

—Standard Valves—

4078-A
Valve

4078-A VALVE

HALF WAVE, HOT CATHODE MERCURY VAPOUR RECTIFIER.

SPECIFICATION.

Cathode.

Shielded, Oxide coated filament.
Constant voltage type.

Base.

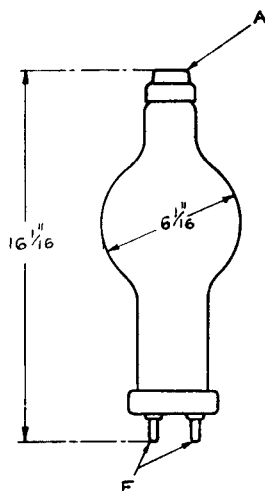
Special 2-pin.

Dimensions.

Maximum overall length $16\frac{1}{16}"$ (40.8 cms.)
Bulb diameter $6\frac{1}{16}"$ (15.4 cms.)
Net weight 1.9 lbs. (860 gms.)
Anode cap diameter $1.42"$ (3.6 cms.)

Constants.

Filament voltage 5 volts
Filament current 20 amps.
Maximum peak anode current 10 amps.
Maximum peak inverse voltage 20,000 volts
Maximum average anode current 2.5 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	$15^{\circ}\text{C.}—50^{\circ}\text{C.}$	$15^{\circ}\text{C.}—40^{\circ}\text{C.}$	—	—
Forced ventilation	$15^{\circ}\text{C.}—65^{\circ}\text{C.}$	$15^{\circ}\text{C.}—55^{\circ}\text{C.}$	$15^{\circ}\text{C.}—45^{\circ}\text{C.}$	$15^{\circ}\text{C.}—40^{\circ}\text{C.}$

Cathode Heating Time.

Ambient temperature $10^{\circ}\text{C.}—15^{\circ}\text{C.}$ $15^{\circ}\text{C.}—20^{\circ}\text{C.}$ 20°C. and above
Heating period 30 15 5* mins.

* If absolutely essential, this time may be reduced to 2 minutes.

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.

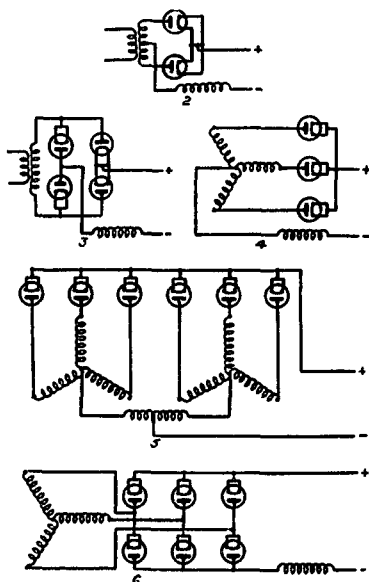
Tentative Data

V.4078-A.1
Sept. 1938

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TYPICAL OPERATING CONDITIONS.

Circuit	Number of Valves	Approx. D.C. Output Volts	Maximum D.C. Load Current
2	2	6,400 volts	5 amps.
3	4	12,800 volts	5 amps.
4	3	9,100 volts	7.5 amps.
5	6	9,100 volts	15 amps.
6	6	18,200 volts	7.5 amps.



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.I.