

Appendix B – Extended results from simulations performed for the time-resolved gas electron diffractometer.

Below are the detailed results relating to the electron pulse simulations presented in Chapter 4 in the main volume of the thesis.

Section B.1 contains Tables B.1 – B.132, with data relating to the root mean square transverse beam radius of the pulsed electron beam, with respect to the center of the electron beam, for various initial electron gun conditions and magnetic lens settings, and how it varies as it propagates through the apparatus.

Section B.2 contains Tables B.133 – B.144, with data relating to the FWHM pulse duration of the pulsed electron at the sample position for various initial electron gun conditions and magnetic lens settings.

B.1. Electron beam radius

Table B.1: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.57E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 8.00E-05 | 8.00E-05 | 8.04E-05 | 8.04E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 1.09E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.84E-04 | 1.84E-04 | 1.83E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 2.44E-04 | 2.44E-04 | 2.43E-04 | 2.43E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 | 2.44E-04 |
| 190 | 3.35E-04 | 3.35E-04 | 3.32E-04 | 3.32E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 | 3.35E-04 |
| 210 | 3.65E-04 | 3.65E-04 | 3.62E-04 | 3.62E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 | 3.65E-04 |
| 220 | 3.81E-04 | 3.81E-04 | 3.77E-04 | 3.77E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 | 3.81E-04 |
| 290 | 4.88E-04 | 4.88E-04 | 4.82E-04 | 4.82E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 | 4.88E-04 |
| 400 | 6.57E-04 | 6.57E-04 | 6.47E-04 | 6.47E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 | 6.57E-04 |
| 500 | 8.11E-04 | 8.11E-04 | 7.97E-04 | 7.97E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 | 8.11E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.2: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.55E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 7.94E-05 | 7.99E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 1.07E-04 | 1.08E-04 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.21E-04 | 1.22E-04 | 1.22E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.78E-04 | 1.78E-04 | 1.78E-04 | 1.78E-04 | 1.79E-04 | 1.79E-04 | 1.81E-04 | 1.82E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 2.36E-04 | 2.35E-04 | 2.35E-04 | 2.34E-04 | 2.34E-04 | 2.34E-04 | 2.35E-04 | 2.36E-04 | 2.37E-04 | 2.38E-04 | 2.40E-04 | 2.42E-04 |
| 190 | 3.24E-04 | 3.22E-04 | 3.20E-04 | 3.19E-04 | 3.18E-04 | 3.17E-04 | 3.17E-04 | 3.17E-04 | 3.17E-04 | 3.17E-04 | 3.18E-04 | 3.19E-04 |
| 210 | 3.53E-04 | 3.51E-04 | 3.49E-04 | 3.47E-04 | 3.46E-04 | 3.45E-04 | 3.44E-04 | 3.44E-04 | 3.44E-04 | 3.44E-04 | 3.44E-04 | 3.45E-04 |
| 220 | 3.67E-04 | 3.65E-04 | 3.63E-04 | 3.62E-04 | 3.60E-04 | 3.59E-04 | 3.58E-04 | 3.57E-04 | 3.57E-04 | 3.57E-04 | 3.58E-04 | 3.58E-04 |
| 290 | 4.70E-04 | 4.67E-04 | 4.64E-04 | 4.61E-04 | 4.59E-04 | 4.57E-04 | 4.55E-04 | 4.53E-04 | 4.52E-04 | 4.51E-04 | 4.50E-04 | 4.49E-04 |
| 400 | 6.32E-04 | 6.28E-04 | 6.23E-04 | 6.19E-04 | 6.15E-04 | 6.11E-04 | 6.07E-04 | 6.04E-04 | 6.01E-04 | 5.98E-04 | 5.96E-04 | 5.94E-04 |
| 500 | 7.80E-04 | 7.74E-04 | 7.68E-04 | 7.62E-04 | 7.57E-04 | 7.51E-04 | 7.46E-04 | 7.42E-04 | 7.37E-04 | 7.33E-04 | 7.29E-04 | 7.25E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.3: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.51E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 7.76E-05 | 7.94E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 1.02E-04 | 1.03E-04 | 1.06E-04 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.14E-04 | 1.15E-04 | 1.17E-04 | 1.20E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.63E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.64E-04 | 1.67E-04 | 1.72E-04 | 1.77E-04 | 1.82E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 2.14E-04 | 2.10E-04 | 2.07E-04 | 2.06E-04 | 2.05E-04 | 2.06E-04 | 2.08E-04 | 2.11E-04 | 2.15E-04 | 2.21E-04 | 2.27E-04 | 2.35E-04 |
| 190 | 2.90E-04 | 2.83E-04 | 2.77E-04 | 2.72E-04 | 2.68E-04 | 2.65E-04 | 2.63E-04 | 2.63E-04 | 2.63E-04 | 2.65E-04 | 2.68E-04 | 2.72E-04 |
| 210 | 3.15E-04 | 3.07E-04 | 3.00E-04 | 2.94E-04 | 2.89E-04 | 2.85E-04 | 2.82E-04 | 2.80E-04 | 2.79E-04 | 2.80E-04 | 2.82E-04 | 2.85E-04 |
| 220 | 3.28E-04 | 3.20E-04 | 3.12E-04 | 3.05E-04 | 2.99E-04 | 2.94E-04 | 2.91E-04 | 2.89E-04 | 2.88E-04 | 2.88E-04 | 2.89E-04 | 2.91E-04 |
| 290 | 4.18E-04 | 4.06E-04 | 3.94E-04 | 3.83E-04 | 3.73E-04 | 3.64E-04 | 3.57E-04 | 3.50E-04 | 3.45E-04 | 3.41E-04 | 3.38E-04 | 3.36E-04 |
| 400 | 5.61E-04 | 5.42E-04 | 5.24E-04 | 5.07E-04 | 4.90E-04 | 4.75E-04 | 4.61E-04 | 4.48E-04 | 4.36E-04 | 4.25E-04 | 4.16E-04 | 4.08E-04 |
| 500 | 6.91E-04 | 6.66E-04 | 6.43E-04 | 6.20E-04 | 5.98E-04 | 5.77E-04 | 5.57E-04 | 5.38E-04 | 5.20E-04 | 5.03E-04 | 4.88E-04 | 4.73E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.4: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.46E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 7.47E-05 | 7.85E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 9.26E-05 | 9.56E-05 | 1.01E-04 | 1.07E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.02E-04 | 1.03E-04 | 1.08E-04 | 1.15E-04 | 1.22E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.39E-04 | 1.36E-04 | 1.35E-04 | 1.37E-04 | 1.41E-04 | 1.48E-04 | 1.57E-04 | 1.69E-04 | 1.80E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 1.77E-04 | 1.69E-04 | 1.63E-04 | 1.59E-04 | 1.58E-04 | 1.60E-04 | 1.64E-04 | 1.71E-04 | 1.80E-04 | 1.92E-04 | 2.07E-04 | 2.24E-04 |
| 190 | 2.36E-04 | 2.20E-04 | 2.06E-04 | 1.95E-04 | 1.86E-04 | 1.80E-04 | 1.76E-04 | 1.75E-04 | 1.76E-04 | 1.80E-04 | 1.87E-04 | 1.96E-04 |
| 210 | 2.56E-04 | 2.37E-04 | 2.21E-04 | 2.07E-04 | 1.96E-04 | 1.87E-04 | 1.80E-04 | 1.76E-04 | 1.75E-04 | 1.77E-04 | 1.81E-04 | 1.87E-04 |
| 220 | 2.66E-04 | 2.46E-04 | 2.28E-04 | 2.13E-04 | 2.00E-04 | 1.90E-04 | 1.83E-04 | 1.77E-04 | 1.75E-04 | 1.75E-04 | 1.77E-04 | 1.83E-04 |
| 290 | 3.36E-04 | 3.07E-04 | 2.81E-04 | 2.57E-04 | 2.35E-04 | 2.16E-04 | 1.99E-04 | 1.84E-04 | 1.73E-04 | 1.63E-04 | 1.56E-04 | 1.52E-04 |
| 400 | 4.47E-04 | 4.05E-04 | 3.65E-04 | 3.27E-04 | 2.91E-04 | 2.58E-04 | 2.27E-04 | 1.99E-04 | 1.73E-04 | 1.49E-04 | 1.28E-04 | 1.09E-04 |
| 500 | 5.49E-04 | 4.94E-04 | 4.42E-04 | 3.92E-04 | 3.44E-04 | 2.99E-04 | 2.55E-04 | 2.15E-04 | 1.76E-04 | 1.40E-04 | 1.07E-04 | 7.66E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.5: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.36E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 7.06E-05 | 7.74E-05 | 7.99E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 8.00E-05 | 8.55E-05 | 9.52E-05 | 1.05E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 8.49E-05 | 8.81E-05 | 9.58E-05 | 1.08E-04 | 1.20E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.06E-04 | 1.00E-04 | 9.87E-05 | 1.02E-04 | 1.09E-04 | 1.21E-04 | 1.37E-04 | 1.58E-04 | 1.77E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 1.28E-04 | 1.14E-04 | 1.03E-04 | 9.71E-05 | 9.53E-05 | 9.79E-05 | 1.05E-04 | 1.17E-04 | 1.33E-04 | 1.54E-04 | 1.79E-04 | 2.09E-04 |
| 190 | 1.64E-04 | 1.36E-04 | 1.13E-04 | 9.32E-05 | 7.78E-05 | 6.66E-05 | 5.98E-05 | 5.74E-05 | 5.95E-05 | 6.62E-05 | 7.75E-05 | 9.35E-05 |
| 210 | 1.76E-04 | 1.44E-04 | 1.17E-04 | 9.27E-05 | 7.29E-05 | 5.73E-05 | 4.59E-05 | 3.88E-05 | 3.61E-05 | 3.80E-05 | 4.45E-05 | 5.56E-05 |
| 220 | 1.82E-04 | 1.49E-04 | 1.19E-04 | 9.26E-05 | 7.07E-05 | 5.29E-05 | 3.93E-05 | 3.00E-05 | 2.50E-05 | 2.43E-05 | 2.83E-05 | 3.69E-05 |
| 290 | 2.26E-04 | 1.78E-04 | 1.34E-04 | 9.44E-05 | 5.89E-05 | 2.90E-05 | 1.02E-05 | 2.53E-05 | 4.89E-05 | 6.82E-05 | 8.20E-05 | 9.06E-05 |
| 400 | 2.98E-04 | 2.28E-04 | 1.64E-04 | 1.05E-04 | 5.49E-05 | 2.86E-05 | 6.30E-05 | 1.23E-04 | 1.78E-04 | 2.25E-04 | 2.65E-04 | 3.00E-04 |
| 500 | 3.65E-04 | 2.76E-04 | 1.94E-04 | 1.20E-04 | 6.43E-05 | 5.81E-05 | 1.29E-04 | 2.18E-04 | 2.99E-04 | 3.71E-04 | 4.34E-04 | 4.92E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.6: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.24E-05 | 6.55E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 6.54E-05 | 7.59E-05 | 7.99E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 6.45E-05 | 7.29E-05 | 8.76E-05 | 1.03E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 6.44E-05 | 6.93E-05 | 8.08E-05 | 9.89E-05 | 1.17E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 6.58E-05 | 5.70E-05 | 5.46E-05 | 5.89E-05 | 7.00E-05 | 8.80E-05 | 1.13E-04 | 1.44E-04 | 1.73E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 7.02E-05 | 4.82E-05 | 3.23E-05 | 2.26E-05 | 1.93E-05 | 2.27E-05 | 3.31E-05 | 5.06E-05 | 7.52E-05 | 1.07E-04 | 1.45E-04 | 1.90E-04 |
| 190 | 8.16E-05 | 4.27E-05 | 1.49E-05 | 2.30E-05 | 4.96E-05 | 6.97E-05 | 8.14E-05 | 8.56E-05 | 8.24E-05 | 7.22E-05 | 5.51E-05 | 3.11E-05 |
| 210 | 8.63E-05 | 4.29E-05 | 1.64E-05 | 3.89E-05 | 7.47E-05 | 1.02E-04 | 1.21E-04 | 1.32E-04 | 1.36E-04 | 1.32E-04 | 1.22E-04 | 1.05E-04 |
| 220 | 8.89E-05 | 4.34E-05 | 1.85E-05 | 4.74E-05 | 8.74E-05 | 1.19E-04 | 1.41E-04 | 1.56E-04 | 1.63E-04 | 1.63E-04 | 1.56E-04 | 1.42E-04 |
| 290 | 1.09E-04 | 5.25E-05 | 4.57E-05 | 1.10E-04 | 1.78E-04 | 2.35E-04 | 2.81E-04 | 3.20E-04 | 3.51E-04 | 3.75E-04 | 3.92E-04 | 4.02E-04 |
| 400 | 1.47E-04 | 8.00E-05 | 1.04E-04 | 2.15E-04 | 3.24E-04 | 4.19E-04 | 5.04E-04 | 5.80E-04 | 6.48E-04 | 7.10E-04 | 7.64E-04 | 8.12E-04 |
| 500 | 1.85E-04 | 1.12E-04 | 1.62E-04 | 3.12E-04 | 4.58E-04 | 5.88E-04 | 7.06E-04 | 8.16E-04 | 9.19E-04 | 1.01E-03 | 1.10E-03 | 1.19E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.7: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.09E-05 | 6.55E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 5.92E-05 | 7.41E-05 | 7.98E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 4.66E-05 | 5.82E-05 | 7.87E-05 | 1.01E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 4.08E-05 | 4.75E-05 | 6.34E-05 | 8.85E-05 | 1.14E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 2.28E-05 | 9.72E-06 | 5.64E-06 | 1.04E-05 | 2.53E-05 | 5.00E-05 | 8.44E-05 | 1.28E-04 | 1.69E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 2.12E-05 | 2.52E-05 | 4.99E-05 | 6.49E-05 | 6.95E-05 | 6.41E-05 | 4.92E-05 | 2.49E-05 | 8.69E-06 | 5.21E-05 | 1.05E-04 | 1.68E-04 |
| 190 | 4.64E-05 | 8.40E-05 | 1.40E-04 | 1.84E-04 | 2.17E-04 | 2.39E-04 | 2.53E-04 | 2.56E-04 | 2.50E-04 | 2.35E-04 | 2.10E-04 | 1.76E-04 |
| 210 | 5.76E-05 | 1.05E-04 | 1.71E-04 | 2.24E-04 | 2.66E-04 | 2.98E-04 | 3.21E-04 | 3.34E-04 | 3.37E-04 | 3.31E-04 | 3.16E-04 | 2.92E-04 |
| 220 | 6.34E-05 | 1.15E-04 | 1.86E-04 | 2.44E-04 | 2.91E-04 | 3.28E-04 | 3.55E-04 | 3.72E-04 | 3.81E-04 | 3.80E-04 | 3.69E-04 | 3.49E-04 |
| 290 | 1.07E-04 | 1.90E-04 | 2.95E-04 | 3.85E-04 | 4.64E-04 | 5.34E-04 | 5.93E-04 | 6.44E-04 | 6.85E-04 | 7.17E-04 | 7.39E-04 | 7.53E-04 |
| 400 | 1.81E-04 | 3.09E-04 | 4.66E-04 | 6.08E-04 | 7.38E-04 | 8.58E-04 | 9.69E-04 | 1.07E-03 | 1.16E-03 | 1.25E-03 | 1.32E-03 | 1.39E-03 |
| 500 | 2.51E-04 | 4.19E-04 | 6.23E-04 | 8.10E-04 | 9.86E-04 | 1.15E-03 | 1.31E-03 | 1.46E-03 | 1.60E-03 | 1.73E-03 | 1.85E-03 | 1.96E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.8: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.94E-05 | 6.54E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 5.23E-05 | 7.20E-05 | 7.98E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 2.71E-05 | 4.19E-05 | 6.86E-05 | 9.79E-05 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.56E-05 | 2.35E-05 | 4.41E-05 | 7.67E-05 | 1.11E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 3.44E-05 | 4.68E-05 | 5.13E-05 | 4.36E-05 | 2.36E-05 | 8.24E-06 | 5.28E-05 | 1.10E-04 | 1.64E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 8.59E-05 | 1.22E-04 | 1.50E-04 | 1.66E-04 | 1.70E-04 | 1.62E-04 | 1.42E-04 | 1.09E-04 | 6.45E-05 | 7.77E-06 | 6.13E-05 | 1.43E-04 |
| 190 | 1.67E-04 | 2.36E-04 | 2.99E-04 | 3.51E-04 | 3.91E-04 | 4.19E-04 | 4.35E-04 | 4.40E-04 | 4.32E-04 | 4.11E-04 | 3.79E-04 | 3.34E-04 |
| 210 | 1.94E-04 | 2.74E-04 | 3.49E-04 | 4.13E-04 | 4.65E-04 | 5.05E-04 | 5.33E-04 | 5.50E-04 | 5.54E-04 | 5.46E-04 | 5.26E-04 | 4.94E-04 |
| 220 | 2.08E-04 | 2.93E-04 | 3.74E-04 | 4.44E-04 | 5.02E-04 | 5.48E-04 | 5.82E-04 | 6.05E-04 | 6.15E-04 | 6.13E-04 | 6.00E-04 | 5.74E-04 |
| 290 | 3.04E-04 | 4.28E-04 | 5.49E-04 | 6.61E-04 | 7.60E-04 | 8.49E-04 | 9.26E-04 | 9.91E-04 | 1.04E-03 | 1.09E-03 | 1.11E-03 | 1.13E-03 |
| 400 | 4.56E-04 | 6.40E-04 | 8.24E-04 | 1.00E-03 | 1.17E-03 | 1.32E-03 | 1.47E-03 | 1.60E-03 | 1.72E-03 | 1.83E-03 | 1.92E-03 | 2.01E-03 |
| 500 | 5.96E-04 | 8.33E-04 | 1.08E-03 | 1.31E-03 | 1.54E-03 | 1.75E-03 | 1.96E-03 | 2.15E-03 | 2.33E-03 | 2.50E-03 | 2.66E-03 | 2.81E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.9: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.74E-05 | 6.54E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 4.47E-05 | 6.97E-05 | 7.97E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 7.31E-06 | 2.44E-05 | 5.74E-05 | 9.45E-05 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.41E-05 | 2.18E-06 | 2.34E-05 | 6.37E-05 | 1.07E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 9.29E-05 | 1.09E-04 | 1.13E-04 | 1.02E-04 | 7.66E-05 | 3.62E-05 | 1.89E-05 | 8.93E-05 | 1.58E-04 | 1.83E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 1.75E-04 | 2.18E-04 | 2.51E-04 | 2.70E-04 | 2.74E-04 | 2.64E-04 | 2.38E-04 | 1.98E-04 | 1.42E-04 | 7.16E-05 | 1.42E-05 | 1.15E-04 |
| 190 | 2.98E-04 | 3.83E-04 | 4.59E-04 | 5.22E-04 | 5.71E-04 | 6.05E-04 | 6.25E-04 | 6.30E-04 | 6.20E-04 | 5.95E-04 | 5.55E-04 | 5.00E-04 |
| 210 | 3.40E-04 | 4.38E-04 | 5.29E-04 | 6.06E-04 | 6.70E-04 | 7.19E-04 | 7.54E-04 | 7.74E-04 | 7.79E-04 | 7.70E-04 | 7.45E-04 | 7.05E-04 |
| 220 | 3.60E-04 | 4.66E-04 | 5.63E-04 | 6.48E-04 | 7.19E-04 | 7.76E-04 | 8.19E-04 | 8.46E-04 | 8.59E-04 | 8.57E-04 | 8.40E-04 | 8.07E-04 |
| 290 | 5.05E-04 | 6.59E-04 | 8.07E-04 | 9.43E-04 | 1.07E-03 | 1.18E-03 | 1.27E-03 | 1.35E-03 | 1.42E-03 | 1.47E-03 | 1.50E-03 | 1.53E-03 |
| 400 | 7.34E-04 | 9.62E-04 | 1.19E-03 | 1.41E-03 | 1.61E-03 | 1.80E-03 | 1.98E-03 | 2.14E-03 | 2.29E-03 | 2.43E-03 | 2.55E-03 | 2.65E-03 |
| 500 | 9.42E-04 | 1.24E-03 | 1.54E-03 | 1.83E-03 | 2.11E-03 | 2.37E-03 | 2.63E-03 | 2.86E-03 | 3.09E-03 | 3.30E-03 | 3.50E-03 | 3.68E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.10: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.55E-05 | 6.53E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 3.66E-05 | 6.70E-05 | 7.96E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 1.66E-05 | 6.24E-06 | 4.55E-05 | 9.08E-05 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 4.31E-05 | 2.84E-05 | 1.97E-06 | 4.99E-05 | 1.03E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.52E-04 | 1.70E-04 | 1.74E-04 | 1.61E-04 | 1.31E-04 | 8.22E-05 | 1.62E-05 | 6.76E-05 | 1.51E-04 | 1.82E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 2.62E-04 | 3.13E-04 | 3.52E-04 | 3.74E-04 | 3.78E-04 | 3.66E-04 | 3.35E-04 | 2.87E-04 | 2.21E-04 | 1.37E-04 | 3.47E-05 | 8.55E-05 |
| 190 | 4.28E-04 | 5.28E-04 | 6.18E-04 | 6.93E-04 | 7.51E-04 | 7.91E-04 | 8.15E-04 | 8.21E-04 | 8.09E-04 | 7.79E-04 | 7.32E-04 | 6.66E-04 |
| 210 | 4.84E-04 | 5.99E-04 | 7.07E-04 | 7.99E-04 | 8.75E-04 | 9.33E-04 | 9.75E-04 | 9.99E-04 | 1.01E-03 | 9.94E-04 | 9.64E-04 | 9.17E-04 |
| 220 | 5.11E-04 | 6.35E-04 | 7.52E-04 | 8.52E-04 | 9.37E-04 | 1.00E-03 | 1.05E-03 | 1.09E-03 | 1.10E-03 | 1.10E-03 | 1.08E-03 | 1.04E-03 |
| 290 | 7.05E-04 | 8.86E-04 | 1.06E-03 | 1.22E-03 | 1.37E-03 | 1.50E-03 | 1.61E-03 | 1.71E-03 | 1.79E-03 | 1.85E-03 | 1.89E-03 | 1.92E-03 |
| 400 | 1.01E-03 | 1.28E-03 | 1.55E-03 | 1.81E-03 | 2.05E-03 | 2.28E-03 | 2.49E-03 | 2.69E-03 | 2.87E-03 | 3.03E-03 | 3.17E-03 | 3.30E-03 |
| 500 | 1.29E-03 | 1.64E-03 | 2.00E-03 | 2.34E-03 | 2.67E-03 | 2.99E-03 | 3.29E-03 | 3.58E-03 | 3.85E-03 | 4.10E-03 | 4.33E-03 | 4.55E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.11: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.30E-05 | 6.52E-05 | 6.56E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 | 6.57E-05 |
| 20 | 2.79E-05 | 6.41E-05 | 7.95E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 | 8.00E-05 |
| 40 | 3.88E-05 | 1.22E-05 | 3.29E-05 | 8.67E-05 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 7.26E-05 | 5.54E-05 | 2.00E-05 | 3.54E-05 | 9.80E-05 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 2.09E-04 | 2.30E-04 | 2.34E-04 | 2.19E-04 | 1.84E-04 | 1.28E-04 | 5.17E-05 | 4.50E-05 | 1.44E-04 | 1.82E-04 | 1.84E-04 | 1.84E-04 |
| 130 | 3.46E-04 | 4.05E-04 | 4.49E-04 | 4.74E-04 | 4.80E-04 | 4.65E-04 | 4.30E-04 | 3.75E-04 | 2.99E-04 | 2.02E-04 | 8.41E-05 | 5.46E-05 |
| 190 | 5.52E-04 | 6.67E-04 | 7.71E-04 | 8.57E-04 | 9.24E-04 | 9.71E-04 | 9.98E-04 | 1.01E-03 | 9.92E-04 | 9.58E-04 | 9.03E-04 | 8.27E-04 |
| 210 | 6.21E-04 | 7.55E-04 | 8.79E-04 | 9.85E-04 | 1.07E-03 | 1.14E-03 | 1.19E-03 | 1.22E-03 | 1.22E-03 | 1.21E-03 | 1.18E-03 | 1.12E-03 |
| 220 | 6.55E-04 | 7.99E-04 | 9.33E-04 | 1.05E-03 | 1.15E-03 | 1.22E-03 | 1.28E-03 | 1.32E-03 | 1.34E-03 | 1.34E-03 | 1.31E-03 | 1.27E-03 |
| 290 | 8.95E-04 | 1.11E-03 | 1.31E-03 | 1.50E-03 | 1.66E-03 | 1.81E-03 | 1.95E-03 | 2.06E-03 | 2.15E-03 | 2.22E-03 | 2.27E-03 | 2.30E-03 |
| 400 | 1.27E-03 | 1.59E-03 | 1.90E-03 | 2.20E-03 | 2.48E-03 | 2.74E-03 | 2.99E-03 | 3.21E-03 | 3.42E-03 | 3.60E-03 | 3.77E-03 | 3.91E-03 |
| 500 | 1.62E-03 | 2.03E-03 | 2.44E-03 | 2.84E-03 | 3.22E-03 | 3.59E-03 | 3.93E-03 | 4.26E-03 | 4.57E-03 | 4.86E-03 | 5.13E-03 | 5.38E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.12: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.80E-04 | 1.80E-04 | 1.82E-04 | 1.82E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 2.45E-04 | 2.45E-04 | 2.47E-04 | 2.47E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.77E-04 | 2.77E-04 | 2.80E-04 | 2.80E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 4.06E-04 | 4.06E-04 | 4.11E-04 | 4.11E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 5.36E-04 | 5.36E-04 | 5.43E-04 | 5.43E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 | 5.36E-04 |
| 190 | 7.32E-04 | 7.32E-04 | 7.41E-04 | 7.41E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 |
| 210 | 7.98E-04 | 7.98E-04 | 8.07E-04 | 8.07E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 |
| 220 | 8.30E-04 | 8.30E-04 | 8.40E-04 | 8.40E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 |
| 290 | 1.06E-03 | 1.06E-03 | 1.07E-03 | 1.07E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 |
| 400 | 1.42E-03 | 1.42E-03 | 1.43E-03 | 1.43E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 |
| 500 | 1.75E-03 | 1.75E-03 | 1.76E-03 | 1.76E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.13: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 2.40E-04 | 2.41E-04 | 2.43E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.71E-04 | 2.72E-04 | 2.73E-04 | 2.74E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.95E-04 | 3.94E-04 | 3.94E-04 | 3.94E-04 | 3.95E-04 | 3.97E-04 | 4.00E-04 | 4.03E-04 | 4.05E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 5.19E-04 | 5.17E-04 | 5.16E-04 | 5.15E-04 | 5.15E-04 | 5.15E-04 | 5.16E-04 | 5.18E-04 | 5.20E-04 | 5.23E-04 | 5.27E-04 | 5.31E-04 |
| 190 | 7.06E-04 | 7.02E-04 | 6.99E-04 | 6.96E-04 | 6.94E-04 | 6.93E-04 | 6.92E-04 | 6.92E-04 | 6.92E-04 | 6.93E-04 | 6.95E-04 | 6.97E-04 |
| 210 | 7.69E-04 | 7.64E-04 | 7.60E-04 | 7.57E-04 | 7.54E-04 | 7.52E-04 | 7.51E-04 | 7.50E-04 | 7.50E-04 | 7.50E-04 | 7.51E-04 | 7.53E-04 |
| 220 | 8.00E-04 | 7.95E-04 | 7.91E-04 | 7.87E-04 | 7.84E-04 | 7.82E-04 | 7.80E-04 | 7.79E-04 | 7.78E-04 | 7.78E-04 | 7.79E-04 | 7.81E-04 |
| 290 | 1.02E-03 | 1.01E-03 | 1.01E-03 | 1.00E-03 | 9.94E-04 | 9.90E-04 | 9.86E-04 | 9.82E-04 | 9.80E-04 | 9.77E-04 | 9.76E-04 | 9.75E-04 |
| 400 | 1.36E-03 | 1.35E-03 | 1.34E-03 | 1.33E-03 | 1.33E-03 | 1.32E-03 | 1.31E-03 | 1.30E-03 | 1.30E-03 | 1.29E-03 | 1.29E-03 | 1.28E-03 |
| 500 | 1.68E-03 | 1.66E-03 | 1.65E-03 | 1.64E-03 | 1.63E-03 | 1.62E-03 | 1.60E-03 | 1.59E-03 | 1.58E-03 | 1.58E-03 | 1.57E-03 | 1.56E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.14: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.47E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.75E-04 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 2.27E-04 | 2.31E-04 | 2.37E-04 | 2.42E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.54E-04 | 2.56E-04 | 2.60E-04 | 2.67E-04 | 2.74E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.60E-04 | 3.57E-04 | 3.57E-04 | 3.59E-04 | 3.63E-04 | 3.70E-04 | 3.80E-04 | 3.92E-04 | 4.03E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 4.67E-04 | 4.59E-04 | 4.54E-04 | 4.51E-04 | 4.50E-04 | 4.52E-04 | 4.56E-04 | 4.63E-04 | 4.73E-04 | 4.85E-04 | 5.00E-04 | 5.17E-04 |
| 190 | 6.29E-04 | 6.13E-04 | 6.00E-04 | 5.89E-04 | 5.81E-04 | 5.75E-04 | 5.72E-04 | 5.72E-04 | 5.73E-04 | 5.78E-04 | 5.85E-04 | 5.94E-04 |
| 210 | 6.83E-04 | 6.65E-04 | 6.49E-04 | 6.36E-04 | 6.25E-04 | 6.17E-04 | 6.11E-04 | 6.08E-04 | 6.07E-04 | 6.09E-04 | 6.13E-04 | 6.20E-04 |
| 220 | 7.10E-04 | 6.91E-04 | 6.74E-04 | 6.59E-04 | 6.47E-04 | 6.37E-04 | 6.30E-04 | 6.26E-04 | 6.24E-04 | 6.24E-04 | 6.27E-04 | 6.33E-04 |
| 290 | 8.99E-04 | 8.72E-04 | 8.46E-04 | 8.22E-04 | 8.01E-04 | 7.83E-04 | 7.67E-04 | 7.53E-04 | 7.42E-04 | 7.34E-04 | 7.28E-04 | 7.24E-04 |
| 400 | 1.20E-03 | 1.16E-03 | 1.12E-03 | 1.08E-03 | 1.04E-03 | 1.01E-03 | 9.82E-04 | 9.54E-04 | 9.29E-04 | 9.07E-04 | 8.87E-04 | 8.69E-04 |
| 500 | 1.47E-03 | 1.42E-03 | 1.36E-03 | 1.31E-03 | 1.27E-03 | 1.22E-03 | 1.18E-03 | 1.14E-03 | 1.10E-03 | 1.06E-03 | 1.03E-03 | 1.00E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.15: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.46E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.68E-04 | 1.77E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 2.07E-04 | 2.14E-04 | 2.27E-04 | 2.40E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.26E-04 | 2.30E-04 | 2.41E-04 | 2.56E-04 | 2.71E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.04E-04 | 2.98E-04 | 2.96E-04 | 3.01E-04 | 3.11E-04 | 3.26E-04 | 3.47E-04 | 3.74E-04 | 3.98E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 3.84E-04 | 3.66E-04 | 3.53E-04 | 3.46E-04 | 3.45E-04 | 3.49E-04 | 3.59E-04 | 3.75E-04 | 3.96E-04 | 4.22E-04 | 4.55E-04 | 4.93E-04 |
| 190 | 5.04E-04 | 4.69E-04 | 4.40E-04 | 4.16E-04 | 3.98E-04 | 3.85E-04 | 3.78E-04 | 3.76E-04 | 3.80E-04 | 3.90E-04 | 4.05E-04 | 4.26E-04 |
| 210 | 5.44E-04 | 5.04E-04 | 4.69E-04 | 4.40E-04 | 4.16E-04 | 3.97E-04 | 3.84E-04 | 3.77E-04 | 3.75E-04 | 3.79E-04 | 3.89E-04 | 4.04E-04 |
| 220 | 5.64E-04 | 5.22E-04 | 4.84E-04 | 4.52E-04 | 4.25E-04 | 4.04E-04 | 3.88E-04 | 3.78E-04 | 3.73E-04 | 3.74E-04 | 3.81E-04 | 3.93E-04 |
| 290 | 7.06E-04 | 6.44E-04 | 5.87E-04 | 5.35E-04 | 4.89E-04 | 4.48E-04 | 4.12E-04 | 3.82E-04 | 3.58E-04 | 3.39E-04 | 3.26E-04 | 3.18E-04 |
| 400 | 9.30E-04 | 8.38E-04 | 7.51E-04 | 6.69E-04 | 5.92E-04 | 5.20E-04 | 4.54E-04 | 3.93E-04 | 3.38E-04 | 2.88E-04 | 2.44E-04 | 2.05E-04 |
| 500 | 1.13E-03 | 1.02E-03 | 9.01E-04 | 7.91E-04 | 6.87E-04 | 5.88E-04 | 4.95E-04 | 4.07E-04 | 3.24E-04 | 2.48E-04 | 1.77E-04 | 1.13E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.16: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.44E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.59E-04 | 1.74E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 1.78E-04 | 1.91E-04 | 2.13E-04 | 2.36E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.88E-04 | 1.96E-04 | 2.13E-04 | 2.40E-04 | 2.67E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 2.29E-04 | 2.17E-04 | 2.15E-04 | 2.22E-04 | 2.40E-04 | 2.67E-04 | 3.03E-04 | 3.50E-04 | 3.92E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 2.71E-04 | 2.40E-04 | 2.18E-04 | 2.06E-04 | 2.03E-04 | 2.11E-04 | 2.28E-04 | 2.54E-04 | 2.91E-04 | 3.38E-04 | 3.94E-04 | 4.59E-04 |
| 190 | 3.37E-04 | 2.77E-04 | 2.26E-04 | 1.85E-04 | 1.53E-04 | 1.30E-04 | 1.17E-04 | 1.14E-04 | 1.21E-04 | 1.37E-04 | 1.63E-04 | 2.00E-04 |
| 210 | 3.60E-04 | 2.90E-04 | 2.30E-04 | 1.79E-04 | 1.37E-04 | 1.05E-04 | 8.24E-05 | 6.91E-05 | 6.55E-05 | 7.16E-05 | 8.77E-05 | 1.14E-04 |
| 220 | 3.71E-04 | 2.97E-04 | 2.32E-04 | 1.76E-04 | 1.30E-04 | 9.31E-05 | 6.55E-05 | 4.74E-05 | 3.88E-05 | 3.96E-05 | 5.04E-05 | 7.12E-05 |
| 290 | 4.51E-04 | 3.44E-04 | 2.47E-04 | 1.61E-04 | 8.47E-05 | 2.48E-05 | 4.15E-05 | 9.73E-05 | 1.46E-04 | 1.83E-04 | 2.09E-04 | 2.24E-04 |
| 400 | 5.79E-04 | 4.23E-04 | 2.79E-04 | 1.50E-04 | 5.10E-05 | 9.24E-05 | 2.21E-04 | 3.44E-04 | 4.52E-04 | 5.47E-04 | 6.28E-04 | 6.98E-04 |
| 500 | 6.97E-04 | 4.98E-04 | 3.13E-04 | 1.53E-04 | 7.02E-05 | 2.02E-04 | 3.94E-04 | 5.73E-04 | 7.34E-04 | 8.80E-04 | 1.01E-03 | 1.13E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.17: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.42E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.48E-04 | 1.71E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 1.44E-04 | 1.63E-04 | 1.96E-04 | 2.31E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.42E-04 | 1.53E-04 | 1.80E-04 | 2.21E-04 | 2.62E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 1.37E-04 | 1.19E-04 | 1.15E-04 | 1.26E-04 | 1.52E-04 | 1.93E-04 | 2.49E-04 | 3.19E-04 | 3.84E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 1.37E-04 | 8.93E-05 | 5.62E-05 | 3.71E-05 | 3.22E-05 | 4.20E-05 | 6.71E-05 | 1.07E-04 | 1.63E-04 | 2.33E-04 | 3.18E-04 | 4.18E-04 |
| 190 | 1.44E-04 | 5.82E-05 | 2.26E-05 | 8.38E-05 | 1.40E-04 | 1.78E-04 | 2.00E-04 | 2.05E-04 | 1.96E-04 | 1.71E-04 | 1.31E-04 | 7.59E-05 |
| 210 | 1.47E-04 | 5.27E-05 | 4.31E-05 | 1.27E-04 | 2.00E-04 | 2.54E-04 | 2.91E-04 | 3.11E-04 | 3.16E-04 | 3.06E-04 | 2.81E-04 | 2.41E-04 |
| 220 | 1.50E-04 | 5.10E-05 | 5.48E-05 | 1.49E-04 | 2.30E-04 | 2.92E-04 | 3.36E-04 | 3.64E-04 | 3.77E-04 | 3.74E-04 | 3.56E-04 | 3.24E-04 |
| 290 | 1.70E-04 | 5.74E-05 | 1.47E-04 | 3.06E-04 | 4.44E-04 | 5.59E-04 | 6.56E-04 | 7.36E-04 | 8.01E-04 | 8.50E-04 | 8.84E-04 | 9.03E-04 |
| 400 | 2.14E-04 | 1.08E-04 | 3.03E-04 | 5.57E-04 | 7.82E-04 | 9.81E-04 | 1.16E-03 | 1.32E-03 | 1.47E-03 | 1.60E-03 | 1.71E-03 | 1.82E-03 |
| 500 | 2.62E-04 | 1.71E-04 | 4.49E-04 | 7.87E-04 | 1.09E-03 | 1.37E-03 | 1.62E-03 | 1.85E-03 | 2.07E-03 | 2.28E-03 | 2.47E-03 | 2.64E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.18: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.34E-04 | 1.67E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 1.03E-04 | 1.29E-04 | 1.76E-04 | 2.26E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 8.82E-05 | 1.04E-04 | 1.41E-04 | 1.97E-04 | 2.55E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.83E-05 | 1.11E-05 | 4.80E-06 | 1.70E-05 | 5.21E-05 | 1.09E-04 | 1.86E-04 | 2.83E-04 | 3.74E-04 | 4.05E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 4.23E-05 | 8.06E-05 | 1.32E-04 | 1.60E-04 | 1.67E-04 | 1.52E-04 | 1.17E-04 | 6.08E-05 | 1.53E-05 | 1.13E-04 | 2.31E-04 | 3.69E-04 |
| 190 | 1.20E-04 | 2.27E-04 | 3.43E-04 | 4.34E-04 | 5.02E-04 | 5.49E-04 | 5.75E-04 | 5.80E-04 | 5.64E-04 | 5.29E-04 | 4.72E-04 | 3.95E-04 |
| 210 | 1.49E-04 | 2.77E-04 | 4.14E-04 | 5.26E-04 | 6.14E-04 | 6.81E-04 | 7.27E-04 | 7.53E-04 | 7.58E-04 | 7.43E-04 | 7.07E-04 | 6.51E-04 |
| 220 | 1.64E-04 | 3.02E-04 | 4.50E-04 | 5.71E-04 | 6.70E-04 | 7.48E-04 | 8.04E-04 | 8.40E-04 | 8.55E-04 | 8.50E-04 | 8.25E-04 | 7.78E-04 |
| 290 | 2.71E-04 | 4.77E-04 | 6.99E-04 | 8.93E-04 | 1.06E-03 | 1.21E-03 | 1.34E-03 | 1.45E-03 | 1.53E-03 | 1.60E-03 | 1.65E-03 | 1.67E-03 |
| 400 | 4.44E-04 | 7.55E-04 | 1.09E-03 | 1.40E-03 | 1.68E-03 | 1.94E-03 | 2.18E-03 | 2.40E-03 | 2.60E-03 | 2.78E-03 | 2.94E-03 | 3.08E-03 |
| 500 | 6.04E-04 | 1.01E-03 | 1.45E-03 | 1.86E-03 | 2.24E-03 | 2.60E-03 | 2.95E-03 | 3.27E-03 | 3.57E-03 | 3.85E-03 | 4.12E-03 | 4.36E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.19: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.35E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.18E-04 | 1.62E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 5.83E-05 | 9.26E-05 | 1.53E-04 | 2.19E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 3.04E-05 | 4.98E-05 | 9.72E-05 | 1.71E-04 | 2.48E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 9.11E-05 | 1.17E-04 | 1.24E-04 | 1.04E-04 | 5.76E-05 | 1.53E-05 | 1.15E-04 | 2.42E-04 | 3.62E-04 | 4.05E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 2.13E-04 | 2.90E-04 | 3.50E-04 | 3.83E-04 | 3.89E-04 | 3.68E-04 | 3.21E-04 | 2.47E-04 | 1.47E-04 | 2.01E-05 | 1.33E-04 | 3.13E-04 |
| 190 | 3.99E-04 | 5.52E-04 | 6.90E-04 | 8.02E-04 | 8.87E-04 | 9.46E-04 | 9.78E-04 | 9.85E-04 | 9.64E-04 | 9.17E-04 | 8.44E-04 | 7.43E-04 |
| 210 | 4.62E-04 | 6.39E-04 | 8.04E-04 | 9.42E-04 | 1.05E-03 | 1.14E-03 | 1.20E-03 | 1.23E-03 | 1.24E-03 | 1.22E-03 | 1.17E-03 | 1.10E-03 |
| 220 | 4.93E-04 | 6.83E-04 | 8.60E-04 | 1.01E-03 | 1.14E-03 | 1.23E-03 | 1.31E-03 | 1.35E-03 | 1.37E-03 | 1.37E-03 | 1.33E-03 | 1.27E-03 |
| 290 | 7.13E-04 | 9.89E-04 | 1.26E-03 | 1.50E-03 | 1.72E-03 | 1.91E-03 | 2.07E-03 | 2.21E-03 | 2.33E-03 | 2.41E-03 | 2.47E-03 | 2.51E-03 |
| 400 | 1.06E-03 | 1.47E-03 | 1.88E-03 | 2.27E-03 | 2.63E-03 | 2.97E-03 | 3.28E-03 | 3.57E-03 | 3.83E-03 | 4.06E-03 | 4.27E-03 | 4.45E-03 |
| 500 | 1.37E-03 | 1.91E-03 | 2.45E-03 | 2.97E-03 | 3.46E-03 | 3.93E-03 | 4.38E-03 | 4.80E-03 | 5.19E-03 | 5.56E-03 | 5.90E-03 | 6.21E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.20: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.30E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.01E-04 | 1.57E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 1.36E-05 | 5.30E-05 | 1.28E-04 | 2.12E-04 | 2.43E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 3.69E-05 | 7.76E-06 | 5.05E-05 | 1.42E-04 | 2.39E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 2.21E-04 | 2.54E-04 | 2.60E-04 | 2.34E-04 | 1.75E-04 | 8.39E-05 | 4.01E-05 | 1.97E-04 | 3.49E-04 | 4.04E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 4.08E-04 | 5.03E-04 | 5.74E-04 | 6.13E-04 | 6.20E-04 | 5.94E-04 | 5.35E-04 | 4.43E-04 | 3.19E-04 | 1.61E-04 | 2.93E-05 | 2.52E-04 |
| 190 | 6.89E-04 | 8.77E-04 | 1.04E-03 | 1.18E-03 | 1.29E-03 | 1.36E-03 | 1.40E-03 | 1.41E-03 | 1.38E-03 | 1.32E-03 | 1.23E-03 | 1.11E-03 |
| 210 | 7.83E-04 | 1.00E-03 | 1.20E-03 | 1.37E-03 | 1.51E-03 | 1.61E-03 | 1.69E-03 | 1.73E-03 | 1.73E-03 | 1.71E-03 | 1.65E-03 | 1.56E-03 |
| 220 | 8.30E-04 | 1.06E-03 | 1.28E-03 | 1.47E-03 | 1.62E-03 | 1.74E-03 | 1.83E-03 | 1.89E-03 | 1.91E-03 | 1.90E-03 | 1.86E-03 | 1.79E-03 |
| 290 | 1.16E-03 | 1.50E-03 | 1.83E-03 | 2.13E-03 | 2.40E-03 | 2.63E-03 | 2.84E-03 | 3.01E-03 | 3.15E-03 | 3.26E-03 | 3.33E-03 | 3.38E-03 |
| 400 | 1.68E-03 | 2.19E-03 | 2.69E-03 | 3.17E-03 | 3.62E-03 | 4.04E-03 | 4.42E-03 | 4.78E-03 | 5.10E-03 | 5.39E-03 | 5.65E-03 | 5.87E-03 |
| 500 | 2.15E-03 | 2.81E-03 | 3.48E-03 | 4.12E-03 | 4.73E-03 | 5.31E-03 | 5.86E-03 | 6.38E-03 | 6.87E-03 | 7.32E-03 | 7.75E-03 | 8.14E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.21: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.25E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 8.19E-05 | 1.51E-04 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 4.12E-05 | 1.20E-05 | 1.01E-04 | 2.03E-04 | 2.43E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.02E-04 | 6.76E-05 | 2.31E-06 | 1.11E-04 | 2.29E-04 | 2.75E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.51E-04 | 3.90E-04 | 3.97E-04 | 3.66E-04 | 2.95E-04 | 1.86E-04 | 3.80E-05 | 1.49E-04 | 3.35E-04 | 4.04E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 6.01E-04 | 7.14E-04 | 7.98E-04 | 8.44E-04 | 8.52E-04 | 8.21E-04 | 7.51E-04 | 6.42E-04 | 4.93E-04 | 3.06E-04 | 7.88E-05 | 1.87E-04 |
| 190 | 9.76E-04 | 1.20E-03 | 1.40E-03 | 1.56E-03 | 1.69E-03 | 1.77E-03 | 1.82E-03 | 1.83E-03 | 1.80E-03 | 1.73E-03 | 1.62E-03 | 1.47E-03 |
| 210 | 1.10E-03 | 1.36E-03 | 1.60E-03 | 1.80E-03 | 1.96E-03 | 2.09E-03 | 2.18E-03 | 2.23E-03 | 2.23E-03 | 2.20E-03 | 2.14E-03 | 2.03E-03 |
| 220 | 1.16E-03 | 1.44E-03 | 1.70E-03 | 1.92E-03 | 2.10E-03 | 2.25E-03 | 2.36E-03 | 2.42E-03 | 2.45E-03 | 2.44E-03 | 2.39E-03 | 2.30E-03 |
| 290 | 1.60E-03 | 2.01E-03 | 2.40E-03 | 2.76E-03 | 3.08E-03 | 3.36E-03 | 3.60E-03 | 3.81E-03 | 3.98E-03 | 4.10E-03 | 4.19E-03 | 4.24E-03 |
