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Data Sheet

CRUX Cathode

Characteristics and Capabilities

Characteristic	Demonstrated Capability
[1]Available Fiber Lengths, Typical (mm)	1 to 5 mm
[2]Available Fiber Diameters (µm)	5, 7, 20, 35
[3]Fiber Density, 4% to 0.4%	% Coverage by area
[4]Substrate	Graphite, aluminum, stainless steel, copper
[5]Max. Operating Temperature (C) [4]	1000+ for graphite substrate; 150 for metal
CTE	Determined by substrate

1. 1 to 2 mm commonly used. Others lengths are stocked or are generally available on request, including bimodal (dual-length) velvet.
2. Area-coverage carbon fiber velvets available with 5 or 7 µm diameter fibers; 20 and 35 µm diam. fibers available only as discrete-fiber emitters with high-precision fiber length and placement.
3. Shorter fibers yield higher fiber density; 1 mm fibers yield ~4% density, while 5 mm fibers yield ~0.4%.
4. These are the most commonly used materials; inquire for others.
5. Cathodes with graphite substrates are typically given a pyrolytic carbon coating at >1000C. On metallic substrates, the fibers are bonded in place with a filled epoxy adhesive limited to ~150C operating temperature.