

Permanent Sensitivity BETA-GAMMA COUNTER

Description

5944 (90NB) is a thin, stainless steel wall counter tube whose characteristics are similar to those of the 30 mg/cm glass wall tubes. However, the materials used in this tube and their special processing permits the use of the halogen-quenched Neon filling which has permanent characteristics. The metal wall of this tube is also mechanically stronger than the fragile thin glass walls of comparative types.

This tube is commonly used in survey instruments for Beta and Gamma detection and in hand and foot monitoring instruments where it is necessary to measure Beta in the presence of Gamma radiation.

General Data

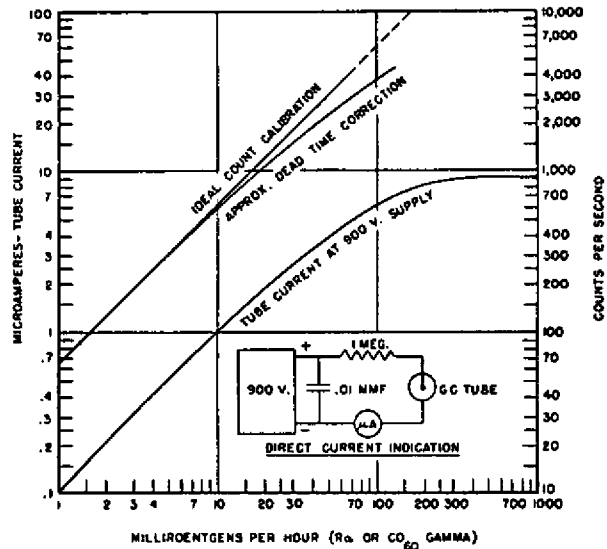
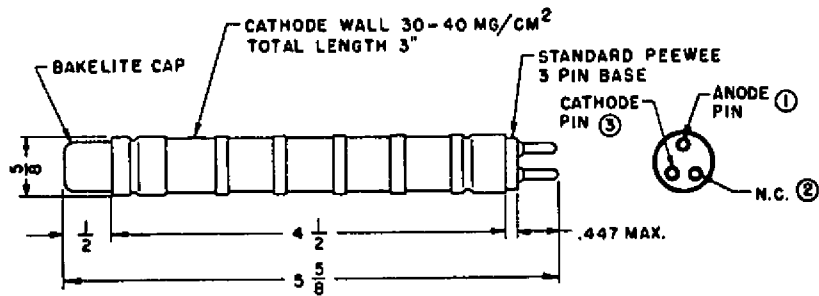
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|---|--|
| Operating temperature range..... | -55° to +75°C |
| Gas filling..... | Neon plus halogen admixture |
| Length of thin wall section (Cathode wall thickness 30-40 mg/cm ²).... | 3 inches total |
| Cathode material..... | stainless steel (28% chromium, 72% iron) |
| Overall cathode dimensions..... | 3½" long x .607" I.D. (3" of 30-40 mg/cm ² + ½" of 176 mg/cm ²) |

Performance Data

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|---|---------------------------|
| Operating voltage ^{1,3,4} | 900 volts D.C. |
| Plateau length ¹ | in excess of 200 volts |
| Slope of plateau ^{1,5} | 10% per 100 volts max. |
| Starting voltage (0.3 volt pulses) ¹ | 825 volts max. |
| Capacity at terminals..... | 2.4 mmf |
| Radial sensitivity (approx.)..... | 80% |
| Dead time (approx.)..... | 100 microseconds |
| Maximum counting rate ⁶ | 1700 counts per second |
| Background (Shielded 2" lead and ¼" aluminum)..... | 50 counts per minute max. |
| Life expectancy in counts ² | unlimited by use |
| Roentgen energy dependence ⁷ | ±20% |

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 Also available upon request filled at 700 volts operating voltage. (Specify type 70NB.)
- ⁵ At an average counting rate of 100 counts per second.
- ⁶ For 20% dead time correction (approx.).
- ⁷ Calculated value based on radiocobalt gamma center value with 100KV to 3 M.E.V. extremes, with gamma shield equivalent to 1/16" thick steel.



TYPICAL OPERATION