| 400 | 2.29E-03 | 2.90E-03 | 3.51E-03 | 4.08E-03 | 4.61E-03 | 5.11E-03 | 5.56E-03 | 5.99E-03 | 6.37E-03 | 6.71E-03 | 7.02E-03 | 7.29E-03 |
| 500 | 2.92E-03 | 3.71E-03 | 4.51E-03 | 5.27E-03 | 6.00E-03 | 6.69E-03 | 7.35E-03 | 7.97E-03 | 8.55E-03 | 9.09E-03 | 9.59E-03 | 1.01E-02 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.22: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.20E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 6.23E-05 | 1.44E-04 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 |
| 40 | 9.11E-05 | 2.98E-05 | 7.30E-05 | 1.94E-04 | 2.43E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.68E-04 | 1.28E-04 | 4.71E-05 | 7.81E-05 | 2.19E-04 | 2.75E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 4.78E-04 | 5.24E-04 | 5.31E-04 | 4.95E-04 | 4.14E-04 | 2.88E-04 | 1.17E-04 | 9.87E-05 | 3.19E-04 | 4.03E-04 | 4.06E-04 | 4.06E-04 |
| 130 | 7.88E-04 | 9.19E-04 | 1.02E-03 | 1.07E-03 | 1.08E-03 | 1.04E-03 | 9.61E-04 | 8.36E-04 | 6.65E-04 | 4.49E-04 | 1.88E-04 | 1.19E-04 |
| 190 | 1.25E-03 | 1.51E-03 | 1.74E-03 | 1.93E-03 | 2.07E-03 | 2.17E-03 | 2.23E-03 | 2.24E-03 | 2.20E-03 | 2.12E-03 | 2.00E-03 | 1.83E-03 |
| 210 | 1.41E-03 | 1.71E-03 | 1.99E-03 | 2.22E-03 | 2.40E-03 | 2.55E-03 | 2.65E-03 | 2.70E-03 | 2.72E-03 | 2.68E-03 | 2.60E-03 | 2.48E-03 |
| 220 | 1.49E-03 | 1.81E-03 | 2.11E-03 | 2.36E-03 | 2.57E-03 | 2.74E-03 | 2.86E-03 | 2.94E-03 | 2.97E-03 | 2.96E-03 | 2.90E-03 | 2.80E-03 |
| 290 | 2.03E-03 | 2.50E-03 | 2.96E-03 | 3.36E-03 | 3.73E-03 | 4.06E-03 | 4.34E-03 | 4.57E-03 | 4.77E-03 | 4.91E-03 | 5.02E-03 | 5.07E-03 |
| 400 | 2.88E-03 | 3.59E-03 | 4.29E-03 | 4.94E-03 | 5.56E-03 | 6.13E-03 | 6.66E-03 | 7.14E-03 | 7.59E-03 | 7.98E-03 | 8.34E-03 | 8.65E-03 |
| 500 | 3.66E-03 | 4.58E-03 | 5.50E-03 | 6.38E-03 | 7.22E-03 | 8.02E-03 | 8.77E-03 | 9.48E-03 | 1.02E-02 | 1.08E-02 | 1.14E-02 | 1.19E-02 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.23: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 | 1.87E-04 |
| 190 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 | 2.53E-04 |
| 210 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 | 2.75E-04 |
| 220 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 | 2.86E-04 |
| 290 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 | 3.63E-04 |
| 400 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 | 4.86E-04 |
| 500 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 | 5.98E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.24: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.13E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 7.09E-05 | 7.13E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 9.01E-05 | 9.06E-05 | 9.12E-05 | 9.17E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 9.99E-05 | 1.00E-04 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.41E-04 | 1.42E-04 | 1.43E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 1.80E-04 | 1.80E-04 | 1.79E-04 | 1.79E-04 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.81E-04 | 1.82E-04 | 1.83E-04 | 1.84E-04 | 1.86E-04 |
| 190 | 2.42E-04 | 2.41E-04 | 2.40E-04 | 2.39E-04 | 2.39E-04 | 2.38E-04 | 2.38E-04 | 2.38E-04 | 2.39E-04 | 2.39E-04 | 2.40E-04 | 2.41E-04 |
| 210 | 2.63E-04 | 2.62E-04 | 2.61E-04 | 2.60E-04 | 2.59E-04 | 2.58E-04 | 2.58E-04 | 2.58E-04 | 2.58E-04 | 2.58E-04 | 2.58E-04 | 2.59E-04 |
| 220 | 2.73E-04 | 2.72E-04 | 2.71E-04 | 2.70E-04 | 2.69E-04 | 2.68E-04 | 2.68E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.68E-04 | 2.68E-04 |
| 290 | 3.47E-04 | 3.45E-04 | 3.43E-04 | 3.41E-04 | 3.39E-04 | 3.38E-04 | 3.37E-04 | 3.36E-04 | 3.35E-04 | 3.34E-04 | 3.34E-04 | 3.34E-04 |
| 400 | 4.63E-04 | 4.60E-04 | 4.57E-04 | 4.54E-04 | 4.51E-04 | 4.49E-04 | 4.46E-04 | 4.44E-04 | 4.42E-04 | 4.40E-04 | 4.39E-04 | 4.37E-04 |
| 500 | 5.70E-04 | 5.66E-04 | 5.62E-04 | 5.58E-04 | 5.54E-04 | 5.50E-04 | 5.47E-04 | 5.44E-04 | 5.40E-04 | 5.38E-04 | 5.35E-04 | 5.32E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.25: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.09E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 6.92E-05 | 7.09E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 8.48E-05 | 8.64E-05 | 8.88E-05 | 9.11E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 9.28E-05 | 9.40E-05 | 9.60E-05 | 9.88E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.25E-04 | 1.25E-04 | 1.25E-04 | 1.27E-04 | 1.29E-04 | 1.31E-04 | 1.35E-04 | 1.39E-04 | 1.43E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 1.59E-04 | 1.57E-04 | 1.56E-04 | 1.55E-04 | 1.56E-04 | 1.57E-04 | 1.59E-04 | 1.61E-04 | 1.65E-04 | 1.69E-04 | 1.75E-04 | 1.81E-04 |
| 190 | 2.11E-04 | 2.07E-04 | 2.03E-04 | 2.00E-04 | 1.97E-04 | 1.96E-04 | 1.95E-04 | 1.95E-04 | 1.96E-04 | 1.98E-04 | 2.01E-04 | 2.04E-04 |
| 210 | 2.28E-04 | 2.23E-04 | 2.19E-04 | 2.15E-04 | 2.12E-04 | 2.09E-04 | 2.08E-04 | 2.07E-04 | 2.07E-04 | 2.08E-04 | 2.10E-04 | 2.13E-04 |
| 220 | 2.37E-04 | 2.32E-04 | 2.27E-04 | 2.22E-04 | 2.19E-04 | 2.16E-04 | 2.14E-04 | 2.13E-04 | 2.13E-04 | 2.13E-04 | 2.15E-04 | 2.17E-04 |
| 290 | 2.99E-04 | 2.91E-04 | 2.83E-04 | 2.76E-04 | 2.69E-04 | 2.64E-04 | 2.59E-04 | 2.55E-04 | 2.51E-04 | 2.49E-04 | 2.47E-04 | 2.46E-04 |
| 400 | 3.97E-04 | 3.85E-04 | 3.73E-04 | 3.61E-04 | 3.50E-04 | 3.40E-04 | 3.30E-04 | 3.22E-04 | 3.14E-04 | 3.06E-04 | 3.00E-04 | 2.94E-04 |
| 500 | 4.88E-04 | 4.71E-04 | 4.55E-04 | 4.40E-04 | 4.25E-04 | 4.10E-04 | 3.97E-04 | 3.84E-04 | 3.71E-04 | 3.60E-04 | 3.49E-04 | 3.39E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.26: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.03E-05 | 6.14E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 6.63E-05 | 7.01E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 7.61E-05 | 7.97E-05 | 8.50E-05 | 9.01E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 8.11E-05 | 8.39E-05 | 8.83E-05 | 9.44E-05 | 1.00E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.05E-04 | 1.09E-04 | 1.15E-04 | 1.23E-04 | 1.33E-04 | 1.42E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 1.25E-04 | 1.21E-04 | 1.18E-04 | 1.16E-04 | 1.17E-04 | 1.19E-04 | 1.24E-04 | 1.30E-04 | 1.37E-04 | 1.47E-04 | 1.59E-04 | 1.72E-04 |
| 190 | 1.60E-04 | 1.51E-04 | 1.42E-04 | 1.36E-04 | 1.31E-04 | 1.27E-04 | 1.26E-04 | 1.26E-04 | 1.28E-04 | 1.32E-04 | 1.38E-04 | 1.46E-04 |
| 210 | 1.73E-04 | 1.61E-04 | 1.51E-04 | 1.42E-04 | 1.36E-04 | 1.30E-04 | 1.27E-04 | 1.25E-04 | 1.25E-04 | 1.27E-04 | 1.31E-04 | 1.37E-04 |
| 220 | 1.79E-04 | 1.67E-04 | 1.55E-04 | 1.46E-04 | 1.38E-04 | 1.32E-04 | 1.28E-04 | 1.25E-04 | 1.24E-04 | 1.25E-04 | 1.28E-04 | 1.33E-04 |
| 290 | 2.22E-04 | 2.04E-04 | 1.87E-04 | 1.71E-04 | 1.57E-04 | 1.44E-04 | 1.34E-04 | 1.24E-04 | 1.17E-04 | 1.11E-04 | 1.07E-04 | 1.05E-04 |
| 400 | 2.93E-04 | 2.66E-04 | 2.39E-04 | 2.14E-04 | 1.90E-04 | 1.68E-04 | 1.47E-04 | 1.28E-04 | 1.10E-04 | 9.45E-05 | 8.03E-05 | 6.79E-05 |
| 500 | 3.58E-04 | 3.23E-04 | 2.89E-04 | 2.55E-04 | 2.23E-04 | 1.92E-04 | 1.63E-04 | 1.36E-04 | 1.10E-04 | 8.59E-05 | 6.39E-05 | 4.40E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.27: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.93E-05 | 6.14E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 6.23E-05 | 6.91E-05 | 7.14E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 6.43E-05 | 7.06E-05 | 7.97E-05 | 8.87E-05 | 9.18E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 6.54E-05 | 7.02E-05 | 7.79E-05 | 8.85E-05 | 9.87E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 7.15E-05 | 7.00E-05 | 7.12E-05 | 7.55E-05 | 8.29E-05 | 9.35E-05 | 1.07E-04 | 1.24E-04 | 1.39E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 7.96E-05 | 7.18E-05 | 6.66E-05 | 6.43E-05 | 6.51E-05 | 6.91E-05 | 7.62E-05 | 8.66E-05 | 1.00E-04 | 1.17E-04 | 1.37E-04 | 1.60E-04 |
| 190 | 9.48E-05 | 7.81E-05 | 6.36E-05 | 5.17E-05 | 4.27E-05 | 3.66E-05 | 3.34E-05 | 3.35E-05 | 3.67E-05 | 4.33E-05 | 5.32E-05 | 6.65E-05 |
| 210 | 1.00E-04 | 8.10E-05 | 6.36E-05 | 4.88E-05 | 3.68E-05 | 2.76E-05 | 2.12E-05 | 1.77E-05 | 1.73E-05 | 2.01E-05 | 2.63E-05 | 3.59E-05 |
| 220 | 1.03E-04 | 8.26E-05 | 6.38E-05 | 4.76E-05 | 3.42E-05 | 2.36E-05 | 1.58E-05 | 1.09E-05 | 8.71E-06 | 9.39E-06 | 1.34E-05 | 2.10E-05 |
| 290 | 1.26E-04 | 9.60E-05 | 6.85E-05 | 4.43E-05 | 2.48E-05 | 1.49E-05 | 2.46E-05 | 4.20E-05 | 5.79E-05 | 6.99E-05 | 7.80E-05 | 8.23E-05 |
| 400 | 1.65E-04 | 1.23E-04 | 8.50E-05 | 5.46E-05 | 3.97E-05 | 5.61E-05 | 9.52E-05 | 1.37E-04 | 1.73E-04 | 2.04E-04 | 2.31E-04 | 2.54E-04 |
| 500 | 2.04E-04 | 1.52E-04 | 1.07E-04 | 7.48E-05 | 7.02E-05 | 1.07E-04 | 1.67E-04 | 2.27E-04 | 2.81E-04 | 3.29E-04 | 3.72E-04 | 4.11E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.28: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.83E-05 | 6.14E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 5.75E-05 | 6.77E-05 | 7.14E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 4.98E-05 | 5.93E-05 | 7.31E-05 | 8.69E-05 | 9.18E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 4.63E-05 | 5.33E-05 | 6.49E-05 | 8.10E-05 | 9.67E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 3.46E-05 | 3.18E-05 | 3.33E-05 | 3.96E-05 | 5.08E-05 | 6.68E-05 | 8.77E-05 | 1.13E-04 | 1.36E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 2.81E-05 | 1.63E-05 | 8.53E-06 | 4.83E-06 | 4.33E-06 | 8.59E-06 | 1.87E-05 | 3.42E-05 | 5.47E-05 | 8.02E-05 | 1.11E-04 | 1.46E-04 |
| 190 | 3.01E-05 | 1.81E-05 | 3.12E-05 | 5.13E-05 | 6.70E-05 | 7.69E-05 | 8.15E-05 | 8.10E-05 | 7.55E-05 | 6.50E-05 | 4.97E-05 | 2.95E-05 |
| 210 | 3.35E-05 | 2.48E-05 | 4.51E-05 | 7.11E-05 | 9.19E-05 | 1.07E-04 | 1.16E-04 | 1.21E-04 | 1.20E-04 | 1.14E-04 | 1.04E-04 | 8.81E-05 |
| 220 | 3.56E-05 | 2.87E-05 | 5.23E-05 | 8.12E-05 | 1.05E-04 | 1.22E-04 | 1.34E-04 | 1.40E-04 | 1.42E-04 | 1.39E-04 | 1.31E-04 | 1.18E-04 |
| 290 | 5.56E-05 | 6.18E-05 | 1.06E-04 | 1.54E-04 | 1.94E-04 | 2.28E-04 | 2.57E-04 | 2.80E-04 | 2.99E-04 | 3.12E-04 | 3.21E-04 | 3.25E-04 |
| 400 | 9.76E-05 | 1.23E-04 | 1.95E-04 | 2.71E-04 | 3.37E-04 | 3.97E-04 | 4.52E-04 | 5.01E-04 | 5.46E-04 | 5.86E-04 | 6.21E-04 | 6.52E-04 |
| 500 | 1.41E-04 | 1.82E-04 | 2.79E-04 | 3.78E-04 | 4.69E-04 | 5.52E-04 | 6.30E-04 | 7.03E-04 | 7.72E-04 | 8.35E-04 | 8.95E-04 | 9.49E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.29: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.69E-05 | 6.13E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 5.16E-05 | 6.60E-05 | 7.13E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 3.30E-05 | 4.61E-05 | 6.53E-05 | 8.48E-05 | 9.17E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 2.42E-05 | 3.39E-05 | 4.98E-05 | 7.22E-05 | 9.43E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.01E-05 | 1.11E-05 | 9.27E-06 | 2.00E-06 | 1.39E-05 | 3.59E-05 | 6.48E-05 | 1.00E-04 | 1.33E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 4.26E-05 | 5.77E-05 | 6.92E-05 | 7.38E-05 | 7.16E-05 | 6.29E-05 | 4.76E-05 | 2.58E-05 | 2.63E-06 | 3.77E-05 | 7.99E-05 | 1.29E-04 |
| 190 | 9.91E-05 | 1.33E-04 | 1.63E-04 | 1.87E-04 | 2.04E-04 | 2.15E-04 | 2.19E-04 | 2.17E-04 | 2.08E-04 | 1.93E-04 | 1.71E-04 | 1.42E-04 |
| 210 | 1.19E-04 | 1.58E-04 | 1.95E-04 | 2.25E-04 | 2.49E-04 | 2.66E-04 | 2.77E-04 | 2.81E-04 | 2.79E-04 | 2.70E-04 | 2.55E-04 | 2.33E-04 |
| 220 | 1.28E-04 | 1.71E-04 | 2.11E-04 | 2.44E-04 | 2.71E-04 | 2.91E-04 | 3.05E-04 | 3.13E-04 | 3.14E-04 | 3.09E-04 | 2.97E-04 | 2.78E-04 |
| 290 | 1.98E-04 | 2.61E-04 | 3.23E-04 | 3.78E-04 | 4.27E-04 | 4.70E-04 | 5.07E-04 | 5.38E-04 | 5.62E-04 | 5.80E-04 | 5.91E-04 | 5.96E-04 |
| 400 | 3.10E-04 | 4.04E-04 | 5.00E-04 | 5.90E-04 | 6.73E-04 | 7.52E-04 | 8.25E-04 | 8.91E-04 | 9.51E-04 | 1.01E-03 | 1.05E-03 | 1.10E-03 |
| 500 | 4.13E-04 | 5.35E-04 | 6.61E-04 | 7.82E-04 | 8.98E-04 | 1.01E-03 | 1.11E-03 | 1.21E-03 | 1.31E-03 | 1.39E-03 | 1.48E-03 | 1.55E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.30: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.53E-05 | 6.13E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 4.51E-05 | 6.41E-05 | 7.13E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 1.47E-05 | 3.15E-05 | 5.65E-05 | 8.22E-05 | 9.16E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 2.98E-06 | 1.25E-05 | 3.31E-05 | 6.22E-05 | 9.14E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 6.04E-05 | 6.31E-05 | 5.91E-05 | 4.70E-05 | 2.66E-05 | 2.16E-06 | 3.94E-05 | 8.56E-05 | 1.29E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 1.24E-04 | 1.42E-04 | 1.54E-04 | 1.58E-04 | 1.54E-04 | 1.42E-04 | 1.22E-04 | 9.28E-05 | 5.52E-05 | 9.13E-06 | 4.57E-05 | 1.09E-04 |
| 190 | 2.21E-04 | 2.61E-04 | 2.98E-04 | 3.27E-04 | 3.48E-04 | 3.61E-04 | 3.66E-04 | 3.63E-04 | 3.51E-04 | 3.30E-04 | 3.02E-04 | 2.64E-04 |
| 210 | 2.53E-04 | 3.01E-04 | 3.46E-04 | 3.83E-04 | 4.12E-04 | 4.34E-04 | 4.47E-04 | 4.53E-04 | 4.50E-04 | 4.38E-04 | 4.18E-04 | 3.89E-04 |
| 220 | 2.70E-04 | 3.21E-04 | 3.70E-04 | 4.11E-04 | 4.45E-04 | 4.70E-04 | 4.88E-04 | 4.98E-04 | 4.99E-04 | 4.91E-04 | 4.76E-04 | 4.52E-04 |
| 290 | 3.84E-04 | 4.62E-04 | 5.38E-04 | 6.08E-04 | 6.71E-04 | 7.26E-04 | 7.73E-04 | 8.13E-04 | 8.45E-04 | 8.67E-04 | 8.83E-04 | 8.89E-04 |
| 400 | 5.65E-04 | 6.83E-04 | 8.03E-04 | 9.18E-04 | 1.03E-03 | 1.13E-03 | 1.22E-03 | 1.31E-03 | 1.39E-03 | 1.46E-03 | 1.52E-03 | 1.58E-03 |
| 500 | 7.29E-04 | 8.84E-04 | 1.04E-03 | 1.20E-03 | 1.35E-03 | 1.49E-03 | 1.63E-03 | 1.76E-03 | 1.88E-03 | 2.00E-03 | 2.10E-03 | 2.20E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.31: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.36E-05 | 6.12E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 3.79E-05 | 6.19E-05 | 7.12E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 5.44E-06 | 1.58E-05 | 4.68E-05 | 7.94E-05 | 9.15E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 2.66E-05 | 1.02E-05 | 1.52E-05 | 5.13E-05 | 8.82E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.15E-04 | 1.17E-04 | 1.12E-04 | 9.61E-05 | 7.03E-05 | 3.41E-05 | 1.23E-05 | 6.94E-05 | 1.24E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 2.05E-04 | 2.26E-04 | 2.40E-04 | 2.45E-04 | 2.40E-04 | 2.25E-04 | 1.99E-04 | 1.63E-04 | 1.16E-04 | 5.90E-05 | 9.04E-06 | 8.79E-05 |
| 190 | 3.41E-04 | 3.89E-04 | 4.34E-04 | 4.69E-04 | 4.95E-04 | 5.11E-04 | 5.18E-04 | 5.14E-04 | 4.99E-04 | 4.74E-04 | 4.38E-04 | 3.92E-04 |
| 210 | 3.87E-04 | 4.44E-04 | 4.98E-04 | 5.44E-04 | 5.81E-04 | 6.07E-04 | 6.24E-04 | 6.30E-04 | 6.27E-04 | 6.12E-04 | 5.88E-04 | 5.52E-04 |
| 220 | 4.10E-04 | 4.71E-04 | 5.31E-04 | 5.82E-04 | 6.23E-04 | 6.55E-04 | 6.77E-04 | 6.89E-04 | 6.91E-04 | 6.82E-04 | 6.62E-04 | 6.32E-04 |
| 290 | 5.69E-04 | 6.62E-04 | 7.57E-04 | 8.44E-04 | 9.22E-04 | 9.89E-04 | 1.05E-03 | 1.10E-03 | 1.14E-03 | 1.17E-03 | 1.18E-03 | 1.19E-03 |
| 400 | 8.20E-04 | 9.63E-04 | 1.11E-03 | 1.26E-03 | 1.39E-03 | 1.52E-03 | 1.63E-03 | 1.74E-03 | 1.84E-03 | 1.93E-03 | 2.01E-03 | 2.07E-03 |
| 500 | 1.05E-03 | 1.24E-03 | 1.44E-03 | 1.63E-03 | 1.82E-03 | 1.99E-03 | 2.16E-03 | 2.33E-03 | 2.48E-03 | 2.62E-03 | 2.75E-03 | 2.88E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.32: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.16E-05 | 6.11E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 3.02E-05 | 5.95E-05 | 7.11E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 2.59E-05 | 8.96E-07 | 3.64E-05 | 7.62E-05 | 9.14E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 5.44E-05 | 3.41E-05 | 3.41E-06 | 3.95E-05 | 8.46E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.70E-04 | 1.71E-04 | 1.64E-04 | 1.46E-04 | 1.15E-04 | 7.15E-05 | 1.59E-05 | 5.22E-05 | 1.19E-04 | 1.44E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 2.86E-04 | 3.09E-04 | 3.26E-04 | 3.32E-04 | 3.26E-04 | 3.08E-04 | 2.77E-04 | 2.34E-04 | 1.79E-04 | 1.10E-04 | 2.89E-05 | 6.50E-05 |
| 190 | 4.60E-04 | 5.17E-04 | 5.70E-04 | 6.12E-04 | 6.43E-04 | 6.62E-04 | 6.70E-04 | 6.65E-04 | 6.48E-04 | 6.18E-04 | 5.75E-04 | 5.20E-04 |
| 210 | 5.18E-04 | 5.86E-04 | 6.51E-04 | 7.05E-04 | 7.49E-04 | 7.81E-04 | 8.01E-04 | 8.08E-04 | 8.04E-04 | 7.87E-04 | 7.58E-04 | 7.15E-04 |
| 220 | 5.47E-04 | 6.20E-04 | 6.91E-04 | 7.52E-04 | 8.02E-04 | 8.40E-04 | 8.66E-04 | 8.80E-04 | 8.82E-04 | 8.72E-04 | 8.49E-04 | 8.13E-04 |
| 290 | 7.51E-04 | 8.63E-04 | 9.76E-04 | 1.08E-03 | 1.17E-03 | 1.25E-03 | 1.32E-03 | 1.38E-03 | 1.43E-03 | 1.46E-03 | 1.49E-03 | 1.50E-03 |
| 400 | 1.07E-03 | 1.24E-03 | 1.42E-03 | 1.59E-03 | 1.75E-03 | 1.90E-03 | 2.04E-03 | 2.17E-03 | 2.29E-03 | 2.40E-03 | 2.49E-03 | 2.57E-03 |
| 500 | 1.36E-03 | 1.59E-03 | 1.83E-03 | 2.06E-03 | 2.28E-03 | 2.50E-03 | 2.70E-03 | 2.89E-03 | 3.07E-03 | 3.24E-03 | 3.40E-03 | 3.55E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.33: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 4.93E-05 | 6.10E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 | 6.15E-05 |
| 20 | 2.19E-05 | 5.68E-05 | 7.10E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 | 7.15E-05 |
| 40 | 4.68E-05 | 1.69E-05 | 2.55E-05 | 7.26E-05 | 9.13E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 | 9.19E-05 |
| 50 | 8.16E-05 | 5.80E-05 | 2.23E-05 | 2.73E-05 | 8.06E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 2.22E-04 | 2.24E-04 | 2.16E-04 | 1.94E-04 | 1.58E-04 | 1.09E-04 | 4.44E-05 | 3.42E-05 | 1.13E-04 | 1.43E-04 | 1.44E-04 | 1.44E-04 |
| 130 | 3.62E-04 | 3.90E-04 | 4.09E-04 | 4.16E-04 | 4.09E-04 | 3.88E-04 | 3.53E-04 | 3.03E-04 | 2.39E-04 | 1.61E-04 | 6.72E-05 | 4.11E-05 |
| 190 | 5.73E-04 | 6.39E-04 | 7.00E-04 | 7.49E-04 | 7.85E-04 | 8.07E-04 | 8.16E-04 | 8.10E-04 | 7.91E-04 | 7.57E-04 | 7.08E-04 | 6.44E-04 |
| 210 | 6.43E-04 | 7.22E-04 | 7.97E-04 | 8.61E-04 | 9.11E-04 | 9.47E-04 | 9.71E-04 | 9.80E-04 | 9.75E-04 | 9.55E-04 | 9.21E-04 | 8.73E-04 |
| 220 | 6.78E-04 | 7.64E-04 | 8.46E-04 | 9.16E-04 | 9.73E-04 | 1.02E-03 | 1.05E-03 | 1.06E-03 | 1.07E-03 | 1.05E-03 | 1.03E-03 | 9.87E-04 |
| 290 | 9.25E-04 | 1.05E-03 | 1.19E-03 | 1.31E-03 | 1.41E-03 | 1.51E-03 | 1.59E-03 | 1.66E-03 | 1.71E-03 | 1.75E-03 | 1.78E-03 | 1.79E-03 |
| 400 | 1.31E-03 | 1.51E-03 | 1.72E-03 | 1.92E-03 | 2.10E-03 | 2.28E-03 | 2.44E-03 | 2.59E-03 | 2.72E-03 | 2.84E-03 | 2.95E-03 | 3.04E-03 |
| 500 | 1.66E-03 | 1.93E-03 | 2.21E-03 | 2.47E-03 | 2.73E-03 | 2.98E-03 | 3.21E-03 | 3.43E-03 | 3.64E-03 | 3.84E-03 | 4.02E-03 | 4.19E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.34: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 |
| 190 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 | 5.48E-04 |
| 210 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 | 5.95E-04 |
| 220 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 | 6.18E-04 |
| 290 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 | 7.80E-04 |
| 400 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 |
| 500 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 | 1.27E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.35: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.60E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.02E-04 | 2.03E-04 | 2.04E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.23E-04 | 2.24E-04 | 2.25E-04 | 2.27E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.08E-04 | 3.08E-04 | 3.08E-04 | 3.09E-04 | 3.10E-04 | 3.12E-04 | 3.14E-04 | 3.16E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 3.94E-04 | 3.93E-04 | 3.92E-04 | 3.92E-04 | 3.92E-04 | 3.93E-04 | 3.94E-04 | 3.96E-04 | 3.98E-04 | 4.00E-04 | 4.03E-04 | 4.07E-04 |
| 190 | 5.24E-04 | 5.22E-04 | 5.20E-04 | 5.18E-04 | 5.17E-04 | 5.16E-04 | 5.16E-04 | 5.16E-04 | 5.17E-04 | 5.18E-04 | 5.20E-04 | 5.22E-04 |
| 210 | 5.67E-04 | 5.65E-04 | 5.62E-04 | 5.60E-04 | 5.59E-04 | 5.58E-04 | 5.57E-04 | 5.57E-04 | 5.57E-04 | 5.57E-04 | 5.59E-04 | 5.60E-04 |
| 220 | 5.89E-04 | 5.86E-04 | 5.84E-04 | 5.81E-04 | 5.80E-04 | 5.78E-04 | 5.77E-04 | 5.77E-04 | 5.77E-04 | 5.77E-04 | 5.78E-04 | 5.79E-04 |
| 290 | 7.42E-04 | 7.37E-04 | 7.33E-04 | 7.29E-04 | 7.26E-04 | 7.23E-04 | 7.21E-04 | 7.19E-04 | 7.17E-04 | 7.16E-04 | 7.15E-04 | 7.15E-04 |
| 400 | 9.83E-04 | 9.76E-04 | 9.70E-04 | 9.63E-04 | 9.57E-04 | 9.52E-04 | 9.47E-04 | 9.42E-04 | 9.38E-04 | 9.35E-04 | 9.31E-04 | 9.29E-04 |
| 500 | 1.20E-03 | 1.19E-03 | 1.19E-03 | 1.18E-03 | 1.17E-03 | 1.16E-03 | 1.15E-03 | 1.15E-03 | 1.14E-03 | 1.13E-03 | 1.13E-03 | 1.12E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.36: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.56E-04 | 1.60E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.90E-04 | 1.94E-04 | 1.99E-04 | 2.04E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.07E-04 | 2.10E-04 | 2.14E-04 | 2.21E-04 | 2.27E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.76E-04 | 2.75E-04 | 2.76E-04 | 2.79E-04 | 2.84E-04 | 2.90E-04 | 2.98E-04 | 3.08E-04 | 3.16E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 3.45E-04 | 3.42E-04 | 3.39E-04 | 3.38E-04 | 3.39E-04 | 3.42E-04 | 3.46E-04 | 3.53E-04 | 3.61E-04 | 3.70E-04 | 3.82E-04 | 3.95E-04 |
| 190 | 4.51E-04 | 4.42E-04 | 4.35E-04 | 4.28E-04 | 4.24E-04 | 4.21E-04 | 4.20E-04 | 4.21E-04 | 4.24E-04 | 4.28E-04 | 4.34E-04 | 4.42E-04 |
| 210 | 4.87E-04 | 4.76E-04 | 4.67E-04 | 4.59E-04 | 4.52E-04 | 4.48E-04 | 4.45E-04 | 4.44E-04 | 4.45E-04 | 4.48E-04 | 4.52E-04 | 4.58E-04 |
| 220 | 5.05E-04 | 4.93E-04 | 4.83E-04 | 4.74E-04 | 4.67E-04 | 4.61E-04 | 4.58E-04 | 4.56E-04 | 4.56E-04 | 4.57E-04 | 4.61E-04 | 4.66E-04 |
| 290 | 6.30E-04 | 6.13E-04 | 5.96E-04 | 5.81E-04 | 5.67E-04 | 5.56E-04 | 5.46E-04 | 5.38E-04 | 5.31E-04 | 5.26E-04 | 5.23E-04 | 5.22E-04 |
| 400 | 8.29E-04 | 8.02E-04 | 7.75E-04 | 7.51E-04 | 7.28E-04 | 7.06E-04 | 6.86E-04 | 6.68E-04 | 6.52E-04 | 6.37E-04 | 6.24E-04 | 6.13E-04 |
| 500 | 1.01E-03 | 9.75E-04 | 9.40E-04 | 9.06E-04 | 8.74E-04 | 8.44E-04 | 8.15E-04 | 7.88E-04 | 7.63E-04 | 7.39E-04 | 7.17E-04 | 6.97E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.37: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.37E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.50E-04 | 1.59E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.70E-04 | 1.79E-04 | 1.91E-04 | 2.02E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.80E-04 | 1.87E-04 | 1.97E-04 | 2.11E-04 | 2.24E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.23E-04 | 2.22E-04 | 2.24E-04 | 2.30E-04 | 2.40E-04 | 2.54E-04 | 2.72E-04 | 2.93E-04 | 3.13E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 2.67E-04 | 2.58E-04 | 2.52E-04 | 2.50E-04 | 2.52E-04 | 2.58E-04 | 2.68E-04 | 2.82E-04 | 3.00E-04 | 3.22E-04 | 3.47E-04 | 3.77E-04 |
| 190 | 3.35E-04 | 3.14E-04 | 2.97E-04 | 2.83E-04 | 2.73E-04 | 2.67E-04 | 2.65E-04 | 2.67E-04 | 2.72E-04 | 2.82E-04 | 2.95E-04 | 3.13E-04 |
| 210 | 3.58E-04 | 3.34E-04 | 3.12E-04 | 2.95E-04 | 2.81E-04 | 2.71E-04 | 2.64E-04 | 2.62E-04 | 2.64E-04 | 2.69E-04 | 2.79E-04 | 2.92E-04 |
| 220 | 3.69E-04 | 3.43E-04 | 3.20E-04 | 3.00E-04 | 2.84E-04 | 2.72E-04 | 2.64E-04 | 2.60E-04 | 2.59E-04 | 2.63E-04 | 2.70E-04 | 2.82E-04 |
| 290 | 4.51E-04 | 4.12E-04 | 3.76E-04 | 3.42E-04 | 3.13E-04 | 2.87E-04 | 2.64E-04 | 2.46E-04 | 2.31E-04 | 2.21E-04 | 2.14E-04 | 2.11E-04 |
| 400 | 5.82E-04 | 5.23E-04 | 4.66E-04 | 4.12E-04 | 3.61E-04 | 3.14E-04 | 2.71E-04 | 2.31E-04 | 1.95E-04 | 1.63E-04 | 1.35E-04 | 1.10E-04 |
| 500 | 7.03E-04 | 6.26E-04 | 5.51E-04 | 4.78E-04 | 4.09E-04 | 3.44E-04 | 2.83E-04 | 2.25E-04 | 1.71E-04 | 1.22E-04 | 7.82E-05 | 4.10E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.38: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.35E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.41E-04 | 1.56E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.43E-04 | 1.58E-04 | 1.79E-04 | 1.99E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.45E-04 | 1.56E-04 | 1.74E-04 | 1.98E-04 | 2.21E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 1.52E-04 | 1.50E-04 | 1.54E-04 | 1.64E-04 | 1.81E-04 | 2.06E-04 | 2.37E-04 | 2.74E-04 | 3.08E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 1.62E-04 | 1.46E-04 | 1.36E-04 | 1.33E-04 | 1.36E-04 | 1.46E-04 | 1.63E-04 | 1.87E-04 | 2.18E-04 | 2.55E-04 | 3.00E-04 | 3.51E-04 |
| 190 | 1.82E-04 | 1.46E-04 | 1.16E-04 | 9.19E-05 | 7.41E-05 | 6.29E-05 | 5.82E-05 | 6.03E-05 | 6.94E-05 | 8.55E-05 | 1.09E-04 | 1.39E-04 |
| 210 | 1.89E-04 | 1.47E-04 | 1.11E-04 | 8.05E-05 | 5.64E-05 | 3.87E-05 | 2.72E-05 | 2.19E-05 | 2.30E-05 | 3.12E-05 | 4.66E-05 | 6.94E-05 |
| 220 | 1.93E-04 | 1.48E-04 | 1.09E-04 | 7.54E-05 | 4.84E-05 | 2.81E-05 | 1.46E-05 | 8.38E-06 | 6.67E-06 | 7.29E-06 | 1.68E-05 | 3.52E-05 |
| 290 | 2.23E-04 | 1.58E-04 | 9.99E-05 | 5.16E-05 | 2.72E-05 | 5.46E-05 | 9.65E-05 | 1.34E-04 | 1.64E-04 | 1.85E-04 | 1.99E-04 | 2.05E-04 |
| 400 | 2.77E-04 | 1.85E-04 | 1.07E-04 | 6.44E-05 | 1.05E-04 | 1.94E-04 | 2.84E-04 | 3.65E-04 | 4.35E-04 | 4.96E-04 | 5.49E-04 | 5.93E-04 |
| 500 | 3.31E-04 | 2.18E-04 | 1.30E-04 | 1.10E-04 | 1.98E-04 | 3.30E-04 | 4.60E-04 | 5.79E-04 | 6.85E-04 | 7.82E-04 | 8.69E-04 | 9.48E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.39: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.33E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.30E-04 | 1.53E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.11E-04 | 1.32E-04 | 1.64E-04 | 1.95E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.01E-04 | 1.18E-04 | 1.44E-04 | 1.81E-04 | 2.16E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 6.69E-05 | 6.24E-05 | 6.76E-05 | 8.33E-05 | 1.09E-04 | 1.46E-04 | 1.93E-04 | 2.50E-04 | 3.01E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 4.24E-05 | 1.91E-05 | 8.41E-06 | 9.19E-06 | 5.98E-06 | 1.06E-05 | 3.48E-05 | 7.04E-05 | 1.17E-04 | 1.74E-04 | 2.42E-04 | 3.19E-04 |
| 190 | 4.04E-05 | 5.32E-05 | 1.02E-04 | 1.44E-04 | 1.74E-04 | 1.92E-04 | 1.99E-04 | 1.94E-04 | 1.80E-04 | 1.54E-04 | 1.19E-04 | 7.25E-05 |
| 210 | 4.92E-05 | 7.67E-05 | 1.39E-04 | 1.92E-04 | 2.33E-04 | 2.61E-04 | 2.78E-04 | 2.84E-04 | 2.80E-04 | 2.65E-04 | 2.39E-04 | 2.03E-04 |
| 220 | 5.47E-05 | 8.90E-05 | 1.57E-04 | 2.17E-04 | 2.62E-04 | 2.96E-04 | 3.18E-04 | 3.29E-04 | 3.30E-04 | 3.20E-04 | 3.00E-04 | 2.69E-04 |
| 290 | 1.05E-04 | 1.80E-04 | 2.89E-04 | 3.87E-04 | 4.70E-04 | 5.40E-04 | 5.98E-04 | 6.46E-04 | 6.82E-04 | 7.09E-04 | 7.25E-04 | 7.30E-04 |
| 400 | 1.99E-04 | 3.30E-04 | 5.02E-04 | 6.59E-04 | 7.99E-04 | 9.26E-04 | 1.04E-03 | 1.14E-03 | 1.24E-03 | 1.32E-03 | 1.39E-03 | 1.46E-03 |
| 500 | 2.92E-04 | 4.70E-04 | 6.96E-04 | 9.07E-04 | 1.10E-03 | 1.28E-03 | 1.44E-03 | 1.60E-03 | 1.74E-03 | 1.88E-03 | 2.00E-03 | 2.12E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.40: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.30E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.17E-04 | 1.49E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 7.23E-05 | 1.02E-04 | 1.46E-04 | 1.90E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 5.06E-05 | 7.35E-05 | 1.10E-04 | 1.61E-04 | 2.11E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.30E-05 | 3.58E-05 | 2.92E-05 | 8.71E-06 | 2.67E-05 | 7.70E-05 | 1.42E-04 | 2.21E-04 | 2.93E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 1.19E-04 | 1.50E-04 | 1.71E-04 | 1.78E-04 | 1.71E-04 | 1.49E-04 | 1.13E-04 | 6.28E-05 | 2.07E-06 | 8.01E-05 | 1.74E-04 | 2.81E-04 |
| 190 | 2.55E-04 | 3.26E-04 | 3.90E-04 | 4.38E-04 | 4.73E-04 | 4.93E-04 | 5.00E-04 | 4.92E-04 | 4.70E-04 | 4.34E-04 | 3.83E-04 | 3.18E-04 |
| 210 | 3.00E-04 | 3.85E-04 | 4.63E-04 | 5.25E-04 | 5.74E-04 | 6.09E-04 | 6.29E-04 | 6.35E-04 | 6.28E-04 | 6.06E-04 | 5.70E-04 | 5.19E-04 |
| 220 | 3.24E-04 | 4.14E-04 | 4.99E-04 | 5.69E-04 | 6.25E-04 | 6.66E-04 | 6.94E-04 | 7.07E-04 | 7.07E-04 | 6.92E-04 | 6.63E-04 | 6.20E-04 |
| 290 | 4.86E-04 | 6.22E-04 | 7.56E-04 | 8.74E-04 | 9.79E-04 | 1.07E-03 | 1.15E-03 | 1.21E-03 | 1.26E-03 | 1.29E-03 | 1.32E-03 | 1.32E-03 |
| 400 | 7.43E-04 | 9.50E-04 | 1.16E-03 | 1.35E-03 | 1.54E-03 | 1.70E-03 | 1.86E-03 | 2.00E-03 | 2.13E-03 | 2.24E-03 | 2.34E-03 | 2.43E-03 |
| 500 | 9.77E-04 | 1.25E-03 | 1.53E-03 | 1.79E-03 | 2.04E-03 | 2.28E-03 | 2.51E-03 | 2.72E-03 | 2.92E-03 | 3.10E-03 | 3.27E-03 | 3.43E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.41: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.26E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.02E-04 | 1.45E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 3.02E-05 | 6.93E-05 | 1.26E-04 | 1.84E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 7.63E-06 | 2.49E-05 | 7.26E-05 | 1.39E-04 | 2.04E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 1.49E-04 | 1.52E-04 | 1.41E-04 | 1.12E-04 | 6.42E-05 | 1.89E-06 | 8.56E-05 | 1.88E-04 | 2.84E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 2.97E-04 | 3.34E-04 | 3.58E-04 | 3.65E-04 | 3.54E-04 | 3.25E-04 | 2.77E-04 | 2.11E-04 | 1.26E-04 | 2.31E-05 | 9.85E-05 | 2.39E-04 |
| 190 | 5.20E-04 | 6.07E-04 | 6.86E-04 | 7.47E-04 | 7.90E-04 | 8.16E-04 | 8.23E-04 | 8.13E-04 | 7.84E-04 | 7.37E-04 | 6.71E-04 | 5.86E-04 |
| 210 | 5.95E-04 | 6.99E-04 | 7.95E-04 | 8.74E-04 | 9.36E-04 | 9.80E-04 | 1.01E-03 | 1.01E-03 | 1.00E-03 | 9.75E-04 | 9.27E-04 | 8.62E-04 |
| 220 | 6.32E-04 | 7.45E-04 | 8.50E-04 | 9.38E-04 | 1.01E-03 | 1.06E-03 | 1.10E-03 | 1.11E-03 | 1.11E-03 | 1.09E-03 | 1.06E-03 | 9.99E-04 |
| 290 | 8.94E-04 | 1.06E-03 | 1.23E-03 | 1.38E-03 | 1.52E-03 | 1.64E-03 | 1.74E-03 | 1.82E-03 | 1.88E-03 | 1.93E-03 | 1.95E-03 | 1.96E-03 |
| 400 | 1.31E-03 | 1.57E-03 | 1.83E-03 | 2.08E-03 | 2.32E-03 | 2.54E-03 | 2.74E-03 | 2.92E-03 | 3.09E-03 | 3.24E-03 | 3.37E-03 | 3.48E-03 |
| 500 | 1.68E-03 | 2.03E-03 | 2.38E-03 | 2.72E-03 | 3.05E-03 | 3.36E-03 | 3.65E-03 | 3.93E-03 | 4.19E-03 | 4.43E-03 | 4.65E-03 | 4.86E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.42: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.22E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 8.53E-05 | 1.40E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.56E-05 | 3.38E-05 | 1.04E-04 | 1.78E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 6.54E-05 | 2.66E-05 | 3.22E-05 | 1.14E-04 | 1.97E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.70E-04 | 2.73E-04 | 2.58E-04 | 2.21E-04 | 1.61E-04 | 7.93E-05 | 2.52E-05 | 1.53E-04 | 2.74E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 4.77E-04 | 5.21E-04 | 5.51E-04 | 5.58E-04 | 5.44E-04 | 5.07E-04 | 4.48E-04 | 3.66E-04 | 2.61E-04 | 1.33E-04 | 1.79E-05 | 1.92E-04 |
| 190 | 7.87E-04 | 8.94E-04 | 9.90E-04 | 1.07E-03 | 1.12E-03 | 1.15E-03 | 1.16E-03 | 1.15E-03 | 1.11E-03 | 1.05E-03 | 9.71E-04 | 8.66E-04 |
| 210 | 8.91E-04 | 1.02E-03 | 1.14E-03 | 1.23E-03 | 1.31E-03 | 1.36E-03 | 1.40E-03 | 1.41E-03 | 1.39E-03 | 1.36E-03 | 1.30E-03 | 1.22E-03 |
| 220 | 9.42E-04 | 1.08E-03 | 1.21E-03 | 1.32E-03 | 1.41E-03 | 1.47E-03 | 1.52E-03 | 1.54E-03 | 1.54E-03 | 1.51E-03 | 1.47E-03 | 1.40E-03 |
| 290 | 1.30E-03 | 1.52E-03 | 1.72E-03 | 1.91E-03 | 2.08E-03 | 2.22E-03 | 2.35E-03 | 2.45E-03 | 2.53E-03 | 2.58E-03 | 2.62E-03 | 2.63E-03 |
| 400 | 1.88E-03 | 2.20E-03 | 2.53E-03 | 2.84E-03 | 3.13E-03 | 3.40E-03 | 3.65E-03 | 3.88E-03 | 4.09E-03 | 4.27E-03 | 4.43E-03 | 4.57E-03 |
| 500 | 2.39E-03 | 2.82E-03 | 3.26E-03 | 3.69E-03 | 4.09E-03 | 4.47E-03 | 4.84E-03 | 5.18E-03 | 5.50E-03 | 5.80E-03 | 6.08E-03 | 6.34E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.43: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.17E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 6.74E-05 | 1.35E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 6.21E-05 | 3.29E-06 | 8.10E-05 | 1.71E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.28E-04 | 8.06E-05 | 9.74E-06 | 8.77E-05 | 1.89E-04 | 2.27E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.91E-04 | 3.94E-04 | 3.76E-04 | 3.31E-04 | 2.60E-04 | 1.62E-04 | 3.74E-05 | 1.15E-04 | 2.63E-04 | 3.17E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 6.55E-04 | 7.08E-04 | 7.43E-04 | 7.52E-04 | 7.35E-04 | 6.91E-04 | 6.21E-04 | 5.23E-04 | 3.98E-04 | 2.46E-04 | 6.57E-05 | 1.42E-04 |
| 190 | 1.05E-03 | 1.18E-03 | 1.29E-03 | 1.38E-03 | 1.45E-03 | 1.49E-03 | 1.50E-03 | 1.48E-03 | 1.44E-03 | 1.37E-03 | 1.27E-03 | 1.15E-03 |
| 210 | 1.18E-03 | 1.34E-03 | 1.48E-03 | 1.59E-03 | 1.69E-03 | 1.75E-03 | 1.79E-03 | 1.80E-03 | 1.79E-03 | 1.74E-03 | 1.67E-03 | 1.58E-03 |
| 220 | 1.25E-03 | 1.42E-03 | 1.57E-03 | 1.70E-03 | 1.80E-03 | 1.88E-03 | 1.93E-03 | 1.96E-03 | 1.96E-03 | 1.93E-03 | 1.87E-03 | 1.79E-03 |
| 290 | 1.71E-03 | 1.97E-03 | 2.21E-03 | 2.44E-03 | 2.64E-03 | 2.81E-03 | 2.96E-03 | 3.08E-03 | 3.17E-03 | 3.24E-03 | 3.28E-03 | 3.30E-03 |
