

DB7-11  
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# PHILIPS

## ACCESSORIES

Socket (supplied with tube)

Type no. 40467

Mu-metal shield

Type no. 55532

## CAPACITANCES

|                                                                             |             |          |
|-----------------------------------------------------------------------------|-------------|----------|
| Grid No.1 to all other electrodes                                           | $C_{g1}$    | = 5.7 pF |
| Cathode to all other electrodes                                             | $C_k$       | = 3.0 pF |
| x <sub>1</sub> plate to all other electrodes<br>except x <sub>2</sub> plate | $C_{x1}$    | = 4.0 pF |
| x <sub>2</sub> plate to all other electrodes<br>except x <sub>1</sub> plate | $C_{x2}$    | = 4.0 pF |
| y <sub>1</sub> plate to all other electrodes<br>except y <sub>2</sub> plate | $C_{y1}$    | = 3.5 pF |
| y <sub>2</sub> plate to all other electrodes<br>except y <sub>1</sub> plate | $C_{y2}$    | = 3.5 pF |
| x <sub>1</sub> plate to x <sub>2</sub> plate                                | $C_{x1-x2}$ | = 1.9 pF |
| y <sub>1</sub> plate to y <sub>2</sub> plate                                | $C_{y1-y2}$ | = 1.7 pF |

FOCUSING Electrostatic

DEFLECTION Double electrostatic; symmetrical

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

If use is made of the full deflection capabilities of the tube, the deflection plates will intercept part of the electron beam near the edge of the scan; a low impedance deflection plate drive is therefore desirable in this case

### Deflection factors

$$\begin{aligned} V_{g6}/V_{g4} &= 1 \left\{ \begin{array}{l} M_x = 17.9 - 22.8 \text{ V/cm} \\ M_y = 6.9 - 8.8 \text{ V/cm} \end{array} \right\} \text{ per kV of } V_{g4} \\ V_{g6}/V_{g4} &= 4 \left\{ \begin{array}{l} M_x = 31.3 - 40.0 \text{ V/cm} \\ M_y = 10.7 - 13.7 \text{ V/cm} \end{array} \right\} \end{aligned}$$

LINE WIDTH measured with shrinking raster method

|                            |          |              |
|----------------------------|----------|--------------|
| Post accelerator voltage   | $V_{g6}$ | = 1200 V     |
| Second accelerator voltage | $V_{g4}$ | = 300 V      |
| First accelerator voltage  | $V_{g2}$ | = 1200 V     |
| Beam current               | $I_b$    | = 10 $\mu$ A |
| Line width                 | l.w.     | = 0.65 mm    |

## OPERATING CHARACTERISTICS

|                                                                  |             |                              |
|------------------------------------------------------------------|-------------|------------------------------|
| Post accelerator voltage                                         | $V_{g6} =$  | 1200 V                       |
| Isolation shield voltage                                         | $V_{g5} =$  | $300 \pm 30$ V               |
| Second accelerator voltage                                       | $V_{g4} =$  | $300(+40 \text{ or } -15)$ V |
| Focusing voltage                                                 | $V_{g3} =$  | 20 to 150 V                  |
| First accelerator voltage                                        | $V_{g2} =$  | 1200 V                       |
| Negative grid No.1 voltage for visual extinction of focused spot | $-V_{g1} =$ | 30 to 80 V                   |
| Deflection factors                                               |             |                              |
| in the x direction                                               | $M_x =$     | 9.4 to 12 V/cm               |
| in the y direction                                               | $M_y =$     | 3.2 to 4.1 V/cm              |
| Useful scan                                                      |             |                              |
| in the x direction                                               | $d_x =$     | 60 mm                        |
| in the y direction                                               | $d_y =$     | 45 mm                        |

### Deviation of the linearity of deflection      max. 2 %

The sensitivity of each plate pair at a deflection of less 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      max. 2 %

With a raster pattern the size of which is adjusted so that the widest points just touch the sides of a square of 40.8 mm sides, no point of the pattern sides will be within a concentric square of 39.2 mm sides

### Undelected spot position

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

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## LIMITING VALUES (Design centre limits)

|                                                         |                                |                                             |
|---------------------------------------------------------|--------------------------------|---------------------------------------------|
| Post accelerator voltage                                | $V_{g6}$                       | = max. 2500 V<br>= min. 1200 V              |
| Isolation shield voltage                                | $V_{g5}$                       | = max. 2200 V                               |
| Second accelerator voltage                              | $V_{g4}$                       | = max. 2100 V<br>= min. 300 V               |
| Focusing voltage                                        | $V_{g3}$                       | = max. 1000 V                               |
| First accelerator voltage                               | $V_{g2}$                       | = max. 1600 V<br>= min. 800 V <sup>1)</sup> |
| Grid No.1 voltage                                       |                                |                                             |
| negative value                                          | $-V_{g1}$                      | = max. 200 V                                |
| positive value                                          | $+V_{g1}$                      | = max. 0 V                                  |
| Voltage ratio                                           | $V_{g6}/V_{g4}$                | = max. 4                                    |
| Peak voltage between grid No.4 and any deflection plate | $V_{x-g4\ p}$<br>$V_{y-g4\ p}$ | = max. 500 V<br>= max. 500 V                |
| Voltage between heater and cathode                      |                                |                                             |
| cathode positive                                        | $V_{kf}(k\ pos.)$              | = max. 100 V                                |
| cathode negative                                        | $V_{kf}(k\ neg.)$              | = max. 15 V                                 |
| Screen dissipation                                      | $W_s$                          | = max. 3 mW/cm <sup>2</sup>                 |
| Cathode current                                         | $I_k$                          | = max. 200 $\mu$ A(RMS)                     |

