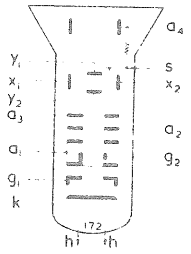
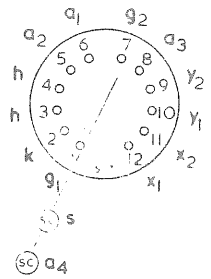


OSCILLOSCOPE TUBE



Base B12F Cap CT8

GENERAL

This short general purpose 5 in. diameter tube has a large screen area coupled with good performance and the added facility of beam blanking at anode potential. The standard phosphor for this tube is P31, but P2, P7 and P11 can be supplied to special order.

Heater Voltage	V_h	6·3	V
Heater Current	I_h	0·3	A

ABSOLUTE RATINGS

Maximum Fourth Anode Voltage	$V_{a4(max)}$	5·0	kV
Minimum Fourth Anode Voltage	$V_{a4(min)}$	1·5	kV
Maximum First Anode Voltage	$V_{a1(max)}$	2·5	kV
Maximum Second Anode Voltage	$V_{a2(max)}$	500	V
Maximum Third Anode Voltage	$V_{a3(max)}$	2·5	kV
Minimum Negative Control Grid Voltage	$-V_{g1(min)}$	1·0	V
Maximum Negative Control Grid Voltage	$-V_{g1(max)}$	300	V
Maximum x plate to Third Anode Voltage	$V_{x\text{-}a3(max)}$	500	V
Maximum y plate to Third Anode Voltage	$V_{y\text{-}a3(max)}$	500	V
Maximum Peak Heater to Cathode Voltage	$V_{h\text{-}k(pk)max}$	250	V
Maximum x plate to Third Anode Resistance	$R_{x\text{-}a3(max)}$	5·0	MΩ
Maximum y plate to Third Anode Resistance	$R_{y\text{-}a3(max)}$	100	kΩ
Maximum Control Grid to Cathode Resistance	$R_{g1\text{-}k(max)}$	1·5	MΩ
Minimum Spiral Resistance		15	MΩ
Maximum P.D.A. Ratio		2 : 1	

All voltages referred to cathode unless otherwise stated.

INTER-ELECTRODE CAPACITANCES

Grid 1 to all	$C_{g1\text{-}all}$	8·0	pF
Cathode to all	$C_{k\text{-}all}$	4·75	pF
x_1 plate to x_2 plate	$C_{x1\text{-}x2}$	2·75	pF
y_1 plate to y_2 plate	$C_{y1\text{-}y2}$	1·5	pF
x_1 and x_2 plates to y_1 and y_2 plates	$C_{x1,x2\text{-}y1,y2}$	0·75	pF
x_1 plate to all, less x_2 plate	$C_{x1\text{-}all,\ less\ x2}$	6·0	pF
x_2 plate to all, less x_1 plate	$C_{x2\text{-}all,\ less\ x1}$	6·0	pF
y_1 plate to all, less y_2 plate	$C_{y1\text{-}all,\ less\ y2}$	6·5	pF
y_2 plate to all, less y_1 plate	$C_{y2\text{-}all,\ less\ y1}$	6·5	pF
Grid 1 and Cathode to x_1 and x_2 plates	$C_{g1,k\text{-}x1,x2}$	0·9	pF
Grid 1 and Cathode to y_1 and y_2 plates	$C_{g1,k\text{-}y1,y2}$	0·5	pF
Grid 2 to all	$C_{g2\text{-}all}$	10	pF

Net Tube Weight (approx)—$2\frac{1}{4}$ lb (1·02 kg)

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TYPICAL OPERATION—Voltages with respect to cathode

Fourth Anode Voltage	V_{a4}	2·0	3·0	4·0	kV
Mean Deflector Plate Potential		1000	1500	2000	V
Third Anode Voltage for astigmatism correction	V_{a3}	1000*	1500*	2000*	V
Second Anode Voltage for focus	V_{a2}	50 to 200	75 to 250	80 to 360	V
First Anode Voltage	V_{a1}	1000	1500	2000	V
Interplate Shield Voltage for optimum raster shape	V_s	1000*	1500*	2000*	V
Beam Blanking Voltage for cut-off	V_{g2}	950†	1430†	1900†	V
Control Grid Voltage for cut-off of raster	V_{g1}	30 to −55	−45 to −80	−56 to −100	V
x plate Sensitivity	S_x	18·6 to 23·5	28 to 35	37 to 47	V/cm
y plate Sensitivity	S_y	7·4 to 10·0	11 to 15	14·5 to 20	V/cm
Maximum Second Anode Current	$I_{a2(max)}$	10	10	10	μA
Maximum Fourth Anode Current	$I_{a4(max)}$	150	200	300	μA
Minimum Screen Area (y × x)		8 · 10	8 · 10	8 · 10	cm²
Line Width		0·6	0·5	0·4	mm

* The required voltage will not differ from the quoted value by more than · 50V

† The beam is unblanked when V_{g2} V_{a1}.