| 400 | 2.44E-03 | 2.83E-03 | 3.22E-03 | 3.60E-03 | 3.94E-03 | 4.27E-03 | 4.56E-03 | 4.84E-03 | 5.08E-03 | 5.30E-03 | 5.49E-03 | 5.66E-03 |
| 500 | 3.10E-03 | 3.62E-03 | 4.14E-03 | 4.65E-03 | 5.13E-03 | 5.59E-03 | 6.02E-03 | 6.43E-03 | 6.82E-03 | 7.17E-03 | 7.50E-03 | 7.81E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.44: Variation in electron beam radius through its flight, for different lens positions with a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.12E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 4.87E-05 | 1.28E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.09E-04 | 4.04E-05 | 5.64E-05 | 1.63E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.89E-04 | 1.34E-04 | 5.23E-05 | 6.01E-05 | 1.80E-04 | 2.27E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 5.07E-04 | 5.11E-04 | 4.91E-04 | 4.39E-04 | 3.58E-04 | 2.45E-04 | 1.01E-04 | 7.46E-05 | 2.50E-04 | 3.17E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 8.27E-04 | 8.89E-04 | 9.29E-04 | 9.40E-04 | 9.20E-04 | 8.70E-04 | 7.89E-04 | 6.76E-04 | 5.33E-04 | 3.57E-04 | 1.50E-04 | 8.90E-05 |
| 190 | 1.31E-03 | 1.46E-03 | 1.59E-03 | 1.69E-03 | 1.76E-03 | 1.81E-03 | 1.82E-03 | 1.80E-03 | 1.75E-03 | 1.67E-03 | 1.56E-03 | 1.42E-03 |
| 210 | 1.47E-03 | 1.64E-03 | 1.81E-03 | 1.94E-03 | 2.05E-03 | 2.12E-03 | 2.17E-03 | 2.18E-03 | 2.16E-03 | 2.11E-03 | 2.03E-03 | 1.92E-03 |
| 220 | 1.55E-03 | 1.74E-03 | 1.92E-03 | 2.07E-03 | 2.19E-03 | 2.28E-03 | 2.34E-03 | 2.37E-03 | 2.37E-03 | 2.33E-03 | 2.27E-03 | 2.17E-03 |
| 290 | 2.11E-03 | 2.40E-03 | 2.69E-03 | 2.94E-03 | 3.17E-03 | 3.37E-03 | 3.54E-03 | 3.68E-03 | 3.79E-03 | 3.87E-03 | 3.92E-03 | 3.93E-03 |
| 400 | 2.98E-03 | 3.44E-03 | 3.89E-03 | 4.32E-03 | 4.72E-03 | 5.09E-03 | 5.44E-03 | 5.75E-03 | 6.03E-03 | 6.29E-03 | 6.51E-03 | 6.70E-03 |
| 500 | 3.78E-03 | 4.38E-03 | 4.99E-03 | 5.57E-03 | 6.13E-03 | 6.66E-03 | 7.16E-03 | 7.63E-03 | 8.07E-03 | 8.48E-03 | 8.86E-03 | 9.21E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.45: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 | 2.42E-04 |
| 190 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 | 3.31E-04 |
| 210 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 | 3.61E-04 |
| 220 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 | 3.76E-04 |
| 290 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 |
| 400 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 |
| 500 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.46: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.55E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 7.95E-05 | 7.98E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 1.08E-04 | 1.08E-04 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.22E-04 | 1.22E-04 | 1.22E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.79E-04 | 1.79E-04 | 1.79E-04 | 1.79E-04 | 1.79E-04 | 1.80E-04 | 1.80E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 2.37E-04 | 2.36E-04 | 2.36E-04 | 2.35E-04 | 2.35E-04 | 2.35E-04 | 2.36E-04 | 2.36E-04 | 2.37E-04 | 2.38E-04 | 2.39E-04 | 2.40E-04 |
| 190 | 3.24E-04 | 3.22E-04 | 3.21E-04 | 3.21E-04 | 3.20E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.20E-04 | 3.21E-04 |
| 210 | 3.53E-04 | 3.51E-04 | 3.50E-04 | 3.49E-04 | 3.48E-04 | 3.48E-04 | 3.47E-04 | 3.47E-04 | 3.47E-04 | 3.47E-04 | 3.47E-04 | 3.48E-04 |
| 220 | 3.67E-04 | 3.66E-04 | 3.64E-04 | 3.63E-04 | 3.62E-04 | 3.62E-04 | 3.61E-04 | 3.61E-04 | 3.60E-04 | 3.60E-04 | 3.61E-04 | 3.61E-04 |
| 290 | 4.69E-04 | 4.67E-04 | 4.65E-04 | 4.63E-04 | 4.62E-04 | 4.60E-04 | 4.59E-04 | 4.58E-04 | 4.57E-04 | 4.56E-04 | 4.56E-04 | 4.56E-04 |
| 400 | 6.30E-04 | 6.27E-04 | 6.24E-04 | 6.21E-04 | 6.19E-04 | 6.16E-04 | 6.14E-04 | 6.11E-04 | 6.09E-04 | 6.08E-04 | 6.06E-04 | 6.05E-04 |
| 500 | 7.77E-04 | 7.73E-04 | 7.69E-04 | 7.65E-04 | 7.61E-04 | 7.58E-04 | 7.54E-04 | 7.51E-04 | 7.48E-04 | 7.45E-04 | 7.43E-04 | 7.40E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.47: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.52E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 7.82E-05 | 7.95E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 1.04E-04 | 1.05E-04 | 1.06E-04 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.17E-04 | 1.17E-04 | 1.19E-04 | 1.21E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.69E-04 | 1.68E-04 | 1.67E-04 | 1.68E-04 | 1.69E-04 | 1.71E-04 | 1.74E-04 | 1.78E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 2.21E-04 | 2.19E-04 | 2.17E-04 | 2.16E-04 | 2.16E-04 | 2.16E-04 | 2.17E-04 | 2.19E-04 | 2.22E-04 | 2.26E-04 | 2.31E-04 | 2.36E-04 |
| 190 | 3.00E-04 | 2.96E-04 | 2.92E-04 | 2.88E-04 | 2.86E-04 | 2.84E-04 | 2.83E-04 | 2.82E-04 | 2.83E-04 | 2.84E-04 | 2.86E-04 | 2.89E-04 |
| 210 | 3.27E-04 | 3.22E-04 | 3.17E-04 | 3.12E-04 | 3.09E-04 | 3.06E-04 | 3.04E-04 | 3.03E-04 | 3.03E-04 | 3.03E-04 | 3.05E-04 | 3.07E-04 |
| 220 | 3.40E-04 | 3.34E-04 | 3.29E-04 | 3.25E-04 | 3.21E-04 | 3.18E-04 | 3.15E-04 | 3.14E-04 | 3.13E-04 | 3.13E-04 | 3.14E-04 | 3.16E-04 |
| 290 | 4.34E-04 | 4.25E-04 | 4.17E-04 | 4.10E-04 | 4.03E-04 | 3.97E-04 | 3.92E-04 | 3.88E-04 | 3.84E-04 | 3.82E-04 | 3.80E-04 | 3.79E-04 |
| 400 | 5.81E-04 | 5.68E-04 | 5.56E-04 | 5.44E-04 | 5.33E-04 | 5.23E-04 | 5.14E-04 | 5.05E-04 | 4.97E-04 | 4.90E-04 | 4.84E-04 | 4.78E-04 |
| 500 | 7.15E-04 | 6.99E-04 | 6.82E-04 | 6.67E-04 | 6.52E-04 | 6.38E-04 | 6.25E-04 | 6.12E-04 | 6.00E-04 | 5.89E-04 | 5.79E-04 | 5.69E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.48: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.47E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 7.62E-05 | 7.89E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 9.74E-05 | 9.96E-05 | 1.03E-04 | 1.07E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 1.08E-04 | 1.09E-04 | 1.12E-04 | 1.17E-04 | 1.22E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.52E-04 | 1.49E-04 | 1.49E-04 | 1.50E-04 | 1.53E-04 | 1.58E-04 | 1.64E-04 | 1.73E-04 | 1.80E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 1.96E-04 | 1.90E-04 | 1.86E-04 | 1.84E-04 | 1.83E-04 | 1.84E-04 | 1.87E-04 | 1.92E-04 | 1.99E-04 | 2.07E-04 | 2.17E-04 | 2.28E-04 |
| 190 | 2.63E-04 | 2.52E-04 | 2.43E-04 | 2.35E-04 | 2.29E-04 | 2.25E-04 | 2.23E-04 | 2.22E-04 | 2.23E-04 | 2.26E-04 | 2.31E-04 | 2.37E-04 |
| 210 | 2.85E-04 | 2.73E-04 | 2.62E-04 | 2.52E-04 | 2.45E-04 | 2.39E-04 | 2.35E-04 | 2.32E-04 | 2.32E-04 | 2.33E-04 | 2.35E-04 | 2.40E-04 |
| 220 | 2.96E-04 | 2.83E-04 | 2.71E-04 | 2.61E-04 | 2.53E-04 | 2.46E-04 | 2.41E-04 | 2.37E-04 | 2.36E-04 | 2.36E-04 | 2.38E-04 | 2.41E-04 |
| 290 | 3.75E-04 | 3.56E-04 | 3.38E-04 | 3.22E-04 | 3.07E-04 | 2.94E-04 | 2.83E-04 | 2.74E-04 | 2.66E-04 | 2.60E-04 | 2.55E-04 | 2.53E-04 |
| 400 | 5.00E-04 | 4.72E-04 | 4.45E-04 | 4.19E-04 | 3.95E-04 | 3.72E-04 | 3.51E-04 | 3.32E-04 | 3.14E-04 | 2.98E-04 | 2.84E-04 | 2.72E-04 |
| 500 | 6.14E-04 | 5.78E-04 | 5.42E-04 | 5.07E-04 | 4.75E-04 | 4.43E-04 | 4.14E-04 | 3.85E-04 | 3.59E-04 | 3.34E-04 | 3.11E-04 | 2.90E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.49: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.41E-05 | 6.55E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 7.33E-05 | 7.81E-05 | 7.98E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 8.87E-05 | 9.26E-05 | 9.93E-05 | 1.06E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 9.64E-05 | 9.89E-05 | 1.04E-04 | 1.12E-04 | 1.21E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.28E-04 | 1.25E-04 | 1.24E-04 | 1.26E-04 | 1.31E-04 | 1.39E-04 | 1.51E-04 | 1.65E-04 | 1.78E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 1.61E-04 | 1.51E-04 | 1.44E-04 | 1.40E-04 | 1.39E-04 | 1.41E-04 | 1.46E-04 | 1.55E-04 | 1.66E-04 | 1.80E-04 | 1.98E-04 | 2.18E-04 |
| 190 | 2.11E-04 | 1.93E-04 | 1.77E-04 | 1.63E-04 | 1.53E-04 | 1.46E-04 | 1.41E-04 | 1.40E-04 | 1.42E-04 | 1.47E-04 | 1.55E-04 | 1.66E-04 |
| 210 | 2.28E-04 | 2.07E-04 | 1.88E-04 | 1.71E-04 | 1.58E-04 | 1.47E-04 | 1.40E-04 | 1.35E-04 | 1.34E-04 | 1.36E-04 | 1.41E-04 | 1.49E-04 |
| 220 | 2.37E-04 | 2.14E-04 | 1.93E-04 | 1.75E-04 | 1.60E-04 | 1.48E-04 | 1.39E-04 | 1.33E-04 | 1.30E-04 | 1.31E-04 | 1.34E-04 | 1.40E-04 |
| 290 | 2.97E-04 | 2.63E-04 | 2.32E-04 | 2.04E-04 | 1.78E-04 | 1.56E-04 | 1.36E-04 | 1.19E-04 | 1.05E-04 | 9.44E-05 | 8.66E-05 | 8.18E-05 |
| 400 | 3.92E-04 | 3.43E-04 | 2.95E-04 | 2.51E-04 | 2.09E-04 | 1.70E-04 | 1.34E-04 | 1.02E-04 | 7.17E-05 | 4.51E-05 | 2.22E-05 | 6.39E-06 |
| 500 | 4.79E-04 | 4.16E-04 | 3.54E-04 | 2.95E-04 | 2.39E-04 | 1.86E-04 | 1.37E-04 | 9.11E-05 | 5.00E-05 | 1.82E-05 | 2.70E-05 | 6.67E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.50: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.34E-05 | 6.55E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 6.99E-05 | 7.71E-05 | 7.98E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 7.79E-05 | 8.38E-05 | 9.41E-05 | 1.05E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 8.21E-05 | 8.56E-05 | 9.37E-05 | 1.06E-04 | 1.19E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 9.98E-05 | 9.40E-05 | 9.26E-05 | 9.58E-05 | 1.04E-04 | 1.16E-04 | 1.34E-04 | 1.55E-04 | 1.75E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 1.19E-04 | 1.04E-04 | 9.29E-05 | 8.66E-05 | 8.49E-05 | 8.78E-05 | 9.56E-05 | 1.08E-04 | 1.25E-04 | 1.47E-04 | 1.74E-04 | 2.05E-04 |
| 190 | 1.49E-04 | 1.20E-04 | 9.57E-05 | 7.54E-05 | 5.95E-05 | 4.81E-05 | 4.12E-05 | 3.90E-05 | 4.14E-05 | 4.87E-05 | 6.08E-05 | 7.77E-05 |
| 210 | 1.59E-04 | 1.26E-04 | 9.72E-05 | 7.25E-05 | 5.21E-05 | 3.61E-05 | 2.46E-05 | 1.76E-05 | 1.50E-05 | 1.71E-05 | 2.40E-05 | 3.58E-05 |
| 220 | 1.65E-04 | 1.29E-04 | 9.81E-05 | 7.12E-05 | 4.86E-05 | 3.05E-05 | 1.70E-05 | 7.97E-06 | 3.64E-06 | 2.95E-06 | 6.33E-06 | 1.53E-05 |
| 290 | 2.02E-04 | 1.52E-04 | 1.06E-04 | 6.49E-05 | 3.01E-05 | 1.07E-05 | 3.49E-05 | 6.51E-05 | 8.97E-05 | 1.08E-04 | 1.21E-04 | 1.29E-04 |
| 400 | 2.63E-04 | 1.90E-04 | 1.23E-04 | 6.50E-05 | 2.83E-05 | 6.04E-05 | 1.28E-04 | 1.90E-04 | 2.43E-04 | 2.88E-04 | 3.28E-04 | 3.62E-04 |
| 500 | 3.19E-04 | 2.27E-04 | 1.43E-04 | 7.37E-05 | 4.95E-05 | 1.19E-04 | 2.17E-04 | 3.06E-04 | 3.84E-04 | 4.53E-04 | 5.17E-04 | 5.75E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.51: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.24E-05 | 6.55E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 6.56E-05 | 7.59E-05 | 7.98E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 6.51E-05 | 7.33E-05 | 8.78E-05 | 1.03E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 6.50E-05 | 7.00E-05 | 8.13E-05 | 9.90E-05 | 1.17E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 6.64E-05 | 5.81E-05 | 5.60E-05 | 6.04E-05 | 7.15E-05 | 8.92E-05 | 1.13E-04 | 1.44E-04 | 1.72E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 7.02E-05 | 4.89E-05 | 3.36E-05 | 2.45E-05 | 2.18E-05 | 2.55E-05 | 3.61E-05 | 5.34E-05 | 7.75E-05 | 1.08E-04 | 1.46E-04 | 1.90E-04 |
| 190 | 7.94E-05 | 4.10E-05 | 1.27E-05 | 2.08E-05 | 4.64E-05 | 6.49E-05 | 7.56E-05 | 7.92E-05 | 7.58E-05 | 6.55E-05 | 4.85E-05 | 2.49E-05 |
| 210 | 8.33E-05 | 4.01E-05 | 1.28E-05 | 3.66E-05 | 7.08E-05 | 9.65E-05 | 1.14E-04 | 1.24E-04 | 1.28E-04 | 1.24E-04 | 1.14E-04 | 9.64E-05 |
| 220 | 8.54E-05 | 4.00E-05 | 1.44E-05 | 4.49E-05 | 8.32E-05 | 1.12E-04 | 1.33E-04 | 1.47E-04 | 1.54E-04 | 1.53E-04 | 1.46E-04 | 1.32E-04 |
| 290 | 1.02E-04 | 4.44E-05 | 3.99E-05 | 1.06E-04 | 1.71E-04 | 2.25E-04 | 2.69E-04 | 3.06E-04 | 3.36E-04 | 3.59E-04 | 3.75E-04 | 3.84E-04 |
| 400 | 1.33E-04 | 6.47E-05 | 9.52E-05 | 2.07E-04 | 3.12E-04 | 4.03E-04 | 4.84E-04 | 5.58E-04 | 6.24E-04 | 6.83E-04 | 7.35E-04 | 7.81E-04 |
| 500 | 1.65E-04 | 9.07E-05 | 1.50E-04 | 3.01E-04 | 4.41E-04 | 5.66E-04 | 6.79E-04 | 7.86E-04 | 8.86E-04 | 9.78E-04 | 1.06E-03 | 1.14E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.52: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.14E-05 | 6.54E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 6.07E-05 | 7.44E-05 | 7.97E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 5.07E-05 | 6.15E-05 | 8.06E-05 | 1.01E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 4.60E-05 | 5.23E-05 | 6.73E-05 | 9.06E-05 | 1.15E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 3.04E-05 | 1.87E-05 | 1.55E-05 | 2.09E-05 | 3.52E-05 | 5.85E-05 | 9.05E-05 | 1.31E-04 | 1.69E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 2.33E-05 | 1.12E-05 | 3.14E-05 | 4.52E-05 | 4.92E-05 | 4.42E-05 | 3.02E-05 | 7.57E-06 | 2.38E-05 | 6.44E-05 | 1.14E-04 | 1.72E-04 |
| 190 | 3.35E-05 | 5.64E-05 | 1.09E-04 | 1.50E-04 | 1.80E-04 | 2.01E-04 | 2.13E-04 | 2.17E-04 | 2.11E-04 | 1.97E-04 | 1.73E-04 | 1.42E-04 |
| 210 | 4.06E-05 | 7.32E-05 | 1.35E-04 | 1.85E-04 | 2.24E-04 | 2.54E-04 | 2.75E-04 | 2.87E-04 | 2.90E-04 | 2.84E-04 | 2.70E-04 | 2.46E-04 |
| 220 | 4.45E-05 | 8.18E-05 | 1.49E-04 | 2.03E-04 | 2.46E-04 | 2.81E-04 | 3.06E-04 | 3.22E-04 | 3.29E-04 | 3.28E-04 | 3.18E-04 | 2.99E-04 |
| 290 | 7.58E-05 | 1.43E-04 | 2.43E-04 | 3.28E-04 | 4.01E-04 | 4.65E-04 | 5.21E-04 | 5.67E-04 | 6.05E-04 | 6.34E-04 | 6.55E-04 | 6.66E-04 |
| 400 | 1.32E-04 | 2.42E-04 | 3.91E-04 | 5.24E-04 | 6.45E-04 | 7.57E-04 | 8.59E-04 | 9.53E-04 | 1.04E-03 | 1.12E-03 | 1.18E-03 | 1.24E-03 |
| 500 | 1.86E-04 | 3.33E-04 | 5.27E-04 | 7.03E-04 | 8.66E-04 | 1.02E-03 | 1.17E-03 | 1.30E-03 | 1.43E-03 | 1.55E-03 | 1.67E-03 | 1.77E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.53: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.00E-05 | 6.54E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 5.52E-05 | 7.28E-05 | 7.97E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 3.49E-05 | 4.84E-05 | 7.25E-05 | 9.88E-05 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 2.53E-05 | 3.31E-05 | 5.18E-05 | 8.13E-05 | 1.12E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.61E-05 | 2.44E-05 | 2.87E-05 | 2.18E-05 | 3.99E-06 | 2.50E-05 | 6.53E-05 | 1.16E-04 | 1.65E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 5.36E-05 | 8.51E-05 | 1.12E-04 | 1.26E-04 | 1.30E-04 | 1.22E-04 | 1.04E-04 | 7.47E-05 | 3.45E-05 | 1.65E-05 | 7.88E-05 | 1.52E-04 |
| 190 | 1.16E-04 | 1.79E-04 | 2.38E-04 | 2.85E-04 | 3.21E-04 | 3.46E-04 | 3.60E-04 | 3.64E-04 | 3.56E-04 | 3.38E-04 | 3.08E-04 | 2.68E-04 |
| 210 | 1.38E-04 | 2.10E-04 | 2.80E-04 | 3.38E-04 | 3.84E-04 | 4.21E-04 | 4.46E-04 | 4.60E-04 | 4.63E-04 | 4.56E-04 | 4.38E-04 | 4.08E-04 |
| 220 | 1.48E-04 | 2.26E-04 | 3.01E-04 | 3.64E-04 | 4.16E-04 | 4.58E-04 | 4.88E-04 | 5.08E-04 | 5.17E-04 | 5.15E-04 | 5.02E-04 | 4.79E-04 |
| 290 | 2.24E-04 | 3.37E-04 | 4.49E-04 | 5.50E-04 | 6.40E-04 | 7.19E-04 | 7.88E-04 | 8.46E-04 | 8.93E-04 | 9.30E-04 | 9.55E-04 | 9.70E-04 |
| 400 | 3.45E-04 | 5.12E-04 | 6.83E-04 | 8.42E-04 | 9.91E-04 | 1.13E-03 | 1.26E-03 | 1.38E-03 | 1.48E-03 | 1.58E-03 | 1.67E-03 | 1.74E-03 |
| 500 | 4.55E-04 | 6.71E-04 | 8.95E-04 | 1.11E-03 | 1.31E-03 | 1.50E-03 | 1.69E-03 | 1.86E-03 | 2.02E-03 | 2.17E-03 | 2.31E-03 | 2.44E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.54: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.86E-05 | 6.53E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 4.92E-05 | 7.10E-05 | 7.96E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 1.82E-05 | 3.44E-05 | 6.38E-05 | 9.62E-05 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 6.09E-06 | 1.26E-05 | 3.52E-05 | 7.11E-05 | 1.09E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 6.02E-05 | 7.42E-05 | 7.80E-05 | 6.86E-05 | 4.61E-05 | 1.05E-05 | 3.83E-05 | 1.01E-04 | 1.60E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 1.25E-04 | 1.64E-04 | 1.93E-04 | 2.10E-04 | 2.14E-04 | 2.04E-04 | 1.82E-04 | 1.46E-04 | 9.68E-05 | 3.44E-05 | 4.13E-05 | 1.30E-04 |
| 190 | 2.24E-04 | 2.99E-04 | 3.67E-04 | 4.23E-04 | 4.66E-04 | 4.96E-04 | 5.13E-04 | 5.17E-04 | 5.08E-04 | 4.86E-04 | 4.50E-04 | 4.01E-04 |
| 210 | 2.57E-04 | 3.44E-04 | 4.25E-04 | 4.94E-04 | 5.50E-04 | 5.94E-04 | 6.24E-04 | 6.41E-04 | 6.45E-04 | 6.36E-04 | 6.14E-04 | 5.78E-04 |
| 220 | 2.74E-04 | 3.67E-04 | 4.54E-04 | 5.30E-04 | 5.92E-04 | 6.42E-04 | 6.79E-04 | 7.03E-04 | 7.14E-04 | 7.11E-04 | 6.96E-04 | 6.67E-04 |
| 290 | 3.90E-04 | 5.26E-04 | 6.58E-04 | 7.79E-04 | 8.87E-04 | 9.83E-04 | 1.07E-03 | 1.14E-03 | 1.19E-03 | 1.24E-03 | 1.27E-03 | 1.29E-03 |
| 400 | 5.74E-04 | 7.75E-04 | 9.78E-04 | 1.17E-03 | 1.35E-03 | 1.52E-03 | 1.67E-03 | 1.82E-03 | 1.95E-03 | 2.07E-03 | 2.17E-03 | 2.26E-03 |
| 500 | 7.42E-04 | 1.00E-03 | 1.27E-03 | 1.53E-03 | 1.77E-03 | 2.01E-03 | 2.23E-03 | 2.44E-03 | 2.64E-03 | 2.82E-03 | 2.99E-03 | 3.15E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.55: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.69E-05 | 6.53E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 | 6.56E-05 |
| 20 | 4.27E-05 | 6.89E-05 | 7.95E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 | 7.99E-05 |
| 40 | 4.37E-06 | 1.97E-05 | 5.43E-05 | 9.34E-05 | 1.08E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.09E-04 |
| 50 | 2.15E-05 | 8.58E-06 | 1.79E-05 | 6.02E-05 | 1.06E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 | 1.23E-04 |
| 90 | 1.08E-04 | 1.25E-04 | 1.28E-04 | 1.17E-04 | 9.00E-05 | 4.77E-05 | 1.01E-05 | 8.35E-05 | 1.55E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 130 | 1.97E-04 | 2.42E-04 | 2.76E-04 | 2.95E-04 | 2.99E-04 | 2.88E-04 | 2.61E-04 | 2.19E-04 | 1.61E-04 | 8.73E-05 | 2.09E-06 | 1.07E-04 |
| 190 | 3.31E-04 | 4.19E-04 | 4.98E-04 | 5.64E-04 | 6.14E-04 | 6.49E-04 | 6.69E-04 | 6.74E-04 | 6.63E-04 | 6.37E-04 | 5.95E-04 | 5.37E-04 |
| 210 | 3.75E-04 | 4.78E-04 | 5.72E-04 | 6.53E-04 | 7.19E-04 | 7.70E-04 | 8.06E-04 | 8.26E-04 | 8.31E-04 | 8.20E-04 | 7.94E-04 | 7.52E-04 |
| 220 | 3.98E-04 | 5.07E-04 | 6.09E-04 | 6.98E-04 | 7.71E-04 | 8.30E-04 | 8.74E-04 | 9.02E-04 | 9.14E-04 | 9.12E-04 | 8.93E-04 | 8.59E-04 |
| 290 | 5.54E-04 | 7.14E-04 | 8.69E-04 | 1.01E-03 | 1.14E-03 | 1.25E-03 | 1.35E-03 | 1.43E-03 | 1.50E-03 | 1.55E-03 | 1.59E-03 | 1.61E-03 |
| 400 | 8.00E-04 | 1.04E-03 | 1.28E-03 | 1.50E-03 | 1.72E-03 | 1.91E-03 | 2.10E-03 | 2.27E-03 | 2.42E-03 | 2.56E-03 | 2.68E-03 | 2.79E-03 |
| 500 | 1.02E-03 | 1.33E-03 | 1.65E-03 | 1.95E-03 | 2.24E-03 | 2.52E-03 | 2.78E-03 | 3.03E-03 | 3.26E-03 | 3.48E-03 | 3.68E-03 | 3.87E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.56: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 | 5.37E-04 |
| 190 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 | 7.32E-04 |
| 210 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 | 7.98E-04 |
| 220 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 | 8.30E-04 |
| 290 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 | 1.06E-03 |
| 400 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 | 1.42E-03 |
| 500 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 | 1.75E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.57: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 2.42E-04 | 2.43E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.73E-04 | 2.74E-04 | 2.75E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.99E-04 | 3.99E-04 | 3.98E-04 | 3.99E-04 | 4.00E-04 | 4.01E-04 | 4.02E-04 | 4.04E-04 | 4.06E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 5.25E-04 | 5.24E-04 | 5.23E-04 | 5.22E-04 | 5.22E-04 | 5.22E-04 | 5.23E-04 | 5.24E-04 | 5.26E-04 | 5.28E-04 | 5.31E-04 | 5.34E-04 |
| 190 | 7.15E-04 | 7.12E-04 | 7.10E-04 | 7.08E-04 | 7.06E-04 | 7.05E-04 | 7.05E-04 | 7.05E-04 | 7.05E-04 | 7.06E-04 | 7.07E-04 | 7.09E-04 |
| 210 | 7.78E-04 | 7.75E-04 | 7.72E-04 | 7.70E-04 | 7.68E-04 | 7.67E-04 | 7.66E-04 | 7.65E-04 | 7.65E-04 | 7.65E-04 | 7.66E-04 | 7.67E-04 |
| 220 | 8.09E-04 | 8.06E-04 | 8.03E-04 | 8.01E-04 | 7.99E-04 | 7.97E-04 | 7.96E-04 | 7.95E-04 | 7.95E-04 | 7.95E-04 | 7.95E-04 | 7.96E-04 |
| 290 | 1.03E-03 | 1.03E-03 | 1.02E-03 | 1.02E-03 | 1.01E-03 | 1.01E-03 | 1.01E-03 | 1.01E-03 | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E-03 |
| 400 | 1.38E-03 | 1.37E-03 | 1.37E-03 | 1.36E-03 | 1.35E-03 | 1.35E-03 | 1.34E-03 | 1.34E-03 | 1.33E-03 | 1.33E-03 | 1.33E-03 | 1.32E-03 |
| 500 | 1.70E-03 | 1.69E-03 | 1.68E-03 | 1.67E-03 | 1.66E-03 | 1.65E-03 | 1.65E-03 | 1.64E-03 | 1.63E-03 | 1.63E-03 | 1.62E-03 | 1.62E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.58: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.77E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 2.34E-04 | 2.36E-04 | 2.40E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.62E-04 | 2.63E-04 | 2.66E-04 | 2.71E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.76E-04 | 3.73E-04 | 3.73E-04 | 3.74E-04 | 3.78E-04 | 3.82E-04 | 3.89E-04 | 3.97E-04 | 4.04E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 4.90E-04 | 4.84E-04 | 4.80E-04 | 4.78E-04 | 4.78E-04 | 4.79E-04 | 4.82E-04 | 4.87E-04 | 4.94E-04 | 5.02E-04 | 5.12E-04 | 5.24E-04 |
| 190 | 6.62E-04 | 6.51E-04 | 6.42E-04 | 6.35E-04 | 6.29E-04 | 6.25E-04 | 6.23E-04 | 6.22E-04 | 6.24E-04 | 6.27E-04 | 6.32E-04 | 6.38E-04 |
| 210 | 7.19E-04 | 7.07E-04 | 6.96E-04 | 6.87E-04 | 6.79E-04 | 6.74E-04 | 6.70E-04 | 6.68E-04 | 6.67E-04 | 6.69E-04 | 6.72E-04 | 6.76E-04 |
| 220 | 7.48E-04 | 7.34E-04 | 7.23E-04 | 7.13E-04 | 7.05E-04 | 6.98E-04 | 6.93E-04 | 6.90E-04 | 6.89E-04 | 6.89E-04 | 6.92E-04 | 6.96E-04 |
| 290 | 9.50E-04 | 9.30E-04 | 9.12E-04 | 8.96E-04 | 8.82E-04 | 8.69E-04 | 8.58E-04 | 8.49E-04 | 8.42E-04 | 8.36E-04 | 8.32E-04 | 8.30E-04 |
| 400 | 1.27E-03 | 1.24E-03 | 1.21E-03 | 1.18E-03 | 1.16E-03 | 1.14E-03 | 1.12E-03 | 1.10E-03 | 1.08E-03 | 1.07E-03 | 1.05E-03 | 1.04E-03 |
| 500 | 1.55E-03 | 1.52E-03 | 1.48E-03 | 1.45E-03 | 1.41E-03 | 1.38E-03 | 1.35E-03 | 1.33E-03 | 1.30E-03 | 1.28E-03 | 1.25E-03 | 1.23E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.59: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.47E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.73E-04 | 1.78E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 2.19E-04 | 2.24E-04 | 2.33E-04 | 2.42E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.43E-04 | 2.46E-04 | 2.53E-04 | 2.63E-04 | 2.74E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 3.37E-04 | 3.32E-04 | 3.31E-04 | 3.34E-04 | 3.41E-04 | 3.52E-04 | 3.67E-04 | 3.85E-04 | 4.01E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 4.32E-04 | 4.19E-04 | 4.11E-04 | 4.06E-04 | 4.05E-04 | 4.08E-04 | 4.15E-04 | 4.26E-04 | 4.40E-04 | 4.59E-04 | 4.81E-04 | 5.07E-04 |
| 190 | 5.76E-04 | 5.51E-04 | 5.31E-04 | 5.15E-04 | 5.02E-04 | 4.93E-04 | 4.89E-04 | 4.88E-04 | 4.91E-04 | 4.97E-04 | 5.08E-04 | 5.22E-04 |
| 210 | 6.23E-04 | 5.95E-04 | 5.71E-04 | 5.51E-04 | 5.35E-04 | 5.22E-04 | 5.13E-04 | 5.08E-04 | 5.07E-04 | 5.10E-04 | 5.17E-04 | 5.28E-04 |
| 220 | 6.47E-04 | 6.17E-04 | 5.91E-04 | 5.69E-04 | 5.51E-04 | 5.36E-04 | 5.26E-04 | 5.19E-04 | 5.16E-04 | 5.17E-04 | 5.22E-04 | 5.30E-04 |
| 290 | 8.15E-04 | 7.72E-04 | 7.32E-04 | 6.97E-04 | 6.65E-04 | 6.37E-04 | 6.12E-04 | 5.92E-04 | 5.75E-04 | 5.63E-04 | 5.54E-04 | 5.49E-04 |
| 400 | 1.08E-03 | 1.01E-03 | 9.55E-04 | 8.98E-04 | 8.45E-04 | 7.96E-04 | 7.50E-04 | 7.08E-04 | 6.70E-04 | 6.36E-04 | 6.06E-04 | 5.80E-04 |
| 500 | 1.32E-03 | 1.24E-03 | 1.16E-03 | 1.08E-03 | 1.01E-03 | 9.41E-04 | 8.76E-04 | 8.15E-04 | 7.58E-04 | 7.04E-04 | 6.55E-04 | 6.09E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.60: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.46E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.66E-04 | 1.77E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 2.00E-04 | 2.08E-04 | 2.23E-04 | 2.39E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 2.17E-04 | 2.22E-04 | 2.34E-04 | 2.52E-04 | 2.71E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 2.84E-04 | 2.76E-04 | 2.75E-04 | 2.80E-04 | 2.92E-04 | 3.11E-04 | 3.36E-04 | 3.68E-04 | 3.97E-04 | 4.07E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 3.53E-04 | 3.31E-04 | 3.16E-04 | 3.08E-04 | 3.06E-04 | 3.11E-04 | 3.23E-04 | 3.42E-04 | 3.68E-04 | 4.00E-04 | 4.39E-04 | 4.84E-04 |
| 190 | 4.57E-04 | 4.15E-04 | 3.80E-04 | 3.51E-04 | 3.29E-04 | 3.14E-04 | 3.06E-04 | 3.04E-04 | 3.09E-04 | 3.20E-04 | 3.39E-04 | 3.64E-04 |
| 210 | 4.92E-04 | 4.43E-04 | 4.01E-04 | 3.66E-04 | 3.37E-04 | 3.15E-04 | 3.00E-04 | 2.91E-04 | 2.89E-04 | 2.94E-04 | 3.06E-04 | 3.25E-04 |
| 220 | 5.10E-04 | 4.57E-04 | 4.12E-04 | 3.74E-04 | 3.41E-04 | 3.16E-04 | 2.97E-04 | 2.85E-04 | 2.80E-04 | 2.81E-04 | 2.90E-04 | 3.05E-04 |
| 290 | 6.33E-04 | 5.57E-04 | 4.88E-04 | 4.26E-04 | 3.71E-04 | 3.22E-04 | 2.79E-04 | 2.43E-04 | 2.14E-04 | 1.92E-04 | 1.76E-04 | 1.67E-04 |
| 400 | 8.27E-04 | 7.15E-04 | 6.10E-04 | 5.11E-04 | 4.19E-04 | 3.34E-04 | 2.56E-04 | 1.84E-04 | 1.20E-04 | 6.26E-05 | 1.63E-05 | 3.21E-05 |
| 500 | 1.00E-03 | 8.59E-04 | 7.21E-04 | 5.90E-04 | 4.66E-04 | 3.49E-04 | 2.39E-04 | 1.39E-04 | 5.13E-05 | 3.85E-05 | 1.24E-04 | 2.13E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.61: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.44E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.58E-04 | 1.74E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 1.75E-04 | 1.88E-04 | 2.12E-04 | 2.36E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.84E-04 | 1.92E-04 | 2.10E-04 | 2.39E-04 | 2.67E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 2.19E-04 | 2.06E-04 | 2.04E-04 | 2.12E-04 | 2.30E-04 | 2.59E-04 | 2.98E-04 | 3.47E-04 | 3.91E-04 | 4.06E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 2.55E-04 | 2.22E-04 | 1.99E-04 | 1.86E-04 | 1.83E-04 | 1.91E-04 | 2.09E-04 | 2.38E-04 | 2.77E-04 | 3.26E-04 | 3.86E-04 | 4.55E-04 |
| 190 | 3.12E-04 | 2.48E-04 | 1.94E-04 | 1.50E-04 | 1.17E-04 | 9.31E-05 | 7.96E-05 | 7.64E-05 | 8.35E-05 | 1.01E-04 | 1.29E-04 | 1.68E-04 |
| 210 | 3.31E-04 | 2.57E-04 | 1.93E-04 | 1.40E-04 | 9.59E-05 | 6.23E-05 | 3.87E-05 | 2.51E-05 | 2.14E-05 | 2.78E-05 | 4.49E-05 | 7.27E-05 |
| 220 | 3.41E-04 | 2.62E-04 | 1.93E-04 | 1.34E-04 | 8.59E-05 | 4.76E-05 | 1.97E-05 | 5.16E-06 | 9.39E-06 | 8.25E-06 | 4.67E-06 | 2.56E-05 |
| 290 | 4.09E-04 | 2.96E-04 | 1.93E-04 | 1.03E-04 | 2.88E-05 | 4.69E-05 | 1.18E-04 | 1.79E-04 | 2.28E-04 | 2.65E-04 | 2.91E-04 | 3.06E-04 |
| 400 | 5.19E-04 | 3.53E-04 | 2.02E-04 | 7.40E-05 | 6.71E-05 | 2.08E-04 | 3.49E-04 | 4.73E-04 | 5.82E-04 | 6.77E-04 | 7.61E-04 | 8.33E-04 |
| 500 | 6.21E-04 | 4.08E-04 | 2.16E-04 | 7.28E-05 | 1.53E-04 | 3.63E-04 | 5.63E-04 | 7.42E-04 | 9.04E-04 | 1.05E-03 | 1.19E-03 | 1.31E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.62: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.42E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.49E-04 | 1.72E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 1.46E-04 | 1.65E-04 | 1.97E-04 | 2.32E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.45E-04 | 1.56E-04 | 1.82E-04 | 2.22E-04 | 2.63E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 1.42E-04 | 1.24E-04 | 1.21E-04 | 1.32E-04 | 1.58E-04 | 1.98E-04 | 2.53E-04 | 3.21E-04 | 3.85E-04 | 4.06E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 1.42E-04 | 9.53E-05 | 6.30E-05 | 4.46E-05 | 4.03E-05 | 5.06E-05 | 7.56E-05 | 1.15E-04 | 1.70E-04 | 2.39E-04 | 3.23E-04 | 4.21E-04 |
| 190 | 1.48E-04 | 6.16E-05 | 1.56E-05 | 7.40E-05 | 1.28E-04 | 1.64E-04 | 1.85E-04 | 1.90E-04 | 1.79E-04 | 1.55E-04 | 1.15E-04 | 6.11E-05 |
| 210 | 1.51E-04 | 5.39E-05 | 3.44E-05 | 1.16E-04 | 1.86E-04 | 2.38E-04 | 2.73E-04 | 2.93E-04 | 2.97E-04 | 2.87E-04 | 2.62E-04 | 2.22E-04 |
| 220 | 1.53E-04 | 5.09E-05 | 4.57E-05 | 1.37E-04 | 2.15E-04 | 2.75E-04 | 3.17E-04 | 3.44E-04 | 3.56E-04 | 3.53E-04 | 3.35E-04 | 3.03E-04 |
| 290 | 1.69E-04 | 4.64E-05 | 1.34E-04 | 2.89E-04 | 4.22E-04 | 5.33E-04 | 6.28E-04 | 7.06E-04 | 7.68E-04 | 8.16E-04 | 8.49E-04 | 8.68E-04 |
| 400 | 2.04E-04 | 8.46E-05 | 2.84E-04 | 5.31E-04 | 7.48E-04 | 9.42E-04 | 1.12E-03 | 1.27E-03 | 1.42E-03 | 1.54E-03 | 1.66E-03 | 1.76E-03 |
| 500 | 2.43E-04 | 1.38E-04 | 4.23E-04 | 7.52E-04 | 1.05E-03 | 1.31E-03 | 1.56E-03 | 1.79E-03 | 2.01E-03 | 2.21E-03 | 2.39E-03 | 2.56E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.63: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.37E-04 | 1.68E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 1.13E-04 | 1.38E-04 | 1.81E-04 | 2.28E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.01E-04 | 1.16E-04 | 1.50E-04 | 2.03E-04 | 2.57E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 5.83E-05 | 3.35E-05 | 2.83E-05 | 4.23E-05 | 7.58E-05 | 1.29E-04 | 2.01E-04 | 2.92E-04 | 3.77E-04 | 4.06E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 3.61E-05 | 4.10E-05 | 8.75E-05 | 1.14E-04 | 1.20E-04 | 1.07E-04 | 7.36E-05 | 2.12E-05 | 5.01E-05 | 1.41E-04 | 2.52E-04 | 3.81E-04 |
| 190 | 7.34E-05 | 1.62E-04 | 2.71E-04 | 3.57E-04 | 4.21E-04 | 4.65E-04 | 4.89E-04 | 4.93E-04 | 4.79E-04 | 4.45E-04 | 3.92E-04 | 3.20E-04 |
| 210 | 9.40E-05 | 2.03E-04 | 3.33E-04 | 4.38E-04 | 5.21E-04 | 5.84E-04 | 6.27E-04 | 6.51E-04 | 6.56E-04 | 6.41E-04 | 6.08E-04 | 5.55E-04 |
| 220 | 1.05E-04 | 2.24E-04 | 3.64E-04 | 4.79E-04 | 5.72E-04 | 6.44E-04 | 6.97E-04 | 7.30E-04 | 7.44E-04 | 7.40E-04 | 7.15E-04 | 6.72E-04 |
| 290 | 1.85E-04 | 3.71E-04 | 5.81E-04 | 7.64E-04 | 9.23E-04 | 1.06E-03 | 1.18E-03 | 1.28E-03 | 1.36E-03 | 1.43E-03 | 1.47E-03 | 1.49E-03 |
| 400 | 3.19E-04 | 6.04E-04 | 9.23E-04 | 1.21E-03 | 1.48E-03 | 1.72E-03 | 1.95E-03 | 2.15E-03 | 2.34E-03 | 2.51E-03 | 2.65E-03 | 2.78E-03 |
| 500 | 4.43E-04 | 8.17E-04 | 1.23E-03 | 1.62E-03 | 1.98E-03 | 2.32E-03 | 2.64E-03 | 2.94E-03 | 3.22E-03 | 3.49E-03 | 3.73E-03 | 3.96E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.64: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.36E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.25E-04 | 1.65E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 7.68E-05 | 1.08E-04 | 1.63E-04 | 2.22E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 5.36E-05 | 7.24E-05 | 1.15E-04 | 1.82E-04 | 2.51E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 4.45E-05 | 6.55E-05 | 7.23E-05 | 5.45E-05 | 1.25E-05 | 5.36E-05 | 1.45E-04 | 2.60E-04 | 3.68E-04 | 4.06E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 1.38E-04 | 2.08E-04 | 2.63E-04 | 2.94E-04 | 2.99E-04 | 2.81E-04 | 2.38E-04 | 1.71E-04 | 8.03E-05 | 3.45E-05 | 1.74E-04 | 3.37E-04 |
| 190 | 2.85E-04 | 4.25E-04 | 5.52E-04 | 6.54E-04 | 7.32E-04 | 7.86E-04 | 8.15E-04 | 8.20E-04 | 8.02E-04 | 7.59E-04 | 6.92E-04 | 6.01E-04 |
| 210 | 3.34E-04 | 4.97E-04 | 6.48E-04 | 7.75E-04 | 8.76E-04 | 9.54E-04 | 1.01E-03 | 1.04E-03 | 1.04E-03 | 1.02E-03 | 9.81E-04 | 9.14E-04 |
| 220 | 3.59E-04 | 5.33E-04 | 6.97E-04 | 8.35E-04 | 9.48E-04 | 1.04E-03 | 1.10E-03 | 1.15E-03 | 1.16E-03 | 1.16E-03 | 1.13E-03 | 1.07E-03 |
| 290 | 5.33E-04 | 7.87E-04 | 1.03E-03 | 1.26E-03 | 1.45E-03 | 1.63E-03 | 1.78E-03 | 1.90E-03 | 2.01E-03 | 2.08E-03 | 2.14E-03 | 2.17E-03 |
| 400 | 8.08E-04 | 1.19E-03 | 1.56E-03 | 1.92E-03 | 2.25E-03 | 2.55E-03 | 2.84E-03 | 3.09E-03 | 3.33E-03 | 3.54E-03 | 3.73E-03 | 3.89E-03 |
| 500 | 1.06E-03 | 1.55E-03 | 2.05E-03 | 2.52E-03 | 2.97E-03 | 3.40E-03 | 3.80E-03 | 4.18E-03 | 4.53E-03 | 4.86E-03 | 5.17E-03 | 5.46E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.65: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.33E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.11E-04 | 1.61E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 3.88E-05 | 7.64E-05 | 1.43E-04 | 2.17E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 1.18E-05 | 2.59E-05 | 7.80E-05 | 1.59E-04 | 2.45E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 1.46E-04 | 1.76E-04 | 1.82E-04 | 1.59E-04 | 1.07E-04 | 2.61E-05 | 8.43E-05 | 2.24E-04 | 3.58E-04 | 4.05E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 2.95E-04 | 3.81E-04 | 4.45E-04 | 4.81E-04 | 4.87E-04 | 4.64E-04 | 4.12E-04 | 3.30E-04 | 2.19E-04 | 7.90E-05 | 9.04E-05 | 2.89E-04 |
| 190 | 5.20E-04 | 6.90E-04 | 8.41E-04 | 9.63E-04 | 1.06E-03 | 1.12E-03 | 1.16E-03 | 1.16E-03 | 1.14E-03 | 1.09E-03 | 1.01E-03 | 8.96E-04 |
| 210 | 5.95E-04 | 7.93E-04 | 9.73E-04 | 1.12E-03 | 1.25E-03 | 1.34E-03 | 1.41E-03 | 1.44E-03 | 1.45E-03 | 1.43E-03 | 1.37E-03 | 1.29E-03 |
| 220 | 6.33E-04 | 8.44E-04 | 1.04E-03 | 1.20E-03 | 1.34E-03 | 1.45E-03 | 1.53E-03 | 1.58E-03 | 1.60E-03 | 1.59E-03 | 1.56E-03 | 1.49E-03 |
| 290 | 8.97E-04 | 1.20E-03 | 1.50E-03 | 1.77E-03 | 2.01E-03 | 2.22E-03 | 2.40E-03 | 2.55E-03 | 2.68E-03 | 2.77E-03 | 2.84E-03 | 2.87E-03 |
| 400 | 1.31E-03 | 1.77E-03 | 2.23E-03 | 2.65E-03 | 3.05E-03 | 3.42E-03 | 3.77E-03 | 4.08E-03 | 4.37E-03 | 4.62E-03 | 4.85E-03 | 5.05E-03 |
