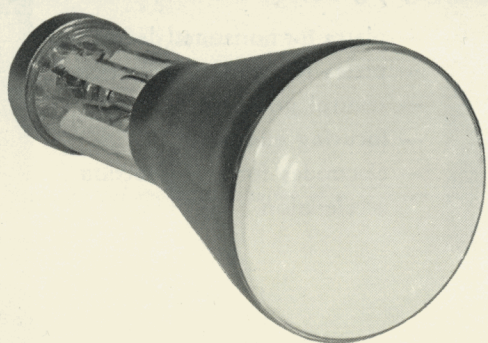
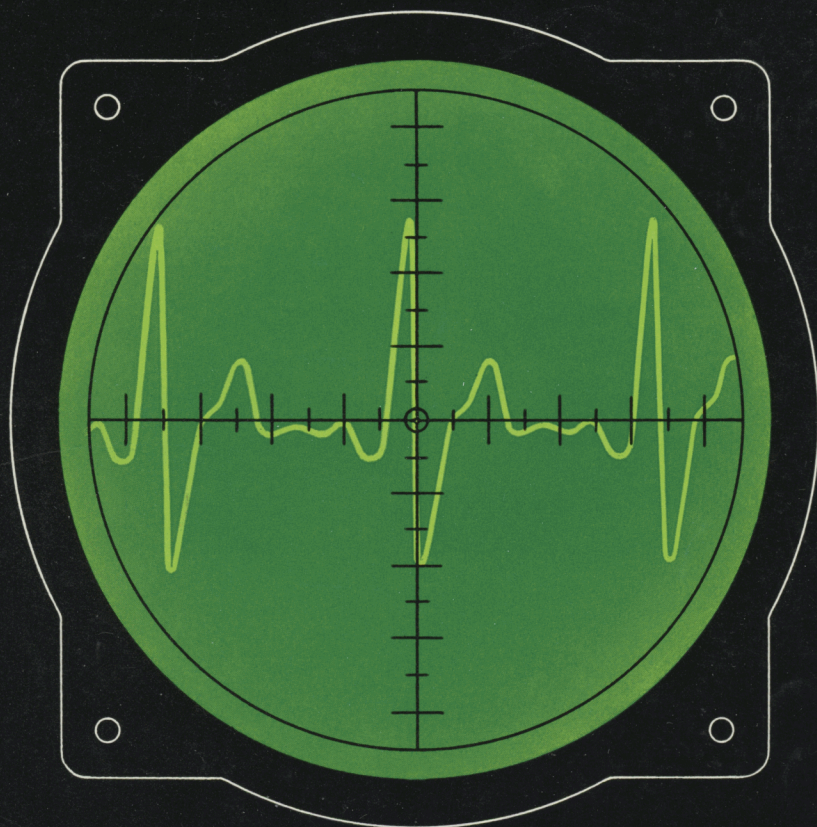


