

Technical Specifications

Emittance Scanner

Dated March 4, 2026

Emittance Scanner Probe Specifications:

- Max Travel: 250mm
- Distance – Slit to Flange: 95mm to 345mm
- Flange: Ability to customize to customer specifications
- Y Resolution: 100 μ m
- Y Step Min: 1 μ m
- Y' Max: ± 126 mRad (for KE <65 keV)
- Y' Resolution: 1.2mRad
- Y' Step Min: 16 bit resolution over +/-Y' Max
- Sweep Voltage: ± 1250 V
- Slit Width: Factory configurable 25 to 250 μ m
- Slit Length: 104 μ m
- Beam \varnothing max: 100mm
- Bias Voltage: -100 V
- Electrode Gap: 6.0mm
- Electrode Length: 76mm
- Cooling Water: 23 LPM @ 450 kPa (65 PSI)
- Max Beam Power³: 10kW
- Max Beam Intensity³: 100 W/cm²@ 10 kW Beam Power
- Cooling Plate: Molybdenum/Copper ideally, may discuss options
- Slits: Molybdenum/Copper ideally, may discuss options

Emittance Scanner Control System Specifications:

- Instrument Rack: 16U 19" rack, w/ keyboard, power bar
- Platform: Industrial PC / Windows™ / LabView™
- Typical Scan Time: <1 minute for 30 step Y by 30 step Y' scan
- Current Meter:
 - 2nA to 20mA (full scale)
 - 5 pA (typical noise floor)
- System Power: 115 or 220 VAC

- Data Plots & Analysis: 2D & 3D phase-scale intensity distributions, computer emittance, RMS ellipses, and Twiss Parameters
- File Report: CSV, PDF