| 500 | 1.69E-03 | 2.29E-03 | 2.89E-03 | 3.46E-03 | 4.00E-03 | 4.52E-03 | 5.01E-03 | 5.47E-03 | 5.90E-03 | 6.31E-03 | 6.68E-03 | 7.03E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.66: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.29E-04 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 9.62E-05 | 1.56E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 |
| 40 | 9.81E-06 | 4.32E-05 | 1.22E-04 | 2.10E-04 | 2.44E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 | 2.45E-04 |
| 50 | 5.27E-05 | 2.23E-05 | 3.88E-05 | 1.35E-04 | 2.37E-04 | 2.76E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 90 | 2.52E-04 | 2.89E-04 | 2.95E-04 | 2.67E-04 | 2.06E-04 | 1.09E-04 | 2.11E-05 | 1.86E-04 | 3.47E-04 | 4.05E-04 | 4.07E-04 | 4.07E-04 |
| 130 | 4.54E-04 | 5.56E-04 | 6.31E-04 | 6.72E-04 | 6.78E-04 | 6.51E-04 | 5.89E-04 | 4.93E-04 | 3.62E-04 | 1.97E-04 | 3.02E-06 | 2.37E-04 |
| 190 | 7.57E-04 | 9.58E-04 | 1.13E-03 | 1.28E-03 | 1.39E-03 | 1.46E-03 | 1.51E-03 | 1.51E-03 | 1.49E-03 | 1.43E-03 | 1.33E-03 | 1.20E-03 |
| 210 | 8.58E-04 | 1.09E-03 | 1.30E-03 | 1.48E-03 | 1.62E-03 | 1.73E-03 | 1.81E-03 | 1.85E-03 | 1.86E-03 | 1.83E-03 | 1.77E-03 | 1.68E-03 |
| 220 | 9.09E-04 | 1.16E-03 | 1.39E-03 | 1.58E-03 | 1.74E-03 | 1.87E-03 | 1.96E-03 | 2.02E-03 | 2.05E-03 | 2.04E-03 | 2.00E-03 | 1.92E-03 |
| 290 | 1.26E-03 | 1.63E-03 | 1.97E-03 | 2.29E-03 | 2.57E-03 | 2.82E-03 | 3.03E-03 | 3.21E-03 | 3.36E-03 | 3.47E-03 | 3.55E-03 | 3.59E-03 |
| 400 | 1.82E-03 | 2.37E-03 | 2.90E-03 | 3.40E-03 | 3.87E-03 | 4.31E-03 | 4.71E-03 | 5.08E-03 | 5.42E-03 | 5.72E-03 | 5.99E-03 | 6.23E-03 |
| 500 | 2.33E-03 | 3.04E-03 | 3.74E-03 | 4.41E-03 | 5.05E-03 | 5.66E-03 | 6.24E-03 | 6.79E-03 | 7.30E-03 | 7.77E-03 | 8.21E-03 | 8.62E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.67: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 | 1.85E-04 |
| 190 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 | 2.49E-04 |
| 210 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 |
| 220 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 |
| 290 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 | 3.56E-04 |
| 400 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 | 4.75E-04 |
| 500 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 | 5.84E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.68: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.14E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 7.10E-05 | 7.15E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 9.03E-05 | 9.08E-05 | 9.12E-05 | 9.16E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 1.00E-04 | 1.01E-04 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.41E-04 | 1.41E-04 | 1.42E-04 | 1.42E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.83E-04 | 1.84E-04 |
| 190 | 2.41E-04 | 2.41E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.40E-04 | 2.40E-04 | 2.41E-04 |
| 210 | 2.62E-04 | 2.62E-04 | 2.61E-04 | 2.60E-04 | 2.60E-04 | 2.59E-04 | 2.59E-04 | 2.59E-04 | 2.59E-04 | 2.59E-04 | 2.59E-04 | 2.60E-04 |
| 220 | 2.72E-04 | 2.72E-04 | 2.71E-04 | 2.70E-04 | 2.70E-04 | 2.69E-04 | 2.69E-04 | 2.69E-04 | 2.69E-04 | 2.69E-04 | 2.69E-04 | 2.69E-04 |
| 290 | 3.44E-04 | 3.44E-04 | 3.42E-04 | 3.41E-04 | 3.40E-04 | 3.39E-04 | 3.38E-04 | 3.38E-04 | 3.37E-04 | 3.37E-04 | 3.37E-04 | 3.36E-04 |
| 400 | 4.59E-04 | 4.58E-04 | 4.56E-04 | 4.54E-04 | 4.52E-04 | 4.50E-04 | 4.49E-04 | 4.47E-04 | 4.46E-04 | 4.45E-04 | 4.44E-04 | 4.43E-04 |
| 500 | 5.63E-04 | 5.62E-04 | 5.59E-04 | 5.56E-04 | 5.54E-04 | 5.51E-04 | 5.49E-04 | 5.47E-04 | 5.45E-04 | 5.43E-04 | 5.41E-04 | 5.40E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.69: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.13E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 7.00E-05 | 7.12E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 8.69E-05 | 8.80E-05 | 8.96E-05 | 9.12E-05 | 9.17E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 9.54E-05 | 9.63E-05 | 9.77E-05 | 9.96E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.30E-04 | 1.30E-04 | 1.30E-04 | 1.31E-04 | 1.33E-04 | 1.34E-04 | 1.37E-04 | 1.40E-04 | 1.42E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.66E-04 | 1.65E-04 | 1.64E-04 | 1.63E-04 | 1.64E-04 | 1.64E-04 | 1.66E-04 | 1.68E-04 | 1.70E-04 | 1.73E-04 | 1.77E-04 | 1.81E-04 |
| 190 | 2.20E-04 | 2.17E-04 | 2.15E-04 | 2.13E-04 | 2.11E-04 | 2.10E-04 | 2.10E-04 | 2.10E-04 | 2.11E-04 | 2.12E-04 | 2.14E-04 | 2.16E-04 |
| 210 | 2.38E-04 | 2.35E-04 | 2.32E-04 | 2.29E-04 | 2.27E-04 | 2.26E-04 | 2.25E-04 | 2.25E-04 | 2.25E-04 | 2.25E-04 | 2.27E-04 | 2.28E-04 |
| 220 | 2.48E-04 | 2.44E-04 | 2.41E-04 | 2.38E-04 | 2.35E-04 | 2.34E-04 | 2.32E-04 | 2.32E-04 | 2.32E-04 | 2.32E-04 | 2.33E-04 | 2.35E-04 |
| 290 | 3.12E-04 | 3.06E-04 | 3.01E-04 | 2.96E-04 | 2.92E-04 | 2.88E-04 | 2.85E-04 | 2.82E-04 | 2.80E-04 | 2.79E-04 | 2.78E-04 | 2.77E-04 |
| 400 | 4.14E-04 | 4.05E-04 | 3.97E-04 | 3.90E-04 | 3.82E-04 | 3.75E-04 | 3.69E-04 | 3.63E-04 | 3.58E-04 | 3.53E-04 | 3.49E-04 | 3.46E-04 |
| 500 | 5.07E-04 | 4.96E-04 | 4.85E-04 | 4.75E-04 | 4.65E-04 | 4.55E-04 | 4.46E-04 | 4.38E-04 | 4.30E-04 | 4.22E-04 | 4.15E-04 | 4.08E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.70: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.08E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 6.80E-05 | 7.06E-05 | 7.15E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 8.09E-05 | 8.34E-05 | 8.70E-05 | 9.05E-05 | 9.17E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 8.74E-05 | 8.94E-05 | 9.24E-05 | 9.66E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.14E-04 | 1.14E-04 | 1.14E-04 | 1.16E-04 | 1.19E-04 | 1.23E-04 | 1.29E-04 | 1.36E-04 | 1.41E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.42E-04 | 1.39E-04 | 1.37E-04 | 1.37E-04 | 1.37E-04 | 1.39E-04 | 1.42E-04 | 1.46E-04 | 1.51E-04 | 1.58E-04 | 1.66E-04 | 1.75E-04 |
| 190 | 1.85E-04 | 1.78E-04 | 1.73E-04 | 1.68E-04 | 1.65E-04 | 1.63E-04 | 1.62E-04 | 1.63E-04 | 1.64E-04 | 1.67E-04 | 1.71E-04 | 1.76E-04 |
| 210 | 1.99E-04 | 1.92E-04 | 1.85E-04 | 1.79E-04 | 1.75E-04 | 1.71E-04 | 1.69E-04 | 1.68E-04 | 1.69E-04 | 1.70E-04 | 1.73E-04 | 1.77E-04 |
| 220 | 2.07E-04 | 1.98E-04 | 1.91E-04 | 1.85E-04 | 1.80E-04 | 1.76E-04 | 1.73E-04 | 1.71E-04 | 1.71E-04 | 1.72E-04 | 1.74E-04 | 1.77E-04 |
| 290 | 2.58E-04 | 2.46E-04 | 2.34E-04 | 2.23E-04 | 2.14E-04 | 2.06E-04 | 1.98E-04 | 1.92E-04 | 1.88E-04 | 1.84E-04 | 1.82E-04 | 1.81E-04 |
| 400 | 3.40E-04 | 3.21E-04 | 3.03E-04 | 2.86E-04 | 2.69E-04 | 2.54E-04 | 2.40E-04 | 2.27E-04 | 2.16E-04 | 2.05E-04 | 1.96E-04 | 1.88E-04 |
| 500 | 4.15E-04 | 3.91E-04 | 3.67E-04 | 3.43E-04 | 3.21E-04 | 3.00E-04 | 2.80E-04 | 2.61E-04 | 2.43E-04 | 2.26E-04 | 2.11E-04 | 1.96E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.71: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.02E-05 | 6.16E-05 | 6.15E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 6.53E-05 | 6.99E-05 | 7.14E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 7.26E-05 | 7.71E-05 | 8.32E-05 | 8.96E-05 | 9.17E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 7.64E-05 | 7.98E-05 | 8.50E-05 | 9.25E-05 | 9.95E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 9.26E-05 | 9.17E-05 | 9.25E-05 | 9.58E-05 | 1.01E-04 | 1.08E-04 | 1.18E-04 | 1.30E-04 | 1.40E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.10E-04 | 1.05E-04 | 1.01E-04 | 1.00E-04 | 1.01E-04 | 1.04E-04 | 1.09E-04 | 1.16E-04 | 1.26E-04 | 1.37E-04 | 1.51E-04 | 1.67E-04 |
| 190 | 1.37E-04 | 1.26E-04 | 1.16E-04 | 1.08E-04 | 1.03E-04 | 9.88E-05 | 9.71E-05 | 9.77E-05 | 1.00E-04 | 1.05E-04 | 1.12E-04 | 1.22E-04 |
| 210 | 1.47E-04 | 1.33E-04 | 1.21E-04 | 1.12E-04 | 1.03E-04 | 9.75E-05 | 9.37E-05 | 9.19E-05 | 9.24E-05 | 9.50E-05 | 9.98E-05 | 1.07E-04 |
| 220 | 1.51E-04 | 1.37E-04 | 1.24E-04 | 1.13E-04 | 1.04E-04 | 9.70E-05 | 9.20E-05 | 8.92E-05 | 8.84E-05 | 8.99E-05 | 9.36E-05 | 9.95E-05 |
| 290 | 1.86E-04 | 1.64E-04 | 1.44E-04 | 1.26E-04 | 1.09E-04 | 9.49E-05 | 8.23E-05 | 7.17E-05 | 6.31E-05 | 5.66E-05 | 5.22E-05 | 5.00E-05 |
| 400 | 2.41E-04 | 2.10E-04 | 1.79E-04 | 1.50E-04 | 1.22E-04 | 9.69E-05 | 7.36E-05 | 5.25E-05 | 3.38E-05 | 1.84E-05 | 9.91E-06 | 1.64E-05 |
| 500 | 2.94E-04 | 2.52E-04 | 2.12E-04 | 1.74E-04 | 1.38E-04 | 1.04E-04 | 7.26E-05 | 4.56E-05 | 2.59E-05 | 2.51E-05 | 4.72E-05 | 7.68E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.72: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.94E-05 | 6.16E-05 | 6.15E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 6.18E-05 | 6.90E-05 | 7.13E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 6.23E-05 | 6.91E-05 | 7.86E-05 | 8.84E-05 | 9.16E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 6.28E-05 | 6.79E-05 | 7.59E-05 | 8.73E-05 | 9.82E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 6.57E-05 | 6.43E-05 | 6.56E-05 | 7.04E-05 | 7.84E-05 | 8.96E-05 | 1.04E-04 | 1.22E-04 | 1.38E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 7.03E-05 | 6.24E-05 | 5.70E-05 | 5.50E-05 | 5.61E-05 | 6.05E-05 | 6.82E-05 | 7.93E-05 | 9.37E-05 | 1.12E-04 | 1.33E-04 | 1.57E-04 |
| 190 | 8.02E-05 | 6.30E-05 | 4.81E-05 | 3.62E-05 | 2.72E-05 | 2.11E-05 | 1.82E-05 | 1.84E-05 | 2.20E-05 | 2.91E-05 | 3.97E-05 | 5.38E-05 |
| 210 | 8.41E-05 | 6.41E-05 | 4.63E-05 | 3.15E-05 | 1.97E-05 | 1.10E-05 | 5.73E-06 | 3.83E-06 | 3.14E-06 | 4.08E-06 | 1.00E-05 | 2.02E-05 |
| 220 | 8.62E-05 | 6.48E-05 | 4.56E-05 | 2.95E-05 | 1.66E-05 | 7.77E-06 | 6.22E-06 | 9.44E-06 | 1.10E-05 | 9.52E-06 | 4.92E-06 | 4.28E-06 |
| 290 | 1.02E-04 | 7.20E-05 | 4.49E-05 | 2.38E-05 | 1.78E-05 | 3.52E-05 | 5.74E-05 | 7.69E-05 | 9.18E-05 | 1.03E-04 | 1.10E-04 | 1.13E-04 |
| 400 | 1.32E-04 | 9.02E-05 | 5.61E-05 | 4.03E-05 | 6.14E-05 | 1.07E-04 | 1.51E-04 | 1.91E-04 | 2.26E-04 | 2.55E-04 | 2.81E-04 | 3.03E-04 |
| 500 | 1.62E-04 | 1.12E-04 | 7.49E-05 | 6.88E-05 | 1.10E-04 | 1.76E-04 | 2.40E-04 | 2.98E-04 | 3.49E-04 | 3.95E-04 | 4.38E-04 | 4.76E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.73: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.84E-05 | 6.15E-05 | 6.15E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 5.77E-05 | 6.78E-05 | 7.13E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 5.03E-05 | 5.97E-05 | 7.32E-05 | 8.69E-05 | 9.16E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 4.67E-05 | 5.39E-05 | 6.52E-05 | 8.12E-05 | 9.65E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 3.47E-05 | 3.24E-05 | 3.42E-05 | 4.07E-05 | 5.18E-05 | 6.75E-05 | 8.80E-05 | 1.13E-04 | 1.36E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 2.69E-05 | 1.57E-05 | 8.39E-06 | 5.01E-06 | 5.24E-06 | 1.03E-05 | 2.07E-05 | 3.60E-05 | 5.62E-05 | 8.12E-05 | 1.11E-04 | 1.45E-04 |
| 190 | 2.58E-05 | 1.56E-05 | 3.07E-05 | 5.00E-05 | 6.46E-05 | 7.36E-05 | 7.75E-05 | 7.65E-05 | 7.06E-05 | 6.01E-05 | 4.49E-05 | 2.50E-05 |
| 210 | 2.82E-05 | 2.23E-05 | 4.46E-05 | 6.95E-05 | 8.91E-05 | 1.03E-04 | 1.11E-04 | 1.15E-04 | 1.14E-04 | 1.08E-04 | 9.71E-05 | 8.18E-05 |
| 220 | 2.98E-05 | 2.62E-05 | 5.17E-05 | 7.94E-05 | 1.01E-04 | 1.17E-04 | 1.28E-04 | 1.34E-04 | 1.35E-04 | 1.32E-04 | 1.23E-04 | 1.10E-04 |
| 290 | 4.68E-05 | 5.87E-05 | 1.05E-04 | 1.50E-04 | 1.89E-04 | 2.21E-04 | 2.48E-04 | 2.70E-04 | 2.87E-04 | 3.00E-04 | 3.07E-04 | 3.11E-04 |
| 400 | 8.42E-05 | 1.18E-04 | 1.92E-04 | 2.64E-04 | 3.28E-04 | 3.86E-04 | 4.38E-04 | 4.85E-04 | 5.27E-04 | 5.65E-04 | 5.98E-04 | 6.27E-04 |
| 500 | 1.23E-04 | 1.74E-04 | 2.72E-04 | 3.68E-04 | 4.55E-04 | 5.36E-04 | 6.11E-04 | 6.80E-04 | 7.45E-04 | 8.06E-04 | 8.62E-04 | 9.14E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.74: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.72E-05 | 6.15E-05 | 6.15E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 5.29E-05 | 6.65E-05 | 7.12E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 3.66E-05 | 4.90E-05 | 6.69E-05 | 8.51E-05 | 9.15E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 2.87E-05 | 3.81E-05 | 5.30E-05 | 7.41E-05 | 9.45E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 6.28E-06 | 3.91E-06 | 2.19E-06 | 7.60E-06 | 2.19E-05 | 4.26E-05 | 6.96E-05 | 1.03E-04 | 1.33E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 2.92E-05 | 4.27E-05 | 5.30E-05 | 5.73E-05 | 5.52E-05 | 4.70E-05 | 3.26E-05 | 1.22E-05 | 1.41E-05 | 4.69E-05 | 8.62E-05 | 1.31E-04 |
| 190 | 7.67E-05 | 1.08E-04 | 1.36E-04 | 1.59E-04 | 1.75E-04 | 1.85E-04 | 1.88E-04 | 1.86E-04 | 1.77E-04 | 1.63E-04 | 1.42E-04 | 1.15E-04 |
| 210 | 9.34E-05 | 1.31E-04 | 1.65E-04 | 1.93E-04 | 2.15E-04 | 2.31E-04 | 2.40E-04 | 2.44E-04 | 2.41E-04 | 2.33E-04 | 2.19E-04 | 1.98E-04 |
| 220 | 1.02E-04 | 1.42E-04 | 1.79E-04 | 2.10E-04 | 2.35E-04 | 2.54E-04 | 2.66E-04 | 2.73E-04 | 2.74E-04 | 2.68E-04 | 2.57E-04 | 2.39E-04 |
| 290 | 1.62E-04 | 2.22E-04 | 2.78E-04 | 3.31E-04 | 3.76E-04 | 4.16E-04 | 4.49E-04 | 4.77E-04 | 4.99E-04 | 5.15E-04 | 5.25E-04 | 5.29E-04 |
| 400 | 2.58E-04 | 3.48E-04 | 4.36E-04 | 5.21E-04 | 5.98E-04 | 6.71E-04 | 7.37E-04 | 7.98E-04 | 8.54E-04 | 9.03E-04 | 9.47E-04 | 9.84E-04 |
| 500 | 3.47E-04 | 4.64E-04 | 5.79E-04 | 6.94E-04 | 8.01E-04 | 9.03E-04 | 9.99E-04 | 1.09E-03 | 1.18E-03 | 1.26E-03 | 1.33E-03 | 1.40E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.75: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.59E-05 | 6.14E-05 | 6.15E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 4.77E-05 | 6.50E-05 | 7.12E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 2.17E-05 | 3.73E-05 | 5.99E-05 | 8.31E-05 | 9.15E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 9.53E-06 | 2.08E-05 | 3.97E-05 | 6.61E-05 | 9.23E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 4.07E-05 | 4.33E-05 | 3.97E-05 | 2.88E-05 | 1.04E-05 | 1.54E-05 | 4.94E-05 | 9.09E-05 | 1.30E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 9.37E-05 | 1.10E-04 | 1.21E-04 | 1.25E-04 | 1.22E-04 | 1.11E-04 | 9.19E-05 | 6.56E-05 | 3.18E-05 | 9.63E-06 | 5.90E-05 | 1.16E-04 |
| 190 | 1.75E-04 | 2.13E-04 | 2.45E-04 | 2.72E-04 | 2.90E-04 | 3.02E-04 | 3.06E-04 | 3.02E-04 | 2.91E-04 | 2.73E-04 | 2.47E-04 | 2.13E-04 |
| 210 | 2.03E-04 | 2.47E-04 | 2.86E-04 | 3.21E-04 | 3.47E-04 | 3.65E-04 | 3.77E-04 | 3.81E-04 | 3.78E-04 | 3.67E-04 | 3.49E-04 | 3.23E-04 |
| 220 | 2.16E-04 | 2.64E-04 | 3.07E-04 | 3.45E-04 | 3.75E-04 | 3.97E-04 | 4.13E-04 | 4.21E-04 | 4.22E-04 | 4.15E-04 | 4.00E-04 | 3.78E-04 |
| 290 | 3.13E-04 | 3.84E-04 | 4.52E-04 | 5.16E-04 | 5.72E-04 | 6.21E-04 | 6.63E-04 | 6.98E-04 | 7.25E-04 | 7.45E-04 | 7.58E-04 | 7.63E-04 |
| 400 | 4.65E-04 | 5.74E-04 | 6.81E-04 | 7.86E-04 | 8.82E-04 | 9.73E-04 | 1.06E-03 | 1.13E-03 | 1.20E-03 | 1.27E-03 | 1.32E-03 | 1.37E-03 |
| 500 | 6.04E-04 | 7.46E-04 | 8.89E-04 | 1.03E-03 | 1.16E-03 | 1.29E-03 | 1.41E-03 | 1.53E-03 | 1.64E-03 | 1.74E-03 | 1.83E-03 | 1.92E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.76: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.44E-05 | 6.14E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 4.19E-05 | 6.33E-05 | 7.13E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 6.27E-06 | 2.47E-05 | 5.24E-05 | 8.09E-05 | 9.14E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 1.18E-05 | 2.75E-06 | 2.54E-05 | 5.75E-05 | 8.98E-05 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 8.47E-05 | 8.73E-05 | 8.22E-05 | 6.83E-05 | 4.54E-05 | 1.34E-05 | 2.77E-05 | 7.83E-05 | 1.26E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 1.59E-04 | 1.79E-04 | 1.91E-04 | 1.96E-04 | 1.91E-04 | 1.77E-04 | 1.54E-04 | 1.22E-04 | 8.07E-05 | 3.00E-05 | 2.99E-05 | 9.93E-05 |
| 190 | 2.72E-04 | 3.17E-04 | 3.56E-04 | 3.87E-04 | 4.10E-04 | 4.24E-04 | 4.28E-04 | 4.24E-04 | 4.11E-04 | 3.88E-04 | 3.56E-04 | 3.15E-04 |
| 210 | 3.10E-04 | 3.64E-04 | 4.11E-04 | 4.51E-04 | 4.83E-04 | 5.06E-04 | 5.20E-04 | 5.25E-04 | 5.21E-04 | 5.08E-04 | 4.85E-04 | 4.54E-04 |
| 220 | 3.29E-04 | 3.87E-04 | 4.39E-04 | 4.83E-04 | 5.20E-04 | 5.47E-04 | 5.66E-04 | 5.75E-04 | 5.76E-04 | 5.68E-04 | 5.50E-04 | 5.23E-04 |
| 290 | 4.61E-04 | 5.49E-04 | 6.31E-04 | 7.08E-04 | 7.75E-04 | 8.35E-04 | 8.86E-04 | 9.28E-04 | 9.62E-04 | 9.86E-04 | 1.00E-03 | 1.01E-03 |
| 400 | 6.70E-04 | 8.03E-04 | 9.34E-04 | 1.06E-03 | 1.18E-03 | 1.29E-03 | 1.39E-03 | 1.48E-03 | 1.57E-03 | 1.64E-03 | 1.71E-03 | 1.77E-03 |
| 500 | 8.59E-04 | 1.04E-03 | 1.21E-03 | 1.38E-03 | 1.54E-03 | 1.70E-03 | 1.85E-03 | 1.99E-03 | 2.12E-03 | 2.24E-03 | 2.36E-03 | 2.46E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.77: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.30E-05 | 6.13E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 | 6.16E-05 |
| 20 | 3.59E-05 | 6.14E-05 | 7.12E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 | 7.16E-05 |
| 40 | 1.07E-05 | 1.16E-05 | 4.41E-05 | 7.85E-05 | 9.13E-05 | 9.17E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 | 9.18E-05 |
| 50 | 3.40E-05 | 1.66E-05 | 1.04E-05 | 4.82E-05 | 8.71E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.29E-04 | 1.32E-04 | 1.25E-04 | 1.09E-04 | 8.15E-05 | 4.35E-05 | 5.11E-06 | 6.47E-05 | 1.22E-04 | 1.43E-04 | 1.43E-04 | 1.43E-04 |
| 130 | 2.26E-04 | 2.48E-04 | 2.62E-04 | 2.67E-04 | 2.61E-04 | 2.45E-04 | 2.18E-04 | 1.80E-04 | 1.31E-04 | 7.13E-05 | 5.65E-07 | 8.14E-05 |
| 190 | 3.71E-04 | 4.22E-04 | 4.68E-04 | 5.05E-04 | 5.31E-04 | 5.47E-04 | 5.53E-04 | 5.48E-04 | 5.33E-04 | 5.06E-04 | 4.69E-04 | 4.20E-04 |
| 210 | 4.19E-04 | 4.81E-04 | 5.37E-04 | 5.84E-04 | 6.21E-04 | 6.48E-04 | 6.65E-04 | 6.71E-04 | 6.67E-04 | 6.51E-04 | 6.25E-04 | 5.87E-04 |
| 220 | 4.43E-04 | 5.10E-04 | 5.72E-04 | 6.24E-04 | 6.67E-04 | 6.98E-04 | 7.21E-04 | 7.33E-04 | 7.34E-04 | 7.24E-04 | 7.03E-04 | 6.71E-04 |
| 290 | 6.13E-04 | 7.14E-04 | 8.12E-04 | 9.02E-04 | 9.82E-04 | 1.05E-03 | 1.11E-03 | 1.16E-03 | 1.20E-03 | 1.23E-03 | 1.25E-03 | 1.26E-03 |
| 400 | 8.79E-04 | 1.03E-03 | 1.19E-03 | 1.34E-03 | 1.48E-03 | 1.61E-03 | 1.73E-03 | 1.84E-03 | 1.94E-03 | 2.03E-03 | 2.11E-03 | 2.18E-03 |
| 500 | 1.12E-03 | 1.33E-03 | 1.53E-03 | 1.74E-03 | 1.93E-03 | 2.11E-03 | 2.29E-03 | 2.45E-03 | 2.61E-03 | 2.75E-03 | 2.89E-03 | 3.01E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.78: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 | 4.08E-04 |
| 190 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 | 5.44E-04 |
| 210 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 | 5.89E-04 |
| 220 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 | 6.12E-04 |
| 290 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 | 7.72E-04 |
| 400 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 |
| 500 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.79: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.61E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.03E-04 | 2.04E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.24E-04 | 2.25E-04 | 2.26E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 3.10E-04 | 3.10E-04 | 3.10E-04 | 3.11E-04 | 3.12E-04 | 3.13E-04 | 3.14E-04 | 3.16E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 3.97E-04 | 3.96E-04 | 3.96E-04 | 3.96E-04 | 3.96E-04 | 3.96E-04 | 3.97E-04 | 3.98E-04 | 3.99E-04 | 4.01E-04 | 4.03E-04 | 4.05E-04 |
| 190 | 5.27E-04 | 5.26E-04 | 5.24E-04 | 5.23E-04 | 5.23E-04 | 5.22E-04 | 5.22E-04 | 5.22E-04 | 5.23E-04 | 5.23E-04 | 5.24E-04 | 5.26E-04 |
| 210 | 5.71E-04 | 5.69E-04 | 5.67E-04 | 5.66E-04 | 5.65E-04 | 5.64E-04 | 5.64E-04 | 5.64E-04 | 5.64E-04 | 5.64E-04 | 5.65E-04 | 5.66E-04 |
| 220 | 5.93E-04 | 5.91E-04 | 5.89E-04 | 5.87E-04 | 5.86E-04 | 5.85E-04 | 5.85E-04 | 5.84E-04 | 5.84E-04 | 5.85E-04 | 5.85E-04 | 5.86E-04 |
| 290 | 7.46E-04 | 7.43E-04 | 7.40E-04 | 7.37E-04 | 7.35E-04 | 7.33E-04 | 7.32E-04 | 7.30E-04 | 7.29E-04 | 7.28E-04 | 7.28E-04 | 7.28E-04 |
| 400 | 9.87E-04 | 9.83E-04 | 9.78E-04 | 9.74E-04 | 9.70E-04 | 9.66E-04 | 9.63E-04 | 9.60E-04 | 9.57E-04 | 9.55E-04 | 9.53E-04 | 9.51E-04 |
| 500 | 1.21E-03 | 1.20E-03 | 1.20E-03 | 1.19E-03 | 1.18E-03 | 1.18E-03 | 1.17E-03 | 1.17E-03 | 1.17E-03 | 1.16E-03 | 1.16E-03 | 1.15E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.80: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.58E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.95E-04 | 1.97E-04 | 2.01E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 2.13E-04 | 2.15E-04 | 2.18E-04 | 2.23E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 2.88E-04 | 2.88E-04 | 2.88E-04 | 2.90E-04 | 2.93E-04 | 2.98E-04 | 3.03E-04 | 3.10E-04 | 3.16E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 3.63E-04 | 3.61E-04 | 3.59E-04 | 3.59E-04 | 3.59E-04 | 3.61E-04 | 3.64E-04 | 3.69E-04 | 3.74E-04 | 3.81E-04 | 3.89E-04 | 3.98E-04 |
| 190 | 4.77E-04 | 4.71E-04 | 4.66E-04 | 4.62E-04 | 4.59E-04 | 4.57E-04 | 4.57E-04 | 4.57E-04 | 4.59E-04 | 4.62E-04 | 4.66E-04 | 4.72E-04 |
| 210 | 5.16E-04 | 5.08E-04 | 5.02E-04 | 4.97E-04 | 4.92E-04 | 4.89E-04 | 4.88E-04 | 4.87E-04 | 4.88E-04 | 4.90E-04 | 4.93E-04 | 4.97E-04 |
| 220 | 5.35E-04 | 5.27E-04 | 5.20E-04 | 5.14E-04 | 5.09E-04 | 5.06E-04 | 5.03E-04 | 5.02E-04 | 5.02E-04 | 5.03E-04 | 5.06E-04 | 5.09E-04 |
| 290 | 6.69E-04 | 6.57E-04 | 6.46E-04 | 6.36E-04 | 6.27E-04 | 6.19E-04 | 6.12E-04 | 6.07E-04 | 6.02E-04 | 5.99E-04 | 5.98E-04 | 5.97E-04 |
| 400 | 8.81E-04 | 8.62E-04 | 8.45E-04 | 8.28E-04 | 8.12E-04 | 7.98E-04 | 7.85E-04 | 7.72E-04 | 7.61E-04 | 7.52E-04 | 7.43E-04 | 7.36E-04 |
| 500 | 1.07E-03 | 1.05E-03 | 1.03E-03 | 1.00E-03 | 9.82E-04 | 9.61E-04 | 9.42E-04 | 9.24E-04 | 9.07E-04 | 8.91E-04 | 8.76E-04 | 8.63E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.81: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.38E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.54E-04 | 1.60E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.82E-04 | 1.87E-04 | 1.95E-04 | 2.03E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.95E-04 | 2.00E-04 | 2.07E-04 | 2.16E-04 | 2.25E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 2.52E-04 | 2.51E-04 | 2.53E-04 | 2.57E-04 | 2.64E-04 | 2.73E-04 | 2.86E-04 | 3.00E-04 | 3.13E-04 | 3.18E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 3.10E-04 | 3.03E-04 | 2.99E-04 | 2.98E-04 | 3.00E-04 | 3.04E-04 | 3.11E-04 | 3.20E-04 | 3.32E-04 | 3.47E-04 | 3.65E-04 | 3.85E-04 |
| 190 | 3.97E-04 | 3.83E-04 | 3.71E-04 | 3.62E-04 | 3.55E-04 | 3.51E-04 | 3.50E-04 | 3.51E-04 | 3.55E-04 | 3.62E-04 | 3.71E-04 | 3.84E-04 |
| 210 | 4.26E-04 | 4.09E-04 | 3.95E-04 | 3.83E-04 | 3.74E-04 | 3.67E-04 | 3.63E-04 | 3.62E-04 | 3.63E-04 | 3.67E-04 | 3.74E-04 | 3.83E-04 |
| 220 | 4.41E-04 | 4.23E-04 | 4.07E-04 | 3.94E-04 | 3.83E-04 | 3.75E-04 | 3.70E-04 | 3.67E-04 | 3.67E-04 | 3.70E-04 | 3.75E-04 | 3.83E-04 |
| 290 | 5.45E-04 | 5.17E-04 | 4.92E-04 | 4.69E-04 | 4.49E-04 | 4.32E-04 | 4.17E-04 | 4.05E-04 | 3.95E-04 | 3.89E-04 | 3.84E-04 | 3.83E-04 |
| 400 | 7.08E-04 | 6.67E-04 | 6.27E-04 | 5.90E-04 | 5.56E-04 | 5.23E-04 | 4.94E-04 | 4.67E-04 | 4.43E-04 | 4.21E-04 | 4.02E-04 | 3.85E-04 |
| 500 | 8.58E-04 | 8.04E-04 | 7.51E-04 | 7.01E-04 | 6.53E-04 | 6.08E-04 | 5.65E-04 | 5.25E-04 | 4.87E-04 | 4.52E-04 | 4.19E-04 | 3.89E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.82: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.37E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.48E-04 | 1.58E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.63E-04 | 1.73E-04 | 1.87E-04 | 2.01E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.71E-04 | 1.78E-04 | 1.90E-04 | 2.07E-04 | 2.23E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 2.02E-04 | 2.01E-04 | 2.03E-04 | 2.11E-04 | 2.23E-04 | 2.40E-04 | 2.61E-04 | 2.87E-04 | 3.10E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 2.36E-04 | 2.24E-04 | 2.18E-04 | 2.16E-04 | 2.18E-04 | 2.26E-04 | 2.38E-04 | 2.54E-04 | 2.76E-04 | 3.02E-04 | 3.32E-04 | 3.68E-04 |
| 190 | 2.87E-04 | 2.62E-04 | 2.42E-04 | 2.25E-04 | 2.14E-04 | 2.07E-04 | 2.04E-04 | 2.07E-04 | 2.14E-04 | 2.25E-04 | 2.42E-04 | 2.63E-04 |
| 210 | 3.05E-04 | 2.75E-04 | 2.50E-04 | 2.29E-04 | 2.13E-04 | 2.01E-04 | 1.94E-04 | 1.91E-04 | 1.93E-04 | 2.00E-04 | 2.12E-04 | 2.28E-04 |
| 220 | 3.13E-04 | 2.82E-04 | 2.54E-04 | 2.31E-04 | 2.12E-04 | 1.98E-04 | 1.89E-04 | 1.84E-04 | 1.83E-04 | 1.88E-04 | 1.97E-04 | 2.11E-04 |
| 290 | 3.76E-04 | 3.29E-04 | 2.85E-04 | 2.46E-04 | 2.11E-04 | 1.81E-04 | 1.55E-04 | 1.34E-04 | 1.17E-04 | 1.04E-04 | 9.63E-05 | 9.31E-05 |
| 400 | 4.77E-04 | 4.06E-04 | 3.38E-04 | 2.75E-04 | 2.16E-04 | 1.62E-04 | 1.13E-04 | 6.92E-05 | 3.28E-05 | 1.83E-05 | 4.30E-05 | 7.35E-05 |
| 500 | 5.71E-04 | 4.78E-04 | 3.89E-04 | 3.05E-04 | 2.26E-04 | 1.54E-04 | 8.93E-05 | 4.11E-05 | 4.99E-05 | 1.08E-04 | 1.73E-04 | 2.34E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.83: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.35E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.40E-04 | 1.56E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.40E-04 | 1.55E-04 | 1.77E-04 | 1.98E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.40E-04 | 1.51E-04 | 1.70E-04 | 1.95E-04 | 2.20E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 1.41E-04 | 1.38E-04 | 1.42E-04 | 1.54E-04 | 1.72E-04 | 1.98E-04 | 2.31E-04 | 2.70E-04 | 3.06E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 1.44E-04 | 1.28E-04 | 1.17E-04 | 1.14E-04 | 1.18E-04 | 1.29E-04 | 1.47E-04 | 1.72E-04 | 2.05E-04 | 2.45E-04 | 2.92E-04 | 3.45E-04 |
| 190 | 1.54E-04 | 1.17E-04 | 8.52E-05 | 6.06E-05 | 4.26E-05 | 3.13E-05 | 2.67E-05 | 2.91E-05 | 3.88E-05 | 5.61E-05 | 8.08E-05 | 1.13E-04 |
| 210 | 1.58E-04 | 1.14E-04 | 7.65E-05 | 4.57E-05 | 2.22E-05 | 8.78E-06 | 1.18E-05 | 1.58E-05 | 1.38E-05 | 5.63E-06 | 1.27E-05 | 3.66E-05 |
| 220 | 1.60E-04 | 1.13E-04 | 7.25E-05 | 3.92E-05 | 1.50E-05 | 1.48E-05 | 2.85E-05 | 3.75E-05 | 3.94E-05 | 3.39E-05 | 2.10E-05 | 3.25E-06 |
| 290 | 1.78E-04 | 1.11E-04 | 5.46E-05 | 2.73E-05 | 6.59E-05 | 1.19E-04 | 1.65E-04 | 2.03E-04 | 2.31E-04 | 2.51E-04 | 2.64E-04 | 2.69E-04 |
| 400 | 2.14E-04 | 1.22E-04 | 6.25E-05 | 9.84E-05 | 1.98E-04 | 2.99E-04 | 3.90E-04 | 4.69E-04 | 5.39E-04 | 5.99E-04 | 6.51E-04 | 6.96E-04 |
| 500 | 2.52E-04 | 1.43E-04 | 9.59E-05 | 1.80E-04 | 3.25E-04 | 4.67E-04 | 5.97E-04 | 7.14E-04 | 8.20E-04 | 9.16E-04 | 1.00E-03 | 1.09E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.84: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.33E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.31E-04 | 1.53E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.12E-04 | 1.33E-04 | 1.64E-04 | 1.95E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.03E-04 | 1.19E-04 | 1.46E-04 | 1.81E-04 | 2.16E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 6.94E-05 | 6.55E-05 | 7.11E-05 | 8.67E-05 | 1.12E-04 | 1.48E-04 | 1.94E-04 | 2.50E-04 | 3.00E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 4.32E-05 | 2.01E-05 | 7.47E-06 | 5.47E-06 | 4.15E-06 | 1.59E-05 | 4.05E-05 | 7.58E-05 | 1.21E-04 | 1.77E-04 | 2.43E-04 | 3.19E-04 |
| 190 | 3.40E-05 | 4.82E-05 | 9.62E-05 | 1.36E-04 | 1.64E-04 | 1.81E-04 | 1.87E-04 | 1.82E-04 | 1.67E-04 | 1.42E-04 | 1.07E-04 | 6.16E-05 |
| 210 | 4.11E-05 | 7.12E-05 | 1.32E-04 | 1.83E-04 | 2.22E-04 | 2.48E-04 | 2.64E-04 | 2.69E-04 | 2.65E-04 | 2.49E-04 | 2.24E-04 | 1.89E-04 |
| 220 | 4.60E-05 | 8.31E-05 | 1.50E-04 | 2.07E-04 | 2.50E-04 | 2.82E-04 | 3.03E-04 | 3.13E-04 | 3.13E-04 | 3.03E-04 | 2.83E-04 | 2.53E-04 |
| 290 | 9.19E-05 | 1.71E-04 | 2.78E-04 | 3.72E-04 | 4.52E-04 | 5.19E-04 | 5.75E-04 | 6.20E-04 | 6.55E-04 | 6.80E-04 | 6.95E-04 | 7.00E-04 |
| 400 | 1.80E-04 | 3.16E-04 | 4.83E-04 | 6.35E-04 | 7.70E-04 | 8.92E-04 | 1.00E-03 | 1.10E-03 | 1.19E-03 | 1.27E-03 | 1.34E-03 | 1.40E-03 |
| 500 | 2.67E-04 | 4.50E-04 | 6.71E-04 | 8.74E-04 | 1.06E-03 | 1.23E-03 | 1.39E-03 | 1.54E-03 | 1.68E-03 | 1.81E-03 | 1.93E-03 | 2.04E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.85: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.30E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.20E-04 | 1.50E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 8.09E-05 | 1.09E-04 | 1.50E-04 | 1.91E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 6.18E-05 | 8.36E-05 | 1.18E-04 | 1.65E-04 | 2.12E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 1.47E-05 | 1.44E-05 | 8.01E-06 | 1.21E-05 | 4.54E-05 | 9.27E-05 | 1.53E-04 | 2.27E-04 | 2.94E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 8.40E-05 | 1.13E-04 | 1.33E-04 | 1.40E-04 | 1.33E-04 | 1.12E-04 | 7.86E-05 | 3.17E-05 | 2.79E-05 | 1.02E-04 | 1.89E-04 | 2.89E-04 |
| 190 | 2.00E-04 | 2.68E-04 | 3.28E-04 | 3.73E-04 | 4.05E-04 | 4.24E-04 | 4.30E-04 | 4.22E-04 | 4.02E-04 | 3.68E-04 | 3.20E-04 | 2.60E-04 |
| 210 | 2.40E-04 | 3.20E-04 | 3.93E-04 | 4.51E-04 | 4.97E-04 | 5.29E-04 | 5.47E-04 | 5.52E-04 | 5.45E-04 | 5.25E-04 | 4.91E-04 | 4.43E-04 |
| 220 | 2.59E-04 | 3.46E-04 | 4.25E-04 | 4.91E-04 | 5.42E-04 | 5.81E-04 | 6.06E-04 | 6.18E-04 | 6.17E-04 | 6.03E-04 | 5.76E-04 | 5.35E-04 |
| 290 | 3.99E-04 | 5.29E-04 | 6.54E-04 | 7.65E-04 | 8.62E-04 | 9.46E-04 | 1.02E-03 | 1.07E-03 | 1.12E-03 | 1.15E-03 | 1.17E-03 | 1.18E-03 |
| 400 | 6.20E-04 | 8.18E-04 | 1.01E-03 | 1.20E-03 | 1.36E-03 | 1.52E-03 | 1.66E-03 | 1.79E-03 | 1.91E-03 | 2.02E-03 | 2.11E-03 | 2.19E-03 |
| 500 | 8.22E-04 | 1.08E-03 | 1.34E-03 | 1.59E-03 | 1.82E-03 | 2.04E-03 | 2.25E-03 | 2.45E-03 | 2.63E-03 | 2.80E-03 | 2.96E-03 | 3.11E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.86: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.27E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.08E-04 | 1.47E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 4.70E-05 | 8.28E-05 | 1.34E-04 | 1.87E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 1.79E-05 | 4.45E-05 | 8.79E-05 | 1.48E-04 | 2.07E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 1.03E-04 | 1.06E-04 | 9.64E-05 | 7.00E-05 | 2.71E-05 | 3.19E-05 | 1.08E-04 | 2.01E-04 | 2.87E-04 | 3.17E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 2.26E-04 | 2.61E-04 | 2.84E-04 | 2.90E-04 | 2.80E-04 | 2.53E-04 | 2.10E-04 | 1.50E-04 | 7.38E-05 | 1.89E-05 | 1.29E-04 | 2.55E-04 |
| 190 | 4.14E-04 | 4.95E-04 | 5.67E-04 | 6.22E-04 | 6.61E-04 | 6.84E-04 | 6.90E-04 | 6.80E-04 | 6.54E-04 | 6.11E-04 | 5.51E-04 | 4.74E-04 |
| 210 | 4.77E-04 | 5.74E-04 | 6.61E-04 | 7.33E-04 | 7.88E-04 | 8.27E-04 | 8.50E-04 | 8.57E-04 | 8.47E-04 | 8.21E-04 | 7.78E-04 | 7.18E-04 |
| 220 | 5.08E-04 | 6.13E-04 | 7.08E-04 | 7.88E-04 | 8.52E-04 | 8.99E-04 | 9.30E-04 | 9.45E-04 | 9.44E-04 | 9.26E-04 | 8.91E-04 | 8.40E-04 |
| 290 | 7.28E-04 | 8.87E-04 | 1.04E-03 | 1.18E-03 | 1.30E-03 | 1.40E-03 | 1.49E-03 | 1.56E-03 | 1.62E-03 | 1.66E-03 | 1.69E-03 | 1.69E-03 |
| 400 | 1.07E-03 | 1.32E-03 | 1.56E-03 | 1.79E-03 | 2.00E-03 | 2.19E-03 | 2.37E-03 | 2.54E-03 | 2.69E-03 | 2.82E-03 | 2.93E-03 | 3.03E-03 |
| 500 | 1.39E-03 | 1.71E-03 | 2.03E-03 | 2.34E-03 | 2.63E-03 | 2.91E-03 | 3.17E-03 | 3.42E-03 | 3.65E-03 | 3.87E-03 | 4.07E-03 | 4.25E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.87: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.24E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 9.46E-05 | 1.43E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.17E-05 | 5.43E-05 | 1.17E-04 | 1.82E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 3.08E-05 | 3.56E-06 | 5.55E-05 | 1.28E-04 | 2.01E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 2.00E-04 | 2.04E-04 | 1.91E-04 | 1.58E-04 | 1.05E-04 | 3.25E-05 | 6.01E-05 | 1.73E-04 | 2.79E-04 | 3.16E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 3.72E-04 | 4.13E-04 | 4.40E-04 | 4.47E-04 | 4.34E-04 | 4.01E-04 | 3.48E-04 | 2.75E-04 | 1.82E-04 | 6.89E-05 | 6.45E-05 | 2.18E-04 |
| 190 | 6.30E-04 | 7.28E-04 | 8.14E-04 | 8.80E-04 | 9.27E-04 | 9.55E-04 | 9.62E-04 | 9.50E-04 | 9.18E-04 | 8.65E-04 | 7.93E-04 | 7.00E-04 |
| 210 | 7.16E-04 | 8.33E-04 | 9.38E-04 | 1.02E-03 | 1.09E-03 | 1.14E-03 | 1.17E-03 | 1.18E-03 | 1.16E-03 | 1.13E-03 | 1.08E-03 | 1.01E-03 |
| 220 | 7.60E-04 | 8.86E-04 | 1.00E-03 | 1.10E-03 | 1.17E-03 | 1.23E-03 | 1.27E-03 | 1.29E-03 | 1.29E-03 | 1.26E-03 | 1.22E-03 | 1.16E-03 |
| 290 | 1.06E-03 | 1.25E-03 | 1.44E-03 | 1.60E-03 | 1.75E-03 | 1.88E-03 | 1.99E-03 | 2.08E-03 | 2.14E-03 | 2.19E-03 | 2.22E-03 | 2.23E-03 |
| 400 | 1.54E-03 | 1.83E-03 | 2.12E-03 | 2.40E-03 | 2.66E-03 | 2.89E-03 | 3.11E-03 | 3.31E-03 | 3.49E-03 | 3.65E-03 | 3.80E-03 | 3.92E-03 |