## CIRCUIT DESIGN VALUES

|                                                                  |           |                                    |
|------------------------------------------------------------------|-----------|------------------------------------|
| Negative grid No.1 voltage for visual extinction of focused spot | $-V_{g1}$ | = 30 to 60 V per kV of $V_{g2}$    |
| Grid No.3 current                                                | $I_{g3}$  | = -15 to +10 $\mu$ A <sup>2)</sup> |

## MAX. CIRCUIT VALUES

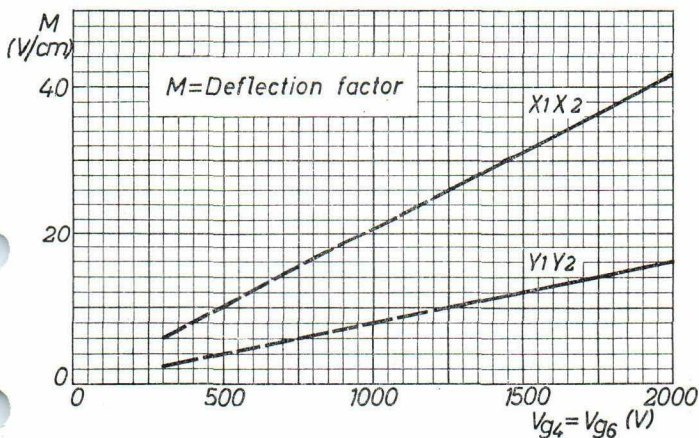
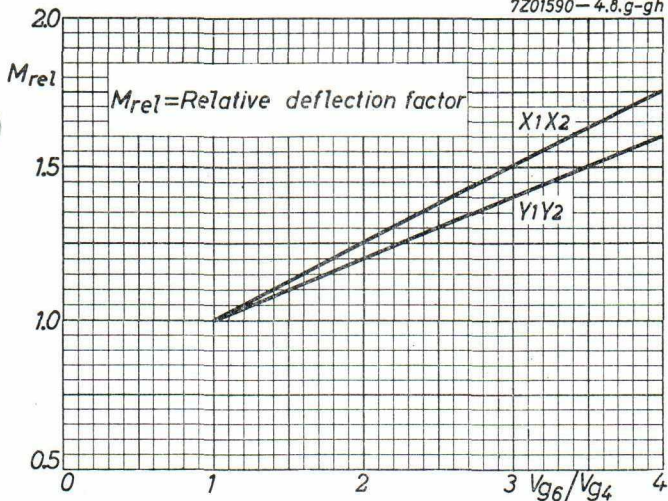
|                                      |             |                       |
|--------------------------------------|-------------|-----------------------|
| External grid No.1 resistance        | $R_{g1}$    | = max. 1.5 M $\Omega$ |
| External deflection plate resistance | $R_x = R_y$ | = max. 50 k $\Omega$  |

- <sup>1)</sup> In order to obtain satisfactory focus quality and maximum screen current it is recommended not to apply to this electrode a voltage less than the indicated value
- <sup>2)</sup> For calculation of the grid No.3 voltage potentiometer these current limits must be taken into account

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7Z01590—4.8.g-gh



2.2.1963

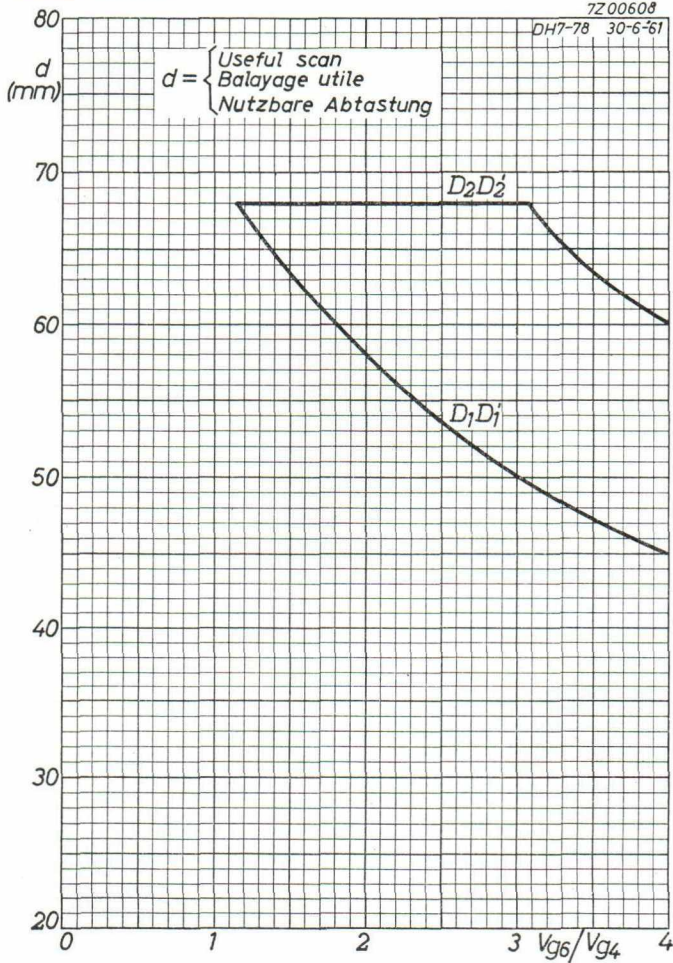
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7Z00608

DH7-78 30-6-61



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