

NATIONAL UNION

21E PL

"VIDEOTRON"

Cylindrical Face Plate

Magnetic Focus
Magnetic Deflection
Ion-Trap Gun

Rectangular All Glass
Filterglass Face Plate

The NU-21 PL is a RECTANGULAR FACE, cylindrical front, direct-view, magnetically focused, magnetically-deflected Television Picture Tube, providing a 19-1/8" x 13-7/8" picture.

The rectangular face of the NU-21 PL uses a special "Filter" glass plate which effectively reduces ambient-light reflection, thus increasing picture contrast. Further: Advantage is taken of the well known optical properties of a cylindrical front surface to eliminate reflection and preserve sharp definition of the picture.

The tube has an electron gun designed to be used with a single-magnet external ion-trap magnet.

DATA

General:

Heater, for unipotential Cathode

Voltage (AC or DC)

6.3 Volts

Current

0.6 ($\pm$ 10%) Amp.

Direct interelectrode capacitance

Grid No. 1 to all other electrodes

6 uuf

Cathode to all other electrodes

5 uuf

Face plate (with about 66% light transmission)

Filter Glass

Phosphor

No. 4-Sulfide Type

Fluorescence

White

Phosphorescence

White

Persistence

Short

Focusing Method

Magnetic

Deflection Method

Magnetic

Deflection Angles (Approx.)

Diagonal

70°

Horizontal

65°

Vertical

50°

Ion-Trap gun

Requires external, single-field magnet

Overall Length

23-1/4" $\pm$ 3/8"

Greatest Diagonal of Tube at Face

21-7/32" $\pm$ 3/16"

Greatest Width of Tube at Face

20-1/4" $\pm$ 3/16"

Greatest Height of Tube at Face

15-9/16" $\pm$ 3/16"

Screen Size

19-1/8 x 13-7/8

Cap
Base
Mounting Position

Recessed Small Cavity (JETEC No. J1-21)
Small-Shell Duodecal 5-Pin (JETEC No. B5-57)
Any

MAXIMUM RATINGS, Design-Center Values:

Collector VOLTAGE	18,000 Max. Volts
GRID-No. 2 VOLTAGE	500 Max. Volts
GRID-No. 1 VOLTAGE	
Negative Bias Value	125 Max. Volts
Positive Bias Value	0 Max. Volts
Positive Peak Value	2 Max. Volts
PEAK HEATER-CATHODE VOLTAGE:	
Heater negative with respect to cathode;	
During equipment warm-up period not exceeding	
15 seconds	410 Max. Volts
After equipment warm-up period	180 Max. Volts
Heater positive with respect to cathode	180 Max. Volts

TYPICAL OPERATION:

Collector Voltage	12,000 Max. Volts
Grid-No. 2 Voltage	300 Volts
Grid-No. 1 Voltage for visual extinction of undeflected focused spot	-33 to -77 Volts
Grid-No. 2 Current	-15 to 15 uamp
Focusing-coil current (Approx.) ¹	95 ua ma
Ion-Trap-Magnet Current (DC, Approx.) ²	75 ma

