PHILIPS

DB7-36
DG7-36
DN7-36

CATHODE RAY TUBE for oscilloscopes with flat face and high sensitivity

SCREEN

For screen properties please refer to front of this section

HEATING

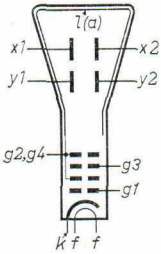
Indirect by A.C. or D.C.; parallel supply

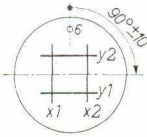
Heater voltage	V_f = 6.3 V
Heater current	I_f = 0.3 A

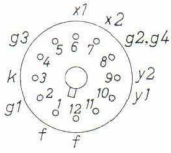
Dimensions in mm

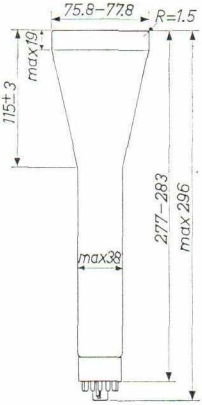
Base: DUODECAL 12 p.

Net weight 370 g









CAPACITANCES

Grid No. 1 to all other electrodes	C_{g1}	= 5.7 pF
Cathode to all other electrodes	C_k	= 3.3 pF
x_1 plate to all other electrodes except x_2 plate	C_{x1}	= 6.0 pF
x_2 plate to all other electrodes except x_1 plate	C_{x2}	= 6.0 pF
y_1 plate to all other electrodes except y_2 plate	C_{y1}	= 4.7 pF
y_2 plate to all other electrodes except y_1 plate	C_{y2}	= 4.7 pF
x_1 plate to x_2 plate	C_{x1-x2}	= 1.9 pF
y_1 plate to y_2 plate	C_{y1-y2}	= 1.7 pF

PHILIPS

FOCUSING Electrostatic

For optimum focus the average potentials of the deflection plates and grids No.2 and 4 should be equal

DEFLECTION Double electrostatic

Both x and y plates for symmetrical operation

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

LINE WIDTH measured on a circle of 50 mm diameter

Grids No.2 and 4 voltage	$V_{g2,g4}$	= 1500 V
Beam current	I_{ℓ}	= 0.5 μA
Line width		= 0.4 mm

UNDEFLECTED SPOT POSITION. With the tube shielded the spot will be within a circle of 4 mm radius, the circle being centered with respect to the tube face

OPERATING CHARACTERISTICS

Grids No.2 and 4 voltage		$V_{g2,g4}$	= 1500 V
Grid No.3 voltage		V_{g3}	= 247-397 V 1)
Negative grid No.1 voltage for visual extinction of focused spot		$-V_{g1}$	= 40-80 V
Deflection factor	x plates	M_x	= 24.5-30.0 V/cm
	y plates	M_y	= 17.0-20.5 V/cm
Useful scan	x plates		= min. 68 mm
	y plates		= min. 57 mm

Deviation of the linearity of deflection. The sensitivity of the deflection plates at a deflection smaller than 75 % of the useful scan will not differ from the sensitivity at a deflection of 25 % of the useful scan by more than 2 %

Pattern distortion. The length of the edges of a raster pattern, whose mean dimensions are smaller than 75 % of the useful scan will not deviate from these mean dimensions by more than 2.5 %

1) For calculation of the grid No.3 voltage potentiometer a grid No.3 current of min. -15 μA and max. +10 μA must be taken into account

LIMITING VALUES (Design centre limits)

Grids No.2 and 4 voltage	$V_{g2,g4}$	= max.	2500 V
		= min.	1000 V
Grid No.3 voltage	V_{g3}	= max.	1000 V
Grid No.1 voltage			
Negative value	$-V_{g1}$	= max.	200 V
Positive value	$+V_{g1}$	= max.	0 V
Peak positive value	$+V_{g1\ p}$	= max.	2 V
Peak voltage between grids No.2 and 4 and any deflection plate	$V_{x-g2,g4\ p}$	= max.	500 V
	$V_{y-g2,g4\ p}$	= max.	500 V
Voltage between heater and cathode	V_{kf}	= max.	180 V
Grids No.2 and 4 dissipation	$W_{g2,g4}$	= max.	6 W
Screen dissipation	W_{ℓ}	= max.	3 mW/cm²

CIRCUIT DESIGN VALUES

Grid No.3 voltage	V_{g3}	= 165-265 V	per kV of $V_{g2,g4}$
Negative grid No.1 voltage for visual extinction of focused spot	$-V_{g1}$	= 27-53 V	per kV of $V_{g2,g4}$
Deflection factor x plates	M_x	= 16.3-20.0 V/cm	per kV of $V_{g2,g4}$
Deflection factor y plates	M_y	= 11.2-13.7 V/cm	per kV of $V_{g2,g4}$
Grid No.1 circuit resistance	R_{g1}	= max. 1.5 MΩ	
Deflection plate resistance	$R_x = R_y$	= max. 5 MΩ	

