

# 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 <sup>6</sup> .....	3 to 4 mg/cm <sup>2</sup>
Mica window diameter.....	25/32"
Length of sensitive gas path.....	100 mm
Recommended X-Ray beam width.....	1.2 cm
Effective cathode dimensions.....	4 <sup>3</sup> / <sub>8</sub> " long x 7 <sup>8</sup> / <sub>16</sub> " O.D. x 3/64" wall

## Performance Data

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

## Notes

<sup>1</sup> This data is obtained from an automatic plateau trace run on each tube.

A print of this trace is shipped with each tube.

<sup>2</sup> Guaranteed  $5 \times 10^{10}$  counts minimum.

<sup>3</sup> These tubes will operate satisfactorily anywhere on the plateau.

<sup>4</sup> At an average counting rate of 100 counts per second.

<sup>5</sup> For 20% dead time correction (approx.).

<sup>6</sup> 3.5 mg/cm<sup>2</sup> mica = .0005 inch = 12.70 microns.

