

*Information
Release*

PHILIPS ELECTRON TUBE DIVISION

Dear Sirs,

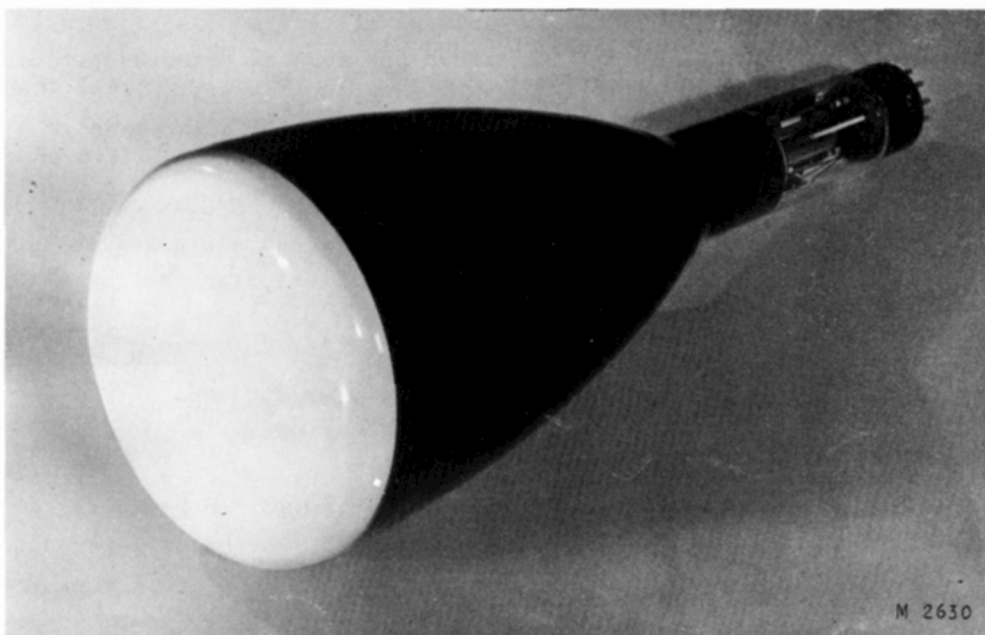
We have pleasure in announcing herewith the cathode-ray tube type DG 13-32, which has been incorporated in our programme to suit the requirements for 13 cm tubes for service oscilloscopes and the like.

The cathode-ray tube DG 13-32 is equivalent to the American type 5UP1 and combines a great deflection sensitivity, a small line width and high brilliancy.

We remain,

Very truly yours,

GENERAL-PURPOSE CATHODE-RAY TUBE



The Philips Cathode-Ray Tube DG 13-32 is especially designed to satisfy the requirements for visual observation of oscillographic phenomena.

The characteristic features of the tube are:

- double symmetric electrostatic deflection;
- high deflection sensitivity at full scan;
- brilliant and fine spot at operation beam-current;
- 4 watt cathode adapted to existing circuitry technique;
- equivalent to the Cathode-Ray Tube 5 UP 1.

ELECTRICAL DATA

HEATING

Indirect by a.c. or d.c.

Parallel supply

Heater voltage 6.3 V

Heater current 0.6 A

SCREEN

Fluorescence green

Persistence medium

FOCUSING

Electrostatic

DEFLECTION

Double electrostatic $D_1 D_1'$ symmetric
 $D_2 D_2'$ symmetric

DIRECT INTERELECTRODE CAPACITANCES

Grid No.1 to all other electrodes

$C_{g_1} = 4.3 \text{ pF}$

Cathode to all other electrodes

$C_k = 6.5 \text{ pF}$

D_1 to all other electrodes

$C_{D_1} = 4.6 \text{ pF}^1)$

D_1' to all other electrodes

$C_{D_1'} = 4.6 \text{ pF}^1)$

D_2 to all other electrodes

$C_{D_2} = 9.3 \text{ pF}^1)$

D_2' to all other electrodes

$C_{D_2'} = 5.1 \text{ pF}^1)$

D_1 to D_1'

$C_{D_1 D_1'} = 1.5 \text{ pF}$

D_2 to D_2'

$C_{D_2 D_2'} = 2 \text{ pF}$

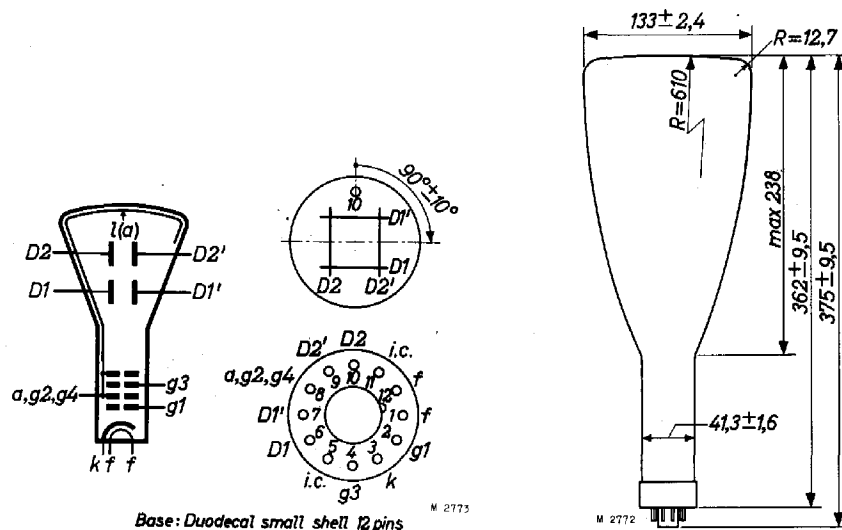
LINE WIDTH at

Grid No.2 + 4 voltage $V_{(g_2 + g_4)} = 2000 \text{ V}$

Screen current $I_1 = 0.5 \text{ } \mu\text{A}$

0.4 mm ²⁾

MAXIMUM DIMENSIONS (in mm) AND ELECTRODE CONNECTIONS



¹⁾ To all electrodes, except the opposite deflection plate.

