AH205/857B

MERCURY VAPOUR RECTIFIER

American Equivalent 857B **Service Type CV2673**

To be read in conjunction with the Rectifier and Thyratron Preamble.

ABRIDGED DATA

Hot cathode mercury vapour rectifier.

Peak inverse anode voltage	22	kV max
Peak anode current (at 22kV p.i.v.)	40	A max
Mean anode current (at 22kV p.i.v.)	10	A max
Fault anode current (0.2s max)	400	A max

GENERAL

Electrical

Filament		oxide coated
Filament voltage	5.0	V
Filament current	30	A
Filament pre-heating time (minimum)	1.0	min

Mechanical

Overall length	19.875 inches (504.8mm) max
Overall diameter	7.625 inches (193.7mm) max
Net weight	4 pounds (1.8kg) approx
Mounting position	vertical, base down
Base connections	flexible leads
Top cap	see outline

CONTROL OF CONDENSED MERCURY TEMPERATURE

On the following pages two curves are given showing:

1. Total heating time for any value of ambient temperature. This is for use when the tube is being switched on from cold.
2. Rise of condensed mercury temperature above ambient plotted against heating and cooling time. This can be used as indicated by the example in the Rectifier and Thyratron Preamble.

MAXIMUM OPERATING CONDITIONS (Absolute values)

Circuit*	Condensed mercury temp (°C)	Peak inverse voltage (50–60Hz) (kV)	Anode current (A) peak	Anode current (A) mean♦	Transformer secondary voltage (r.m.s.) (kV)	Maximum d.c. output (kV)	Maximum d.c. output (A)
A							
Single phase	30–40	22	40	10	7.7	7.0	20
full wave	25–60	10	40	10	3.5	3.1	20
B							
Single phase	30–40	22	40	10	15.5	14.0	20
bridge	25–60	10	40	10	7.0	6.3	20
C							
Three phase	30–40	22	40	10	9.0†	10.5†	30
half wave	25–60	10	40	10	4.1†	4.7†	30
D							
Three phase	30–40	22	40	10	9.0	21.0	30
full wave	25–60	10	40	10	4.1	9.5	30

* See Typical Rectifier Circuits for Choke Input Filters in the Rectifier and Thyratron Preamble.

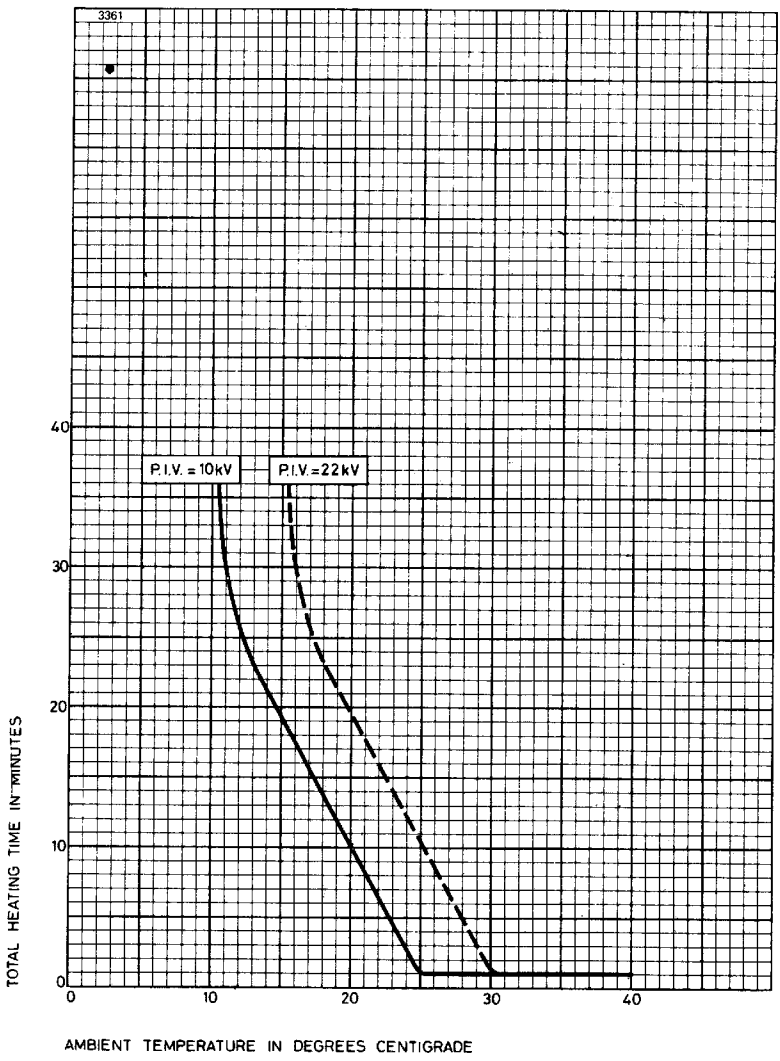
† For operation at constant full load. If the load resistance is increased, the peak inverse voltage on the tubes will exceed the ratings unless the transformer secondary voltage is reduced. The total reduction required is 14% at no load and the d.c. output voltage will be correspondingly reduced.

