AH221

MERCURY VAPOUR RECTIFIER

Service Types CV5 and CV1435

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

ABRIDGED DATA

Hot cathode mercury vapour rectifier.

Peak inverse anode voltage	20	kV max
Peak anode current (at 20kV p.i.v.)	5.0	A max
Mean anode current (at 20kV p.i.v.)	1.25	A max
Fault anode current (0.2s max)	50	A max

GENERAL

Electrical

Filament		oxide coated
Filament voltage	4.0	V
Filament current	11	A
Filament pre-heating time (minimum)	1.0	min

Mechanical

Overall length	10.630 inches (270mm) max
Overall diameter	2.312 inches (58.72mm) max
Net weight	8 ounces (230g) approx
Mounting position	vertical, base down
Base	Goliath Edison screw E40/45
Top cap	B.S.448-CT9 with adaptor

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)

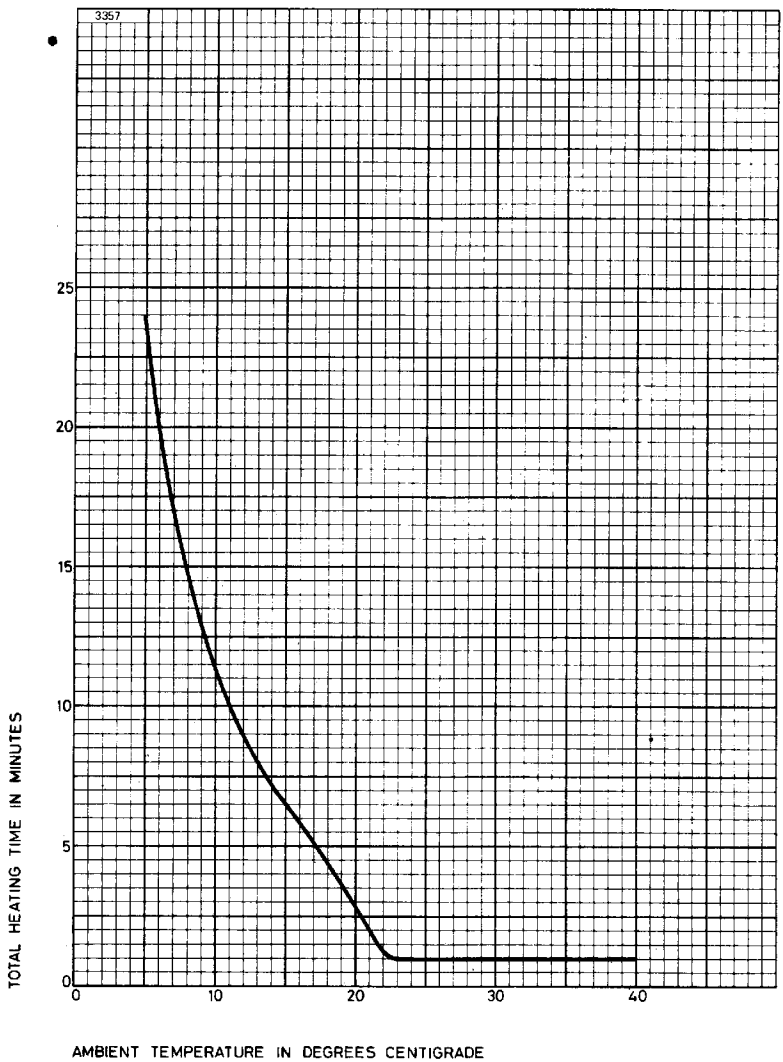
Circuit*	• Condensed mercury temp. (°C)	Peak inverse voltage (50–60Hz) (kV)	Anode current (A) peak	Anode current (A) mean♦	Transformer secondary voltage (r.m.s.) (kV)	Maximum d.c. output (kV)	Maximum d.c. output (A)
A							
Single phase	20–40	20	5.0	1.25	7.0	6.3	2.5
full wave	20–50	11	5.0	1.25	3.9	3.5	2.5
B							
Single phase	20–40	20	5.0	1.25	14.0	12.6	2.5
bridge	20–50	11	5.0	1.25	7.75	7.0	2.5
C							
Three phase	20–40	20	5.0	1.25	8.1†	9.5†	3.75
half wave	20–50	11	5.0	1.25	4.4†	5.2†	3.75
D							
Three phase	20–40	20	5.0	1.25	8.1	19.0	3.75
full wave	20–50	11	5.0	1.25	4.4	10.4	3.75