| 500 | 1.97E-03 | 2.36E-03 | 2.75E-03 | 3.12E-03 | 3.48E-03 | 3.82E-03 | 4.14E-03 | 4.44E-03 | 4.72E-03 | 4.98E-03 | 5.23E-03 | 5.45E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.88: Variation in electron beam radius through its flight, for different lens positions with a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|----------------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.20E-04 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 8.06E-05 | 1.39E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.70E-05 | 2.46E-05 | 9.86E-05 | 1.76E-04 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 | 2.06E-04 |
| 50 | 8.09E-05 | 4.02E-05 | 2.17E-05 | 1.07E-04 | 1.95E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 | 2.28E-04 |
| 90 | 2.99E-04 | 3.03E-04 | 2.88E-04 | 2.48E-04 | 1.86E-04 | 9.99E-05 | 9.72E-06 | 1.43E-04 | 2.70E-04 | 3.16E-04 | 3.18E-04 | 3.18E-04 |
| 130 | 5.19E-04 | 5.68E-04 | 5.98E-04 | 6.06E-04 | 5.91E-04 | 5.52E-04 | 4.90E-04 | 4.04E-04 | 2.94E-04 | 1.60E-04 | 1.79E-04 | 1.79E-04 |
| 190 | 8.48E-04 | 9.64E-04 | 1.06E-03 | 1.14E-03 | 1.20E-03 | 1.23E-03 | 1.24E-03 | 1.23E-03 | 1.19E-03 | 1.13E-03 | 9.30E-04 | 9.30E-04 |
| 210 | 9.58E-04 | 1.10E-03 | 1.22E-03 | 1.32E-03 | 1.40E-03 | 1.46E-03 | 1.49E-03 | 1.50E-03 | 1.49E-03 | 1.45E-03 | 1.30E-03 | 1.30E-03 |
| 220 | 1.01E-03 | 1.16E-03 | 1.30E-03 | 1.41E-03 | 1.50E-03 | 1.57E-03 | 1.62E-03 | 1.64E-03 | 1.63E-03 | 1.61E-03 | 1.49E-03 | 1.49E-03 |
| 290 | 1.40E-03 | 1.63E-03 | 1.84E-03 | 2.04E-03 | 2.21E-03 | 2.36E-03 | 2.49E-03 | 2.60E-03 | 2.68E-03 | 2.74E-03 | 2.78E-03 | 2.78E-03 |
| 400 | 2.00E-03 | 2.35E-03 | 2.70E-03 | 3.02E-03 | 3.33E-03 | 3.61E-03 | 3.87E-03 | 4.10E-03 | 4.32E-03 | 4.51E-03 | 4.82E-03 | 4.82E-03 |
| 500 | 2.55E-03 | 3.02E-03 | 3.48E-03 | 3.92E-03 | 4.34E-03 | 4.74E-03 | 5.12E-03 | 5.47E-03 | 5.81E-03 | 6.12E-03 | 6.67E-03 | 6.67E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.89: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 | 2.43E-04 |
| 190 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 | 3.32E-04 |
| 210 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 | 3.62E-04 |
| 220 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 | 3.77E-04 |
| 290 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 | 4.82E-04 |
| 400 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 | 6.47E-04 |
| 500 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 | 7.97E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.90: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.58E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 8.01E-05 | 8.03E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 1.09E-04 | 1.09E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 1.23E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 2.40E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.39E-04 | 2.40E-04 | 2.40E-04 | 2.41E-04 | 2.42E-04 |
| 190 | 3.27E-04 | 3.27E-04 | 3.26E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.26E-04 |
| 210 | 3.57E-04 | 3.56E-04 | 3.55E-04 | 3.54E-04 | 3.54E-04 | 3.53E-04 | 3.53E-04 | 3.53E-04 | 3.53E-04 | 3.53E-04 | 3.53E-04 | 3.54E-04 |
| 220 | 3.71E-04 | 3.70E-04 | 3.70E-04 | 3.69E-04 | 3.68E-04 | 3.68E-04 | 3.67E-04 | 3.67E-04 | 3.67E-04 | 3.67E-04 | 3.67E-04 | 3.68E-04 |
| 290 | 4.74E-04 | 4.73E-04 | 4.72E-04 | 4.71E-04 | 4.69E-04 | 4.69E-04 | 4.68E-04 | 4.67E-04 | 4.67E-04 | 4.66E-04 | 4.66E-04 | 4.66E-04 |
| 400 | 6.36E-04 | 6.34E-04 | 6.32E-04 | 6.30E-04 | 6.29E-04 | 6.27E-04 | 6.26E-04 | 6.24E-04 | 6.23E-04 | 6.22E-04 | 6.21E-04 | 6.20E-04 |
| 500 | 7.84E-04 | 7.81E-04 | 7.79E-04 | 7.76E-04 | 7.74E-04 | 7.72E-04 | 7.69E-04 | 7.67E-04 | 7.66E-04 | 7.64E-04 | 7.62E-04 | 7.61E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.91: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.56E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 7.93E-05 | 8.01E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 1.06E-04 | 1.07E-04 | 1.08E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 1.20E-04 | 1.20E-04 | 1.21E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.75E-04 | 1.74E-04 | 1.74E-04 | 1.74E-04 | 1.75E-04 | 1.76E-04 | 1.78E-04 | 1.81E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 2.30E-04 | 2.28E-04 | 2.27E-04 | 2.26E-04 | 2.26E-04 | 2.26E-04 | 2.27E-04 | 2.29E-04 | 2.31E-04 | 2.33E-04 | 2.36E-04 | 2.39E-04 |
| 190 | 3.13E-04 | 3.10E-04 | 3.07E-04 | 3.05E-04 | 3.03E-04 | 3.02E-04 | 3.01E-04 | 3.01E-04 | 3.01E-04 | 3.02E-04 | 3.04E-04 | 3.05E-04 |
| 210 | 3.40E-04 | 3.37E-04 | 3.34E-04 | 3.31E-04 | 3.29E-04 | 3.27E-04 | 3.26E-04 | 3.25E-04 | 3.25E-04 | 3.25E-04 | 3.26E-04 | 3.28E-04 |
| 220 | 3.54E-04 | 3.50E-04 | 3.47E-04 | 3.44E-04 | 3.42E-04 | 3.40E-04 | 3.38E-04 | 3.37E-04 | 3.37E-04 | 3.37E-04 | 3.38E-04 | 3.39E-04 |
| 290 | 4.51E-04 | 4.46E-04 | 4.41E-04 | 4.36E-04 | 4.32E-04 | 4.28E-04 | 4.25E-04 | 4.22E-04 | 4.20E-04 | 4.19E-04 | 4.17E-04 | 4.17E-04 |
| 400 | 6.04E-04 | 5.96E-04 | 5.89E-04 | 5.81E-04 | 5.74E-04 | 5.68E-04 | 5.62E-04 | 5.56E-04 | 5.51E-04 | 5.47E-04 | 5.43E-04 | 5.39E-04 |
| 500 | 7.44E-04 | 7.33E-04 | 7.23E-04 | 7.13E-04 | 7.04E-04 | 6.95E-04 | 6.86E-04 | 6.78E-04 | 6.71E-04 | 6.64E-04 | 6.57E-04 | 6.51E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.92: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.53E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 7.80E-05 | 7.97E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 1.02E-04 | 1.04E-04 | 1.06E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 1.14E-04 | 1.15E-04 | 1.17E-04 | 1.20E-04 | 1.23E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.64E-04 | 1.62E-04 | 1.62E-04 | 1.63E-04 | 1.65E-04 | 1.68E-04 | 1.72E-04 | 1.77E-04 | 1.82E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 2.13E-04 | 2.10E-04 | 2.07E-04 | 2.06E-04 | 2.05E-04 | 2.06E-04 | 2.08E-04 | 2.11E-04 | 2.15E-04 | 2.21E-04 | 2.27E-04 | 2.34E-04 |
| 190 | 2.88E-04 | 2.81E-04 | 2.76E-04 | 2.71E-04 | 2.67E-04 | 2.64E-04 | 2.63E-04 | 2.63E-04 | 2.63E-04 | 2.65E-04 | 2.68E-04 | 2.72E-04 |
| 210 | 3.13E-04 | 3.05E-04 | 2.98E-04 | 2.92E-04 | 2.88E-04 | 2.84E-04 | 2.81E-04 | 2.80E-04 | 2.79E-04 | 2.80E-04 | 2.82E-04 | 2.85E-04 |
| 220 | 3.26E-04 | 3.17E-04 | 3.10E-04 | 3.03E-04 | 2.98E-04 | 2.94E-04 | 2.90E-04 | 2.88E-04 | 2.87E-04 | 2.88E-04 | 2.89E-04 | 2.91E-04 |
| 290 | 4.14E-04 | 4.01E-04 | 3.90E-04 | 3.80E-04 | 3.70E-04 | 3.62E-04 | 3.55E-04 | 3.49E-04 | 3.44E-04 | 3.40E-04 | 3.38E-04 | 3.36E-04 |
| 400 | 5.52E-04 | 5.34E-04 | 5.16E-04 | 5.00E-04 | 4.85E-04 | 4.70E-04 | 4.57E-04 | 4.45E-04 | 4.34E-04 | 4.23E-04 | 4.15E-04 | 4.07E-04 |
| 500 | 6.78E-04 | 6.55E-04 | 6.32E-04 | 6.10E-04 | 5.89E-04 | 5.69E-04 | 5.50E-04 | 5.32E-04 | 5.15E-04 | 5.00E-04 | 4.85E-04 | 4.72E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.93: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.49E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 7.62E-05 | 7.91E-05 | 8.03E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 9.67E-05 | 9.90E-05 | 1.03E-04 | 1.08E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 1.07E-04 | 1.08E-04 | 1.12E-04 | 1.17E-04 | 1.22E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.49E-04 | 1.46E-04 | 1.46E-04 | 1.47E-04 | 1.51E-04 | 1.56E-04 | 1.63E-04 | 1.72E-04 | 1.81E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 1.91E-04 | 1.84E-04 | 1.80E-04 | 1.78E-04 | 1.77E-04 | 1.78E-04 | 1.82E-04 | 1.87E-04 | 1.94E-04 | 2.03E-04 | 2.15E-04 | 2.28E-04 |
| 190 | 2.55E-04 | 2.42E-04 | 2.32E-04 | 2.24E-04 | 2.17E-04 | 2.13E-04 | 2.10E-04 | 2.09E-04 | 2.11E-04 | 2.14E-04 | 2.19E-04 | 2.26E-04 |
| 210 | 2.76E-04 | 2.62E-04 | 2.50E-04 | 2.39E-04 | 2.31E-04 | 2.24E-04 | 2.20E-04 | 2.17E-04 | 2.16E-04 | 2.18E-04 | 2.21E-04 | 2.26E-04 |
| 220 | 2.87E-04 | 2.71E-04 | 2.59E-04 | 2.47E-04 | 2.38E-04 | 2.30E-04 | 2.24E-04 | 2.21E-04 | 2.19E-04 | 2.19E-04 | 2.22E-04 | 2.26E-04 |
| 290 | 3.62E-04 | 3.40E-04 | 3.20E-04 | 3.02E-04 | 2.86E-04 | 2.71E-04 | 2.58E-04 | 2.48E-04 | 2.39E-04 | 2.32E-04 | 2.28E-04 | 2.25E-04 |
| 400 | 4.80E-04 | 4.47E-04 | 4.18E-04 | 3.89E-04 | 3.62E-04 | 3.36E-04 | 3.13E-04 | 2.91E-04 | 2.72E-04 | 2.54E-04 | 2.39E-04 | 2.25E-04 |
| 500 | 5.88E-04 | 5.46E-04 | 5.07E-04 | 4.68E-04 | 4.31E-04 | 3.96E-04 | 3.63E-04 | 3.32E-04 | 3.03E-04 | 2.75E-04 | 2.50E-04 | 2.26E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.94: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.44E-05 | 6.58E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 7.39E-05 | 7.86E-05 | 8.03E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 8.96E-05 | 9.35E-05 | 1.00E-04 | 1.07E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 9.75E-05 | 9.99E-05 | 1.05E-04 | 1.13E-04 | 1.21E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.30E-04 | 1.26E-04 | 1.25E-04 | 1.27E-04 | 1.33E-04 | 1.41E-04 | 1.52E-04 | 1.66E-04 | 1.79E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 1.63E-04 | 1.53E-04 | 1.46E-04 | 1.42E-04 | 1.41E-04 | 1.43E-04 | 1.48E-04 | 1.57E-04 | 1.68E-04 | 1.82E-04 | 1.99E-04 | 2.19E-04 |
| 190 | 2.13E-04 | 1.94E-04 | 1.78E-04 | 1.65E-04 | 1.55E-04 | 1.48E-04 | 1.44E-04 | 1.43E-04 | 1.45E-04 | 1.49E-04 | 1.58E-04 | 1.69E-04 |
| 210 | 2.29E-04 | 2.08E-04 | 1.89E-04 | 1.73E-04 | 1.60E-04 | 1.50E-04 | 1.42E-04 | 1.38E-04 | 1.37E-04 | 1.39E-04 | 1.44E-04 | 1.52E-04 |
| 220 | 2.38E-04 | 2.15E-04 | 1.94E-04 | 1.77E-04 | 1.62E-04 | 1.50E-04 | 1.42E-04 | 1.36E-04 | 1.33E-04 | 1.34E-04 | 1.37E-04 | 1.43E-04 |
| 290 | 2.97E-04 | 2.64E-04 | 2.33E-04 | 2.05E-04 | 1.80E-04 | 1.57E-04 | 1.38E-04 | 1.22E-04 | 1.08E-04 | 9.77E-05 | 9.03E-05 | 8.59E-05 |
| 400 | 3.91E-04 | 3.42E-04 | 2.95E-04 | 2.51E-04 | 2.09E-04 | 1.71E-04 | 1.35E-04 | 1.03E-04 | 7.31E-05 | 4.68E-05 | 2.38E-05 | 6.16E-06 |
| 500 | 4.76E-04 | 4.13E-04 | 3.52E-04 | 2.93E-04 | 2.37E-04 | 1.85E-04 | 1.35E-04 | 8.93E-05 | 4.79E-05 | 1.48E-05 | 2.70E-05 | 6.64E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.95: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.38E-05 | 6.58E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 7.11E-05 | 7.78E-05 | 8.01E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 8.11E-05 | 8.66E-05 | 9.58E-05 | 1.06E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 8.62E-05 | 8.96E-05 | 9.68E-05 | 1.09E-04 | 1.20E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.07E-04 | 1.02E-04 | 1.01E-04 | 1.04E-04 | 1.11E-04 | 1.23E-04 | 1.39E-04 | 1.59E-04 | 1.77E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 1.29E-04 | 1.16E-04 | 1.05E-04 | 1.00E-04 | 9.86E-05 | 1.02E-04 | 1.09E-04 | 1.20E-04 | 1.36E-04 | 1.56E-04 | 1.81E-04 | 2.09E-04 |
| 190 | 1.63E-04 | 1.37E-04 | 1.14E-04 | 9.57E-05 | 8.13E-05 | 7.11E-05 | 6.51E-05 | 6.34E-05 | 6.60E-05 | 7.30E-05 | 8.43E-05 | 1.00E-04 |
| 210 | 1.75E-04 | 1.44E-04 | 1.17E-04 | 9.47E-05 | 7.61E-05 | 6.16E-05 | 5.12E-05 | 4.51E-05 | 4.33E-05 | 4.57E-05 | 5.26E-05 | 6.38E-05 |
| 220 | 1.80E-04 | 1.48E-04 | 1.19E-04 | 9.43E-05 | 7.35E-05 | 5.69E-05 | 4.45E-05 | 3.62E-05 | 3.21E-05 | 3.23E-05 | 3.69E-05 | 4.58E-05 |
| 290 | 2.21E-04 | 1.75E-04 | 1.31E-04 | 9.27E-05 | 5.81E-05 | 2.84E-05 | 6.77E-06 | 2.07E-05 | 4.17E-05 | 5.83E-05 | 7.02E-05 | 7.74E-05 |
| 400 | 2.87E-04 | 2.18E-04 | 1.54E-04 | 9.49E-05 | 4.35E-05 | 1.73E-05 | 6.17E-05 | 1.17E-04 | 1.66E-04 | 2.08E-04 | 2.45E-04 | 2.77E-04 |
| 500 | 3.47E-04 | 2.59E-04 | 1.76E-04 | 1.01E-04 | 4.15E-05 | 4.68E-05 | 1.27E-04 | 2.09E-04 | 2.82E-04 | 3.46E-04 | 4.06E-04 | 4.59E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.96: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.30E-05 | 6.58E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 6.78E-05 | 7.69E-05 | 8.01E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 7.14E-05 | 7.87E-05 | 9.11E-05 | 1.05E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 7.33E-05 | 7.77E-05 | 8.74E-05 | 1.03E-04 | 1.19E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 8.17E-05 | 7.47E-05 | 7.28E-05 | 7.70E-05 | 8.67E-05 | 1.02E-04 | 1.23E-04 | 1.50E-04 | 1.75E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 9.14E-05 | 7.30E-05 | 5.96E-05 | 5.21E-05 | 5.01E-05 | 5.38E-05 | 6.33E-05 | 7.86E-05 | 9.98E-05 | 1.27E-04 | 1.59E-04 | 1.98E-04 |
| 190 | 1.08E-04 | 7.29E-05 | 4.33E-05 | 1.97E-05 | 4.29E-06 | 1.33E-05 | 2.22E-05 | 2.53E-05 | 2.23E-05 | 1.35E-05 | 1.46E-06 | 2.16E-05 |
| 210 | 1.13E-04 | 7.35E-05 | 3.90E-05 | 1.20E-05 | 1.44E-05 | 3.54E-05 | 5.10E-05 | 6.02E-05 | 6.31E-05 | 6.00E-05 | 5.10E-05 | 3.61E-05 |
| 220 | 1.16E-04 | 7.39E-05 | 3.72E-05 | 9.52E-06 | 2.19E-05 | 4.68E-05 | 6.57E-05 | 7.78E-05 | 8.37E-05 | 8.35E-05 | 7.73E-05 | 6.53E-05 |
| 290 | 1.38E-04 | 7.86E-05 | 2.94E-05 | 2.71E-05 | 8.06E-05 | 1.29E-04 | 1.70E-04 | 2.02E-04 | 2.29E-04 | 2.49E-04 | 2.63E-04 | 2.71E-04 |
| 400 | 1.75E-04 | 9.15E-05 | 3.61E-05 | 8.35E-05 | 1.78E-04 | 2.61E-04 | 3.35E-04 | 4.00E-04 | 4.58E-04 | 5.10E-04 | 5.56E-04 | 5.95E-04 |
| 500 | 2.10E-04 | 1.07E-04 | 5.45E-05 | 1.39E-04 | 2.69E-04 | 3.82E-04 | 4.86E-04 | 5.80E-04 | 6.66E-04 | 7.47E-04 | 8.22E-04 | 8.91E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.97: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.21E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 6.41E-05 | 7.58E-05 | 8.02E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 6.05E-05 | 6.98E-05 | 8.60E-05 | 1.03E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 5.88E-05 | 6.45E-05 | 7.71E-05 | 9.68E-05 | 1.17E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 5.36E-05 | 4.43E-05 | 4.20E-05 | 4.70E-05 | 5.94E-05 | 7.91E-05 | 1.06E-04 | 1.41E-04 | 1.72E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 5.07E-05 | 2.71E-05 | 1.07E-05 | 2.58E-06 | 3.21E-06 | 1.95E-06 | 1.31E-05 | 3.24E-05 | 5.93E-05 | 9.37E-05 | 1.36E-04 | 1.84E-04 |
| 190 | 5.11E-05 | 1.35E-05 | 3.29E-05 | 6.94E-05 | 9.64E-05 | 1.15E-04 | 1.25E-04 | 1.28E-04 | 1.24E-04 | 1.12E-04 | 9.23E-05 | 6.55E-05 |
| 210 | 5.24E-05 | 1.46E-05 | 4.86E-05 | 9.39E-05 | 1.29E-04 | 1.54E-04 | 1.72E-04 | 1.83E-04 | 1.85E-04 | 1.81E-04 | 1.69E-04 | 1.49E-04 |
| 220 | 5.32E-05 | 1.62E-05 | 5.67E-05 | 1.06E-04 | 1.45E-04 | 1.74E-04 | 1.96E-04 | 2.10E-04 | 2.16E-04 | 2.15E-04 | 2.07E-04 | 1.91E-04 |
| 290 | 6.23E-05 | 3.75E-05 | 1.15E-04 | 1.93E-04 | 2.58E-04 | 3.13E-04 | 3.60E-04 | 4.00E-04 | 4.32E-04 | 4.57E-04 | 4.74E-04 | 4.84E-04 |
| 400 | 8.43E-05 | 8.31E-05 | 2.09E-04 | 3.31E-04 | 4.36E-04 | 5.32E-04 | 6.20E-04 | 6.99E-04 | 7.72E-04 | 8.37E-04 | 8.95E-04 | 9.45E-04 |
| 500 | 1.09E-04 | 1.28E-04 | 2.96E-04 | 4.57E-04 | 5.99E-04 | 7.32E-04 | 8.55E-04 | 9.72E-04 | 1.08E-03 | 1.18E-03 | 1.28E-03 | 1.36E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.98: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.13E-05 | 6.57E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 6.02E-05 | 7.47E-05 | 8.00E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 4.88E-05 | 6.01E-05 | 7.99E-05 | 1.02E-04 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 4.33E-05 | 5.00E-05 | 6.54E-05 | 8.99E-05 | 1.15E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 2.43E-05 | 1.21E-05 | 8.86E-06 | 1.46E-05 | 2.97E-05 | 5.40E-05 | 8.75E-05 | 1.30E-04 | 1.69E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 1.69E-05 | 2.26E-05 | 4.55E-05 | 5.87E-05 | 6.23E-05 | 5.65E-05 | 4.15E-05 | 1.75E-05 | 1.55E-05 | 5.78E-05 | 1.09E-04 | 1.70E-04 |
| 190 | 3.67E-05 | 7.98E-05 | 1.32E-04 | 1.73E-04 | 2.03E-04 | 2.25E-04 | 2.37E-04 | 2.40E-04 | 2.33E-04 | 2.18E-04 | 1.94E-04 | 1.61E-04 |
| 210 | 4.65E-05 | 9.95E-05 | 1.61E-04 | 2.11E-04 | 2.51E-04 | 2.81E-04 | 3.02E-04 | 3.14E-04 | 3.17E-04 | 3.11E-04 | 2.95E-04 | 2.71E-04 |
| 220 | 5.17E-05 | 1.09E-04 | 1.76E-04 | 2.30E-04 | 2.74E-04 | 3.09E-04 | 3.35E-04 | 3.51E-04 | 3.58E-04 | 3.57E-04 | 3.46E-04 | 3.26E-04 |
| 290 | 9.02E-05 | 1.80E-04 | 2.78E-04 | 3.64E-04 | 4.40E-04 | 5.06E-04 | 5.63E-04 | 6.11E-04 | 6.50E-04 | 6.80E-04 | 7.01E-04 | 7.13E-04 |
| 400 | 1.55E-04 | 2.92E-04 | 4.40E-04 | 5.75E-04 | 7.01E-04 | 8.16E-04 | 9.22E-04 | 1.02E-03 | 1.11E-03 | 1.19E-03 | 1.26E-03 | 1.32E-03 |
| 500 | 2.15E-04 | 3.94E-04 | 5.88E-04 | 7.68E-04 | 9.38E-04 | 1.10E-03 | 1.25E-03 | 1.39E-03 | 1.53E-03 | 1.65E-03 | 1.77E-03 | 1.87E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.99: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.02E-05 | 6.57E-05 | 6.57E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 | 6.59E-05 |
| 20 | 5.58E-05 | 7.33E-05 | 8.00E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 | 8.04E-05 |
| 40 | 3.61E-05 | 4.96E-05 | 7.34E-05 | 9.97E-05 | 1.09E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 1.10E-04 |
| 50 | 2.67E-05 | 3.45E-05 | 5.31E-05 | 8.24E-05 | 1.13E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.24E-04 |
| 90 | 1.44E-05 | 2.29E-05 | 2.68E-05 | 1.97E-05 | 1.91E-06 | 2.71E-05 | 6.73E-05 | 1.18E-04 | 1.66E-04 | 1.83E-04 | 1.83E-04 | 1.83E-04 |
| 130 | 5.06E-05 | 8.28E-05 | 1.08E-04 | 1.23E-04 | 1.26E-04 | 1.19E-04 | 1.00E-04 | 7.13E-05 | 3.13E-05 | 1.95E-05 | 8.14E-05 | 1.54E-04 |
| 190 | 1.11E-04 | 1.75E-04 | 2.32E-04 | 2.79E-04 | 3.15E-04 | 3.40E-04 | 3.54E-04 | 3.57E-04 | 3.49E-04 | 3.31E-04 | 3.02E-04 | 2.62E-04 |
| 210 | 1.31E-04 | 2.05E-04 | 2.74E-04 | 3.31E-04 | 3.78E-04 | 4.13E-04 | 4.38E-04 | 4.52E-04 | 4.56E-04 | 4.48E-04 | 4.30E-04 | 4.00E-04 |
| 220 | 1.42E-04 | 2.21E-04 | 2.94E-04 | 3.58E-04 | 4.09E-04 | 4.50E-04 | 4.80E-04 | 5.00E-04 | 5.09E-04 | 5.07E-04 | 4.94E-04 | 4.70E-04 |
| 290 | 2.14E-04 | 3.29E-04 | 4.39E-04 | 5.40E-04 | 6.30E-04 | 7.08E-04 | 7.76E-04 | 8.34E-04 | 8.80E-04 | 9.16E-04 | 9.41E-04 | 9.56E-04 |
| 400 | 3.29E-04 | 5.00E-04 | 6.68E-04 | 8.28E-04 | 9.76E-04 | 1.11E-03 | 1.24E-03 | 1.36E-03 | 1.46E-03 | 1.56E-03 | 1.65E-03 | 1.72E-03 |
| 500 | 4.35E-04 | 6.55E-04 | 8.76E-04 | 1.09E-03 | 1.29E-03 | 1.48E-03 | 1.66E-03 | 1.83E-03 | 2.00E-03 | 2.15E-03 | 2.29E-03 | 2.41E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.100: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 | 5.43E-04 |
| 190 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 | 7.41E-04 |
| 210 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 | 8.07E-04 |
| 220 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 | 8.40E-04 |
| 290 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 | 1.07E-03 |
| 400 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 | 1.43E-03 |
| 500 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 | 1.76E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.101: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.46E-04 | 2.46E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.78E-04 | 2.78E-04 | 2.78E-04 | 2.79E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 4.07E-04 | 4.06E-04 | 4.06E-04 | 4.06E-04 | 4.07E-04 | 4.08E-04 | 4.09E-04 | 4.10E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 5.36E-04 | 5.35E-04 | 5.34E-04 | 5.34E-04 | 5.34E-04 | 5.34E-04 | 5.34E-04 | 5.35E-04 | 5.36E-04 | 5.37E-04 | 5.39E-04 | 5.41E-04 |
| 190 | 7.30E-04 | 7.28E-04 | 7.26E-04 | 7.25E-04 | 7.24E-04 | 7.24E-04 | 7.23E-04 | 7.23E-04 | 7.23E-04 | 7.24E-04 | 7.25E-04 | 7.26E-04 |
| 210 | 7.95E-04 | 7.92E-04 | 7.90E-04 | 7.89E-04 | 7.88E-04 | 7.87E-04 | 7.86E-04 | 7.86E-04 | 7.86E-04 | 7.86E-04 | 7.86E-04 | 7.87E-04 |
| 220 | 8.27E-04 | 8.24E-04 | 8.22E-04 | 8.21E-04 | 8.20E-04 | 8.18E-04 | 8.18E-04 | 8.17E-04 | 8.17E-04 | 8.17E-04 | 8.17E-04 | 8.18E-04 |
| 290 | 1.05E-03 | 1.05E-03 | 1.05E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.04E-03 | 1.03E-03 | 1.03E-03 | 1.03E-03 |
| 400 | 1.41E-03 | 1.40E-03 | 1.40E-03 | 1.40E-03 | 1.39E-03 | 1.39E-03 | 1.39E-03 | 1.38E-03 | 1.38E-03 | 1.38E-03 | 1.38E-03 | 1.37E-03 |
| 500 | 1.74E-03 | 1.73E-03 | 1.72E-03 | 1.72E-03 | 1.71E-03 | 1.71E-03 | 1.70E-03 | 1.70E-03 | 1.69E-03 | 1.69E-03 | 1.69E-03 | 1.68E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.102: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.80E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.40E-04 | 2.41E-04 | 2.44E-04 | 2.46E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.70E-04 | 2.71E-04 | 2.73E-04 | 2.76E-04 | 2.79E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 3.91E-04 | 3.90E-04 | 3.90E-04 | 3.91E-04 | 3.93E-04 | 3.96E-04 | 4.00E-04 | 4.05E-04 | 4.10E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 5.13E-04 | 5.09E-04 | 5.07E-04 | 5.06E-04 | 5.05E-04 | 5.06E-04 | 5.08E-04 | 5.11E-04 | 5.15E-04 | 5.21E-04 | 5.27E-04 | 5.35E-04 |
| 190 | 6.95E-04 | 6.89E-04 | 6.83E-04 | 6.78E-04 | 6.75E-04 | 6.72E-04 | 6.71E-04 | 6.70E-04 | 6.71E-04 | 6.73E-04 | 6.76E-04 | 6.80E-04 |
| 210 | 7.56E-04 | 7.49E-04 | 7.42E-04 | 7.36E-04 | 7.31E-04 | 7.28E-04 | 7.25E-04 | 7.24E-04 | 7.23E-04 | 7.24E-04 | 7.26E-04 | 7.29E-04 |
| 220 | 7.87E-04 | 7.79E-04 | 7.71E-04 | 7.65E-04 | 7.59E-04 | 7.55E-04 | 7.52E-04 | 7.50E-04 | 7.49E-04 | 7.50E-04 | 7.51E-04 | 7.54E-04 |
| 290 | 1.00E-03 | 9.88E-04 | 9.77E-04 | 9.67E-04 | 9.57E-04 | 9.49E-04 | 9.42E-04 | 9.36E-04 | 9.32E-04 | 9.28E-04 | 9.26E-04 | 9.24E-04 |
| 400 | 1.34E-03 | 1.32E-03 | 1.30E-03 | 1.28E-03 | 1.27E-03 | 1.25E-03 | 1.24E-03 | 1.23E-03 | 1.22E-03 | 1.21E-03 | 1.20E-03 | 1.19E-03 |
| 500 | 1.64E-03 | 1.62E-03 | 1.59E-03 | 1.57E-03 | 1.55E-03 | 1.53E-03 | 1.51E-03 | 1.50E-03 | 1.48E-03 | 1.46E-03 | 1.45E-03 | 1.44E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.103: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.48E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.77E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.31E-04 | 2.34E-04 | 2.40E-04 | 2.45E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.58E-04 | 2.60E-04 | 2.64E-04 | 2.71E-04 | 2.78E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 3.67E-04 | 3.64E-04 | 3.63E-04 | 3.65E-04 | 3.69E-04 | 3.76E-04 | 3.86E-04 | 3.97E-04 | 4.08E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 4.76E-04 | 4.68E-04 | 4.62E-04 | 4.59E-04 | 4.59E-04 | 4.61E-04 | 4.65E-04 | 4.72E-04 | 4.81E-04 | 4.93E-04 | 5.07E-04 | 5.24E-04 |
| 190 | 6.40E-04 | 6.25E-04 | 6.12E-04 | 6.01E-04 | 5.93E-04 | 5.87E-04 | 5.84E-04 | 5.84E-04 | 5.86E-04 | 5.90E-04 | 5.97E-04 | 6.06E-04 |
| 210 | 6.95E-04 | 6.77E-04 | 6.61E-04 | 6.48E-04 | 6.38E-04 | 6.30E-04 | 6.24E-04 | 6.21E-04 | 6.20E-04 | 6.22E-04 | 6.27E-04 | 6.33E-04 |
| 220 | 7.22E-04 | 7.03E-04 | 6.86E-04 | 6.72E-04 | 6.60E-04 | 6.51E-04 | 6.44E-04 | 6.40E-04 | 6.38E-04 | 6.38E-04 | 6.42E-04 | 6.47E-04 |
| 290 | 9.14E-04 | 8.86E-04 | 8.61E-04 | 8.38E-04 | 8.18E-04 | 8.00E-04 | 7.84E-04 | 7.71E-04 | 7.60E-04 | 7.52E-04 | 7.46E-04 | 7.43E-04 |
| 400 | 1.22E-03 | 1.17E-03 | 1.14E-03 | 1.10E-03 | 1.07E-03 | 1.03E-03 | 1.00E-03 | 9.77E-04 | 9.53E-04 | 9.31E-04 | 9.12E-04 | 8.95E-04 |
| 500 | 1.49E-03 | 1.44E-03 | 1.39E-03 | 1.34E-03 | 1.29E-03 | 1.25E-03 | 1.20E-03 | 1.17E-03 | 1.13E-03 | 1.09E-03 | 1.06E-03 | 1.03E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.104: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.47E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.73E-04 | 1.79E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.18E-04 | 2.24E-04 | 2.34E-04 | 2.44E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.41E-04 | 2.44E-04 | 2.52E-04 | 2.64E-04 | 2.76E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 3.33E-04 | 3.27E-04 | 3.26E-04 | 3.30E-04 | 3.37E-04 | 3.49E-04 | 3.66E-04 | 3.87E-04 | 4.05E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 4.25E-04 | 4.11E-04 | 4.01E-04 | 3.96E-04 | 3.94E-04 | 3.98E-04 | 4.05E-04 | 4.17E-04 | 4.34E-04 | 4.55E-04 | 4.80E-04 | 5.09E-04 |
| 190 | 5.63E-04 | 5.36E-04 | 5.13E-04 | 4.95E-04 | 4.81E-04 | 4.71E-04 | 4.65E-04 | 4.64E-04 | 4.67E-04 | 4.75E-04 | 4.87E-04 | 5.03E-04 |
| 210 | 6.10E-04 | 5.78E-04 | 5.51E-04 | 5.28E-04 | 5.09E-04 | 4.95E-04 | 4.85E-04 | 4.80E-04 | 4.79E-04 | 4.82E-04 | 4.90E-04 | 5.01E-04 |
| 220 | 6.33E-04 | 5.99E-04 | 5.70E-04 | 5.45E-04 | 5.24E-04 | 5.07E-04 | 4.95E-04 | 4.88E-04 | 4.84E-04 | 4.85E-04 | 4.91E-04 | 5.01E-04 |
| 290 | 7.95E-04 | 7.46E-04 | 7.02E-04 | 6.61E-04 | 6.25E-04 | 5.93E-04 | 5.66E-04 | 5.43E-04 | 5.24E-04 | 5.10E-04 | 5.00E-04 | 4.94E-04 |
| 400 | 1.05E-03 | 9.78E-04 | 9.09E-04 | 8.45E-04 | 7.85E-04 | 7.29E-04 | 6.78E-04 | 6.31E-04 | 5.88E-04 | 5.49E-04 | 5.15E-04 | 4.86E-04 |
| 500 | 1.28E-03 | 1.19E-03 | 1.10E-03 | 1.01E-03 | 9.31E-04 | 8.53E-04 | 7.80E-04 | 7.11E-04 | 6.47E-04 | 5.86E-04 | 5.30E-04 | 4.79E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.105: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.47E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.68E-04 | 1.78E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 2.03E-04 | 2.11E-04 | 2.26E-04 | 2.42E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 2.20E-04 | 2.25E-04 | 2.37E-04 | 2.55E-04 | 2.74E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 2.90E-04 | 2.81E-04 | 2.80E-04 | 2.85E-04 | 2.97E-04 | 3.16E-04 | 3.41E-04 | 3.73E-04 | 4.02E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 3.61E-04 | 3.39E-04 | 3.24E-04 | 3.15E-04 | 3.14E-04 | 3.19E-04 | 3.30E-04 | 3.49E-04 | 3.74E-04 | 4.06E-04 | 4.45E-04 | 4.90E-04 |
| 190 | 4.68E-04 | 4.25E-04 | 3.90E-04 | 3.61E-04 | 3.39E-04 | 3.24E-04 | 3.16E-04 | 3.14E-04 | 3.19E-04 | 3.30E-04 | 3.49E-04 | 3.74E-04 |
| 210 | 5.04E-04 | 4.54E-04 | 4.12E-04 | 3.77E-04 | 3.48E-04 | 3.26E-04 | 3.11E-04 | 3.02E-04 | 3.00E-04 | 3.05E-04 | 3.17E-04 | 3.35E-04 |
| 220 | 5.22E-04 | 4.69E-04 | 4.23E-04 | 3.85E-04 | 3.53E-04 | 3.27E-04 | 3.08E-04 | 2.96E-04 | 2.91E-04 | 2.93E-04 | 3.01E-04 | 3.16E-04 |
| 290 | 6.47E-04 | 5.70E-04 | 5.02E-04 | 4.40E-04 | 3.84E-04 | 3.35E-04 | 2.93E-04 | 2.57E-04 | 2.28E-04 | 2.06E-04 | 1.91E-04 | 1.82E-04 |
| 400 | 8.45E-04 | 7.31E-04 | 6.26E-04 | 5.27E-04 | 4.35E-04 | 3.50E-04 | 2.71E-04 | 1.99E-04 | 1.34E-04 | 7.66E-05 | 2.70E-05 | 1.80E-05 |
| 500 | 1.02E-03 | 8.78E-04 | 7.40E-04 | 6.08E-04 | 4.83E-04 | 3.66E-04 | 2.55E-04 | 1.52E-04 | 6.03E-05 | 2.62E-05 | 1.10E-04 | 1.96E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.106: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.45E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.62E-04 | 1.76E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 1.83E-04 | 1.95E-04 | 2.17E-04 | 2.39E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 1.94E-04 | 2.01E-04 | 2.18E-04 | 2.45E-04 | 2.71E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 2.39E-04 | 2.27E-04 | 2.25E-04 | 2.32E-04 | 2.49E-04 | 2.75E-04 | 3.11E-04 | 3.56E-04 | 3.97E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 2.84E-04 | 2.53E-04 | 2.32E-04 | 2.20E-04 | 2.17E-04 | 2.24E-04 | 2.41E-04 | 2.67E-04 | 3.03E-04 | 3.49E-04 | 4.04E-04 | 4.68E-04 |
| 190 | 3.53E-04 | 2.93E-04 | 2.44E-04 | 2.03E-04 | 1.72E-04 | 1.50E-04 | 1.38E-04 | 1.35E-04 | 1.42E-04 | 1.59E-04 | 1.85E-04 | 2.20E-04 |
| 210 | 3.76E-04 | 3.07E-04 | 2.48E-04 | 1.98E-04 | 1.57E-04 | 1.26E-04 | 1.04E-04 | 9.18E-05 | 8.90E-05 | 9.57E-05 | 1.12E-04 | 1.38E-04 |
| 220 | 3.88E-04 | 3.14E-04 | 2.50E-04 | 1.95E-04 | 1.50E-04 | 1.14E-04 | 8.76E-05 | 7.04E-05 | 6.27E-05 | 6.45E-05 | 7.59E-05 | 9.70E-05 |
| 290 | 4.70E-04 | 3.63E-04 | 2.67E-04 | 1.80E-04 | 1.03E-04 | 3.74E-05 | 1.99E-05 | 7.11E-05 | 1.15E-04 | 1.50E-04 | 1.73E-04 | 1.87E-04 |
| 400 | 6.00E-04 | 4.42E-04 | 2.96E-04 | 1.62E-04 | 4.71E-05 | 6.82E-05 | 1.91E-04 | 3.06E-04 | 4.07E-04 | 4.96E-04 | 5.73E-04 | 6.40E-04 |
| 500 | 7.18E-04 | 5.15E-04 | 3.26E-04 | 1.53E-04 | 3.70E-05 | 1.73E-04 | 3.55E-04 | 5.23E-04 | 6.74E-04 | 8.12E-04 | 9.38E-04 | 1.05E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.107: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.44E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.54E-04 | 1.74E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 1.61E-04 | 1.77E-04 | 2.06E-04 | 2.36E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 1.65E-04 | 1.75E-04 | 1.97E-04 | 2.32E-04 | 2.67E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 1.80E-04 | 1.64E-04 | 1.61E-04 | 1.71E-04 | 1.93E-04 | 2.29E-04 | 2.77E-04 | 3.37E-04 | 3.92E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 1.97E-04 | 1.55E-04 | 1.27E-04 | 1.11E-04 | 1.07E-04 | 1.17E-04 | 1.39E-04 | 1.74E-04 | 2.22E-04 | 2.83E-04 | 3.56E-04 | 4.42E-04 |
| 190 | 2.24E-04 | 1.45E-04 | 7.93E-05 | 2.72E-05 | 1.38E-05 | 4.35E-05 | 6.16E-05 | 6.64E-05 | 5.80E-05 | 3.66E-05 | 2.86E-06 | 4.46E-05 |
| 210 | 2.33E-04 | 1.42E-04 | 6.53E-05 | 8.98E-06 | 5.19E-05 | 9.75E-05 | 1.29E-04 | 1.47E-04 | 1.52E-04 | 1.43E-04 | 1.21E-04 | 8.67E-05 |
| 220 | 2.38E-04 | 1.41E-04 | 5.88E-05 | 1.27E-05 | 7.21E-05 | 1.25E-04 | 1.63E-04 | 1.88E-04 | 1.99E-04 | 1.96E-04 | 1.81E-04 | 1.53E-04 |
| 290 | 2.73E-04 | 1.35E-04 | 2.74E-05 | 9.85E-05 | 2.17E-04 | 3.18E-04 | 4.03E-04 | 4.73E-04 | 5.29E-04 | 5.71E-04 | 6.01E-04 | 6.17E-04 |
| 400 | 3.31E-04 | 1.36E-04 | 5.68E-05 | 2.51E-04 | 4.50E-04 | 6.24E-04 | 7.81E-04 | 9.22E-04 | 1.05E-03 | 1.16E-03 | 1.26E-03 | 1.35E-03 |
| 500 | 3.86E-04 | 1.45E-04 | 1.16E-04 | 3.92E-04 | 6.62E-04 | 9.03E-04 | 1.13E-03 | 1.33E-03 | 1.52E-03 | 1.70E-03 | 1.86E-03 | 2.01E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.108: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.42E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.46E-04 | 1.72E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 1.36E-04 | 1.57E-04 | 1.94E-04 | 2.33E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 1.32E-04 | 1.44E-04 | 1.73E-04 | 2.18E-04 | 2.64E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 1.15E-04 | 9.49E-05 | 9.08E-05 | 1.03E-04 | 1.32E-04 | 1.77E-04 | 2.38E-04 | 3.15E-04 | 3.86E-04 | 4.11E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 1.02E-04 | 4.90E-05 | 1.35E-05 | 8.12E-06 | 1.30E-05 | 2.66E-06 | 2.55E-05 | 7.00E-05 | 1.31E-04 | 2.09E-04 | 3.03E-04 | 4.12E-04 |
| 190 | 8.97E-05 | 1.80E-05 | 9.88E-05 | 1.75E-04 | 2.32E-04 | 2.70E-04 | 2.92E-04 | 2.96E-04 | 2.85E-04 | 2.56E-04 | 2.12E-04 | 1.51E-04 |
| 210 | 8.81E-05 | 3.30E-05 | 1.38E-04 | 2.32E-04 | 3.06E-04 | 3.61E-04 | 3.98E-04 | 4.19E-04 | 4.24E-04 | 4.12E-04 | 3.83E-04 | 3.39E-04 |
| 220 | 8.77E-05 | 4.21E-05 | 1.58E-04 | 2.61E-04 | 3.42E-04 | 4.06E-04 | 4.52E-04 | 4.81E-04 | 4.93E-04 | 4.90E-04 | 4.69E-04 | 4.33E-04 |
| 290 | 9.35E-05 | 1.14E-04 | 2.99E-04 | 4.62E-04 | 6.01E-04 | 7.22E-04 | 8.25E-04 | 9.11E-04 | 9.81E-04 | 1.03E-03 | 1.07E-03 | 1.09E-03 |
| 400 | 1.25E-04 | 2.36E-04 | 5.22E-04 | 7.78E-04 | 1.01E-03 | 1.22E-03 | 1.41E-03 | 1.59E-03 | 1.75E-03 | 1.89E-03 | 2.02E-03 | 2.13E-03 |
| 500 | 1.66E-04 | 3.51E-04 | 7.25E-04 | 1.07E-03 | 1.38E-03 | 1.67E-03 | 1.95E-03 | 2.20E-03 | 2.44E-03 | 2.67E-03 | 2.88E-03 | 3.07E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.109: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.37E-04 | 1.69E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 1.09E-04 | 1.35E-04 | 1.80E-04 | 2.29E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 9.60E-05 | 1.12E-04 | 1.47E-04 | 2.03E-04 | 2.59E-04 | 2.79E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 4.74E-05 | 2.08E-05 | 1.51E-05 | 2.95E-05 | 6.46E-05 | 1.20E-04 | 1.96E-04 | 2.91E-04 | 3.80E-04 | 4.10E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 3.17E-05 | 6.57E-05 | 1.14E-04 | 1.41E-04 | 1.47E-04 | 1.33E-04 | 9.75E-05 | 4.24E-05 | 3.25E-05 | 1.28E-04 | 2.44E-04 | 3.79E-04 |
| 190 | 9.47E-05 | 2.03E-04 | 3.14E-04 | 4.02E-04 | 4.69E-04 | 5.14E-04 | 5.40E-04 | 5.45E-04 | 5.30E-04 | 4.94E-04 | 4.39E-04 | 3.63E-04 |
| 210 | 1.20E-04 | 2.50E-04 | 3.81E-04 | 4.90E-04 | 5.76E-04 | 6.42E-04 | 6.87E-04 | 7.12E-04 | 7.17E-04 | 7.02E-04 | 6.67E-04 | 6.12E-04 |
| 220 | 1.34E-04 | 2.73E-04 | 4.15E-04 | 5.33E-04 | 6.30E-04 | 7.05E-04 | 7.61E-04 | 7.96E-04 | 8.11E-04 | 8.06E-04 | 7.81E-04 | 7.36E-04 |
| 290 | 2.28E-04 | 4.36E-04 | 6.50E-04 | 8.39E-04 | 1.01E-03 | 1.15E-03 | 1.28E-03 | 1.38E-03 | 1.47E-03 | 1.53E-03 | 1.58E-03 | 1.60E-03 |
| 400 | 3.80E-04 | 6.94E-04 | 1.02E-03 | 1.32E-03 | 1.60E-03 | 1.85E-03 | 2.09E-03 | 2.31E-03 | 2.50E-03 | 2.68E-03 | 2.83E-03 | 2.97E-03 |
| 500 | 5.20E-04 | 9.29E-04 | 1.36E-03 | 1.76E-03 | 2.13E-03 | 2.49E-03 | 2.83E-03 | 3.14E-03 | 3.44E-03 | 3.72E-03 | 3.97E-03 | 4.21E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.110: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.37E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 | 1.49E-04 |
| 20 | 1.26E-04 | 1.66E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 | 1.82E-04 |
| 40 | 8.05E-05 | 1.12E-04 | 1.66E-04 | 2.25E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 | 2.47E-04 |
