

*not in handbook***MONITOR TUBE**

The M31-131W is a 31 cm-diagonal rectangular television tube with integral protection primarily intended for use as a monitor or display tube.

**QUICK REFERENCE DATA**

Deflection angle	90 °	
Focusing	electrostatic	
Resolution	900	lines
Overall length	max. 310	mm

**SCREEN**

Blue Binder, Tab 4

Metal backed phosphor		
Luminescence	white	
Light transmission of face glass	approx. 50	%
Useful diagonal	min. 295	mm
Useful width	min. 257	mm
Useful height	min. 195	mm

**HEATING**

Indirect by a. c. or d. c. ; parallel supply

Heater voltage	$V_f$	6,3	V
Heater current	$I_f$	300	mA

**FOCUSING**

electrostatic

For focusing voltage providing optimum focus at a beam current of 100  $\mu$ A see under "Typical operating conditions".

**DEFLECTION**

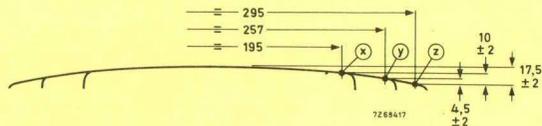
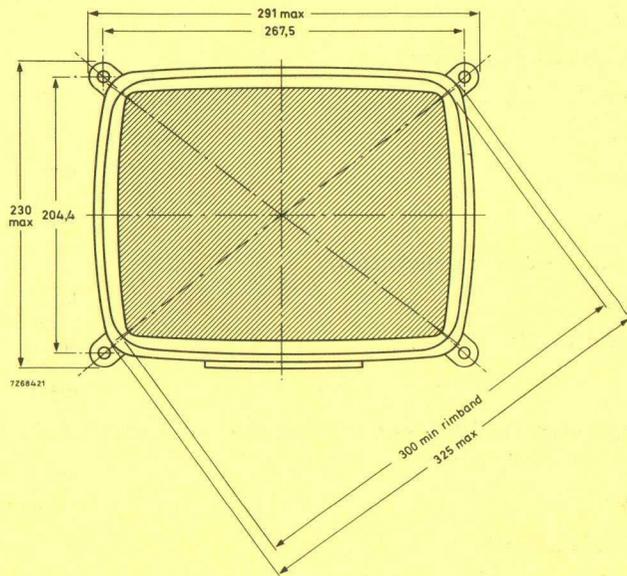
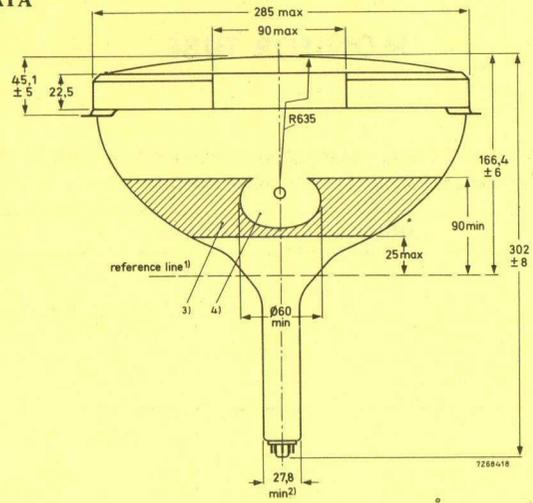
magnetic

Diagonal deflection angle 90 °

For a deflection coil please contact the local tube supplier.