PHILIPS

CATHODE-RAY TUBES

for measuring equipment



PHILIPS ELECTRON TUBE DIVISION

DG 7-6

DB 7-6

DP 7-6

DR 7-6

PHILIPS

INSTRUMENT CATHODE-RAY TUBE

DG 7-6

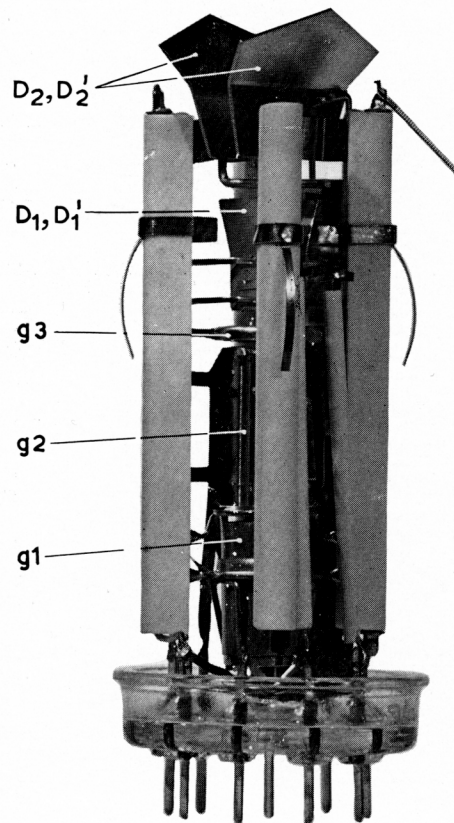
DB 7-6

DP 7-6

DR 7-6

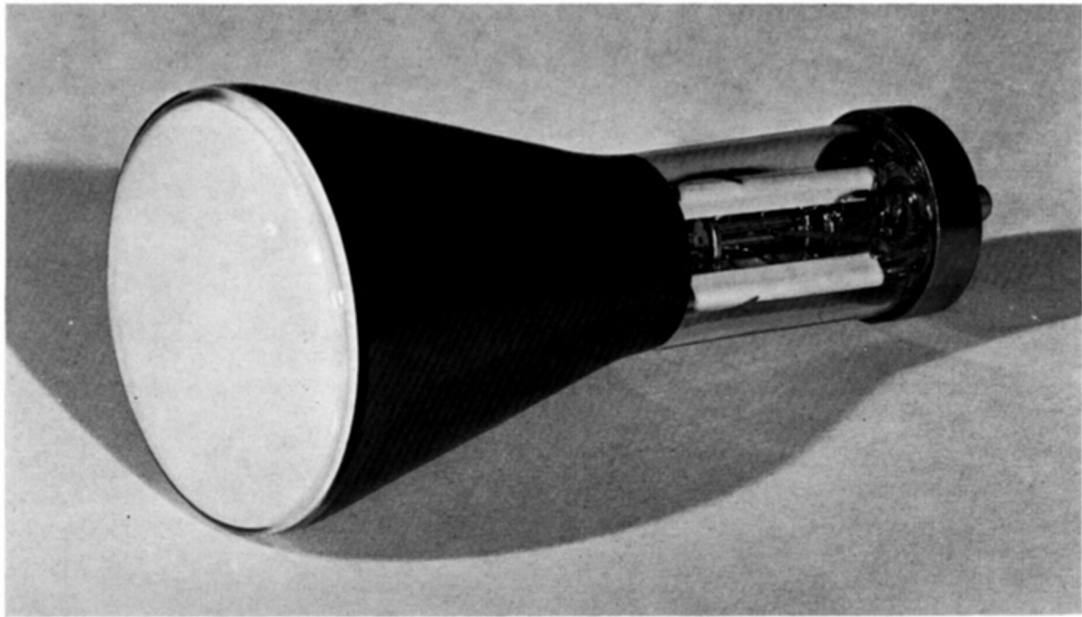
- *Overall length only of 16 cm (6 ⁵/₁₆")*
- *A brilliant spot*
- *No deflection defocusing*
- *Asymmetric deflection*
- *Different screen types*

The Philips Cathode Ray Tube DG 7-6 with its 7 cm (3") screen, gives ample screen area and spot-brilliance for small and easily transportable low-cost oscilloscopes.



Electron gun of the cathode-ray tube DG 7-6

- D_2, D_2' — plates for horizontal deflection
- D_1, D_1' — plates for vertical deflection
- g_1 — control grid
- g_2 — focusing electrode
- g_3 — electrodes for pre-deflection acceleration



The Philips Cathode-Ray Tube DG 7-6 has the following main features:

Thanks to the small dimensions and electrical characteristics, this tube will give outstanding service in all applications where low-cost, light-weight apparatus for oscilloscopy are of prime importance.

800 Volts accelerating voltage; which can easily be obtained from a relatively simple high tension supply.

A brilliant spot owing to excellent screen properties.

A remarkably good picture over the entire screen surface.

Asymmetric deflection, asking only a simple design of the timebase.

For various applications different screen types available:

- G. A green screen for oscilloscopy and recording of medium- and high-frequency phenomena.
- B. A blue screen for photographic recording of non-recurrent high-speed phenomena.
- P. A double-layer screen with bluish fluorescence for oscilloscopy and recording of low-frequency and low-speed non-recurrent phenomena.
- R. A greenish-yellow screen for oscilloscopy and recording of low- and medium-frequency signals. *)

*) Detailed information on all phosphors is given in a folder dealing with data and characteristics of Philips phosphors.

