

# —Standard Valves—

4077-A  
Valve

## 4077-A VALVE

HALF WAVE, HOT CATHODE MERCURY VAPOUR RECTIFIER.

### SPECIFICATION.

#### Cathode.

Shielded, oxide coated filament.  
Constant voltage type.

#### Base.

Edison screw Goliath.

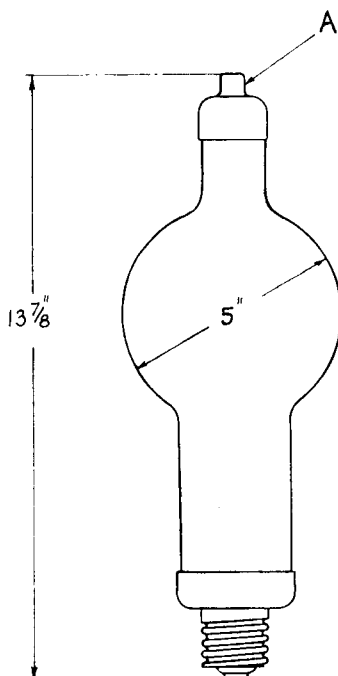
#### Dimensions.

Maximum overall length  $14 \frac{1}{8}$ " (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.

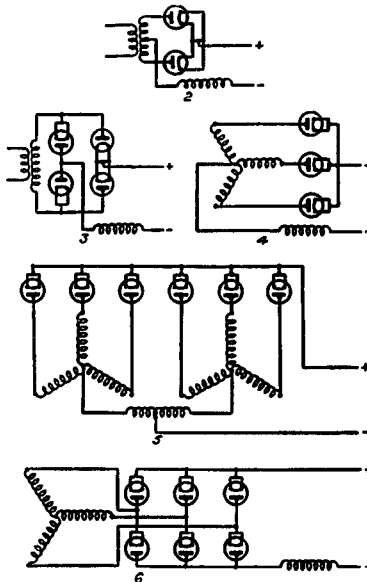
Tentative data

V.4077A-1.  
Sept. 1938

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## 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.