



## Rectifier Type GU7

**General.** The GU 7 is a directly heated half-wave mercury vapour diode intended for use as a power rectifier.

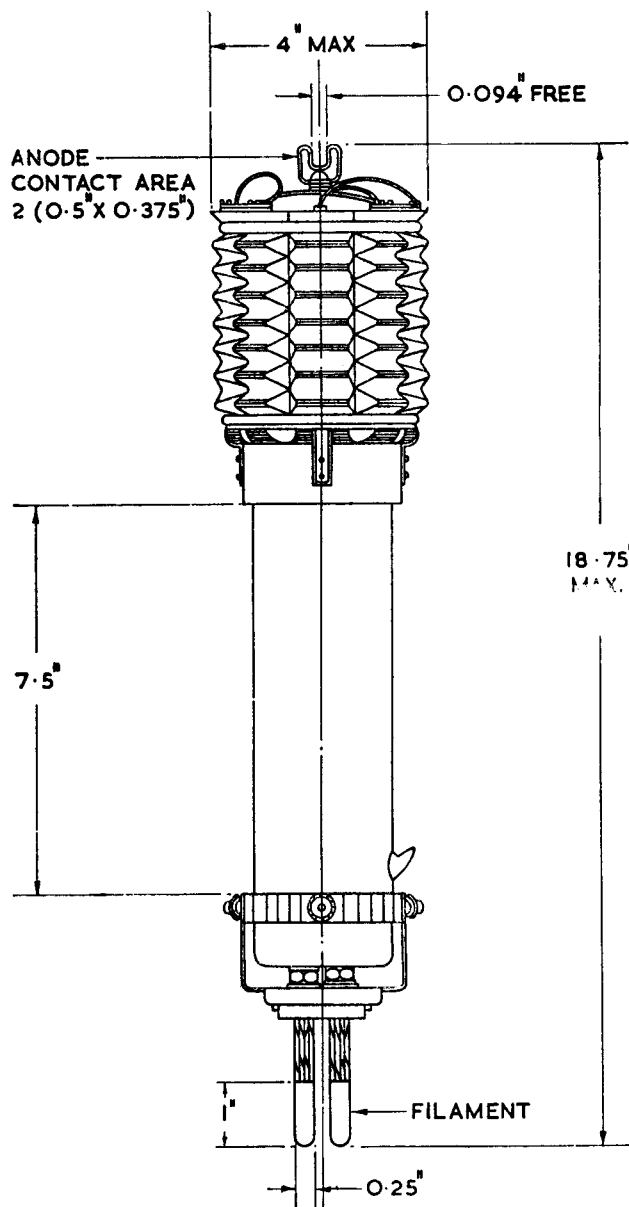
**Cooling.** The condensation temperature is the limiting factor. The range quoted is for the temperature at that part of the bulb where the mercury collects.

The temperature gradient should be so arranged that the coolest part of the bulb is at the base. The ambient temperature in still air should not exceed 38°C. If an air blast is used, the temperature may be raised to 58°C, the temperature being recorded on a thermometer suspended 6 in. from the valve and with its bulb level with the top of the filament cap.

**HT Switching.** There must be a time delay after switching on the filament supply in order that the filament may attain its working temperature and that the condensation temperature may be within the rated limits, before the anode voltage is applied. Provided that the ambient temperature is not less than 32°C, the minimum delay time should be one minute. At lower ambient temperatures, the delay time must be extended until the condensation temperature reaches the minimum value. If the ambient temperature is below 10°C, the delay time is likely to be inconveniently long, and a heated air blast may then be necessary.

**Mounting.** The valve must be mounted vertically with its anode uppermost. This position must be maintained during storage and transit in order to prevent mercury being deposited on the filament or anode.

**Seasoning.** Whenever a new valve is put into service, or when a valve has been transported or stored, the filament must be run for at least 30 minutes at normal filament voltage before anode voltage is applied.



WEIGHT 3.75 lb. (1.7 kg.)

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**APPROXIMATE DATA**

$V_f$	2.35	V
$I_f$	40	A
$PIV_{(max)}$	13.5	kV
$I_{k(pk)} (max)$	16	A
$I_{k(max)}$ (averaged over 15 secs.)	4	A
$T_{Hg}$	30 to 58°C	

**OPERATING DATA****Full load conditions**

Circuit	No. of Valves	Voltage Output kV	Current Output A
Bi-phase half-wave	2	4.3	8
Single-phase full-wave	4	8.6	8
Three-phase half-wave	3	6	12
Three-phase full-wave	6	12	12
Double three-phase inter-connected	6	6	24

These values assume that the smoothing circuit is so designed that the ratio of peak to mean cathode current does not exceed 4 to 1.