♦ Averaging time 30 seconds maximum.

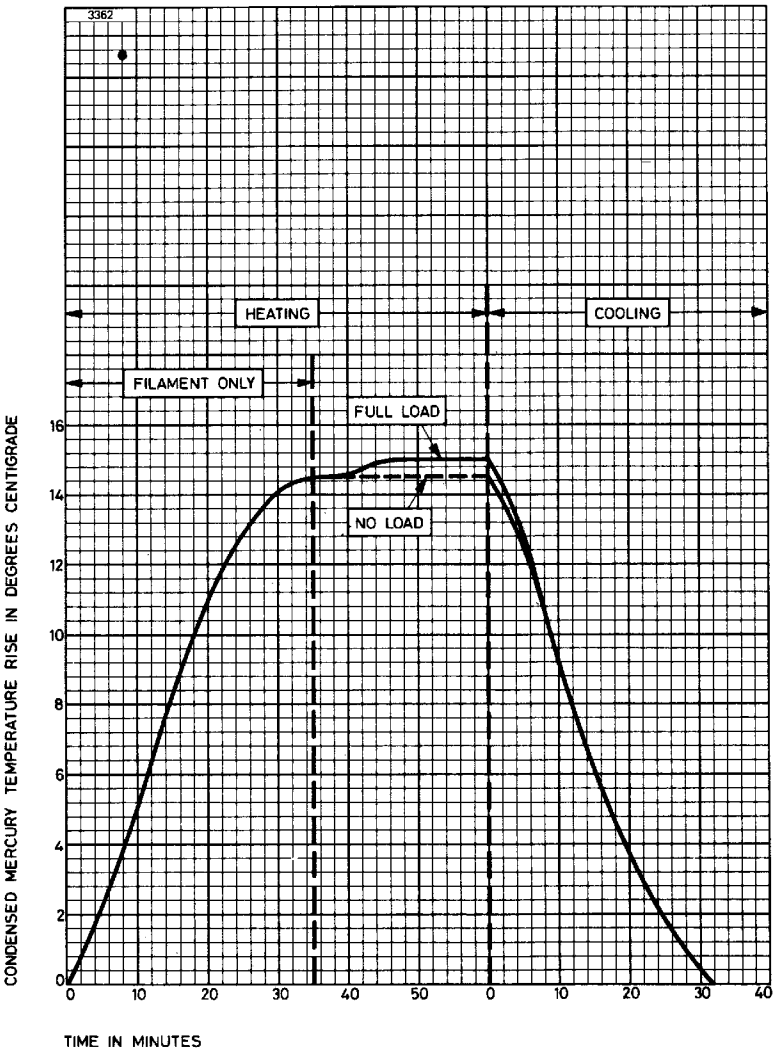
X-RAY WARNING

The AH205/857B emits X-rays when it is operated with a peak inverse anode voltage above 16kV absolute. These rays can constitute a health hazard unless adequate shielding is provided. This is entirely a function of high voltage devices and does not reflect upon the design of the tube.

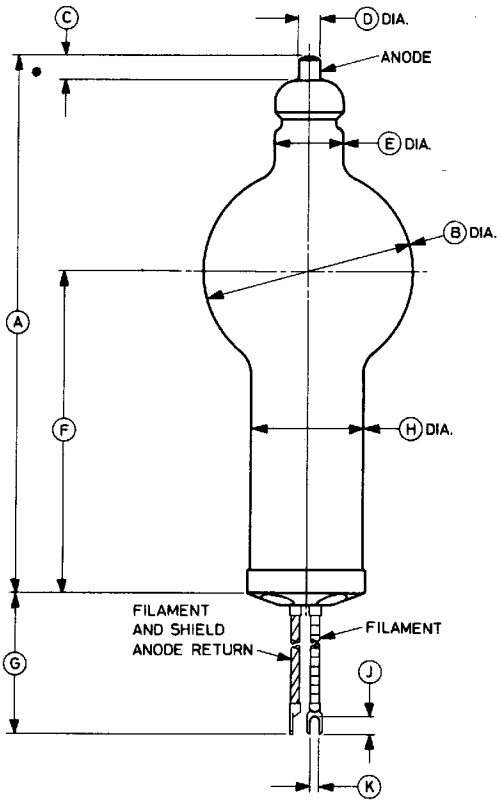
TOTAL HEATING TIME CHARACTERISTIC



TYPICAL HEATING AND COOLING CHARACTERISTIC



OUTLINE (All dimensions without limits are nominal)



Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	19.875 max	504.8 max	F	11.625	295.3
B	7.625 max	193.7 max	G	10.625 max	269.9 max
C	0.812	20.62	H	4.125 max	104.8 max
D	0.812	20.62	J	0.625	15.88
E	2.500	63.50	K	0.347	8.81

Millimetre dimensions have been derived from inches.