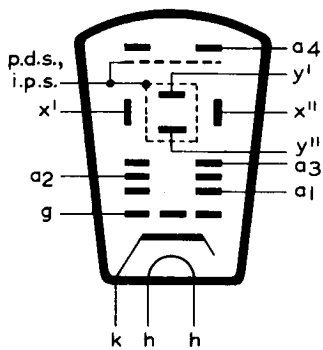
ETEL CR132

OSCILLOSCOPE TUBE

Oscilloscope tube with 3-in. diameter flat screen and distributed p.d.a. system, primarily intended for transistorised display equipment.



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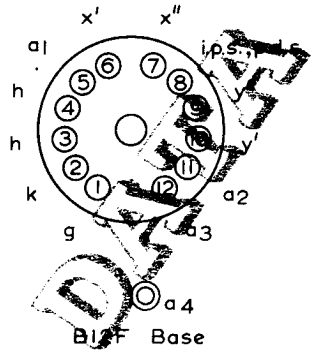

GENERAL DATA

Screen type	P31	P7
Fluorescent colour of screen	green	blue with yellow afterglow
Persistence	medium	long
Focus	electrostatic	
Deflection	double electrostatic	
Maximum overall diameter	78.3	mm
Maximum overall length	296	mm
Useful screen area at Va4/Va3=5		
x direction	Full screen	mm
y direction	50	mm
Weight (approx.)	340	g
	12	oz
Mounting position	Any - see section on mounting (page 4)	

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CATHODE

Indirectly heated

Heater voltage	Vh	6.3	V
Heater current	Ih	150	mA

CAPACITANCES

cg-all	6.6	pF
ck-all	4.0	pF
cx'-all (x" earthed)	6.0	pF
cx"-all (x' earthed)	6.0	pF
cy'-all (y" earthed)	4.0	pF
cy"-all (y' earthed)	4.0	pF
cx'-x"	2.0	pF
cy'-y"	2.0	pF
cx'+ x"- y'+ y"	0.3	pF

LIMITING VALUES (absolute ratings)

Maximum first anode voltage	Va1 max.	700	V
Minimum first anode voltage	Va1 min.	275	V
Maximum second anode voltage	Va2 max.	500	V
Maximum third anode voltage	Va3 max.	1.5	kV
Minimum third anode voltage	Va3 min.	275	V
Maximum inter plate shield and post deflection shield voltage	Vi.p.s.+ p.d.s.max.	1.5	kV
Minimum inter plate shield and post deflection shield voltage	Vi.p.s.+ p.d.s.min.	275	V
Maximum fourth anode voltage	Va4 max.	7.5	kV
Minimum fourth anode voltage	Va4 min.	1.0	kV
Maximum negative grid voltage	-Vg max.	200	V
Minimum negative grid voltage	-Vg min.	1.0	V
Maximum grid resistor	Rg-k max.	1.0	MΩ
Maximum heater to cathode voltage	Vh-k max.	±150	V
*Maximum Va4 to Va3 ratio	Va4/Va3 max.	10	
Minimum a4 to a3 resistance	ra4-a3 min.	100	MΩ

*Above this figure severe raster distortion will become apparent.

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OPERATING CONDITIONS

First anode voltage	Va1	300	500	V
Second anode voltage	Va2	60	140	V
Third anode voltage	Va3	300	800	V
Fourth anode voltage	Va4	1.5	4.0	kV
Grid voltage for visual cut-off	Vg	-30	-50	V
x plate sensitivity	Sx	5.0	13	V/cm
y plate sensitivity	Sy	3.0	8.0	V/cm
Second anode current	Ia2	±20	±20	μA
*Line width		0.7	0.5	mm

*Measured on a circle of 40mm diameter with It=0.5μA.

DEFLECTION

Primarily intended for symmetrical operation on both x and y plates. With Va4/Va3=5, the sensitivity (for both x'- x" and y'- y" plate pairs separately) for a deflection of less than 75% of the useful scan will not differ from the sensitivity of a deflection of 25% of the useful scan by more than ±2%.