²⁾ Measured on a circle of 50 mm diameter.

TYPICAL OPERATING CONDITIONS

Grid No.2 and 4 voltage	$V_{g_2 + g_4}$	=	2000 V	
Grid No.3 voltage	V_{g_3}	=	340 - 640 V	³⁾
Neg. grid No.1 voltage for visual extinction of the focused spot	$-V_{g_1}$	=	max. 90 V	
Sensitivity ($D_1 D_1'$)	N_1	=	0.41 - 0.55 mm/V	
Sensitivity ($D_2 D_2'$)	N_2	=	0.33 - 0.45 mm/V	

LIMITING VALUES (Design centre value)

Grid No.2 and 4 voltage	$V_{g_2 + g_4}$	=	max. 2500 V	
Grid No.3 voltage	V_{g_3}	=	max. 1000 V	³⁾
Grid No.1 voltage Negative value	$-V_{g_1}$	=	max. 200 V	
Positive value	V_{g_1}	=	max. 0 V	
Peak voltage on deflection plates $D_1 D_1'$	$V_{D_1 D_1' p}$	=	max. 500 V	
Peak voltage on deflection plates $D_2 D_2'$	$V_{D_2 D_2' p}$	=	max. 500 V	
Voltage between cathode and heater	V_{kf}	=	max. 125 V	
Screen dissipation	W_l	=	max. 3 mW/cm ²	
Grid No.2 and 4 dissipation	$W_{g_2 + g_4}$	=	max. 4 W	

MAX. CIRCUIT VALUES

Deflection plate resistance	R_D	=	max. 5 MΩ	
Grid No.1 circuit resistance	R_{g_1}	=	max. 1.5 MΩ	

MECHANICAL DATA

MOUNTING POSITION

Any

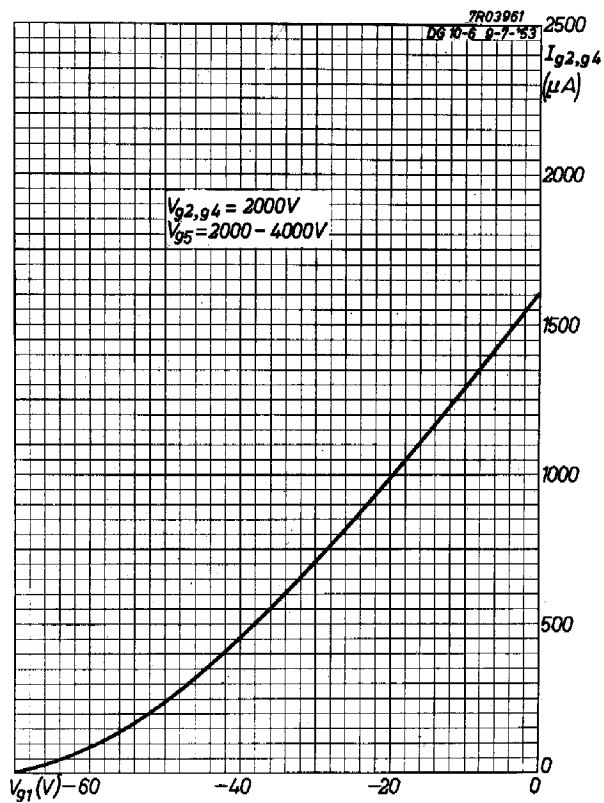
DIMENSIONS

Overall length	375 ± 9.5 mm ($14\frac{3}{4} \pm \frac{3}{8}$ ")
Screen diameter	13 cm (5 ")

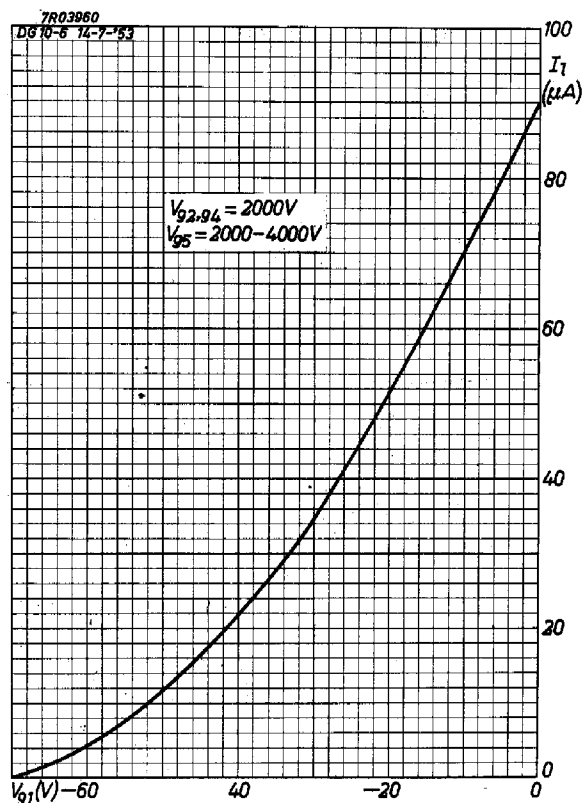
NET WEIGHT

790 g (1 lb 12 oz.)

³⁾ 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.



Grid No.2 and No.4 current plotted against negative grid No.1 current.



Screen current as a function of negative grid-cut-off voltage.