

November 7, 1958

TELEVISION PICTURE TUBE TYPE 21ELP4

90° Magnetic Deflection
Rectangular Glass
Aluminized
Gray Filter Glass

Electrostatic Focus
6-1/2" Neck Length
6.3 Volt, 300 Ma. Heater

External Conductive Coating
Spherical Faceplate
No Ion Trap
19-1/16" x 15-1/16" Picture

ELECTRICAL:

Cathode	Coated Unipotential
Heater:	
Voltage (ac or dc)	6.3 Volts
Current	0.3 Ampere
Direct Interelectrode Capacitances:	
Grid 1 to all other Electrodes	
Cathode to all other Electrodes	5 uuf
External Conductive Coating:	
Maximum	2500 uuf
Minimum	2000 uuf
Screen:	
Phosphor	Aluminized P4
Fluorescence	White
Persistence	Short
Focusing Method	Electrostatic
Deflection Method	Magnetic
Horizontal Angle (Approx.)	85°
Vertical Angle (Approx.)	68°
Diagonal Angle (Approx.)	90°
No Ion Trap Gun	No Magnet Required

MECHANICAL:

Mounting Position	Any
Screen Dimensions:	
Minimum Screen Area	262 Sq. In.
Height	15-1/16" Min.
Width	19-1/16" Min.
Diagonal	20-1/4" Min.
Face Plate	Spherical Outer and Inner Surfaces
Glass	Neutral Filter
Transmission	74 per cent
Bulb Number	J171E1 or Equiv.
Bulb Dimensions:	
Height	16-3/8" ± 1/8"
Width	20-1/4" ± 1/8"
Diagonal	21-3/8" ± 1/8"
Neck Length	6-1/2"
Overall Length	19" ± 3/8"
Net Weight (Approx.)	23 Pounds
Anode Terminal	Recessed Small Cavity Cap (JETEC J1-21)
Base	Small Shell Duodecal 6-Pin (JETEC B6-63)
or	Short Small Shell Duodecal 6-Pin (JETEC B6-203)

MAXIMUM RATINGS, Grid Drive Service:

Design Center Values	
Anode Voltage■	20000 max. Volts
Grid 4 Voltage:	
Positive Value	1000 max. Volts.
Negative Value	500 max. Volts
Grid 2 Voltage	500 max. Volts
Grid 1 Voltage:	
Negative Bias Value	140 max. Volts
Negative Peak Value	200 max. Volts
Positive Bias Value	0 max. Volts
Positive Peak Value	0 max. Volts
Peak Heater-Cathode Voltage:	
Heater Negative with Respect to Cathode:	
During Warmup Period of 15 sec. max. ..	410 max. Volts
After Equipment Warmup Period	180 max. Volts
Heater Positive with Respect to Cathode	180 max. Volts

TYPICAL OPERATING CONDITIONS, Grid Drive Service:

Anode Voltage*	14000	16000 Volts
Grid 4 Voltage	-50 to +350	0 to 400 Volts
Grid 2 Voltage▲	450	450 Volts
Grid 1 Voltage for Raster Cutoff▲ ..	-45 to -105	-45 to -105 Volts

LIMITING CIRCUIT VALUES:

Grid 1 Circuit Resistance	1.5 max. Megohms
Grid 2 Circuit Resistance**	10000 min. Ohms
Grid 4 Circuit Resistance**	10000 min. Ohms