MECHANICAL DATA

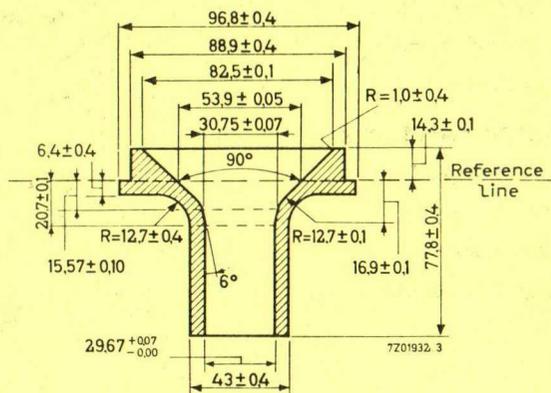
Dimensions in mm



Notes see page 4

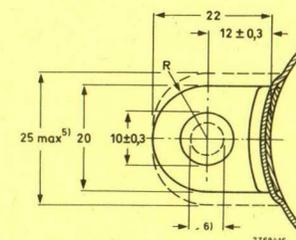
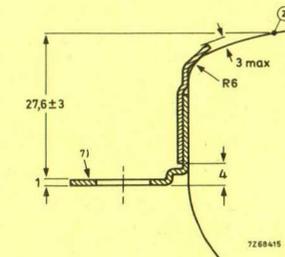
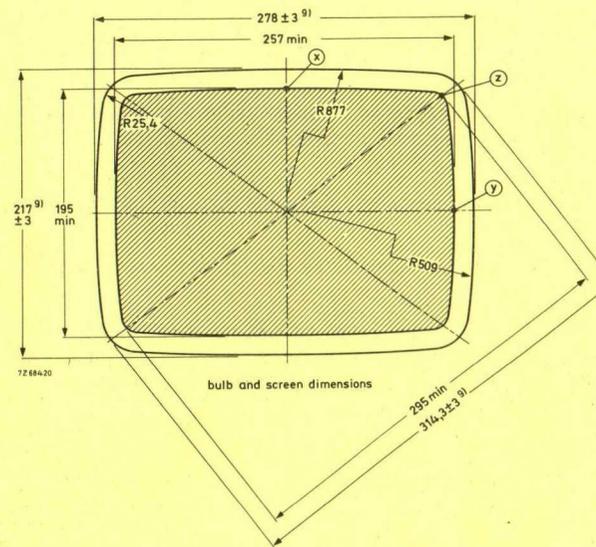
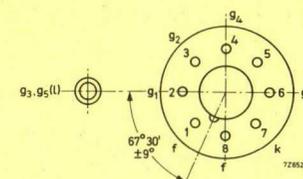
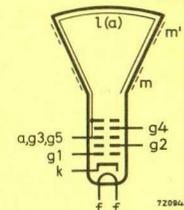
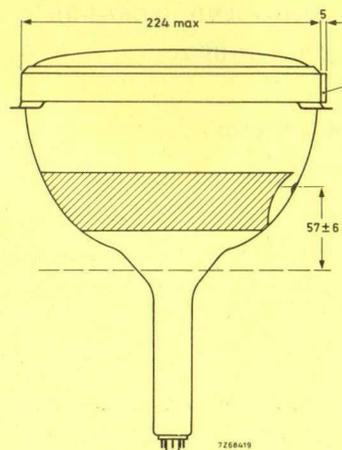
REFERENCE LINE GAUGE

Dimensions in mm



MECHANICAL DATA (continued)

Dimensions in mm



Notes see page 4

**MECHANICAL DATA** (continued)

Mounting position: any

Base	Neo eightar (B8H), IEC67-I-31a
Cavity contact	CT8, IEC 67-III-2
Accessories	
Socket	2422 501 06001
Final accelerator contact connector	type 55563A

**PICTURE CENTRING MAGNET**

Field intensity perpendicular to the tube axis adjustable from 0 to 800 A/m ( 0 to 10 Oe). Adjustment of the centring magnet should not cause a general reduction in brightness or shading the raster.

**NOTES TO OUTLINE DRAWING**

- 1) The reference line is determined by the plane of the upper edge of the flange of the reference line gauge with the gauge resting on the cone.
- 2) The maximum dimension is determined by the reference line gauge.
- 3) This tube has a external conductive coating (m), which must be earthed. The capacitance of this coating to the final accelerator is used for smoothing the EHT. The tube marking and warning labels are on the side of the cone opposite the final accelerator contact, and this side should not be used for making contact to the conductive coating.
- 4) This area must be kept clean.
- 5) Minimum space to be reserved for mounting lugs.
- 6) The mounting screws in the cabinet must be situated within a circle with a diameter of 6 mm drawn around the true geometrical position (corners of a rectangle of 267,5 mm x 204,4 mm).
- 7) The maximum displacement of any lug with respect to the plane through the other three lugs is 2 mm.
- 8) The metal rimband must be earthed. For this purpose the overlap of the band is provided with holes.
- 9) The bulge of the spliceline seal may increase the indicated maximum values for envelope width, diagonal, and height by not more than 6,4 mm, but at any point around the seal the bulge will not protrude more than 3,2 mm beyond the envelope surface.