ELECTRICAL DATA

Screen

Tube type	Fluorescence (colour)	Persistence	
		Character	0.1% of max. brightness after
DG 7-6	green	medium	50 milli sec.
DB 7-6	blue	short	20 milli sec.
DP 7-6	blue (afterglow greenish-yellow)	very long	80 sec.
DR 7-6	greenish-yellow	long	20 sec.

Heating Indirect by A.C. or D.C.

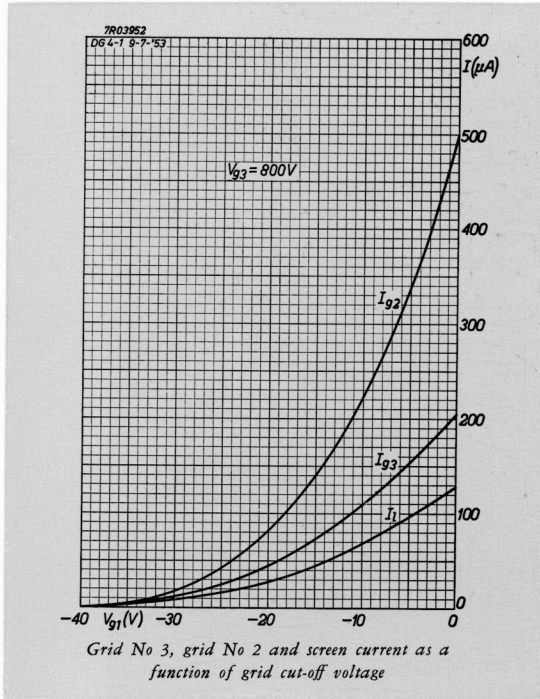
Heater voltage: . . . $V_f = 6.3$ V

Heater current: . . . $I_f = 0.31$ A

Deflection Double electrostatic D_1D_1' symmetric
 D_2D_2' asymmetric

Focusing Electrostatic

Line width at $V_{g3} = 800$ V
 $I_l = 0,5$ μ A = 0.7 mm *)



INTERELECTRODE CAPACITANCES					
Electrodes	Symbol	Value (pF)	Electrodes	Symbol	Value (pF)
D_1 to D_1'	$C_{D_1D_1'}$	0.6	D_1' to all	$C_{D_1'}$	5.3
D_2 to D_2'	$C_{D_2D_2'}$	0.8	D_2 to all	C_{D_2}	4.5
$D_1 + D_1'$ to $D_2 + D_2'$	$C_{D_1D_1' - D_2D_2'}$	0.5	D_2' to all	$C_{D_2'}$	4.5
D_1 to all	C_{D_1}	5.3	Grid 1 to all	C_{g1}	10

Operating characteristics

Grid no. 3 voltage	V_{g3}	=	800 V
Grid no. 2 voltage	V_{g2}	=	200 - 300 V
Negative grid no. 1 voltage for visual extinction of the focused spot	$-V_{g1}$	=	0 - 50 V
Deflection sensitivity	D_1D_1'	=	0,25 mm/V
Deflection sensitivity	D_2D_2'	=	0,16 mm/V

Limiting values

Grid no. 3 voltage	V_{g3}	=	max. 1000 V
		=	min. 800 V
Grid no. 2 voltage	V_{g2}	=	max. 400 V
Grid no. 1 voltage (negative value)	$-V_{g1}$	=	max. 100 V
Grid no. 1 voltage (positive value)	$+V_{g1}$	=	max. 0 V
Peak voltage on deflection plates D_1D_1'	$V_{D_1D_1'p}$	=	max. 450 V
Peak voltage on deflection plates D_2D_2'	$V_{D_2D_2'p}$	=	max. 750 V
Screen dissipation	W_l	=	max. 3 mW/cm ²

Maximum circuit values

Deflection plate circuit resistance	R_D	=	max. 5 Mohm
Grid no. 1 circuit resistance	R_{g1}	=	max. 0,5 Mohm

