4077-A VALVE

HALF WAVE, HOT CATHODE MERCURY VAPOUR RECTIFIER.

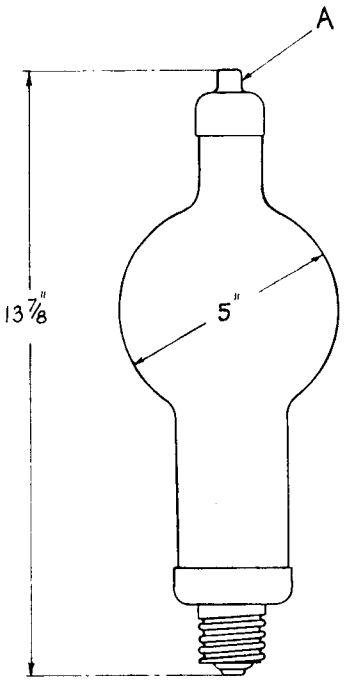
SPECIFICATION.

Cathode.
Shielded, oxide coated filament.
Constant voltage type.

Base.
Edison screw Goliath.

Dimensions.

Maximum overall length	14 1/32" (35·7 cms.)
Bulb diameter	5" (12·7 cms.)
Net weight	0·9 lb. (410 gms.)
Anode cap diameter	0·55" (1·4 cms.)



Constants.

Filament voltage	5 volts
Filament current	10 amps.
Max. peak anode current	5 amps.
Max. peak inverse voltage	16,000 volts
Max. average anode current	1·25 amps.
Ambient temperature range	10°C. min. 65°C. max.
Condensed mercury temperature range	25°C. min. 65°C. max.

Recommended Ambient Temperature Conditions.

	Peak Inverse Voltage.			
	Less than 7,500 v.	7,500—10,000 v.	10,000—12,500 v.	*Greater than* 12,500 v.
Natural ventilation	15°C.—50°C.	15°C.—40°C.	—	—
Forced ventilation	15°C.—65°C.	15°C.—55°C.	15°C.—45°C.	15°C.—40°C.

Cathode Heating Time.

Ambient temperature	10°C.—15°C.	15°C.—20°C.	20°C. and above
Heating period	30	15	5 * mins.

* This time may be reduced to 1 minute if absolutely essential.

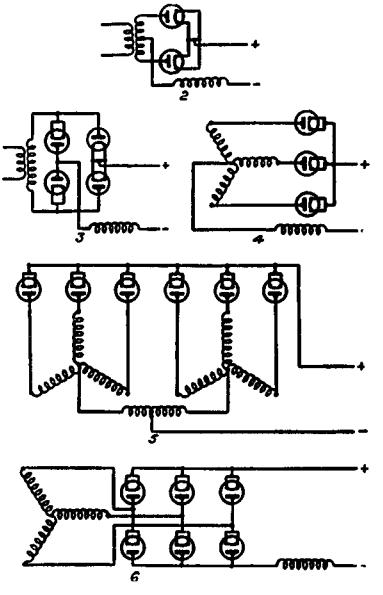
Note :—After shipment the filament must be run at full voltage for 30 minutes before any anode voltage is applied, so that the mercury shall be distributed correctly.

Tentative data

—Standard Valves—

TYPICAL OPERATING CONDITIONS.

Circuit	Number of Valves	Approx. D.C. Output volts	Max. D.C. Load Current
2	2	5150 volts	2·5 amps.
3	4	10300 ,,	2·5 ,,
4	3	7250 ,,	3·75 ,,
5	6	7250 ,,	7·5 ,,
6	6	14500 ,,	3·75 ,,



Important.

This rectifier being directly heated, the output circuit must be connected to the mid-point of the filament transformer. The filament transformer should be so connected that the anode and filament voltages are 90° out of phase. The maximum peak anode current and output current should be reduced by 50 per cent. if quadrature operation of the filament and anode voltages is not possible.

Temperature limits given under " Natural Ventilation " are only valid for unrestricted natural ventilation which causes the condensed mercury temperature to be about 15°C.—20°C. above the ambient temperature, forced air blast being required for operation up to the maximum condensed mercury temperature limit.

For further information on H.C.M.V. rectifiers, see Sheet G.1.

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