| 50 | 5.80E-05 | 7.66E-05 | 1.19E-04 | 1.86E-04 | 2.54E-04 | 2.79E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 | 2.80E-04 |
| 90 | 3.80E-05 | 5.93E-05 | 6.61E-05 | 4.84E-05 | 6.67E-06 | 5.95E-05 | 1.50E-04 | 2.65E-04 | 3.73E-04 | 4.10E-04 | 4.11E-04 | 4.11E-04 |
| 130 | 1.27E-04 | 1.99E-04 | 2.54E-04 | 2.84E-04 | 2.90E-04 | 2.72E-04 | 2.30E-04 | 1.63E-04 | 7.25E-05 | 4.21E-05 | 1.81E-04 | 3.44E-04 |
| 190 | 2.67E-04 | 4.10E-04 | 5.37E-04 | 6.39E-04 | 7.18E-04 | 7.72E-04 | 8.02E-04 | 8.07E-04 | 7.89E-04 | 7.47E-04 | 6.80E-04 | 5.89E-04 |
| 210 | 3.15E-04 | 4.80E-04 | 6.31E-04 | 7.58E-04 | 8.60E-04 | 9.38E-04 | 9.92E-04 | 1.02E-03 | 1.03E-03 | 1.01E-03 | 9.67E-04 | 9.01E-04 |
| 220 | 3.38E-04 | 5.15E-04 | 6.78E-04 | 8.17E-04 | 9.31E-04 | 1.02E-03 | 1.09E-03 | 1.13E-03 | 1.15E-03 | 1.14E-03 | 1.11E-03 | 1.06E-03 |
| 290 | 5.04E-04 | 7.62E-04 | 1.01E-03 | 1.23E-03 | 1.43E-03 | 1.60E-03 | 1.75E-03 | 1.88E-03 | 1.98E-03 | 2.06E-03 | 2.12E-03 | 2.15E-03 |
| 400 | 7.66E-04 | 1.15E-03 | 1.53E-03 | 1.88E-03 | 2.21E-03 | 2.52E-03 | 2.80E-03 | 3.06E-03 | 3.30E-03 | 3.51E-03 | 3.70E-03 | 3.86E-03 |
| 500 | 1.00E-03 | 1.50E-03 | 2.00E-03 | 2.48E-03 | 2.93E-03 | 3.35E-03 | 3.76E-03 | 4.14E-03 | 4.49E-03 | 4.83E-03 | 5.13E-03 | 5.42E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.111: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.0 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 | 1.84E-04 |
| 190 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 |
| 210 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 | 2.67E-04 |
| 220 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 | 2.77E-04 |
| 290 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 | 3.51E-04 |
| 400 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 | 4.67E-04 |
| 500 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 | 5.72E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.112: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 7.11E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 9.06E-05 | 9.08E-05 | 9.11E-05 | 9.13E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 1.00E-04 | 1.01E-04 | 1.01E-04 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.41E-04 | 1.41E-04 | 1.41E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.81E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.80E-04 | 1.81E-04 | 1.81E-04 | 1.81E-04 | 1.82E-04 | 1.82E-04 | 1.83E-04 |
| 190 | 2.41E-04 | 2.41E-04 | 2.41E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.41E-04 |
| 210 | 2.62E-04 | 2.61E-04 | 2.61E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 | 2.60E-04 |
| 220 | 2.72E-04 | 2.71E-04 | 2.71E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 | 2.70E-04 |
| 290 | 3.44E-04 | 3.43E-04 | 3.42E-04 | 3.41E-04 | 3.41E-04 | 3.40E-04 | 3.39E-04 | 3.39E-04 | 3.39E-04 | 3.39E-04 | 3.38E-04 | 3.38E-04 |
| 400 | 4.57E-04 | 4.55E-04 | 4.54E-04 | 4.53E-04 | 4.52E-04 | 4.51E-04 | 4.50E-04 | 4.49E-04 | 4.48E-04 | 4.47E-04 | 4.47E-04 | 4.46E-04 |
| 500 | 5.60E-04 | 5.58E-04 | 5.57E-04 | 5.55E-04 | 5.53E-04 | 5.52E-04 | 5.50E-04 | 5.49E-04 | 5.48E-04 | 5.47E-04 | 5.46E-04 | 5.45E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.113: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.4 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.12E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 7.03E-05 | 7.11E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 8.83E-05 | 8.90E-05 | 9.01E-05 | 9.10E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 9.74E-05 | 9.79E-05 | 9.88E-05 | 1.00E-04 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.34E-04 | 1.34E-04 | 1.34E-04 | 1.35E-04 | 1.36E-04 | 1.37E-04 | 1.38E-04 | 1.40E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.71E-04 | 1.71E-04 | 1.70E-04 | 1.70E-04 | 1.70E-04 | 1.70E-04 | 1.71E-04 | 1.72E-04 | 1.74E-04 | 1.76E-04 | 1.78E-04 | 1.81E-04 |
| 190 | 2.28E-04 | 2.26E-04 | 2.24E-04 | 2.23E-04 | 2.22E-04 | 2.22E-04 | 2.21E-04 | 2.22E-04 | 2.22E-04 | 2.23E-04 | 2.24E-04 | 2.26E-04 |
| 210 | 2.47E-04 | 2.44E-04 | 2.42E-04 | 2.41E-04 | 2.40E-04 | 2.39E-04 | 2.38E-04 | 2.38E-04 | 2.38E-04 | 2.39E-04 | 2.39E-04 | 2.41E-04 |
| 220 | 2.56E-04 | 2.54E-04 | 2.52E-04 | 2.50E-04 | 2.48E-04 | 2.47E-04 | 2.47E-04 | 2.46E-04 | 2.46E-04 | 2.46E-04 | 2.47E-04 | 2.48E-04 |
| 290 | 3.22E-04 | 3.19E-04 | 3.16E-04 | 3.13E-04 | 3.10E-04 | 3.08E-04 | 3.06E-04 | 3.04E-04 | 3.03E-04 | 3.02E-04 | 3.01E-04 | 3.01E-04 |
| 400 | 4.27E-04 | 4.22E-04 | 4.17E-04 | 4.12E-04 | 4.08E-04 | 4.03E-04 | 4.00E-04 | 3.96E-04 | 3.93E-04 | 3.90E-04 | 3.87E-04 | 3.85E-04 |
| 500 | 5.23E-04 | 5.16E-04 | 5.09E-04 | 5.03E-04 | 4.97E-04 | 4.91E-04 | 4.85E-04 | 4.80E-04 | 4.75E-04 | 4.70E-04 | 4.66E-04 | 4.62E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.114: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.09E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 6.91E-05 | 7.07E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 8.45E-05 | 8.61E-05 | 8.84E-05 | 9.06E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 9.23E-05 | 9.35E-05 | 9.55E-05 | 9.81E-05 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.24E-04 | 1.24E-04 | 1.24E-04 | 1.25E-04 | 1.27E-04 | 1.30E-04 | 1.33E-04 | 1.37E-04 | 1.41E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.56E-04 | 1.54E-04 | 1.53E-04 | 1.53E-04 | 1.53E-04 | 1.54E-04 | 1.56E-04 | 1.59E-04 | 1.62E-04 | 1.66E-04 | 1.71E-04 | 1.77E-04 |
| 190 | 2.05E-04 | 2.01E-04 | 1.98E-04 | 1.95E-04 | 1.93E-04 | 1.92E-04 | 1.91E-04 | 1.91E-04 | 1.92E-04 | 1.94E-04 | 1.97E-04 | 2.00E-04 |
| 210 | 2.21E-04 | 2.17E-04 | 2.12E-04 | 2.09E-04 | 2.06E-04 | 2.04E-04 | 2.03E-04 | 2.02E-04 | 2.03E-04 | 2.04E-04 | 2.06E-04 | 2.08E-04 |
| 220 | 2.30E-04 | 2.25E-04 | 2.20E-04 | 2.16E-04 | 2.13E-04 | 2.10E-04 | 2.09E-04 | 2.08E-04 | 2.08E-04 | 2.08E-04 | 2.10E-04 | 2.12E-04 |
| 290 | 2.87E-04 | 2.80E-04 | 2.73E-04 | 2.66E-04 | 2.60E-04 | 2.55E-04 | 2.51E-04 | 2.47E-04 | 2.44E-04 | 2.42E-04 | 2.41E-04 | 2.40E-04 |
| 400 | 3.79E-04 | 3.67E-04 | 3.56E-04 | 3.45E-04 | 3.35E-04 | 3.26E-04 | 3.17E-04 | 3.09E-04 | 3.02E-04 | 2.95E-04 | 2.90E-04 | 2.85E-04 |
| 500 | 4.63E-04 | 4.48E-04 | 4.32E-04 | 4.18E-04 | 4.04E-04 | 3.91E-04 | 3.78E-04 | 3.66E-04 | 3.55E-04 | 3.45E-04 | 3.35E-04 | 3.26E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.115: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.05E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 6.74E-05 | 7.03E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 7.92E-05 | 8.21E-05 | 8.61E-05 | 9.00E-05 | 9.13E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 8.53E-05 | 8.74E-05 | 9.08E-05 | 9.55E-05 | 1.00E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 1.10E-04 | 1.09E-04 | 1.10E-04 | 1.12E-04 | 1.15E-04 | 1.20E-04 | 1.26E-04 | 1.34E-04 | 1.40E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.35E-04 | 1.32E-04 | 1.30E-04 | 1.29E-04 | 1.30E-04 | 1.32E-04 | 1.35E-04 | 1.40E-04 | 1.46E-04 | 1.53E-04 | 1.62E-04 | 1.72E-04 |
| 190 | 1.74E-04 | 1.67E-04 | 1.61E-04 | 1.56E-04 | 1.52E-04 | 1.50E-04 | 1.49E-04 | 1.50E-04 | 1.52E-04 | 1.55E-04 | 1.59E-04 | 1.65E-04 |
| 210 | 1.87E-04 | 1.79E-04 | 1.71E-04 | 1.65E-04 | 1.60E-04 | 1.56E-04 | 1.54E-04 | 1.53E-04 | 1.54E-04 | 1.56E-04 | 1.59E-04 | 1.63E-04 |
| 220 | 1.94E-04 | 1.85E-04 | 1.76E-04 | 1.70E-04 | 1.64E-04 | 1.60E-04 | 1.57E-04 | 1.55E-04 | 1.55E-04 | 1.56E-04 | 1.58E-04 | 1.62E-04 |
| 290 | 2.40E-04 | 2.26E-04 | 2.13E-04 | 2.02E-04 | 1.92E-04 | 1.82E-04 | 1.75E-04 | 1.68E-04 | 1.63E-04 | 1.59E-04 | 1.57E-04 | 1.56E-04 |
| 400 | 3.13E-04 | 2.93E-04 | 2.73E-04 | 2.54E-04 | 2.36E-04 | 2.20E-04 | 2.04E-04 | 1.90E-04 | 1.78E-04 | 1.66E-04 | 1.56E-04 | 1.48E-04 |
| 500 | 3.81E-04 | 3.54E-04 | 3.28E-04 | 3.02E-04 | 2.78E-04 | 2.55E-04 | 2.33E-04 | 2.12E-04 | 1.93E-04 | 1.75E-04 | 1.58E-04 | 1.42E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.116: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 6.01E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 6.53E-05 | 6.97E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 7.28E-05 | 7.70E-05 | 8.32E-05 | 8.92E-05 | 9.13E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 7.66E-05 | 7.98E-05 | 8.50E-05 | 9.22E-05 | 9.91E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 9.25E-05 | 9.15E-05 | 9.26E-05 | 9.57E-05 | 1.01E-04 | 1.08E-04 | 1.17E-04 | 1.29E-04 | 1.39E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.09E-04 | 1.04E-04 | 1.01E-04 | 9.98E-05 | 1.01E-04 | 1.04E-04 | 1.09E-04 | 1.16E-04 | 1.25E-04 | 1.37E-04 | 1.50E-04 | 1.66E-04 |
| 190 | 1.35E-04 | 1.24E-04 | 1.15E-04 | 1.07E-04 | 1.02E-04 | 9.83E-05 | 9.69E-05 | 9.76E-05 | 1.00E-04 | 1.05E-04 | 1.12E-04 | 1.22E-04 |
| 210 | 1.44E-04 | 1.31E-04 | 1.20E-04 | 1.10E-04 | 1.02E-04 | 9.69E-05 | 9.33E-05 | 9.18E-05 | 9.25E-05 | 9.52E-05 | 1.00E-04 | 1.07E-04 |
| 220 | 1.49E-04 | 1.35E-04 | 1.22E-04 | 1.12E-04 | 1.03E-04 | 9.62E-05 | 9.16E-05 | 8.90E-05 | 8.86E-05 | 9.02E-05 | 9.40E-05 | 9.99E-05 |
| 290 | 1.81E-04 | 1.60E-04 | 1.40E-04 | 1.23E-04 | 1.07E-04 | 9.27E-05 | 8.07E-05 | 7.07E-05 | 6.27E-05 | 5.67E-05 | 5.28E-05 | 5.09E-05 |
| 400 | 2.33E-04 | 2.02E-04 | 1.71E-04 | 1.43E-04 | 1.16E-04 | 9.14E-05 | 6.88E-05 | 4.83E-05 | 3.02E-05 | 1.51E-05 | 7.79E-06 | 1.63E-05 |
| 500 | 2.82E-04 | 2.41E-04 | 2.01E-04 | 1.63E-04 | 1.27E-04 | 9.42E-05 | 6.37E-05 | 3.72E-05 | 1.86E-05 | 2.43E-05 | 5.01E-05 | 7.88E-05 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.117: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.95E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 6.26E-05 | 6.90E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 6.48E-05 | 7.08E-05 | 7.97E-05 | 8.83E-05 | 9.13E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 6.60E-05 | 7.06E-05 | 7.80E-05 | 8.83E-05 | 9.81E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 7.16E-05 | 7.03E-05 | 7.17E-05 | 7.61E-05 | 8.34E-05 | 9.36E-05 | 1.07E-04 | 1.23E-04 | 1.37E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 7.83E-05 | 7.11E-05 | 6.65E-05 | 6.48E-05 | 6.60E-05 | 7.02E-05 | 7.74E-05 | 8.75E-05 | 1.01E-04 | 1.17E-04 | 1.36E-04 | 1.58E-04 |
| 190 | 9.02E-05 | 7.45E-05 | 6.11E-05 | 5.05E-05 | 4.25E-05 | 3.74E-05 | 3.53E-05 | 3.60E-05 | 3.98E-05 | 4.66E-05 | 5.65E-05 | 6.95E-05 |
| 210 | 9.46E-05 | 7.61E-05 | 6.00E-05 | 4.65E-05 | 3.56E-05 | 2.76E-05 | 2.23E-05 | 1.99E-05 | 2.04E-05 | 2.40E-05 | 3.06E-05 | 4.04E-05 |
| 220 | 9.68E-05 | 7.71E-05 | 5.95E-05 | 4.46E-05 | 3.24E-05 | 2.30E-05 | 1.63E-05 | 1.24E-05 | 1.13E-05 | 1.31E-05 | 1.80E-05 | 2.60E-05 |
| 290 | 1.14E-04 | 8.49E-05 | 5.85E-05 | 3.54E-05 | 1.67E-05 | 1.07E-05 | 2.45E-05 | 4.05E-05 | 5.39E-05 | 6.36E-05 | 7.00E-05 | 7.30E-05 |
| 400 | 1.43E-04 | 1.01E-04 | 6.40E-05 | 3.46E-05 | 2.74E-05 | 5.66E-05 | 9.65E-05 | 1.32E-04 | 1.64E-04 | 1.91E-04 | 2.15E-04 | 2.35E-04 |
| 500 | 1.72E-04 | 1.20E-04 | 7.48E-05 | 4.58E-05 | 5.66E-05 | 1.08E-04 | 1.66E-04 | 2.19E-04 | 2.67E-04 | 3.09E-04 | 3.48E-04 | 3.83E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.118: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.4 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.88E-05 | 6.13E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 5.95E-05 | 6.81E-05 | 7.12E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 5.57E-05 | 6.38E-05 | 7.56E-05 | 8.72E-05 | 9.13E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 5.39E-05 | 6.00E-05 | 6.99E-05 | 8.36E-05 | 9.68E-05 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 4.78E-05 | 4.60E-05 | 4.78E-05 | 5.36E-05 | 6.33E-05 | 7.70E-05 | 9.47E-05 | 1.16E-04 | 1.36E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 4.37E-05 | 3.41E-05 | 2.78E-05 | 2.53E-05 | 2.66E-05 | 3.20E-05 | 4.15E-05 | 5.50E-05 | 7.25E-05 | 9.41E-05 | 1.20E-04 | 1.49E-04 |
| 190 | 4.18E-05 | 2.23E-05 | 8.55E-06 | 1.18E-05 | 2.28E-05 | 3.07E-05 | 3.42E-05 | 3.35E-05 | 2.86E-05 | 1.97E-05 | 6.82E-06 | 1.01E-05 |
| 210 | 4.22E-05 | 2.05E-05 | 1.02E-05 | 2.35E-05 | 4.01E-05 | 5.25E-05 | 6.02E-05 | 6.36E-05 | 6.26E-05 | 5.76E-05 | 4.85E-05 | 3.54E-05 |
| 220 | 4.26E-05 | 2.01E-05 | 1.27E-05 | 2.98E-05 | 4.90E-05 | 6.35E-05 | 7.33E-05 | 7.87E-05 | 7.98E-05 | 7.68E-05 | 6.96E-05 | 5.85E-05 |
| 290 | 4.88E-05 | 2.53E-05 | 3.97E-05 | 7.76E-05 | 1.13E-04 | 1.42E-04 | 1.66E-04 | 1.86E-04 | 2.01E-04 | 2.12E-04 | 2.19E-04 | 2.21E-04 |
| 400 | 6.67E-05 | 5.07E-05 | 9.31E-05 | 1.57E-04 | 2.17E-04 | 2.68E-04 | 3.14E-04 | 3.56E-04 | 3.92E-04 | 4.25E-04 | 4.54E-04 | 4.79E-04 |
| 500 | 8.84E-05 | 8.10E-05 | 1.45E-04 | 2.32E-04 | 3.12E-04 | 3.84E-04 | 4.49E-04 | 5.11E-04 | 5.67E-04 | 6.20E-04 | 6.68E-04 | 7.13E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.119: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.6 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.79E-05 | 6.13E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 5.60E-05 | 6.72E-05 | 7.12E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 4.55E-05 | 5.59E-05 | 7.09E-05 | 8.59E-05 | 9.12E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 4.04E-05 | 4.82E-05 | 6.09E-05 | 7.84E-05 | 9.54E-05 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 2.20E-05 | 1.94E-05 | 2.15E-05 | 2.87E-05 | 4.10E-05 | 5.85E-05 | 8.11E-05 | 1.09E-04 | 1.34E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 1.10E-05 | 7.15E-06 | 1.41E-05 | 1.78E-05 | 1.64E-05 | 9.76E-06 | 2.23E-06 | 1.89E-05 | 4.12E-05 | 6.88E-05 | 1.01E-04 | 1.39E-04 |
| 190 | 2.47E-05 | 4.52E-05 | 7.13E-05 | 9.12E-05 | 1.05E-04 | 1.14E-04 | 1.17E-04 | 1.15E-04 | 1.08E-04 | 9.56E-05 | 7.84E-05 | 5.61E-05 |
| 210 | 3.30E-05 | 5.96E-05 | 9.12E-05 | 1.16E-04 | 1.35E-04 | 1.49E-04 | 1.57E-04 | 1.60E-04 | 1.58E-04 | 1.51E-04 | 1.39E-04 | 1.21E-04 |
| 220 | 3.75E-05 | 6.68E-05 | 1.01E-04 | 1.29E-04 | 1.50E-04 | 1.66E-04 | 1.77E-04 | 1.83E-04 | 1.83E-04 | 1.79E-04 | 1.69E-04 | 1.54E-04 |
| 290 | 7.13E-05 | 1.19E-04 | 1.72E-04 | 2.17E-04 | 2.56E-04 | 2.90E-04 | 3.18E-04 | 3.41E-04 | 3.59E-04 | 3.73E-04 | 3.81E-04 | 3.84E-04 |
| 400 | 1.29E-04 | 2.04E-04 | 2.85E-04 | 3.58E-04 | 4.24E-04 | 4.85E-04 | 5.40E-04 | 5.91E-04 | 6.37E-04 | 6.78E-04 | 7.14E-04 | 7.45E-04 |
| 500 | 1.84E-04 | 2.82E-04 | 3.88E-04 | 4.86E-04 | 5.77E-04 | 6.62E-04 | 7.42E-04 | 8.18E-04 | 8.89E-04 | 9.56E-04 | 1.02E-03 | 1.07E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.120: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.71E-05 | 6.13E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 5.23E-05 | 6.61E-05 | 7.12E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 3.45E-05 | 4.72E-05 | 6.58E-05 | 8.45E-05 | 9.12E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 2.58E-05 | 3.54E-05 | 5.10E-05 | 7.26E-05 | 9.38E-05 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 8.32E-06 | 9.17E-06 | 6.74E-06 | 2.21E-06 | 1.68E-05 | 3.83E-05 | 6.62E-05 | 1.00E-04 | 1.31E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 4.05E-05 | 5.46E-05 | 6.47E-05 | 6.84E-05 | 6.56E-05 | 5.67E-05 | 4.16E-05 | 2.02E-05 | 7.22E-06 | 4.11E-05 | 8.15E-05 | 1.28E-04 |
| 190 | 9.43E-05 | 1.26E-04 | 1.55E-04 | 1.77E-04 | 1.92E-04 | 2.02E-04 | 2.05E-04 | 2.02E-04 | 1.93E-04 | 1.78E-04 | 1.56E-04 | 1.29E-04 |
| 210 | 1.13E-04 | 1.50E-04 | 1.85E-04 | 2.13E-04 | 2.34E-04 | 2.50E-04 | 2.60E-04 | 2.63E-04 | 2.60E-04 | 2.51E-04 | 2.36E-04 | 2.14E-04 |
| 220 | 1.22E-04 | 1.62E-04 | 2.00E-04 | 2.31E-04 | 2.55E-04 | 2.74E-04 | 2.87E-04 | 2.93E-04 | 2.94E-04 | 2.88E-04 | 2.76E-04 | 2.57E-04 |
| 290 | 1.87E-04 | 2.47E-04 | 3.06E-04 | 3.58E-04 | 4.04E-04 | 4.45E-04 | 4.79E-04 | 5.07E-04 | 5.29E-04 | 5.45E-04 | 5.54E-04 | 5.58E-04 |
| 400 | 2.91E-04 | 3.82E-04 | 4.73E-04 | 5.58E-04 | 6.37E-04 | 7.12E-04 | 7.80E-04 | 8.42E-04 | 8.98E-04 | 9.49E-04 | 9.93E-04 | 1.03E-03 |
| 500 | 3.86E-04 | 5.04E-04 | 6.25E-04 | 7.41E-04 | 8.50E-04 | 9.55E-04 | 1.05E-03 | 1.15E-03 | 1.23E-03 | 1.32E-03 | 1.39E-03 | 1.46E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.121: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture, 2.0 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 5.60E-05 | 6.12E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 | 6.14E-05 |
| 20 | 4.81E-05 | 6.49E-05 | 7.11E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 | 7.13E-05 |
| 40 | 2.26E-05 | 3.79E-05 | 6.02E-05 | 8.29E-05 | 9.11E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 | 9.14E-05 |
| 50 | 1.04E-05 | 2.17E-05 | 4.04E-05 | 6.63E-05 | 9.20E-05 | 1.01E-04 | 1.01E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 | 1.02E-04 |
| 90 | 3.94E-05 | 4.17E-05 | 3.81E-05 | 2.71E-05 | 8.82E-06 | 1.68E-05 | 5.02E-05 | 9.10E-05 | 1.29E-04 | 1.42E-04 | 1.42E-04 | 1.42E-04 |
| 130 | 9.12E-05 | 1.07E-04 | 1.18E-04 | 1.22E-04 | 1.18E-04 | 1.07E-04 | 8.83E-05 | 6.24E-05 | 2.91E-05 | 1.16E-05 | 6.01E-05 | 1.16E-04 |
| 190 | 1.71E-04 | 2.07E-04 | 2.39E-04 | 2.65E-04 | 2.83E-04 | 2.94E-04 | 2.98E-04 | 2.94E-04 | 2.83E-04 | 2.65E-04 | 2.39E-04 | 2.05E-04 |
| 210 | 1.97E-04 | 2.40E-04 | 2.80E-04 | 3.13E-04 | 3.38E-04 | 3.57E-04 | 3.68E-04 | 3.71E-04 | 3.68E-04 | 3.57E-04 | 3.39E-04 | 3.13E-04 |
| 220 | 2.10E-04 | 2.57E-04 | 3.00E-04 | 3.37E-04 | 3.66E-04 | 3.88E-04 | 4.03E-04 | 4.10E-04 | 4.10E-04 | 4.03E-04 | 3.89E-04 | 3.66E-04 |
| 290 | 3.04E-04 | 3.74E-04 | 4.42E-04 | 5.04E-04 | 5.59E-04 | 6.07E-04 | 6.47E-04 | 6.81E-04 | 7.07E-04 | 7.26E-04 | 7.38E-04 | 7.42E-04 |
| 400 | 4.52E-04 | 5.58E-04 | 6.66E-04 | 7.68E-04 | 8.62E-04 | 9.51E-04 | 1.03E-03 | 1.11E-03 | 1.17E-03 | 1.23E-03 | 1.29E-03 | 1.33E-03 |
| 500 | 5.86E-04 | 7.26E-04 | 8.69E-04 | 1.01E-03 | 1.14E-03 | 1.26E-03 | 1.38E-03 | 1.49E-03 | 1.60E-03 | 1.70E-03 | 1.79E-03 | 1.87E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.122: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 | 4.10E-04 |
| 190 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 | 5.46E-04 |
| 210 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 | 5.91E-04 |
| 220 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 | 6.14E-04 |
| 290 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 | 7.73E-04 |
| 400 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 | 1.02E-03 |
| 500 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 | 1.25E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.123: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.05E-04 | 2.06E-04 | 2.06E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 2.27E-04 | 2.27E-04 | 2.28E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.14E-04 | 3.14E-04 | 3.15E-04 | 3.15E-04 | 3.15E-04 | 3.16E-04 | 3.17E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 4.02E-04 | 4.02E-04 | 4.02E-04 | 4.02E-04 | 4.02E-04 | 4.02E-04 | 4.03E-04 | 4.03E-04 | 4.04E-04 | 4.05E-04 | 4.07E-04 | 4.08E-04 |
| 190 | 5.35E-04 | 5.34E-04 | 5.33E-04 | 5.33E-04 | 5.32E-04 | 5.32E-04 | 5.32E-04 | 5.32E-04 | 5.32E-04 | 5.33E-04 | 5.33E-04 | 5.34E-04 |
| 210 | 5.79E-04 | 5.78E-04 | 5.77E-04 | 5.76E-04 | 5.76E-04 | 5.75E-04 | 5.75E-04 | 5.75E-04 | 5.75E-04 | 5.75E-04 | 5.76E-04 | 5.76E-04 |
| 220 | 6.01E-04 | 6.00E-04 | 5.99E-04 | 5.98E-04 | 5.97E-04 | 5.97E-04 | 5.96E-04 | 5.96E-04 | 5.96E-04 | 5.96E-04 | 5.97E-04 | 5.97E-04 |
| 290 | 7.57E-04 | 7.55E-04 | 7.53E-04 | 7.51E-04 | 7.50E-04 | 7.49E-04 | 7.48E-04 | 7.47E-04 | 7.46E-04 | 7.46E-04 | 7.45E-04 | 7.45E-04 |
| 400 | 1.00E-03 | 9.98E-04 | 9.95E-04 | 9.93E-04 | 9.90E-04 | 9.88E-04 | 9.86E-04 | 9.84E-04 | 9.82E-04 | 9.80E-04 | 9.79E-04 | 9.78E-04 |
| 500 | 1.22E-03 | 1.22E-03 | 1.22E-03 | 1.21E-03 | 1.21E-03 | 1.21E-03 | 1.20E-03 | 1.20E-03 | 1.20E-03 | 1.19E-03 | 1.19E-03 | 1.19E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.124: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.4 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.60E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 2.00E-04 | 2.01E-04 | 2.04E-04 | 2.06E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 2.20E-04 | 2.21E-04 | 2.23E-04 | 2.26E-04 | 2.28E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 3.00E-04 | 3.00E-04 | 3.01E-04 | 3.02E-04 | 3.04E-04 | 3.07E-04 | 3.10E-04 | 3.14E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 3.81E-04 | 3.80E-04 | 3.79E-04 | 3.78E-04 | 3.79E-04 | 3.80E-04 | 3.82E-04 | 3.85E-04 | 3.88E-04 | 3.92E-04 | 3.97E-04 | 4.03E-04 |
| 190 | 5.03E-04 | 4.99E-04 | 4.96E-04 | 4.93E-04 | 4.92E-04 | 4.91E-04 | 4.90E-04 | 4.91E-04 | 4.92E-04 | 4.94E-04 | 4.96E-04 | 5.00E-04 |
| 210 | 5.44E-04 | 5.39E-04 | 5.35E-04 | 5.32E-04 | 5.29E-04 | 5.28E-04 | 5.26E-04 | 5.26E-04 | 5.26E-04 | 5.28E-04 | 5.30E-04 | 5.32E-04 |
| 220 | 5.64E-04 | 5.59E-04 | 5.55E-04 | 5.51E-04 | 5.48E-04 | 5.46E-04 | 5.45E-04 | 5.44E-04 | 5.44E-04 | 5.45E-04 | 5.46E-04 | 5.48E-04 |
| 290 | 7.07E-04 | 7.00E-04 | 6.93E-04 | 6.86E-04 | 6.81E-04 | 6.76E-04 | 6.72E-04 | 6.68E-04 | 6.65E-04 | 6.64E-04 | 6.62E-04 | 6.62E-04 |
| 400 | 9.33E-04 | 9.21E-04 | 9.10E-04 | 8.99E-04 | 8.89E-04 | 8.80E-04 | 8.72E-04 | 8.64E-04 | 8.57E-04 | 8.51E-04 | 8.46E-04 | 8.41E-04 |
| 500 | 1.14E-03 | 1.12E-03 | 1.11E-03 | 1.09E-03 | 1.08E-03 | 1.07E-03 | 1.05E-03 | 1.04E-03 | 1.03E-03 | 1.02E-03 | 1.01E-03 | 1.00E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.125: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.39E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.57E-04 | 1.61E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.91E-04 | 1.95E-04 | 2.00E-04 | 2.05E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 2.08E-04 | 2.11E-04 | 2.16E-04 | 2.22E-04 | 2.27E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.77E-04 | 2.77E-04 | 2.78E-04 | 2.80E-04 | 2.85E-04 | 2.91E-04 | 2.99E-04 | 3.08E-04 | 3.16E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 3.46E-04 | 3.43E-04 | 3.40E-04 | 3.40E-04 | 3.41E-04 | 3.43E-04 | 3.48E-04 | 3.54E-04 | 3.62E-04 | 3.71E-04 | 3.82E-04 | 3.95E-04 |
| 190 | 4.51E-04 | 4.42E-04 | 4.35E-04 | 4.29E-04 | 4.25E-04 | 4.23E-04 | 4.22E-04 | 4.23E-04 | 4.25E-04 | 4.30E-04 | 4.36E-04 | 4.43E-04 |
| 210 | 4.86E-04 | 4.76E-04 | 4.67E-04 | 4.59E-04 | 4.53E-04 | 4.49E-04 | 4.47E-04 | 4.46E-04 | 4.47E-04 | 4.49E-04 | 4.54E-04 | 4.60E-04 |
| 220 | 5.04E-04 | 4.92E-04 | 4.82E-04 | 4.74E-04 | 4.67E-04 | 4.62E-04 | 4.59E-04 | 4.57E-04 | 4.57E-04 | 4.59E-04 | 4.63E-04 | 4.68E-04 |
| 290 | 6.27E-04 | 6.10E-04 | 5.94E-04 | 5.79E-04 | 5.67E-04 | 5.56E-04 | 5.46E-04 | 5.39E-04 | 5.33E-04 | 5.28E-04 | 5.26E-04 | 5.25E-04 |
| 400 | 8.20E-04 | 7.95E-04 | 7.69E-04 | 7.46E-04 | 7.24E-04 | 7.03E-04 | 6.84E-04 | 6.67E-04 | 6.52E-04 | 6.38E-04 | 6.26E-04 | 6.16E-04 |
| 500 | 9.97E-04 | 9.63E-04 | 9.29E-04 | 8.97E-04 | 8.67E-04 | 8.38E-04 | 8.11E-04 | 7.85E-04 | 7.61E-04 | 7.39E-04 | 7.18E-04 | 6.99E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.126: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 0.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.38E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.53E-04 | 1.60E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.79E-04 | 1.86E-04 | 1.95E-04 | 2.04E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 1.92E-04 | 1.97E-04 | 2.05E-04 | 2.16E-04 | 2.26E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.45E-04 | 2.44E-04 | 2.46E-04 | 2.51E-04 | 2.59E-04 | 2.69E-04 | 2.83E-04 | 3.00E-04 | 3.14E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 2.98E-04 | 2.92E-04 | 2.88E-04 | 2.86E-04 | 2.88E-04 | 2.93E-04 | 3.00E-04 | 3.11E-04 | 3.25E-04 | 3.42E-04 | 3.61E-04 | 3.84E-04 |
| 190 | 3.79E-04 | 3.64E-04 | 3.51E-04 | 3.41E-04 | 3.33E-04 | 3.29E-04 | 3.27E-04 | 3.29E-04 | 3.34E-04 | 3.41E-04 | 3.52E-04 | 3.66E-04 |
| 210 | 4.07E-04 | 3.88E-04 | 3.72E-04 | 3.59E-04 | 3.48E-04 | 3.41E-04 | 3.37E-04 | 3.35E-04 | 3.37E-04 | 3.41E-04 | 3.49E-04 | 3.60E-04 |
| 220 | 4.20E-04 | 4.00E-04 | 3.83E-04 | 3.68E-04 | 3.56E-04 | 3.47E-04 | 3.41E-04 | 3.38E-04 | 3.38E-04 | 3.41E-04 | 3.48E-04 | 3.57E-04 |
| 290 | 5.16E-04 | 4.86E-04 | 4.58E-04 | 4.33E-04 | 4.10E-04 | 3.91E-04 | 3.74E-04 | 3.61E-04 | 3.50E-04 | 3.43E-04 | 3.38E-04 | 3.36E-04 |
| 400 | 6.67E-04 | 6.21E-04 | 5.77E-04 | 5.35E-04 | 4.97E-04 | 4.61E-04 | 4.28E-04 | 3.98E-04 | 3.71E-04 | 3.46E-04 | 3.25E-04 | 3.07E-04 |
| 500 | 8.05E-04 | 7.45E-04 | 6.86E-04 | 6.30E-04 | 5.76E-04 | 5.26E-04 | 4.78E-04 | 4.33E-04 | 3.91E-04 | 3.52E-04 | 3.16E-04 | 2.83E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.127: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.37E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.48E-04 | 1.59E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.64E-04 | 1.74E-04 | 1.88E-04 | 2.02E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 1.72E-04 | 1.80E-04 | 1.92E-04 | 2.08E-04 | 2.24E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.05E-04 | 2.03E-04 | 2.06E-04 | 2.13E-04 | 2.25E-04 | 2.42E-04 | 2.63E-04 | 2.89E-04 | 3.11E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 2.38E-04 | 2.28E-04 | 2.21E-04 | 2.19E-04 | 2.22E-04 | 2.29E-04 | 2.41E-04 | 2.58E-04 | 2.79E-04 | 3.04E-04 | 3.35E-04 | 3.70E-04 |
| 190 | 2.90E-04 | 2.66E-04 | 2.45E-04 | 2.29E-04 | 2.18E-04 | 2.11E-04 | 2.09E-04 | 2.11E-04 | 2.19E-04 | 2.30E-04 | 2.47E-04 | 2.68E-04 |
| 210 | 3.07E-04 | 2.79E-04 | 2.54E-04 | 2.33E-04 | 2.17E-04 | 2.06E-04 | 1.99E-04 | 1.96E-04 | 1.99E-04 | 2.06E-04 | 2.17E-04 | 2.34E-04 |
| 220 | 3.16E-04 | 2.85E-04 | 2.58E-04 | 2.35E-04 | 2.17E-04 | 2.03E-04 | 1.94E-04 | 1.89E-04 | 1.89E-04 | 1.94E-04 | 2.03E-04 | 2.17E-04 |
| 290 | 3.78E-04 | 3.32E-04 | 2.88E-04 | 2.50E-04 | 2.15E-04 | 1.85E-04 | 1.60E-04 | 1.39E-04 | 1.23E-04 | 1.11E-04 | 1.03E-04 | 1.01E-04 |
| 400 | 4.76E-04 | 4.07E-04 | 3.39E-04 | 2.76E-04 | 2.17E-04 | 1.64E-04 | 1.14E-04 | 7.05E-05 | 3.27E-05 | 1.30E-05 | 3.74E-05 | 6.70E-05 |
| 500 | 5.68E-04 | 4.76E-04 | 3.87E-04 | 3.03E-04 | 2.24E-04 | 1.50E-04 | 8.39E-05 | 3.23E-05 | 4.46E-05 | 1.05E-04 | 1.68E-04 | 2.27E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.128: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.2 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.35E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.42E-04 | 1.57E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.46E-04 | 1.60E-04 | 1.80E-04 | 2.00E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 1.48E-04 | 1.59E-04 | 1.76E-04 | 1.99E-04 | 2.21E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 1.57E-04 | 1.55E-04 | 1.59E-04 | 1.69E-04 | 1.86E-04 | 2.09E-04 | 2.39E-04 | 2.76E-04 | 3.08E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 1.67E-04 | 1.52E-04 | 1.43E-04 | 1.40E-04 | 1.43E-04 | 1.53E-04 | 1.70E-04 | 1.94E-04 | 2.24E-04 | 2.60E-04 | 3.03E-04 | 3.53E-04 |
| 190 | 1.84E-04 | 1.50E-04 | 1.21E-04 | 9.89E-05 | 8.26E-05 | 7.26E-05 | 6.92E-05 | 7.22E-05 | 8.19E-05 | 9.83E-05 | 1.21E-04 | 1.51E-04 |
| 210 | 1.91E-04 | 1.50E-04 | 1.15E-04 | 8.64E-05 | 6.37E-05 | 4.73E-05 | 3.72E-05 | 3.34E-05 | 3.61E-05 | 4.54E-05 | 6.15E-05 | 8.43E-05 |
| 220 | 1.94E-04 | 1.51E-04 | 1.12E-04 | 8.05E-05 | 5.47E-05 | 3.53E-05 | 2.21E-05 | 1.51E-05 | 1.42E-05 | 1.96E-05 | 3.20E-05 | 5.12E-05 |
| 290 | 2.18E-04 | 1.54E-04 | 9.58E-05 | 4.58E-05 | 1.52E-05 | 4.48E-05 | 8.46E-05 | 1.18E-04 | 1.44E-04 | 1.63E-04 | 1.74E-04 | 1.79E-04 |
| 400 | 2.60E-04 | 1.67E-04 | 8.37E-05 | 3.61E-05 | 9.29E-05 | 1.82E-04 | 2.66E-04 | 3.39E-04 | 4.03E-04 | 4.59E-04 | 5.07E-04 | 5.48E-04 |
| 500 | 3.01E-04 | 1.84E-04 | 8.68E-05 | 7.26E-05 | 1.83E-04 | 3.13E-04 | 4.34E-04 | 5.42E-04 | 6.40E-04 | 7.29E-04 | 8.11E-04 | 8.84E-04 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.129: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.4 A lens current^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.34E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.35E-04 | 1.55E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.25E-04 | 1.44E-04 | 1.71E-04 | 1.97E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 1.20E-04 | 1.35E-04 | 1.58E-04 | 1.89E-04 | 2.19E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 1.02E-04 | 9.92E-05 | 1.04E-04 | 1.18E-04 | 1.41E-04 | 1.72E-04 | 2.12E-04 | 2.61E-04 | 3.04E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 8.66E-05 | 6.63E-05 | 5.36E-05 | 4.93E-05 | 5.38E-05 | 6.71E-05 | 8.93E-05 | 1.20E-04 | 1.60E-04 | 2.09E-04 | 2.67E-04 | 3.33E-04 |
| 190 | 7.02E-05 | 2.80E-05 | 1.52E-05 | 4.41E-05 | 6.86E-05 | 8.38E-05 | 8.93E-05 | 8.56E-05 | 7.29E-05 | 5.13E-05 | 2.09E-05 | 1.81E-05 |
| 210 | 6.69E-05 | 2.15E-05 | 3.43E-05 | 7.66E-05 | 1.11E-04 | 1.36E-04 | 1.50E-04 | 1.55E-04 | 1.51E-04 | 1.38E-04 | 1.16E-04 | 8.58E-05 |
| 220 | 6.56E-05 | 2.04E-05 | 4.50E-05 | 9.32E-05 | 1.33E-04 | 1.62E-04 | 1.81E-04 | 1.90E-04 | 1.91E-04 | 1.82E-04 | 1.65E-04 | 1.38E-04 |
| 290 | 6.49E-05 | 4.66E-05 | 1.27E-04 | 2.12E-04 | 2.85E-04 | 3.46E-04 | 3.96E-04 | 4.36E-04 | 4.67E-04 | 4.89E-04 | 5.02E-04 | 5.07E-04 |
| 400 | 8.67E-05 | 1.22E-04 | 2.64E-04 | 4.04E-04 | 5.26E-04 | 6.36E-04 | 7.35E-04 | 8.23E-04 | 9.03E-04 | 9.73E-04 | 1.03E-03 | 1.09E-03 |
| 500 | 1.21E-04 | 1.99E-04 | 3.91E-04 | 5.79E-04 | 7.47E-04 | 9.01E-04 | 1.04E-03 | 1.18E-03 | 1.30E-03 | 1.41E-03 | 1.52E-03 | 1.61E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.130: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.6 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.32E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.27E-04 | 1.53E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 1.02E-04 | 1.26E-04 | 1.60E-04 | 1.95E-04 | 2.06E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 8.93E-05 | 1.08E-04 | 1.37E-04 | 1.77E-04 | 2.15E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 4.24E-05 | 3.80E-05 | 4.40E-05 | 6.14E-05 | 9.01E-05 | 1.30E-04 | 1.81E-04 | 2.43E-04 | 3.00E-04 | 3.19E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 1.63E-05 | 2.57E-05 | 4.31E-05 | 4.96E-05 | 4.44E-05 | 2.78E-05 | 1.69E-06 | 3.91E-05 | 9.00E-05 | 1.52E-04 | 2.26E-04 | 3.10E-04 |
| 190 | 7.14E-05 | 1.27E-04 | 1.81E-04 | 2.22E-04 | 2.51E-04 | 2.67E-04 | 2.73E-04 | 2.67E-04 | 2.49E-04 | 2.21E-04 | 1.81E-04 | 1.30E-04 |
| 210 | 9.45E-05 | 1.62E-04 | 2.28E-04 | 2.80E-04 | 3.20E-04 | 3.48E-04 | 3.64E-04 | 3.69E-04 | 3.63E-04 | 3.46E-04 | 3.17E-04 | 2.77E-04 |
| 220 | 1.06E-04 | 1.80E-04 | 2.51E-04 | 3.09E-04 | 3.55E-04 | 3.88E-04 | 4.10E-04 | 4.21E-04 | 4.20E-04 | 4.08E-04 | 3.85E-04 | 3.51E-04 |
| 290 | 1.91E-04 | 3.04E-04 | 4.16E-04 | 5.13E-04 | 5.98E-04 | 6.70E-04 | 7.31E-04 | 7.80E-04 | 8.19E-04 | 8.46E-04 | 8.62E-04 | 8.67E-04 |
| 400 | 3.28E-04 | 5.02E-04 | 6.76E-04 | 8.35E-04 | 9.80E-04 | 1.11E-03 | 1.24E-03 | 1.35E-03 | 1.45E-03 | 1.53E-03 | 1.61E-03 | 1.68E-03 |
| 500 | 4.55E-04 | 6.83E-04 | 9.14E-04 | 1.13E-03 | 1.33E-03 | 1.52E-03 | 1.69E-03 | 1.86E-03 | 2.02E-03 | 2.16E-03 | 2.29E-03 | 2.42E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.131: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 1.8 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.30E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.18E-04 | 1.50E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 7.65E-05 | 1.06E-04 | 1.49E-04 | 1.91E-04 | 2.06E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 5.59E-05 | 7.87E-05 | 1.15E-04 | 1.64E-04 | 2.12E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 2.50E-05 | 2.75E-05 | 2.03E-05 | 1.75E-06 | 3.54E-05 | 8.46E-05 | 1.48E-04 | 2.24E-04 | 2.94E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 1.05E-04 | 1.36E-04 | 1.57E-04 | 1.63E-04 | 1.55E-04 | 1.33E-04 | 9.81E-05 | 4.89E-05 | 1.36E-05 | 9.04E-05 | 1.81E-04 | 2.85E-04 |
| 190 | 2.32E-04 | 3.03E-04 | 3.64E-04 | 4.11E-04 | 4.44E-04 | 4.64E-04 | 4.69E-04 | 4.61E-04 | 4.40E-04 | 4.04E-04 | 3.55E-04 | 2.92E-04 |
| 210 | 2.74E-04 | 3.58E-04 | 4.33E-04 | 4.94E-04 | 5.41E-04 | 5.74E-04 | 5.93E-04 | 5.99E-04 | 5.91E-04 | 5.69E-04 | 5.34E-04 | 4.84E-04 |
| 220 | 2.95E-04 | 3.86E-04 | 4.68E-04 | 5.36E-04 | 5.89E-04 | 6.29E-04 | 6.55E-04 | 6.68E-04 | 6.67E-04 | 6.52E-04 | 6.23E-04 | 5.81E-04 |
| 290 | 4.45E-04 | 5.82E-04 | 7.11E-04 | 8.26E-04 | 9.27E-04 | 1.02E-03 | 1.09E-03 | 1.15E-03 | 1.20E-03 | 1.23E-03 | 1.25E-03 | 1.26E-03 |
| 400 | 6.81E-04 | 8.89E-04 | 1.09E-03 | 1.28E-03 | 1.46E-03 | 1.62E-03 | 1.77E-03 | 1.91E-03 | 2.03E-03 | 2.14E-03 | 2.23E-03 | 2.32E-03 |
| 500 | 8.96E-04 | 1.17E-03 | 1.44E-03 | 1.70E-03 | 1.94E-03 | 2.17E-03 | 2.39E-03 | 2.60E-03 | 2.79E-03 | 2.97E-03 | 3.13E-03 | 3.28E-03 |