Raster Distortion

At the recommended P.D A. ratios, over a screen area of 6 cm · 10 cm raster distortion will not be greater than 2%. The raster distortion limit between rectangles 6 cm 10 cm and 8 cm · 10 cm is 3%. Raster geometry can be adjusted by varying the interplate shield voltage (V_s) with respect to the mean deflector plate potential. The interplate shield voltage (V_s) for optimum raster shape will be within · 50V of the mean deflector plate potential, though differing from the third anode voltage (V_{a3}). It is essential to ensure that the correct raster shape has been achieved by this means before adjusting for optimum focus.

Rectangularity of x and y axes is 90 1 .

The Deflector System

Both x and y plates are designed for symmetrical operation. Should the tube be required to operate asymmetrically, some degradation of focus and trace geometry will result.

If the mean plate potentials for both x and y plates are the same, the third anode voltage for astigmatism correction will be within : 50V of the mean plate potential.

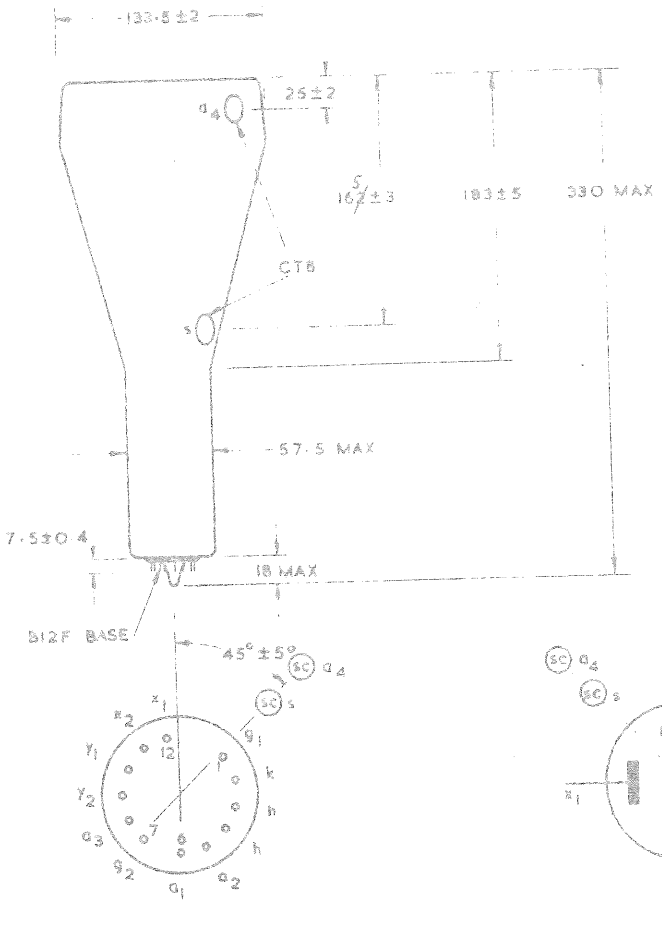
If the x plate mean potential differs considerably from that of the y, greater variation of the third anode voltage (V_{a3}) and the interplate shield voltage (V_s) will be required, and the x and y sensitivities will decrease.

The y plate mean potential should not be allowed to become greater than that of the x or severe deflection defocusing will result.

The deflector system is designed to intercept part of the beam, so that low impedance deflector plate drive is desirable.

Magnetic Shielding

Adequate magnetic shielding is required. In addition due attention should be paid to the position of the tube relative to transformers and chokes.



Mounting Position—Unrestricted

It is advisable to support the tube near the screen and at a second point on the parallel neck near the base. The tube should not be subjected to any stress from the use of clamps and should not be suspended by the base.

Connecting leads should not be soldered directly to the tube pins.

All dimensions in mm. (Not to be scaled).