



## MERCURY VAPOUR THYRATRON

### Service Type CV5141

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

### ABRIDGED DATA

Mercury vapour thyatron for high voltage industrial control applications.

Peak forward anode voltage . . . . .	15	kV max
Peak inverse anode voltage . . . . .	15	kV max
Peak anode current . . . . .	12	A max
Average anode current . . . . .	1.5	A max

### GENERAL

#### Electrical

Filament . . . . .		oxide coated
Filament voltage . . . . .	2.5	V
Filament current . . . . .	20	A
Filament pre-heating time (minimum) . . . . .	5.0	min
Inter-electrode capacitances:		
grid to anode . . . . .	8.0	pF
grid to filament . . . . .	18	pF

#### Mechanical

Overall length (excluding flexible leads) . . . . .	11.000 inches (279.4mm) max
Overall width . . . . .	4.000 inches (101.6mm) nom
Net weight . . . . .	1 pound (0.5kg) approx
Mounting position . . . . .	vertical, base down
Base . . . . .	flying leads
Top cap . . . . .	see outline

<b>Cooling</b> . . . . .	natural
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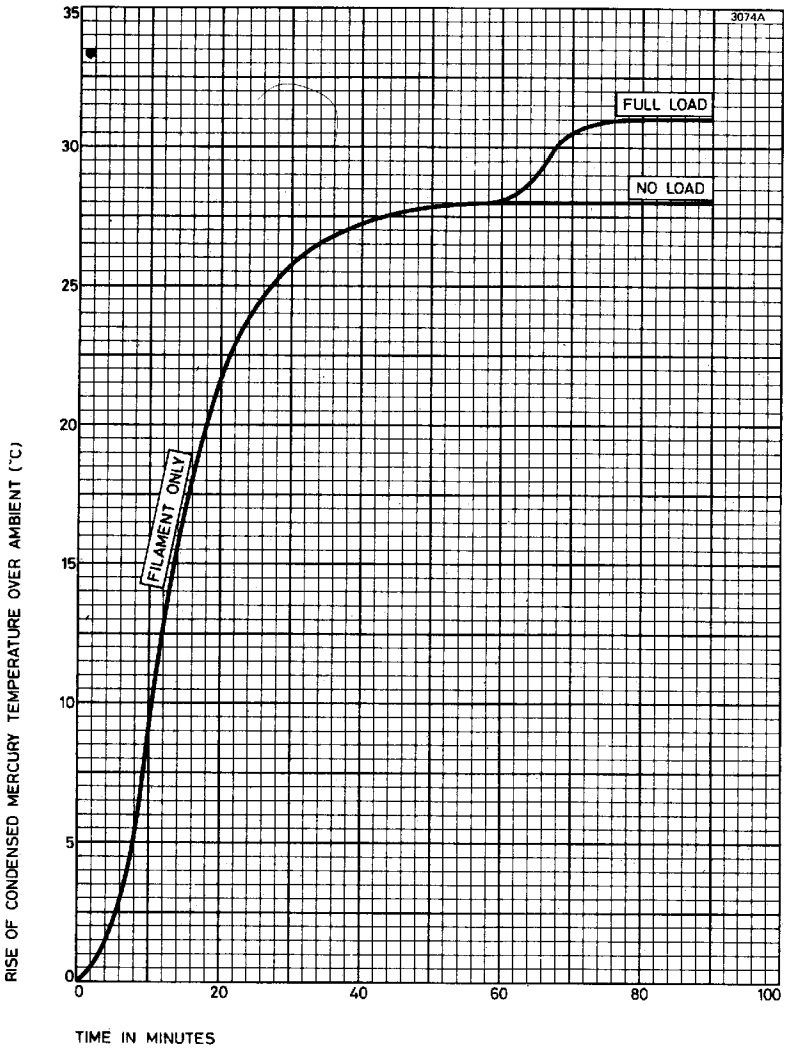
## MAXIMUM AND MINIMUM RATINGS (Absolute values)

	Min	Max	Min	Max	
Peak forward anode voltage	—	10	—	15	kV
Peak inverse anode voltage	—	10	—	15	kV
Peak anode current	—	16	—	12	A
Average anode current (averaging time 15s max)	—	2.0	—	1.5	A
Fault anode current (peak)	—	200	—	200	A
Duration of fault current	—	0.1	—	0.1	s
Condensed mercury temperature	40	75	40	70	°C
Negative grid voltage:					
before conduction			—	500	V
during conduction			—	10	V
Average grid current			—	250	mA
Recommended grid resistor			5.0	50	kΩ
Filament pre-heating time			5.0	—	min