^a Values are the root mean square radius of the electron beam in meters.

Table B.132: Variation in electron beam radius through its flight, for different lens positions with a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture, 2.0 A lens current ^a

| Electron flight distance / mm | Lens position from anode / mm | | | | | | | | | | | |
|--|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 10 | 1.27E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 | 1.40E-04 |
| 20 | 1.09E-04 | 1.48E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 | 1.62E-04 |
| 40 | 4.95E-05 | 8.50E-05 | 1.36E-04 | 1.88E-04 | 2.06E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 | 2.07E-04 |
| 50 | 2.07E-05 | 4.74E-05 | 9.04E-05 | 1.50E-04 | 2.08E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 | 2.29E-04 |
| 90 | 9.68E-05 | 1.01E-04 | 9.15E-05 | 6.53E-05 | 2.28E-05 | 3.60E-05 | 1.12E-04 | 2.04E-04 | 2.89E-04 | 3.18E-04 | 3.19E-04 | 3.19E-04 |
| 130 | 2.17E-04 | 2.53E-04 | 2.76E-04 | 2.82E-04 | 2.72E-04 | 2.46E-04 | 2.03E-04 | 1.44E-04 | 6.78E-05 | 2.42E-05 | 1.33E-04 | 2.58E-04 |
| 190 | 3.98E-04 | 4.82E-04 | 5.53E-04 | 6.09E-04 | 6.48E-04 | 6.70E-04 | 6.77E-04 | 6.67E-04 | 6.41E-04 | 5.98E-04 | 5.39E-04 | 4.63E-04 |
| 210 | 4.59E-04 | 5.58E-04 | 6.46E-04 | 7.17E-04 | 7.73E-04 | 8.12E-04 | 8.35E-04 | 8.42E-04 | 8.32E-04 | 8.06E-04 | 7.63E-04 | 7.04E-04 |
| 220 | 4.89E-04 | 5.96E-04 | 6.92E-04 | 7.72E-04 | 8.36E-04 | 8.83E-04 | 9.14E-04 | 9.29E-04 | 9.27E-04 | 9.09E-04 | 8.75E-04 | 8.24E-04 |
| 290 | 7.02E-04 | 8.64E-04 | 1.02E-03 | 1.15E-03 | 1.27E-03 | 1.38E-03 | 1.47E-03 | 1.54E-03 | 1.60E-03 | 1.64E-03 | 1.66E-03 | 1.67E-03 |
| 400 | 1.04E-03 | 1.29E-03 | 1.53E-03 | 1.75E-03 | 1.96E-03 | 2.16E-03 | 2.34E-03 | 2.50E-03 | 2.65E-03 | 2.78E-03 | 2.89E-03 | 2.99E-03 |
| 500 | 1.34E-03 | 1.67E-03 | 1.99E-03 | 2.30E-03 | 2.59E-03 | 2.87E-03 | 3.13E-03 | 3.37E-03 | 3.60E-03 | 3.82E-03 | 4.01E-03 | 4.20E-03 |

