

GENERAL

The 31E13 is a magnetically focused and deflected cathode-ray tube primarily designed for PPI applications. This aluminised tube has a 12" diameter flat face and is available with a T6 or T7 screen. It has a straight tetrode gun, and conforms to the British Service specification CV429.

RATINGS

Heater voltage	V_h	6.3	V
Heater current	I_h	0.6	A
Maximum second anode voltage	$V_{a2(max)}$	15.5*	kV
Minimum second anode voltage	$V_{a2(min)}$	9.0	kV
Maximum first anode voltage	$V_{a1(max)}$	600*	V
Maximum heater/cathode voltage, heater negative (d.c.)	$V_{h-k(max)}$	150	V

* The maximum ratings are absolute maximum values.

INTER-ELECTRODE CAPACITANCES**

Grid/Earth	C_{g-E}	<8.0	pF
Cathode/Earth	C_{k-E}	<8.0	pF

** With holder capacity balanced out.

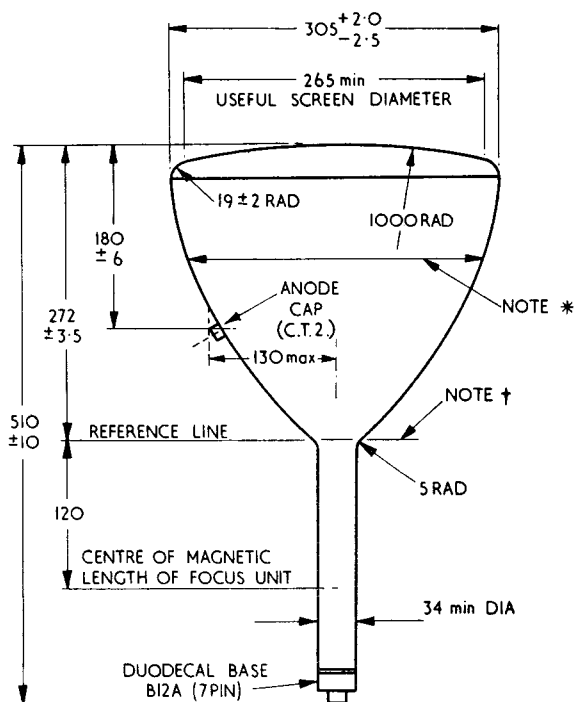
TYPICAL OPERATION

Second anode voltage	V_{a2}	15	kV
First anode voltage	V_{a1}	300	V
Grid bias for cut-off	V_g	-60 to -90	V
Average peak/peak modulating voltage for modulation up to 50 μ A		24	V
Deviation of unfocused and undeflected spot from centre of screen		<15	mm
Maximum unfocused spot diameter for 50 μ A beam current		15	mm
Maximum line width for 50 μ A beam current		0.5†	mm
Persistence of T6 screen (long yellow afterglow)		50‡	s
Persistence of T7 screen (very long orange afterglow)		200‡§	s

† 100 μ s pulse at 100 p/s. 100 μ s line scan 250 mm long.

‡ Persistence is defined as the time taken from the cessation of continuous excitation for the luminance to decay from 1 foot lambert to approximately 1% of that value.

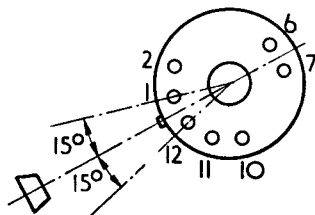
§ The T7 screen is liable to burn even at low values of beam current if operated with stationary or slow moving spot.



All dimensions in millimetres.

† Beginning of curvature point at which 36.1 dia. ring gauge is stopped.

* Ring Gauge (mm)	Distance from centre of Screen (mm)
280	93 ± 10
230	150 ± 9
180	191 ± 8
130	222 ± 7
80	249 ± 6
36.1	272 ± 3.5



CONNECTIONS

Pin 1 Heater (h)

Pin 2 Grid (g)

Pin 6 Internal Connection (IC)

Pin 7 Internal Connection (IC)

Pin 10 First anode (a1)

Pin 11 Cathode (k)

Pin 12 Heater (h)

Cap Second anode (a2)

Anode cap in line with spigot $\pm 15^\circ$