

Permanent Sensitivity X-RAY COUNTER

Description 6207 (153C)

The type 153C is an optimum design for an end mica window, X-Ray diffraction and fluorescence analysis counter. It has maximum sensitivity to the characteristic radiation of the usual X-Ray diffraction targets. The infinite-life, halogen filling allows the exposure of the tube to the direct X-Ray beam without any adverse effect.

General Data

Operating temperature range.....	-55° to +75°C
Gas filling.....	Argon plus halogen admixture
Cathode material.....	stainless steel (28% chromium, 72% iron)
Mica window ⁶	3 to 4 mg/cm ²
Mica window diameter.....	25/32"
Length of sensitive gas path.....	100 mm
Recommended X-Ray beam width.....	1.2 cm
Effective cathode dimensions.....	4 ³ / ₈ " long x 7 ⁸ / ₈ " O.D. x 3/64" wall

Performance Data

Operating voltage ^{1,3}	1500 volts D.C.
Plateau length ¹	in excess of 400 volts
Slope of plateau ^{1,3}	3% to 8% per 100 volts
Starting voltage (0.3 volt pulses) ¹	1300 to 1400 volts
Capacity at terminals.....	2.4 mmf
Radial sensitivity.....	65% to 70%
Dead time (approx.).....	150 microseconds
Maximum counting rate ⁵	1100 counts per second
Background (Shielded 2" lead and 1/8" aluminum).....	60 counts*per minute max.
Life expectancy in counts ²	unlimited by use

Notes

¹ This data is obtained from an automatic plateau trace run on each tube.

A print of this trace is shipped with each tube.

² Guaranteed 5×10^{10} counts minimum.

³ These tubes will operate satisfactorily anywhere on the plateau.

⁴ At an average counting rate of 100 counts per second.

⁵ For 20% dead time correction (approx.).

⁶ 3.5 mg/cm² mica = .0005 inch = 12.70 microns.