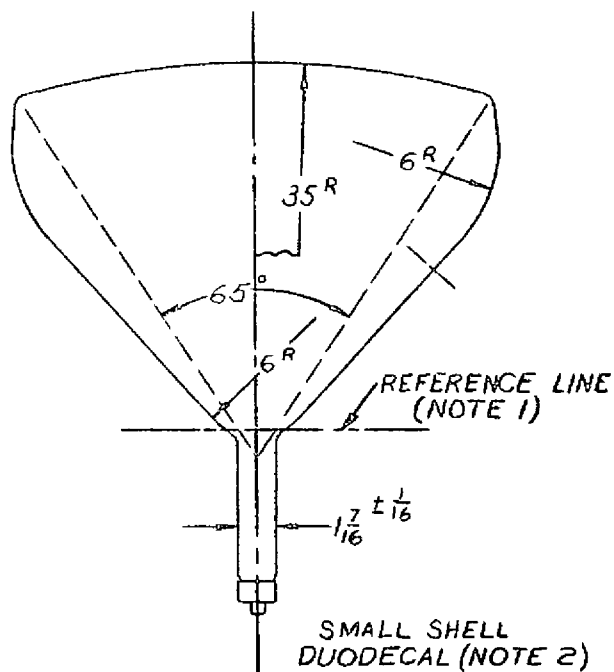
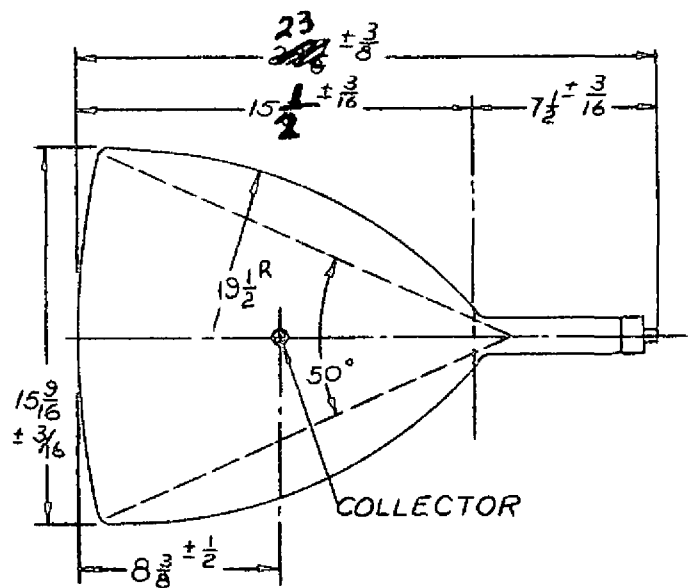
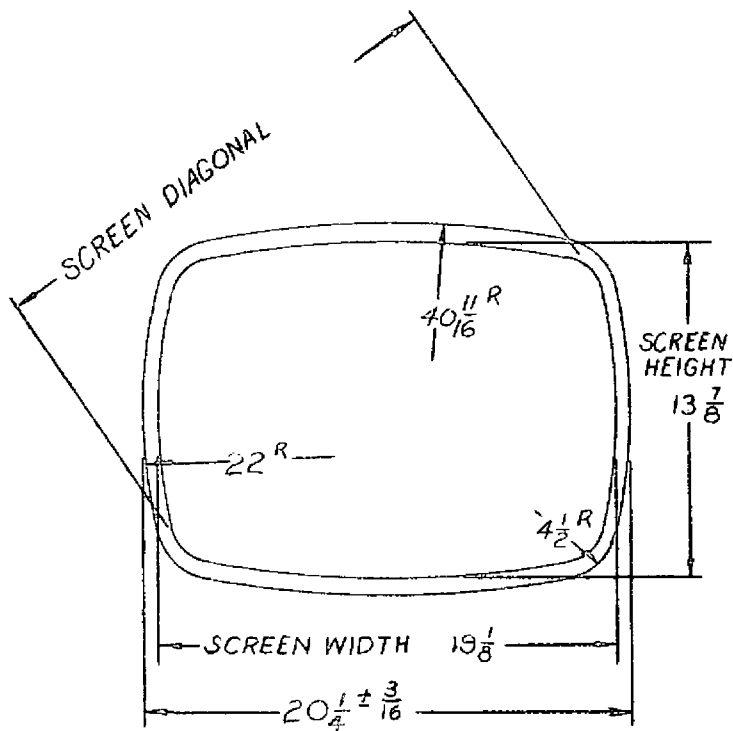
MAXIMUM CIRCUIT VALUES:

Grid-No. 1-circuit resistance	1.5 megohms
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1. For JETEC standard focus coil #109 with the combined grid No. 1 bias voltage and video-signal voltage adjusted to produce a highlight brightness of 30 foot lamberts on a picture area of 17" x 12-3/4". Distance from reference line of bulb to center of focus coil air gap shall be 3".
2. JETEC ion-trap magnet No. 111 located in optimum position and rotated to give maximum brightness.

X-Ray Warning - Because the rating of the tube permits operation at voltages as high as 19.8 KILOVOLTS (absolute value), shielding of the tube for X-ray radiation may be needed whenever the operating conditions involve voltages in excess of 16 kilovolts.

Socket Connections - Pin 1: Heater; Pin 2: Grid No. 1; Pin 10: Grid No 2;
Pin 11: Cathode; Pin 12: Heater; CAP: Collector.



NOTE 1: With tube neck inserted through flared end of reference-line gauge (JETEC No. 110) and with tube seated in gauge, the reference line is determined by the inter-section of the plane CC' of the gauge with the glass funnel.

NOTE 2: Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. Bottom circumference of base shell will fall within a circle concentric with bulb axis and having a diameter of 3".