^a Values are the root mean square radius of the electron beam in meters.

B.2. Electron beam pulse duration

Table B.133: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 9.38E-13 | 9.40E-13 | 9.46E-13 | 9.55E-13 | 9.75E-13 | 1.02E-12 | 1.11E-12 | 1.25E-12 | 1.24E-12 | 1.21E-12 | 1.18E-12 |
| 2 | 9.38E-13 | 9.40E-13 | 9.45E-13 | 9.55E-13 | 9.71E-13 | 1.01E-12 | 1.13E-12 | 1.22E-12 | 1.20E-12 | 1.16E-12 | 1.13E-12 |
| 3 | 9.38E-13 | 9.40E-13 | 9.44E-13 | 9.50E-13 | 9.66E-13 | 9.97E-13 | 1.11E-12 | 1.16E-12 | 1.15E-12 | 1.13E-12 | 1.09E-12 |
| 4 | 9.38E-13 | 9.39E-13 | 9.42E-13 | 9.48E-13 | 9.59E-13 | 9.83E-13 | 1.07E-12 | 1.09E-12 | 1.10E-12 | 1.09E-12 | 1.05E-12 |
| 5 | 9.38E-13 | 9.39E-13 | 9.40E-13 | 9.46E-13 | 9.52E-13 | 9.70E-13 | 1.03E-12 | 1.05E-12 | 1.05E-12 | 1.05E-12 | 1.03E-12 |
| 6 | 9.38E-13 | 9.39E-13 | 9.40E-13 | 9.42E-13 | 9.47E-13 | 9.60E-13 | 9.98E-13 | 1.02E-12 | 1.01E-12 | 1.00E-12 | 1.00E-12 |
| 7 | 9.38E-13 | 9.38E-13 | 9.39E-13 | 9.40E-13 | 9.43E-13 | 9.50E-13 | 9.75E-13 | 9.87E-13 | 9.89E-13 | 9.87E-13 | 9.89E-13 |
| 8 | 9.38E-13 | 9.38E-13 | 9.38E-13 | 9.39E-13 | 9.40E-13 | 9.42E-13 | 9.54E-13 | 9.66E-13 | 9.72E-13 | 9.71E-13 | 9.68E-13 |
| 9 | 9.38E-13 | 9.38E-13 | 9.38E-13 | 9.37E-13 | 9.38E-13 | 9.40E-13 | 9.42E-13 | 9.52E-13 | 9.55E-13 | 9.59E-13 | 9.58E-13 |
| 10 | 9.38E-13 | 9.38E-13 | 9.38E-13 | 9.37E-13 | 9.37E-13 | 9.38E-13 | 9.39E-13 | 9.41E-13 | 9.45E-13 | 9.46E-13 | 9.48E-13 |
| 11 | 9.38E-13 | 9.38E-13 | 9.37E-13 | 9.37E-13 | 9.38E-13 | 9.37E-13 | 9.38E-13 | 9.38E-13 | 9.39E-13 | 9.40E-13 | 9.42E-13 |
| 12 | 9.38E-13 | 9.38E-13 | 9.37E-13 | 9.37E-13 | 9.37E-13 | 9.37E-13 | 9.38E-13 | 9.38E-13 | 9.37E-13 | 9.38E-13 | 9.40E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.134: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 45 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 9.23E-13 | 9.26E-13 | 9.34E-13 | 9.50E-13 | 9.78E-13 | 1.04E-12 | 1.28E-12 | 1.53E-12 | 1.51E-12 | 1.44E-12 | 1.37E-12 |
| 2 | 9.23E-13 | 9.25E-13 | 9.31E-13 | 9.44E-13 | 9.68E-13 | 1.03E-12 | 1.35E-12 | 1.48E-12 | 1.43E-12 | 1.37E-12 | 1.31E-12 |
| 3 | 9.23E-13 | 9.25E-13 | 9.29E-13 | 9.39E-13 | 9.57E-13 | 1.01E-12 | 1.29E-12 | 1.34E-12 | 1.31E-12 | 1.27E-12 | 1.22E-12 |
| 4 | 9.23E-13 | 9.24E-13 | 9.28E-13 | 9.34E-13 | 9.48E-13 | 9.95E-13 | 1.20E-12 | 1.23E-12 | 1.21E-12 | 1.17E-12 | 1.16E-12 |
| 5 | 9.23E-13 | 9.24E-13 | 9.27E-13 | 9.31E-13 | 9.40E-13 | 9.73E-13 | 1.12E-12 | 1.14E-12 | 1.13E-12 | 1.11E-12 | 1.09E-12 |
| 6 | 9.23E-13 | 9.24E-13 | 9.25E-13 | 9.28E-13 | 9.34E-13 | 9.54E-13 | 1.05E-12 | 1.08E-12 | 1.07E-12 | 1.06E-12 | 1.05E-12 |
| 7 | 9.23E-13 | 9.23E-13 | 9.25E-13 | 9.27E-13 | 9.31E-13 | 9.40E-13 | 9.97E-13 | 1.03E-12 | 1.02E-12 | 1.02E-12 | 1.02E-12 |
| 8 | 9.23E-13 | 9.23E-13 | 9.24E-13 | 9.27E-13 | 9.28E-13 | 9.32E-13 | 9.56E-13 | 9.84E-13 | 9.92E-13 | 9.93E-13 | 9.94E-13 |
| 9 | 9.23E-13 | 9.24E-13 | 9.24E-13 | 9.25E-13 | 9.27E-13 | 9.27E-13 | 9.33E-13 | 9.53E-13 | 9.64E-13 | 9.66E-13 | 9.71E-13 |
| 10 | 9.23E-13 | 9.24E-13 | 9.25E-13 | 9.25E-13 | 9.25E-13 | 9.24E-13 | 9.27E-13 | 9.31E-13 | 9.40E-13 | 9.48E-13 | 9.53E-13 |
| 11 | 9.23E-13 | 9.24E-13 | 9.24E-13 | 9.25E-13 | 9.24E-13 | 9.24E-13 | 9.25E-13 | 9.26E-13 | 9.27E-13 | 9.32E-13 | 9.36E-13 |
| 12 | 9.23E-13 | 9.23E-13 | 9.25E-13 | 9.25E-13 | 9.25E-13 | 9.23E-13 | 9.25E-13 | 9.26E-13 | 9.26E-13 | 9.26E-13 | 9.28E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.135: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μ m anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.33E-12 | 1.37E-12 | 1.47E-12 | 1.49E-12 | 1.48E-12 | 1.45E-12 | 1.43E-12 |
| 2 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.33E-12 | 1.36E-12 | 1.45E-12 | 1.45E-12 | 1.46E-12 | 1.43E-12 | 1.42E-12 |
| 3 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.32E-12 | 1.35E-12 | 1.41E-12 | 1.41E-12 | 1.41E-12 | 1.39E-12 | 1.38E-12 |
| 4 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.34E-12 | 1.38E-12 | 1.38E-12 | 1.38E-12 | 1.37E-12 | 1.36E-12 |
| 5 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.32E-12 | 1.36E-12 | 1.37E-12 | 1.36E-12 | 1.36E-12 | 1.35E-12 |
| 6 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.34E-12 | 1.35E-12 | 1.33E-12 | 1.35E-12 | 1.35E-12 |
| 7 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.32E-12 | 1.33E-12 | 1.33E-12 | 1.33E-12 | 1.33E-12 |
| 8 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.32E-12 | 1.32E-12 | 1.32E-12 | 1.32E-12 |
| 9 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.31E-12 | 1.31E-12 |
| 10 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 |
| 11 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.29E-12 | 1.29E-12 | 1.30E-12 | 1.30E-12 |
| 12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.29E-12 | 1.30E-12 | 1.29E-12 | 1.30E-12 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.136: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 45 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.33E-12 | 1.37E-12 | 1.48E-12 | 1.74E-12 | 1.76E-12 | 1.70E-12 | 1.63E-12 | 1.58E-12 |
| 2 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.32E-12 | 1.36E-12 | 1.45E-12 | 1.67E-12 | 1.66E-12 | 1.63E-12 | 1.58E-12 | 1.56E-12 |
| 3 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.32E-12 | 1.34E-12 | 1.43E-12 | 1.58E-12 | 1.58E-12 | 1.56E-12 | 1.52E-12 | 1.50E-12 |
| 4 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.33E-12 | 1.40E-12 | 1.51E-12 | 1.51E-12 | 1.50E-12 | 1.47E-12 | 1.46E-12 |
| 5 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.32E-12 | 1.36E-12 | 1.45E-12 | 1.46E-12 | 1.45E-12 | 1.43E-12 | 1.43E-12 |
| 6 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.31E-12 | 1.34E-12 | 1.40E-12 | 1.42E-12 | 1.41E-12 | 1.40E-12 | 1.40E-12 |
| 7 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.32E-12 | 1.36E-12 | 1.38E-12 | 1.38E-12 | 1.37E-12 | 1.37E-12 |
| 8 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.31E-12 | 1.33E-12 | 1.35E-12 | 1.35E-12 | 1.35E-12 | 1.35E-12 |
| 9 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.33E-12 | 1.33E-12 | 1.34E-12 | 1.33E-12 |
| 10 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 | 1.32E-12 | 1.32E-12 |
| 11 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.31E-12 | 1.31E-12 |
| 12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 | 1.30E-12 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.137: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 6.30E-13 | 6.31E-13 | 6.34E-13 | 6.38E-13 | 6.46E-13 | 6.62E-13 | 6.85E-13 | 7.38E-13 | 8.39E-13 | 8.62E-13 | 8.47E-13 |
| 2 | 6.30E-13 | 6.31E-13 | 6.33E-13 | 6.36E-13 | 6.43E-13 | 6.53E-13 | 6.77E-13 | 7.44E-13 | 8.31E-13 | 8.26E-13 | 8.12E-13 |
| 3 | 6.30E-13 | 6.30E-13 | 6.33E-13 | 6.36E-13 | 6.40E-13 | 6.49E-13 | 6.69E-13 | 7.40E-13 | 7.83E-13 | 7.81E-13 | 7.70E-13 |
| 4 | 6.30E-13 | 6.30E-13 | 6.32E-13 | 6.34E-13 | 6.37E-13 | 6.44E-13 | 6.61E-13 | 7.18E-13 | 7.45E-13 | 7.46E-13 | 7.54E-13 |
| 5 | 6.30E-13 | 6.30E-13 | 6.31E-13 | 6.33E-13 | 6.35E-13 | 6.40E-13 | 6.51E-13 | 6.91E-13 | 7.13E-13 | 7.11E-13 | 7.16E-13 |
| 6 | 6.30E-13 | 6.30E-13 | 6.31E-13 | 6.32E-13 | 6.34E-13 | 6.37E-13 | 6.44E-13 | 6.71E-13 | 6.86E-13 | 6.86E-13 | 6.85E-13 |
| 7 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.31E-13 | 6.32E-13 | 6.35E-13 | 6.38E-13 | 6.52E-13 | 6.64E-13 | 6.65E-13 | 6.66E-13 |
| 8 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.31E-13 | 6.32E-13 | 6.32E-13 | 6.35E-13 | 6.39E-13 | 6.50E-13 | 6.52E-13 | 6.52E-13 |
| 9 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.31E-13 | 6.31E-13 | 6.33E-13 | 6.39E-13 | 6.42E-13 | 6.44E-13 |
| 10 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.29E-13 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.32E-13 | 6.34E-13 | 6.35E-13 |
| 11 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.29E-13 | 6.30E-13 | 6.29E-13 | 6.29E-13 | 6.29E-13 | 6.30E-13 | 6.30E-13 | 6.31E-13 |
| 12 | 6.30E-13 | 6.30E-13 | 6.30E-13 | 6.29E-13 | 6.30E-13 | 6.29E-13 | 6.29E-13 | 6.28E-13 | 6.29E-13 | 6.30E-13 | 6.31E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.138: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 65 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 6.21E-13 | 6.22E-13 | 6.24E-13 | 6.29E-13 | 6.39E-13 | 6.54E-13 | 6.91E-13 | 8.01E-13 | 1.01E-12 | 1.04E-12 | 1.01E-12 |
| 2 | 6.21E-13 | 6.21E-13 | 6.23E-13 | 6.28E-13 | 6.36E-13 | 6.50E-13 | 6.86E-13 | 8.60E-13 | 1.00E-12 | 9.91E-13 | 9.57E-13 |
| 3 | 6.21E-13 | 6.21E-13 | 6.23E-13 | 6.26E-13 | 6.32E-13 | 6.44E-13 | 6.76E-13 | 8.50E-13 | 9.13E-13 | 8.97E-13 | 8.72E-13 |
| 4 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.24E-13 | 6.29E-13 | 6.37E-13 | 6.62E-13 | 7.95E-13 | 8.36E-13 | 8.32E-13 | 8.07E-13 |
| 5 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.23E-13 | 6.26E-13 | 6.33E-13 | 6.50E-13 | 7.43E-13 | 7.73E-13 | 7.75E-13 | 7.63E-13 |
| 6 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.24E-13 | 6.28E-13 | 6.38E-13 | 6.98E-13 | 7.28E-13 | 7.29E-13 | 7.24E-13 |
| 7 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.23E-13 | 6.25E-13 | 6.29E-13 | 6.62E-13 | 6.89E-13 | 6.94E-13 | 6.93E-13 |
| 8 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.22E-13 | 6.25E-13 | 6.36E-13 | 6.59E-13 | 6.67E-13 | 6.69E-13 |
| 9 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.20E-13 | 6.23E-13 | 6.25E-13 | 6.36E-13 | 6.46E-13 | 6.49E-13 |
| 10 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.20E-13 | 6.20E-13 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.24E-13 | 6.29E-13 | 6.35E-13 |
| 11 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.20E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.23E-13 | 6.23E-13 |
| 12 | 6.21E-13 | 6.21E-13 | 6.20E-13 | 6.21E-13 | 6.20E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.21E-13 | 6.22E-13 | 6.22E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.139: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 8.86E-13 | 8.81E-13 | 8.90E-13 | 8.96E-13 | 9.04E-13 | 9.16E-13 | 9.44E-13 | 1.01E-12 | 1.04E-12 | 1.04E-12 | 1.02E-12 |
| 2 | 8.86E-13 | 8.86E-13 | 8.89E-13 | 8.94E-13 | 9.02E-13 | 9.11E-13 | 9.36E-13 | 9.98E-13 | 1.02E-12 | 1.02E-12 | 1.01E-12 |
| 3 | 8.86E-13 | 8.86E-13 | 8.88E-13 | 8.92E-13 | 8.94E-13 | 9.02E-13 | 9.22E-13 | 9.71E-13 | 9.81E-13 | 9.84E-13 | 9.82E-13 |
| 4 | 8.86E-13 | 8.86E-13 | 8.87E-13 | 8.90E-13 | 8.95E-13 | 9.03E-13 | 9.17E-13 | 9.55E-13 | 9.61E-13 | 9.59E-13 | 9.61E-13 |
| 5 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.89E-13 | 8.92E-13 | 8.98E-13 | 9.06E-13 | 9.31E-13 | 9.42E-13 | 9.43E-13 | 9.41E-13 |
| 6 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.87E-13 | 8.91E-13 | 8.93E-13 | 9.01E-13 | 9.14E-13 | 9.25E-13 | 9.29E-13 | 9.43E-13 |
| 7 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.88E-13 | 8.90E-13 | 8.95E-13 | 9.04E-13 | 9.11E-13 | 9.13E-13 | 9.16E-13 |
| 8 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.87E-13 | 8.89E-13 | 8.91E-13 | 8.94E-13 | 9.00E-13 | 9.01E-13 | 9.05E-13 |
| 9 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 | 8.88E-13 | 8.90E-13 | 8.92E-13 | 8.94E-13 | 8.96E-13 |
| 10 | 8.86E-13 | 8.86E-13 | 8.85E-13 | 8.85E-13 | 8.84E-13 | 8.85E-13 | 8.86E-13 | 8.88E-13 | 8.88E-13 | 8.92E-13 | 8.91E-13 |
| 11 | 8.86E-13 | 8.85E-13 | 8.85E-13 | 8.85E-13 | 8.84E-13 | 8.84E-13 | 8.85E-13 | 8.85E-13 | 8.87E-13 | 8.86E-13 | 8.87E-13 |
| 12 | 8.86E-13 | 8.85E-13 | 8.85E-13 | 8.85E-13 | 8.85E-13 | 8.84E-13 | 8.85E-13 | 8.85E-13 | 8.86E-13 | 8.86E-13 | 8.86E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.140: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 65 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 8.81E-13 | 8.83E-13 | 8.86E-13 | 8.93E-13 | 9.06E-13 | 9.30E-13 | 9.95E-13 | 1.17E-12 | 1.22E-12 | 1.19E-12 | 1.15E-12 |
| 2 | 8.81E-13 | 8.82E-13 | 8.85E-13 | 8.90E-13 | 9.00E-13 | 9.23E-13 | 9.81E-13 | 1.14E-12 | 1.16E-12 | 1.14E-12 | 1.11E-12 |
| 3 | 8.81E-13 | 8.82E-13 | 8.84E-13 | 8.88E-13 | 8.96E-13 | 9.13E-13 | 9.64E-13 | 1.08E-12 | 1.10E-12 | 1.08E-12 | 1.06E-12 |
| 4 | 8.81E-13 | 8.82E-13 | 8.83E-13 | 8.86E-13 | 8.91E-13 | 9.04E-13 | 9.43E-13 | 1.03E-12 | 1.04E-12 | 1.02E-12 | 1.01E-12 |
| 5 | 8.81E-13 | 8.82E-13 | 8.83E-13 | 8.85E-13 | 8.88E-13 | 8.96E-13 | 9.23E-13 | 9.85E-13 | 1.00E-12 | 9.90E-13 | 9.84E-13 |
| 6 | 8.81E-13 | 8.82E-13 | 8.83E-13 | 8.83E-13 | 8.86E-13 | 8.90E-13 | 9.05E-13 | 9.48E-13 | 9.62E-13 | 9.62E-13 | 9.56E-13 |
| 7 | 8.81E-13 | 8.81E-13 | 8.82E-13 | 8.83E-13 | 8.84E-13 | 8.86E-13 | 8.94E-13 | 9.20E-13 | 9.36E-13 | 9.39E-13 | 9.33E-13 |
| 8 | 8.81E-13 | 8.82E-13 | 8.82E-13 | 8.82E-13 | 8.83E-13 | 8.84E-13 | 8.87E-13 | 9.00E-13 | 9.14E-13 | 9.17E-13 | 9.17E-13 |
| 9 | 8.81E-13 | 8.81E-13 | 8.82E-13 | 8.82E-13 | 8.82E-13 | 8.83E-13 | 8.84E-13 | 8.86E-13 | 8.96E-13 | 9.01E-13 | 9.03E-13 |
| 10 | 8.81E-13 | 8.81E-13 | 8.81E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.82E-13 | 8.82E-13 | 8.83E-13 | 8.88E-13 | 8.91E-13 |
| 11 | 8.81E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.81E-13 | 8.83E-13 | 8.83E-13 |
| 12 | 8.81E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.82E-13 | 8.81E-13 | 8.81E-13 | 8.81E-13 | 8.79E-13 | 8.81E-13 | 8.81E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.141: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 150 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.03E-13 | 4.07E-13 | 4.13E-13 | 4.23E-13 | 4.39E-13 | 4.78E-13 | 5.37E-13 |
| 2 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 4.00E-13 | 4.04E-13 | 4.05E-13 | 4.10E-13 | 4.19E-13 | 4.36E-13 | 4.92E-13 | 5.31E-13 |
| 3 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.03E-13 | 4.09E-13 | 4.16E-13 | 4.32E-13 | 4.83E-13 | 5.04E-13 |
| 4 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.02E-13 | 4.05E-13 | 4.10E-13 | 4.26E-13 | 4.65E-13 | 4.76E-13 |
| 5 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.02E-13 | 4.07E-13 | 4.19E-13 | 4.44E-13 | 4.53E-13 |
| 6 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.01E-13 | 4.03E-13 | 4.11E-13 | 4.27E-13 | 4.37E-13 |
| 7 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.00E-13 | 4.01E-13 | 4.04E-13 | 4.15E-13 | 4.22E-13 |
| 8 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 3.99E-13 | 4.01E-13 | 4.05E-13 | 4.11E-13 |
| 9 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.99E-13 | 3.99E-13 | 4.04E-13 |
| 10 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.99E-13 |
| 11 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.97E-13 | 3.98E-13 | 3.98E-13 | 3.97E-13 | 3.97E-13 | 3.98E-13 | 3.98E-13 |
| 12 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.98E-13 | 3.97E-13 | 3.97E-13 | 3.98E-13 | 3.98E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.142: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 100 kV acceleration voltage, 10 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 3.92E-13 | 3.91E-13 | 3.93E-13 | 3.94E-13 | 3.97E-13 | 4.01E-13 | 4.08E-13 | 4.19E-13 | 4.44E-13 | 5.20E-13 | 6.32E-13 |
| 2 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.94E-13 | 3.96E-13 | 3.99E-13 | 4.05E-13 | 4.15E-13 | 4.44E-13 | 5.75E-13 | 6.42E-13 |
| 3 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.95E-13 | 3.98E-13 | 4.01E-13 | 4.11E-13 | 4.42E-13 | 5.55E-13 | 5.87E-13 |
| 4 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.94E-13 | 3.96E-13 | 3.99E-13 | 4.06E-13 | 4.37E-13 | 5.15E-13 | 5.34E-13 |
| 5 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.93E-13 | 3.95E-13 | 3.97E-13 | 4.01E-13 | 4.25E-13 | 4.77E-13 | 4.93E-13 |
| 6 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.95E-13 | 3.98E-13 | 4.10E-13 | 4.48E-13 | 4.60E-13 |
| 7 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.93E-13 | 3.95E-13 | 3.99E-13 | 4.23E-13 | 4.36E-13 |
| 8 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.93E-13 | 3.94E-13 | 4.04E-13 | 4.16E-13 |
| 9 | 3.92E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.94E-13 | 4.02E-13 |
| 10 | 3.92E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.93E-13 | 3.93E-13 | 3.93E-13 |
| 11 | 3.92E-13 | 3.92E-13 | 3.91E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 |
| 12 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.91E-13 | 3.92E-13 | 3.92E-13 | 3.92E-13 | 3.91E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.143: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 150 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.64E-13 | 5.67E-13 | 5.74E-13 | 5.81E-13 | 5.92E-13 | 6.17E-13 | 6.59E-13 | 6.68E-13 |
| 2 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.63E-13 | 5.65E-13 | 5.70E-13 | 5.76E-13 | 5.85E-13 | 6.11E-13 | 6.43E-13 | 6.47E-13 |
| 3 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.64E-13 | 5.67E-13 | 5.72E-13 | 5.81E-13 | 6.04E-13 | 6.25E-13 | 6.31E-13 |
| 4 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.63E-13 | 5.65E-13 | 5.69E-13 | 5.76E-13 | 5.94E-13 | 6.10E-13 | 6.12E-13 |
| 5 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.64E-13 | 5.66E-13 | 5.71E-13 | 5.83E-13 | 5.94E-13 | 5.99E-13 |
| 6 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.63E-13 | 5.65E-13 | 5.66E-13 | 5.75E-13 | 5.84E-13 | 5.87E-13 |
| 7 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.64E-13 | 5.68E-13 | 5.75E-13 | 5.79E-13 |
| 8 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.64E-13 | 5.68E-13 | 5.72E-13 |
| 9 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.63E-13 | 5.67E-13 |
| 10 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.61E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.62E-13 |
| 11 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.61E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.61E-13 | 5.62E-13 |
| 12 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.61E-13 | 5.61E-13 | 5.62E-13 | 5.62E-13 | 5.62E-13 | 5.61E-13 | 5.61E-13 | 5.62E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.

Table B.144: Variation in electron pulse duration at the sample position for various magnetic lens positions and currents for a 100 kV acceleration voltage, 15 mm photocathode to anode distance, 400 μm anode aperture^a

| Lens distance from anode / cm | Magnetic lens current / A | | | | | | | | | | |
|----------------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 1 | 5.58E-13 | 5.59E-13 | 5.60E-13 | 5.63E-13 | 5.67E-13 | 5.73E-13 | 5.83E-13 | 6.04E-13 | 6.64E-13 | 7.63E-13 | 7.80E-13 |
| 2 | 5.58E-13 | 5.59E-13 | 5.60E-13 | 5.62E-13 | 5.64E-13 | 5.69E-13 | 5.78E-13 | 5.96E-13 | 6.65E-13 | 7.36E-13 | 7.39E-13 |
| 3 | 5.58E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.63E-13 | 5.66E-13 | 5.73E-13 | 5.88E-13 | 6.50E-13 | 6.93E-13 | 6.96E-13 |
| 4 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.62E-13 | 5.65E-13 | 5.69E-13 | 5.80E-13 | 6.27E-13 | 6.59E-13 | 6.62E-13 |
| 5 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.63E-13 | 5.66E-13 | 5.73E-13 | 6.04E-13 | 6.29E-13 | 6.37E-13 |
| 6 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.63E-13 | 5.67E-13 | 5.84E-13 | 6.06E-13 | 6.12E-13 |
| 7 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.64E-13 | 5.70E-13 | 5.86E-13 | 5.94E-13 |
| 8 | 5.58E-13 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.63E-13 | 5.72E-13 | 5.78E-13 |
| 9 | 5.58E-13 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.60E-13 | 5.61E-13 | 5.62E-13 | 5.66E-13 |
| 10 | 5.58E-13 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 |
| 11 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.58E-13 | 5.58E-13 |
| 12 | 5.58E-13 | 5.58E-13 | 5.59E-13 | 5.58E-13 | 5.59E-13 | 5.58E-13 | 5.59E-13 | 5.59E-13 | 5.59E-13 | 5.58E-13 | 5.58E-13 |

^a Values are the full-width half maximum of the electron beam 's duration in seconds.