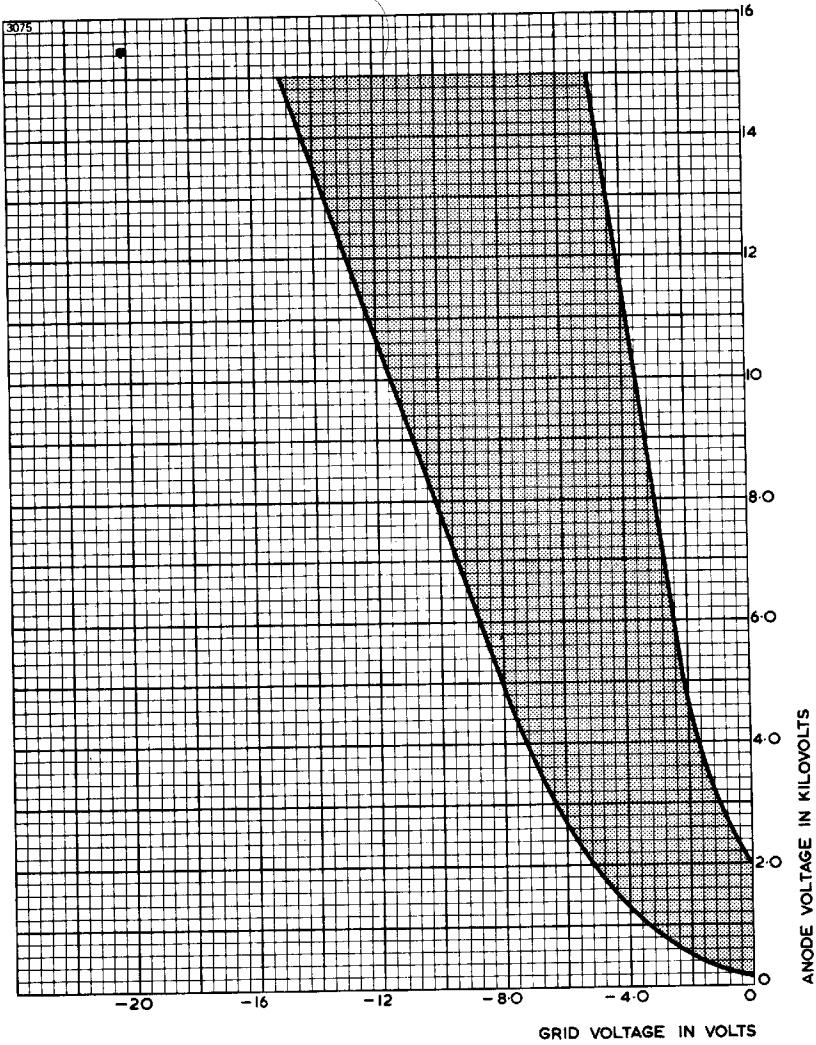
## CHARACTERISTICS

Voltage drop (approx)	16	V
Ionization time (approx)	10	μs
Recovery time (approx)	1.0	ms
Condensed mercury temperature rise:		
at no load (approx)	28	°C
at full load (approx)	31	°C