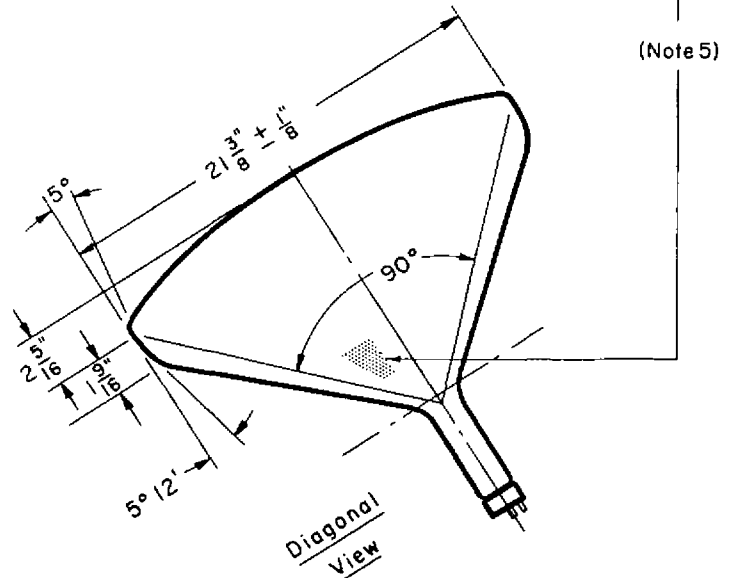
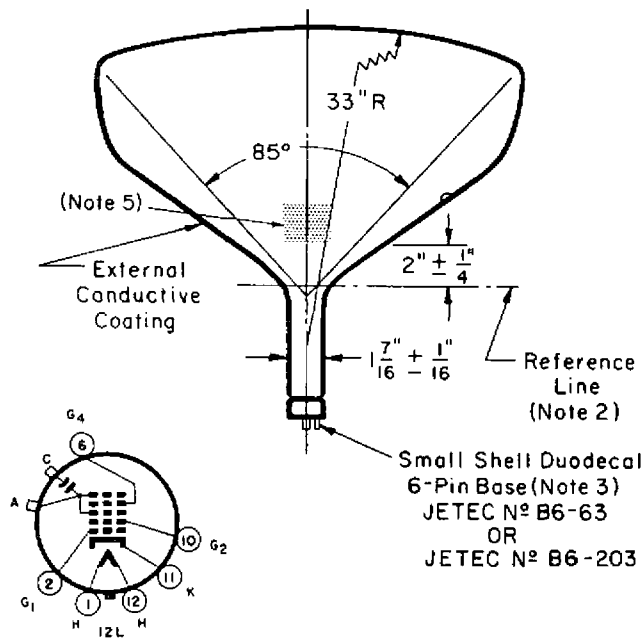
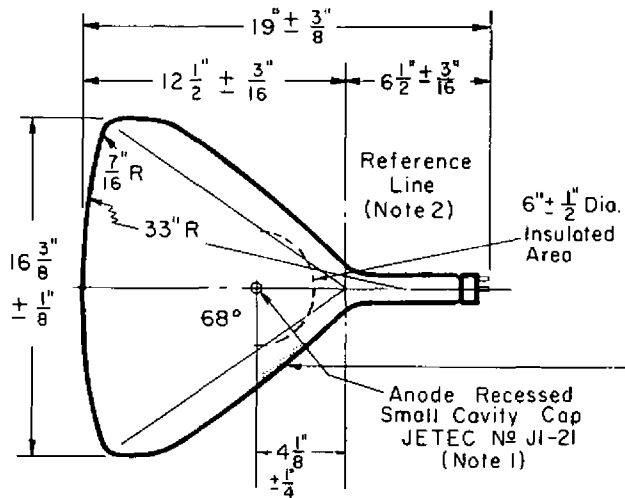
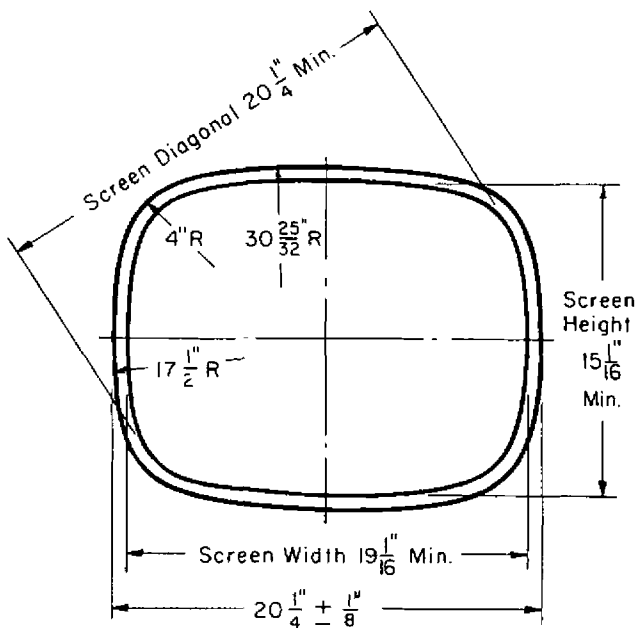
* Brilliance and definition decrease with decreasing anode voltage. In general, anode voltage should not be less than 11000 volts.

**Protective resistance in the G₂ and G₄ circuits is advisable to prevent damage to the tube.

▲ Raster size 19-1/16" x 15-1/16"

■ Inasmuch as the tube rating permits operation at voltages as high as 22 kilovolts (absolute value), shielding of the tube for x-ray radiation may be needed whenever the operating conditions involve voltage in excess of 16 kilovolts.

♦ It is recommended that Grid 2 be operated at a voltage greater than 300 volts since resolution is affected at lower voltages.



CE-C1405

NOTE 1: The plane through the tube axis and the base pin No. 6 may vary from the plane through the tube axis and the bulb terminal by an angular tolerance of $\pm 30^\circ$ measured about the tube axis. The bulb terminal is on the same side of the tube as pin No. 6.

NOTE 2: With the tube neck inserted through the flared end of REFERENCE-Line Gauge (JETEC No. 116) and with the tube seated in the gauge, the reference line is determined by the intersection of the plane cc' (face of the flared end) of the gauge with the glass funnel.

NOTE 3: The socket should not be mounted rigidly but it should be allowed to move freely and it should have flexible leads. The bottom circumference of the base shell will lie within a circle concentric with the bulb axis and having a diameter of $2\text{--}3/4$ ".

NOTE 4: External conductive coating must be grounded.

NOTE 5: Contact area of external conductive coating $2''$ min. $\times$ $2''$ min. located $2'' \pm 1/4''$ from Reference Line 90° counterclockwise from anode button as viewed from base end of tube.