The deflection plate resistances should be approximately equal

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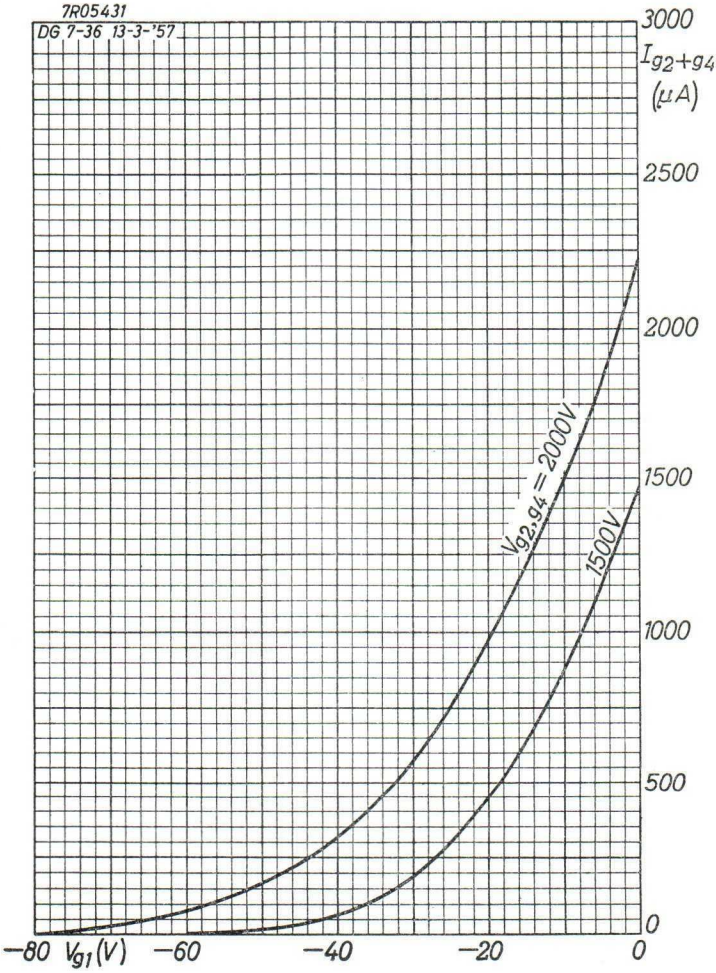

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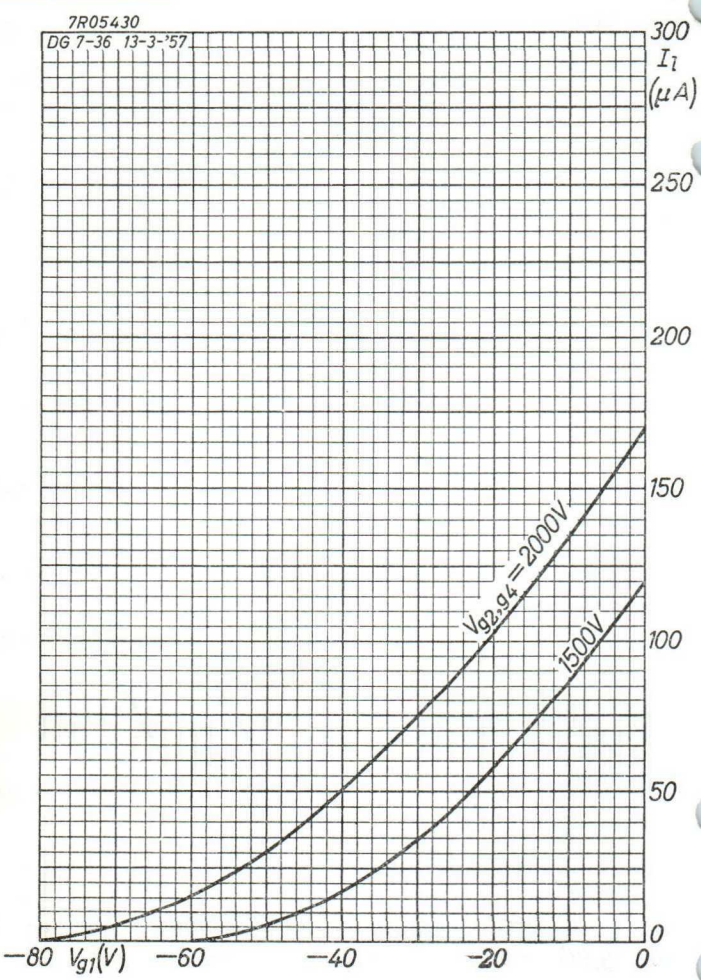

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