X-RAY TUBE

4072A

CATHODE.

(*a*) **For operation on 10 mA only.**
Filament voltage 3.4 volts maximum, 2.6 volts minimum.
Filament current 2.4 amps. maximum, 1.7 amps minimum.

(*b*) **For operation on any emission between 2 mA and 10 mA.**
Filament voltage 3.4 volts maximum, 2.0 volts minimum.
Filament current 2.4 amps maximum, 1.5 amps minimum.

DIMENSIONS.

Maximum overall length	121	mm.
Maximum diameter	38	mm.
Net weight	110	g.

MOUNTING.

The tube is intended for mounting by means of a 2 B.A. screw fitting the tapped hole in the anode and a locating slot as shown on the drawing. No metal parts should approach within $\frac{1}{2}''$ of the glass at any point, except in the immediate vicinity of the anode.

FOCUS.

Effective focal spot is 1.5 mm. × 1.5 mm.

COVERING POWER.

The diameter of the cone of X-rays emerging from the tube is 16″ (min.) at 30 inches target distance and the intensity is effectively constant over this area.

OPERATION.

The tube is only to be operated when wholly immersed in Grade A transformer oil. It is most important that the electrical connections to the tube shall be thoroughly sound.

The tube is self-rectifying and is intended to be run directly across the poles of a high tension transformer which delivers 10 mA mean rectified current at a peak voltage, during the active half cycle, of 63 kilovolts. The regulation of the transformer secondary circuit should be such that the peak voltage does not rise above 75 kV when the tube is removed and yet such that the maximum current which the transformer will deliver on short circuit is less than 120 mA. The high tension should be applied by means of a switch in the primary circuit which momentarily inserts a resistance of at least 0.06 ohm per volt of mains voltage.

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PROTECTION.

This tube is not self-protected and therefore external X-ray protection equivalent to 1 mm. of lead should be provided.

MAXIMUM RATING.

The tube may be run continuously at 63 kV peak 10 mA for a period depending upon the design of the tube container. Provision must be made for perfectly free circulation of oil round the tube, especially the anode, in order to prevent excessive local rise in temperature. The temperature of the body of the oil must not be permitted to rise above 60°C.

MAINS FLUCTUATION.

While the tube is intended to be run at 10 mA, small changes in tube current due to voltage variations of the mains will not damage the tube, but it is important to ensure that the tube current never exceeds 12 mA. It is therefore advisable when starting to reduce the filament current slightly, in case the mains voltage has risen considerably since the tube was last used.