MECHANICAL DATA

Mounting position: any

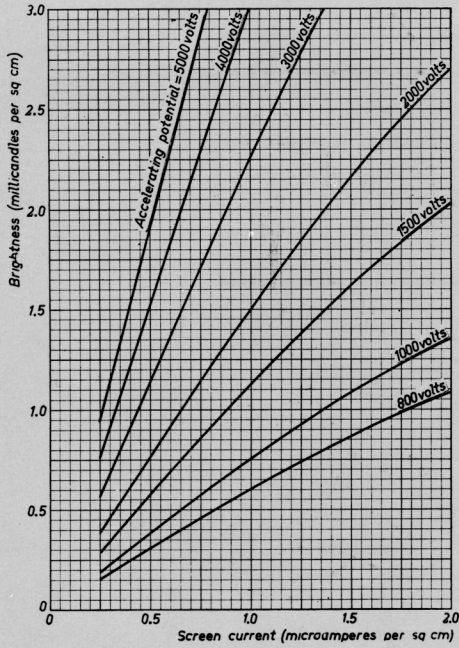
Nett weight: 140 g (5 ounces)

Dimensions: overall length 16 cm ($6\frac{5}{16}$ "")
screen diameter 7 cm (3")

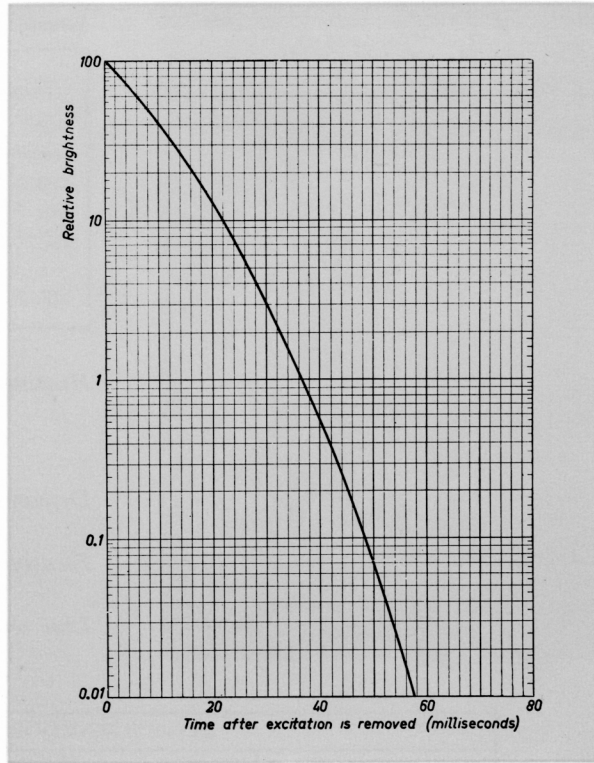
*) Measured on a circle of 50 mm diameter.

G-screen

The green fluorescent G-screen provides high visual contrast under conditions of normal ambient illumination. It has medium persistence and can be used for visual observation of recurrent phenomena in the majority of applications.

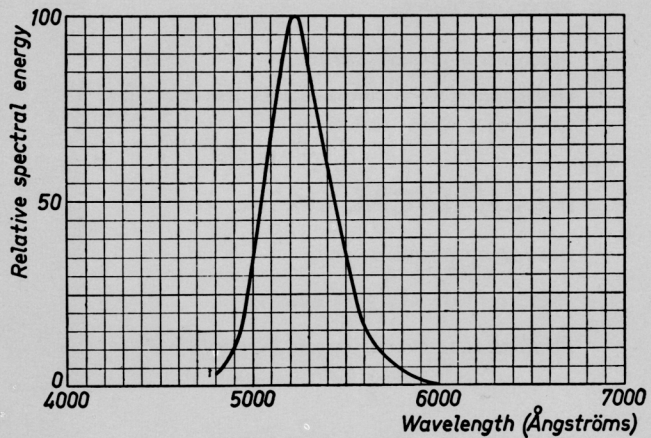


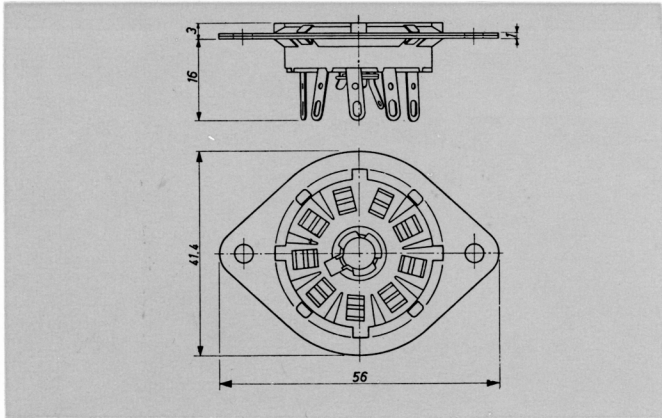
Relative spectral energy distribution of a G-screen