**CAPACITANCES**

Final accelerator to external conductive coating	$C_{g3, g5(\ell)}/m$	1200	pF
Final accelerator to metal band	$C_{g3, g5(\ell)}/m'$	150	pF
Cathode to all other elements	$C_k$	5	pF
Control grid to all other elements	$C_{g1}$	7	pF

**TYPICAL OPERATING CONDITIONS**

Final accelerator voltage	$V_{g3, g5(\ell)}$	16	kV
Focusing electrode voltage	$V_{g4}$	0 to 400	V
First accelerator voltage	$V_{g2}$	600	V
Grid no. 1 voltage for extinction of focused raster	$V_{g1}$	-32 to -85	V

**RESOLUTION** <sup>1)</sup>

Resolution at screen centre measured with the shrinking raster method (non-interlaced raster), under typical operating conditions, and at a beam current of 50  $\mu$ A: 900 lines

**LIMITING VALUES** (Absolute max. rating system)

Final accelerator voltage	$V_{g3, g5(\ell)}$	max.	18	kV
		min.	10	kV
Focusing electrode voltage, positive	$V_{g4}$	max.	1000	V
negative	$-V_{g4}$	max.	500	V
First accelerator voltage	$V_{g2}$	max.	800	V
		min.	300	V
Grid no. 1 voltage, negative	$-V_{g1}$	max.	150	V
positive	$V_{g1}$	max.	0	V
positive peak	$V_{g1p}$	max.	2	V
Cathode to heater voltage, positive	$V_{kf}$	max.	250	V
positive peak	$V_{kf_p}$	max.	300	V <sup>2)</sup>
negative	$-V_{kf}$	max.	135	V
negative peak	$-V_{kf_p}$	max.	180	V

1) If necessary, the picture quality can be improved by using a beam centring magnet. This magnet, catalogue number 3322 142 11401, can be supplied on request.

2) During a warm-up period not exceeding 15 s the heater may be 410 V negative with respect to the cathode.

Approved ?

OK 10/1-80  
Silbergl

## MONITOR TUBE

The M31-131W is a 31 cm-diagonal rectangular television tube with integral protection primarily intended for use as a monitor or display tube.

QUICK REFERENCE DATA			
Deflection angle		90	°
Focusing		electrostatic	
Resolution		900	lines
Overall length		≤ 310	mm

### SCREEN

Metal backed phosphor

Luminescence white

Light transmission of face glass approx. 50 %

Useful diagonal ≥ 295 mm

Useful width ≥ 257 mm

Useful height ≥ 195 mm

### HEATING

Indirect by a.c. or d.c.; parallel supply

Heater voltage  $V_f$  6.3 V

Heater current  $I_f$  200 mA

### FOCUSING

electrostatic

For focusing voltage providing optimum focus at a beam current of 100  $\mu$ A see under "Typical operating conditions"

