INSTRUMENT CATHODE-RAY TUBE

development sample data

Development samples are distributed without guarantee for further supply. Development sample data represent the characteristics and ratings of development samples and are to be regarded as first indications of the ultimate performance to be achieved by the product in preparation.

INSTRUMENT CATHODE-RAY TUBE

14 cm diagonal, rectangular flat faced oscilloscope tube with mesh and metal backed screen.

QUICK REFERENCE DATA				
Final accelerator voltage	$V_{g_6(\ell)}$		10	kV
Display area			100 x 80	mm^2
Deflection factor, horizontal	M_x	approx.	16	V/cm
vertical	M_y	approx.	4	V/cm

SCREEN

	colour	persistence
D14-12GH	green	medium short

Useful screen dimensions min. 100 x 80 mm^2

Useful scan at $V_{g_6(\ell)}/V_{g_2,g_4} = 6.5$

horizontal	min.	100	mm
vertical	min.	80	mm

HEATING: Indirect by A.C. or D.C.; parallel supply

Heater voltage	V_f	6.3	V
Heater current	I_f	300	mA

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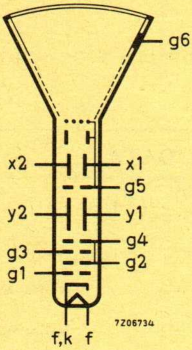
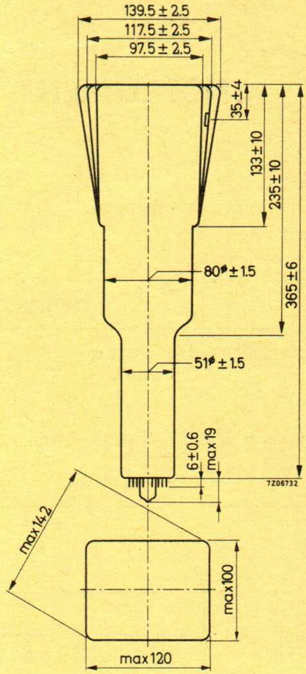
MECHANICAL DATA Dimensions in mm





CONNECTIONS INDICATED ON SAMPLES

Mounting position: any

The tube should not be supported by the base alone and under no circumstances should the socket be allowed to support the tube.

Dimensions and connections

See also outline drawing

Overall length (socket included)	max.	390	mm
Face dimensions	max.	100 x 120	mm^2
Net weight	approx.		g

Base 14 pin all glass

Accessories

Socket	type	55566
Final accelerator contact connector	type	55563
Mu-metal shield	type	

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CAPACITANCES

x_1 to all other elements except x_2	$C_{x_1(x_2)}$	5	pF
x_2 to all other elements except x_1	$C_{x_2(x_1)}$	5	pF
y_1 to all other elements except y_2	$C_{y_1(y_2)}$	4	pF
y_2 to all other elements except y_1	$C_{y_2(y_1)}$	4	pF
x_1 to x_2	$C_{x_1x_2}$	3	pF
y_1 to y_2	$C_{y_1y_2}$	2	pF
Control grid to all other elements	C_{g_1}	6	pF
Cathode to all other elements	C_k	5	pF

FOCUSING electrostatic

DEFLECTION double electrostatic

x plates symmetrical

y plates symmetrical

If use is made of the full deflection capabilities of the tube the deflection plates will intercept part of the electron beam; hence a low impedance deflection plate drive is desirable.

Angle between x and y traces $90 \pm 1^{\circ}$

LINE WIDTH

Measured with the shrinking raster method in the centre of the screen under typical operating conditions, adjusted for optimum spot size at a beam current $I_\ell = 10\ \mu A$.

Line width l.w. approx. 0.40 mm

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TYPICAL OPERATING CONDITIONS

Final accelerator voltage	$V_{g6(\ell)}$		10 000	V
Interplate shield voltage	V_{g5}		1500	V
Geometry control voltage	ΔV_{g5}		t.b.f.	V [1]
Focusing electrode voltage	V_{g3}	approx.	375	V
First accelerator voltage	$V_{g2,g4}$		1500	V
Astigmatism control voltage	$\Delta V_{g2,g4}$		$\pm$ 75	V [2]
Control grid voltage for visual extinction of focused spot	V_{g1}	approx.	-40	V
Deflection factor, horizontal	M_x	approx.	16	V/cm
vertical	M_y	approx.	4	V/cm
Useful scan, horizontal		min.	100	mm
vertical		min.	80	mm

LIMITING VALUES (Absolute maximum rating system)

Final accelerator voltage	$V_{g6(\ell)}$	max.	11 000	V
		min.	9000	V
Interplate shield voltage geometry control electrode voltage	V_{g5}	max.	1650	V
Focusing electrode voltage	V_{g3}	max.	1650	V
First accelerator and astigmatism control electrode voltage	$V_{g2,g4}$	max.	1650	V
		min.	1350	V
Control grid voltage	$-V_{g1}$	max.	200	V
		min.	0	V
Cathode to heater voltage	V_{kf}	cathode connected to heater		
Voltage between astigmatism control electrode and any deflection plate	$V_{g4/x}$	max.	500	V
	$V_{g4/y}$	max.	500	V
Grid drive, average		max.	20	V
Screen dissipation	W_ℓ	max.	3	mW/cm2
Ratio $V_{g6(\ell)}/V_{g2,g4}$	$V_{g6(\ell)}/V_{g2,g4}$	max.	6	

For notes see page 5

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NOTES

1. This tube is designed for optimum performance when operating at the ratio $V_{g6(\ell)}/V_{g2,g4} = 6$. Operation at other ratio may result in changes in deflection uniformity and geometry distortion. The geometry control electrode voltage should be adjusted for optimum performance.
   For any necessary adjustment its potential will be within the stated range.

2. The astigmatism control electrode voltage should be adjusted for optimum spot shape. For any necessary adjustment its potential will be within the stated range.

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