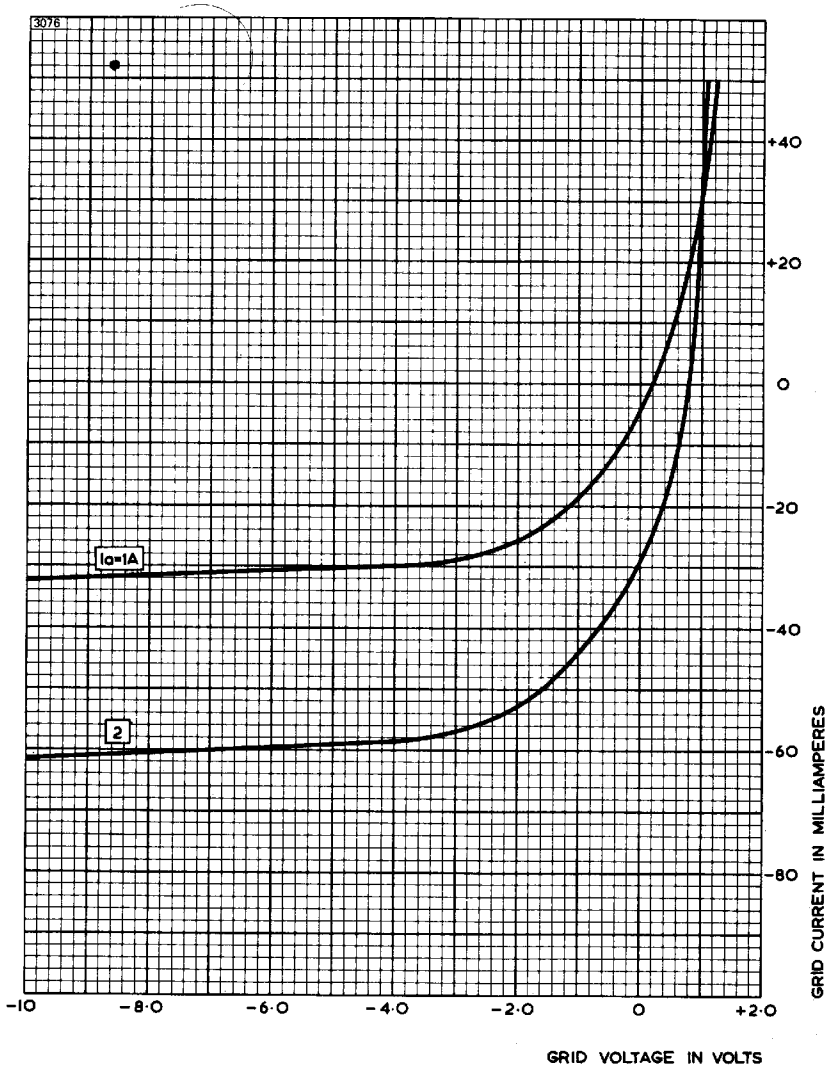
# TYPICAL HEATING CHARACTERISTIC



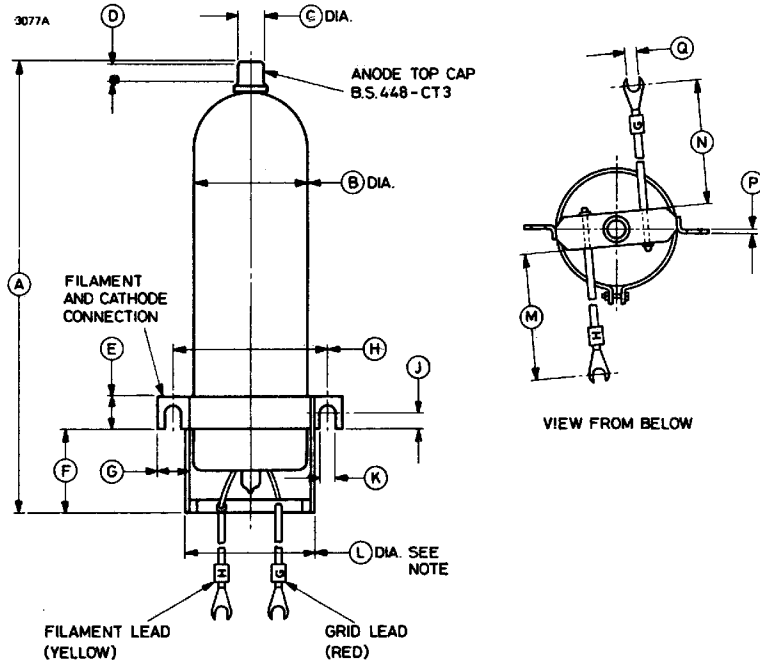
# CONTROL CHARACTERISTIC



# TYPICAL GRID CURRENT CHARACTERISTICS



**OUTLINE (All dimensions without limits are nominal)**



Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	9.750 ± 0.500	247.7 ± 12.7	J	0.375	9.53
B	2.500	63.50	K	0.250	6.35
C	0.566 ± 0.015	14.38 ± 0.38	L	2.875	73.03
D	0.380 min	9.65 min	M	4.312 ± 0.250	109.5 ± 6.4
E	0.750 ± 0.031	19.05 ± 0.79	N	4.562 ± 0.250	115.9 ± 6.4
F	1.750	44.45	P	0.080	2.03
G	0.750	19.05	Q	0.265	6.73
H	3.406 ± 0.062	86.51 ± 1.57			

Millimetre dimensions have been derived from inches.

**Note** The base will pass through a hole of this diameter up to the terminal lugs.