### DEFLECTION

magnetic

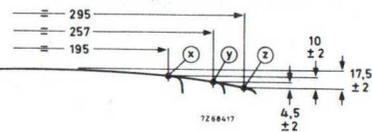
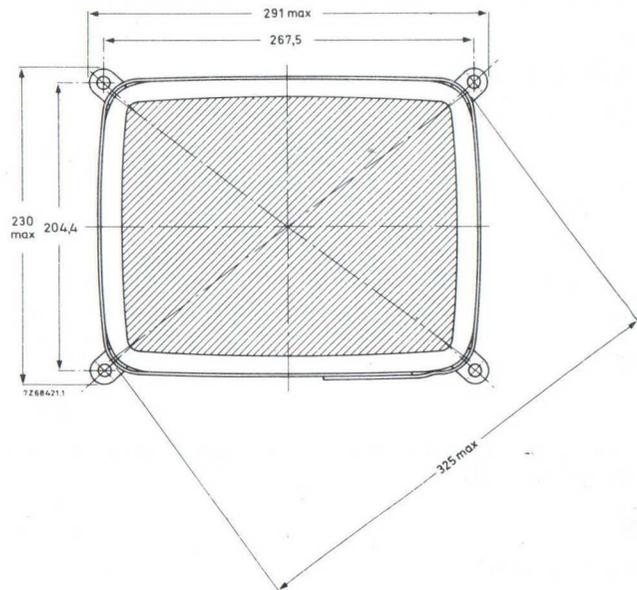
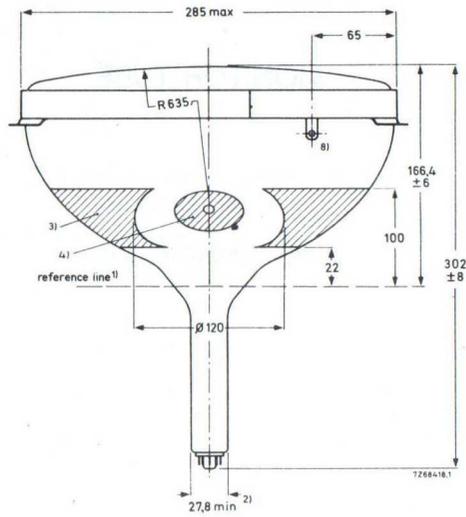
Diagonal deflection angle 90 °

Deflection coil AT1071/03 is recommended.



MECHANICAL DATA

Dimensions in mm

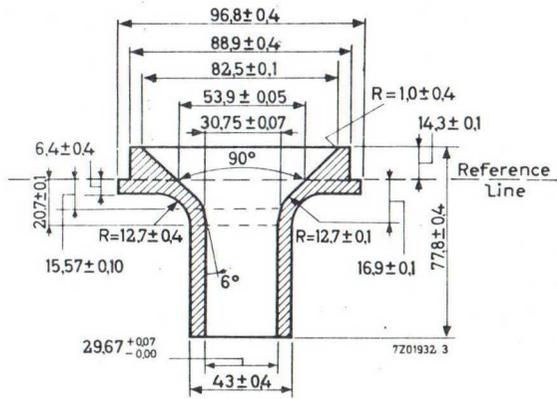


Notes see page 4



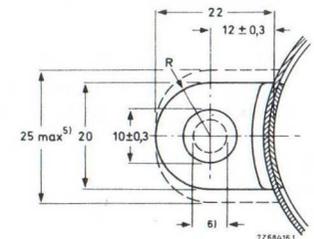
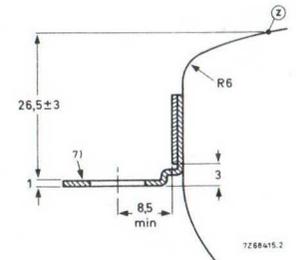
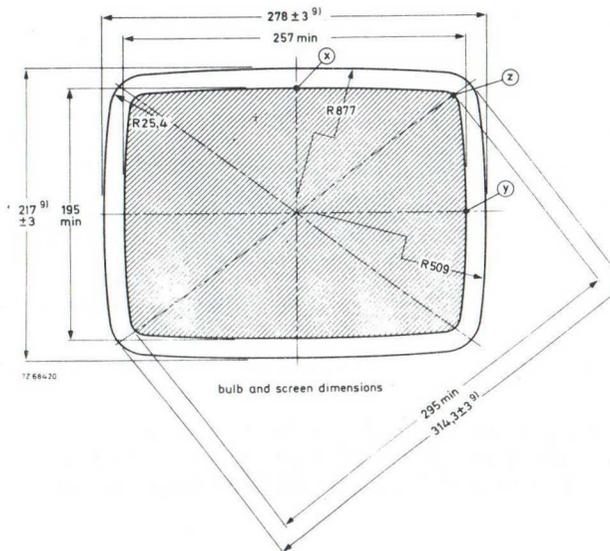
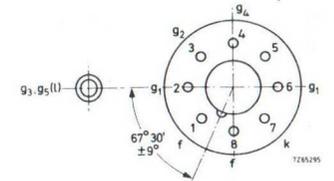
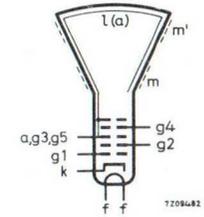
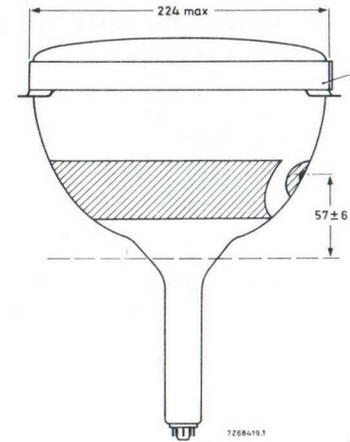
REFERENCE LINE GAUGE

Dimensions in mm



MECHANICAL DATA (continued)

Dimensions in mm



Notes see page 4.