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

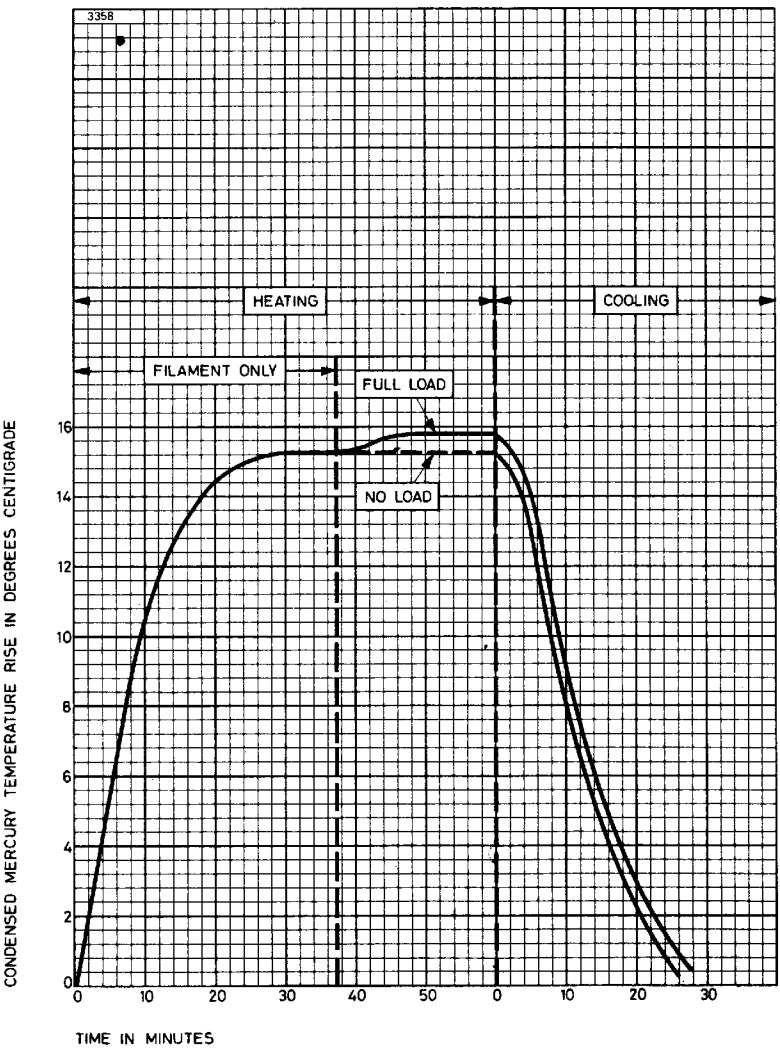
† For operation at constant full load. If the load resistance is increased, the peak inverse voltage on the tubes will exceed the ratings unless the transformer secondary voltage is reduced. The total reduction required is 14% at no load and the d.c. output voltage will be correspondingly reduced.

♦ Averaging time 15 seconds maximum.

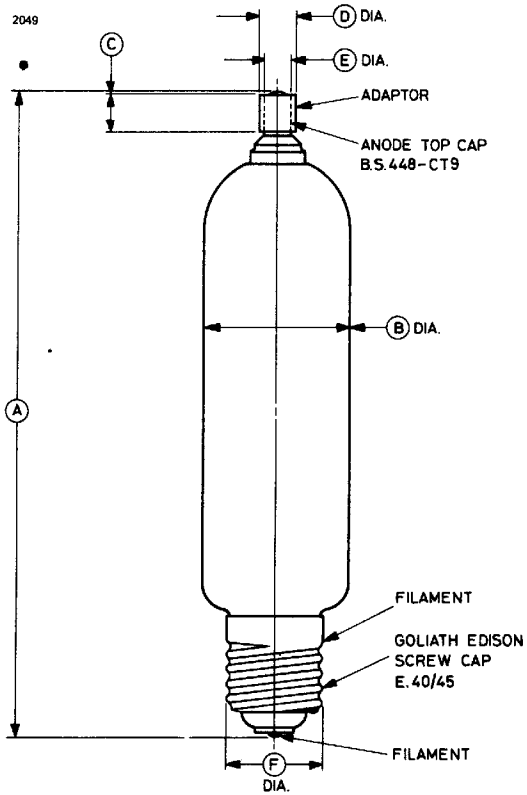
TOTAL HEATING TIME CHARACTERISTIC



TYPICAL HEATING AND COOLING CHARACTERISTIC



OUTLINE (All dimensions without limits are nominal)



Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	9.842 ± 0.787	250.0 ± 20.0	D	0.563	14.30
B	2.312 max	58.72 max	E	0.375 ± 0.002	9.525 ± 0.051
C	0.591 max	15.01 max	F	1.531	38.89

Millimetre dimensions have been derived from inches.