TYPICAL OPERATING CONDITIONS [3]

| | | | | |
|---|---|---|---|---|
| Accelerator voltage | $V_{g2,g4,g5,I}$ | | 1000 | V |
| Astigmatism control voltage | $\Delta V_{g2,g4,g5,I}$ | | ± 25 | V [1] |
| Focusing electrode voltage | $V_{g3}$ | approx. | 150 | V |
| Control grid voltage for visual extinction of focused spot | $V_{g1}$ | approx. max. | - 30 | V |
| Deflection factor, horizontal | $M_x$ | approx. | 29 | V/cm |
| vertical | $M_y$ | approx. | 13 | V/cm |
| Deviation of linearity of deflection | | max. | 2 | % [2] |
| Useful scan, horizontal | | min. | 60 | mm |
| vertical | | min. | 50 | mm |

LIMITING VALUES (Absolute max. rating system)

| | | | | |
|---|---|---|---|---|
| Accelerator voltage | $V_{g2,g4,g5,I}$ | max. | 2200 | V |
| | | min. | 900 | V |
| Focusing electrode voltage | $V_{g3}$ | max. | 2200 | V |
| Control grid voltage, negative | $-V_{g1}$ | max. | 200 | V |
| | | min. | 0 | V |
| Cathode to heater voltage | $V_{kf}$ | cathode connected to heater | | |
| Grid drive, average | | max. | 20 | V |
| Screen dissipation | $W_I$ | max. | 3 | $mW/cm^2$ |

[1]) The astigmatism control electrode voltage should once be adjusted for optimum spot shape in the centre of the screen. For any necessary adjustment the control voltage will be within the stated range, if the mean x and y plate potential are equal to $V_{g2,g4,g5,I}$.

[2]) The sensitivity 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 the indicated value.

[3]) The mean x and y plate potential should be equal to $V_{g2,g4,g5,I}$.

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# INSTRUMENT CATHODE-RAY TUBE

## development sample data

7 cm diameter flat faced monoaccelerator oscilloscope tube primarily intended for use in inexpensive oscilloscopes and monitoring devices.

| QUICK REFERENCE DATA | | | |
|---|---|---|---|
| Accelerator voltage | $V_{g2,g4,g5,I}$ | 1000 | V |
| Display area | | 60 x 50 | $mm^2$ |
| Deflection factor, horizontal | $M_x$ approx. | 29 | V/cm |
| vertical | $M_y$ approx. | 12 | V/cm |

SCREEN

| | colour | persistence |
|---|---|---|
| D7-19GH | green | medium short |

| | | | |
|---|---|---|---|
| Useful screen diameter | min. | 64 | mm |
| Useful scan at $V_{g2,g4,g5,I}$ = 1000 V | | | |
| horizontal | min. | 60 | mm |
| vertical | min. | 50 | mm |

The useful scan may be shifted vertically to a maximum of 4 mm with respect to the geometric centre of the faceplate.

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

| | | | |
|---|---|---|---|
| Heater voltage | $V_f$ | 6.3 | V |
| Heater current | $I_f$ | 300 | mA |

These data, based on the specifications and measured performance of development samples, afford a preliminary indication of the characteristics to be expected of the described product. Distribution of development samples implies no guarantee as to the subsequent availability of the product

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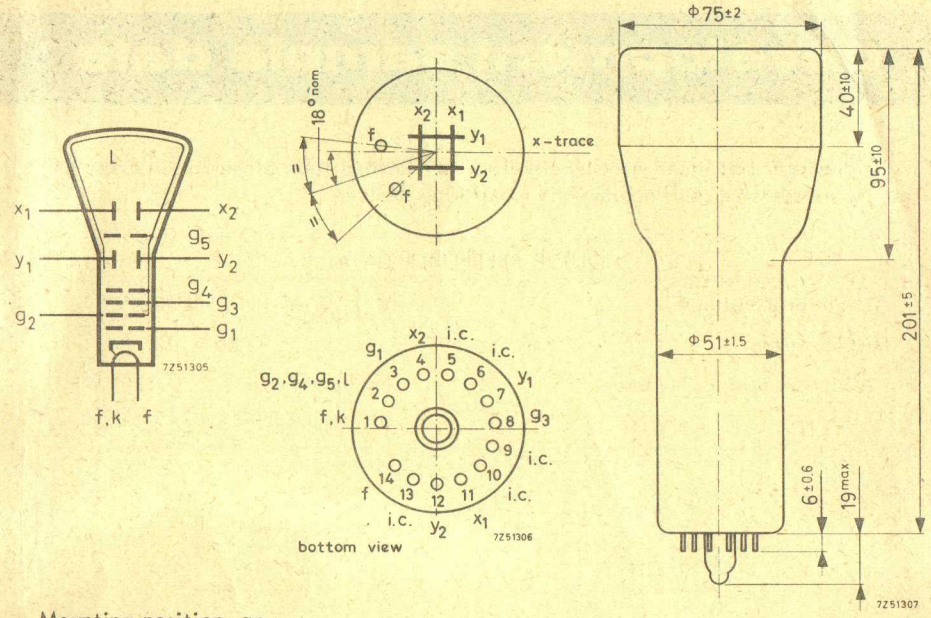
## MECHANICAL DATA

Dimensions in mm




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 | max. | 225 | mm |
| Face diameter | max. | 77 | mm |
| Base 14 pin all glass | | | |
| Net weight | approx. | | g |

Accessories

| | | |
|---|---|---|
| Socket (supplied with tube) | type | 55566 |
| Mu-metal shield | type | |





## CAPACITANCES

| | | | |
|---|---|---|---|
| $x_1$ to all other elements except $x_2$ | $C_{x1(x2)}$ | 4 | pF |
| $x_2$ to all other elements except $x_1$ | $C_{x2(x1)}$ | 4 | pF |
| $y_1$ to all other elements except $y_2$ | $C_{y1(y2)}$ | 3.5 | pF |
| $y_2$ to all other elements except $y_1$ | $C_{y2(y1)}$ | 3.5 | pF |
| $x_1$ to $x_2$ | $C_{x1x2}$ | 3 | pF |
| $y_1$ to $y_2$ | $C_{y1y2}$ | 2 | pF |
| Control grid to all other elements | $C_{g1}$ | 6 | pF |
| Cathode to all other elements | $C_k$ | 5 | pF |

| | |
|---|---|
| FOCUSING | electrostatic |
| DEFLECTION [3] | 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 ± 1 | ° |

LINE WIDTH [3]

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 $I_l$ = 10 μA. [1]

| | | | |
|---|---|---|---|
| Line width | l.w. | 0.30 | mm |

[1] With monoaccelerator tubes the beam current cannot be measured directly. The following procedure should be adhered to:

a) with $V_{g2,g4,g5,l}$ = 1000 V and an estimated beam current of 10 μA, adjust $V_{g3}$ for optimum line width

b) switch over to the following conditions:

$V_{g2,g4,g5,l}$ = 1000 V, $V_{g3}$ as under a), $V_{y1} = V_{y2}$ = 1000 V (mean potential), $V_{x1}$ = 300 V, $V_{x2}$ = 700 V, $V_{g1}$ adjusted for $I_{x2}$ = 10 μA

c) With $V_{g1}$ as under b), readjusted $V_{g3}$ and all other voltages according to the typical operating conditions, the beam current $I_l$ = 10 μA.

[3] See page 4