**MECHANICAL DATA** (continued)Mounting position : anyBase Neo eightar (B8H), IEC 67-I-31aCavity contact CT8, IEC 67-III-2AccessoriesSocket 2422 501 06001Final accelerator contact connector type 55563A**PICTURE CENTRING MAGNET**

Field intensity perpendicular to the tube axis adjustable from 0 to 800 A/m (0 to 10 Oe). Adjustment of the centring magnet should not cause a general reduction in brightness or shading the raster.

**NOTES TO OUTLINE DRAWINGS**

- 1) The reference line is determined by the plane of the upper edge of the flange of the reference line gauge with the gauge resting on the cone.
- 2) The maximum dimension is determined by the reference line gauge.
- 3) This tube has a external conductive coating (m), which must be earthed.  
The capacitance of this coating to the final accelerator is used for smoothing the EHT.  
The tube marking and warning labels are on the side of the cone opposite the final accelerator contact, and this side should not be used for making contact to the conductive coating.
- 4) This area must be kept clean.
- 5) Minimum space to be reserved for mounting lugs.
- 6) The mounting screws in the cabinet must be situated within a circle with a diameter of 6 mm drawn around the true geometrical position (corners of a rectangle of 267,5 mm x 204,4 mm).
- 7) The maximum displacement of any lug, with respect to the plane through the other three lugs is 2 mm.
- 8) The metal rim-band must be earthed. For this purpose the band is provided with a tag.
- 9) The bulge of the spliceline seal may increase the indicated maximum values for envelope width, diagonal, and height by not more than 6,4 mm, but at any point around the seal the bulge will not protrude more than 3,2 mm beyond the envelope surface.

**CAPACITANCES**

Final accelerator to external conductive coating	$C_{g3, g5(\ell)/m}$	1200	pF
Final accelerator to metal band	$C_{g3, g5(\ell)/m}$	150	pF
Cathode to all other elements	$C_k$	5	pF
Control grid to all other elements	$C_{g1}$	7	pF

**TYPICAL OPERATING CONDITIONS**

Final accelerator voltage	$V_{g3, g5(\ell)}$	16	kV
Focusing electrode voltage	$V_{g4}$	0 to 400	V
First accelerator voltage	$V_{g2}$	600	V
Grid 1 voltage for extinction of focused raster	$V_{g1}$	-32 to -85	V

**RESOLUTION**

Resolution at screen centre measured with the shrinking raster method (non-interlaced raster), under typical operating conditions, and at a beam current of 50  $\mu$ A: 900 lines

If necessary, the picture quality can be improved by using a beam centring magnet. This magnet, catalogue number 3322 142 11401, can be supplied on request.

**LIMITING VALUES** (Absolute max. rating system)

Final accelerator voltage	$V_{g3, g5(\ell)}$	max.	18	kV
		min.	10	kV
Focusing electrode voltage, positive	$V_{g4}$	max.	1000	V
negative	$-V_{g4}$	max.	500	V
First accelerator voltage	$V_{g2}$	max.	800	V
		min.	300	V
Grid voltage, negative	$-V_{g1}$	max.	150	V
positive	$V_{g1}$	max.	0	V
positive peak	$V_{g1p}$	max.	2	V
Cathode to heater voltage, positive	$V_{kf}$	max.	250	V
positive peak	$V_{kfp}$	max.	300	V
negative	$-V_{kf}$	max.	135	V <sup>1)</sup>
negative peak	$-V_{kfp}$	max.	180	V

1) During a warm-up period not exceeding 15 s the heater may be 410-V negative with respect to the cathode.