The x plates are those nearest the screen.

The arrangement of the plates is such, that viewing the fluorescent screen with the final anode connector vertically upwards, a positive voltage on the x' plate will deflect the spot to the left, and a positive voltage on the y' plate will move the spot upwards.

For optimum focus, the average potentials of the deflection plates and a3 should be approximately equal.

RASTER DISTORTION

With Va4/Va3=5, the length of the edges of a raster pattern whose mean dimensions are less than 75% of the useful scan will not deviate from those mean dimensions by more than ±2.5%.

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SPOT ECCENTRICITY

With the tube magnetically shielded, the undeflected spot will lie within a rectangle 6mm x 8mm symmetrically placed about the geometric centre of the tube face, the major axis corresponding to the x direction.

ORIENTATION AND RECTANGULARITY

The y axis lies within ±12° of the line which joins the base centre to the reference pip between pins 1 and 12. The angle between the x and y axes is 90° ± 1°.

MOUNTING

There is no restriction on the position of mounting. In mounting the tube, the main support should be at the end nearer the screen and so arranged that no stresses are produced in the glass. Adequate precautions should be taken to protect the tube from effects of shock or sudden acceleration. In particular, a resilient pad should be provided between the flat face of the tube and any surrounding metal parts.

The tube is not intended to be soldered directly into the wiring. The tube socket should not be rigidly mounted, but should have flexible leads and be allowed to move freely.

AUXILIARY COMPONENTS

Sockets

The B12F socket can be supplied by the Carr Fastener Co., of Stapleford, Notts., type VO/842.

Cavity Cap Connectors

Any commercially available CT8 connector is suitable.

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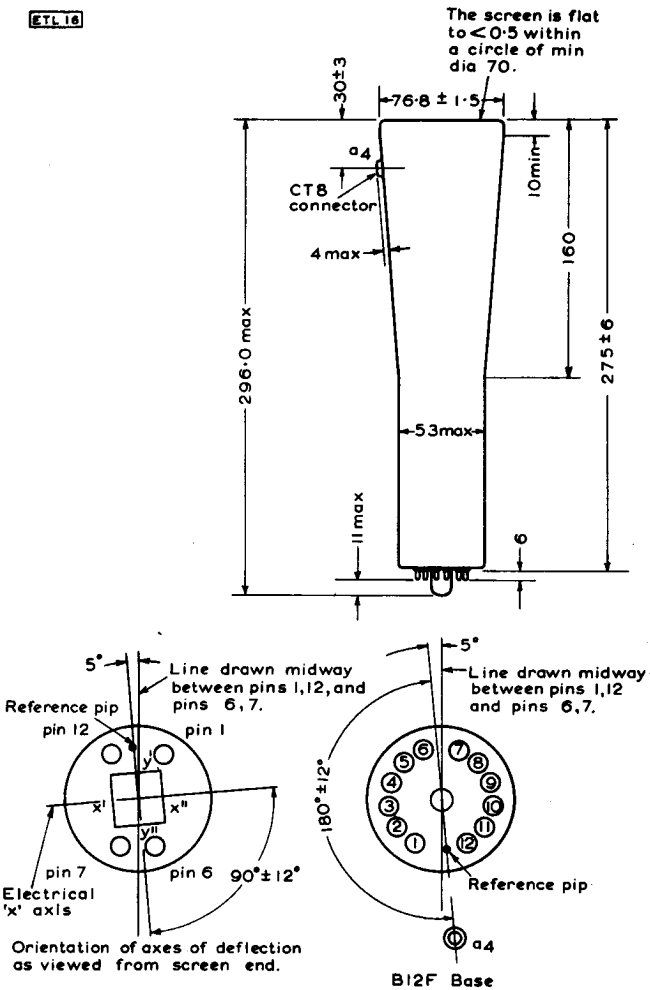

All dimensions in mm

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