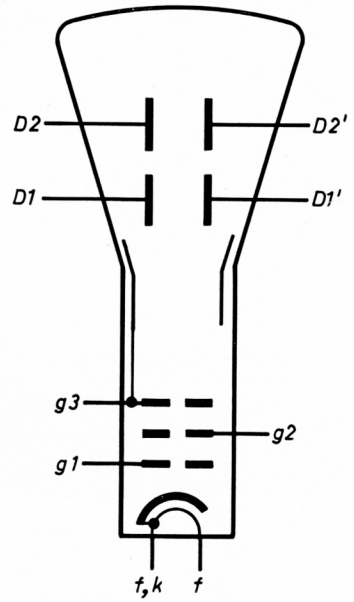
Persistence characteristic of a G-screen.

Brightness of a G-screen as a function of the screen current per square cm screen area, with the accelerating potential as a parameter.

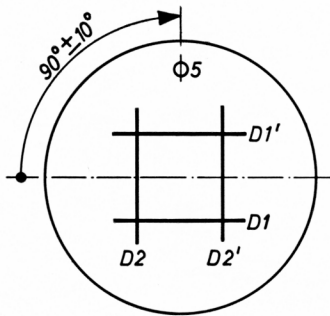




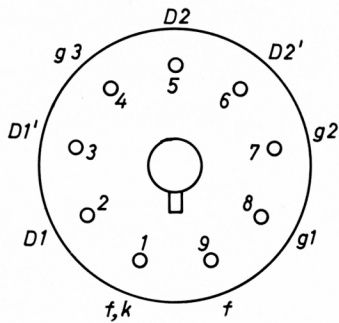
Base: English loctal 9 pins



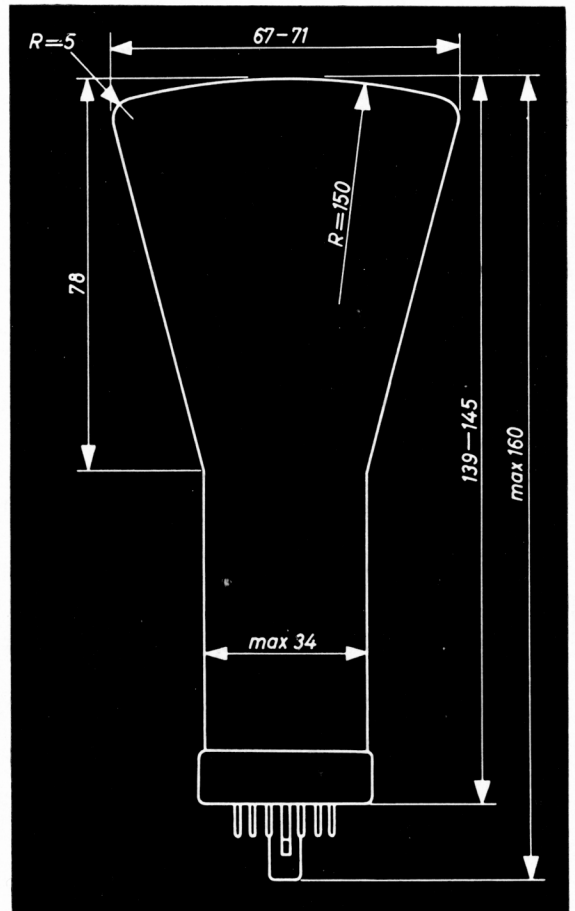
Electrode arrangement



Position of the deflection plates



Base connections



Outline drawing of the DG 7-6 (dimensions in mm)