The 27ABP4 has a 5 1/8" Neck Length, electrostatic focus, magnetic deflection. The tube has a metal back screen and a Pittsburgh type implosion faceplate sealed to the tube. A straight gun which requires no ion trap and a 600 milliampere, 6.3 volt filament is used.

ELECTRICAL DATA

Focusing Method
Electrostatic
Deflection Angles, Approximate
  Horizontal 106° Degrees
  Vertical 86° Degrees
  Diagonal 110° Degrees
Direct Inter-electrode Capacitances
  Cathode to all other electrodes, approximate 5 uuf
  Grid #1 to all other electrodes, approximate 6 uuf
  External Conductive Coating to Anode 2500 max. uuf
  2000 min. uuf
  600 ± 300 ma
Heater Current at 6.3 volts
11 Seconds
Heater Warm-up Time

OPTICAL DATA

Phosphor Number JEDEC Designation
P4 Aluminized
Light Transmittance at Center, Approximate 48%

MECHANICAL DATA

Overall Length 17 1/8 ± 3/8 Inches
Greatest Diameter of Tube
Greatest Dimensions of Tube
  Diagonal 26 13/16 ± 1/8 Inches
  Width 25 9/32 ± 1/8 Inches
  Height 20 7/32 ± 1/8 Inches
Minimum Useless Screen Diameter (Projected)
Minimum Useless Screen Dimensions (Projected)
  Diagonal 25 3/4 Inches
  Horizontal axis 24 1/4 Inches
  Vertical axis 18 5/8 Inches
  Area 425 Sq. Inches
Neck Length 5 1/8 ± 3/16 Inches
Bulb EIA designation or equivalent (Including shield designation)
  C214 1/2 Exp. #13
  Pittsburgh FP214 1/2 Al
Panel
  J1-21
Bulb Contact JEDEC designation
Base JEDEC designation
Basing JEDEC designation

from JEDEC release #3674, April 9, 1962
MECHANICAL DATA (Cont'd)

Bulb Contact Alignment
J1-21 contact aligns with pin position #4 ± 30 Degrees
Weight (Approx.) Bulb 41 lbs.
Weight (Approx.) Laminated 52 lbs.

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to cathode

Maximum Anode Voltage 22,000 Volts
Minimum Anode Voltage 12,000 Volts
Maximum Grid #4 (Focusing Electrode) Voltage +1100 -550
Maximum Grid #2 Voltage 550 Volts
Minimum Grid #2 Voltage 200 Volts
Grid #1 Voltage
  Maximum Negative Value 155 Volts DC
  Maximum Negative Peak Value 220 Volts
  Maximum Positive Value 0 Volts DC
  Maximum Positive Peak Value 2 Volts
Maximum Heater Voltage 6.9 Volts
Minimum Heater Voltage 5.7 Volts
Maximum Heater-Cathode Voltage
  Heater negative with respect to cathode
  During warm-up period not to exceed 15 seconds 450 Volts
  After equipment warm-up period 200 Volts
  Heater positive with respect to cathode 200 volts

TYPICAL OPERATING CONDITIONS

GRID DRIVE SERVICE

Unless otherwise specified, all voltage values are positive with respect to cathode.

Anode Voltage 18,000 Volts DC
Grid #4 Voltage (Focusing Electrode) (Notes 3 & 4) 0 to +400 Volts DC
Grid #2 Voltage 300 Volts DC
Grid #1 Voltage (Note #1) -35 to -72 Volts DC

MAXIMUM CIRCUIT VALUES

Maximum Grid #1 Circuit Resistance 1.5 Megohms

GRAPHICS AND DRAWINGS

Tube Outline with essential dimensions and tolerances.

Pin Connections

  Pin 1 - Heater  Pin 6 - G1 Grid
  Pin 2 - G1 Grid  Pin 7 - Cathode
  Pin 3 - G2 Grid  Pin 8 - Heater
  Pin 4 - G4 Grid  Bulb Contact - Ultor
NOTES

1. Visual extinction of focused raster.

2. With the combined grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 100 microamperes on a 18 1/2" X 24" pattern from RCA 2F21 Monoscope or equivalent.

3. Individual tubes will have satisfactory focus as some value between 0 to +400 volts.

4. Ion trap positioned with trailing edge of pole pieces over the G1-G2 gap and oriented to give maximum brightness.

DIAGRAM NOTES

1. The plane through the tube axis and pin #4 may vary from the plane through the tube axis and ultor terminal by angular tolerance (measured about the tube axis) of 30°. Ultor terminal is on same side as pin #4.

2. External conductive coating must be grounded.

3. Insulating coating around cavity contact: to clean use only a soft dry lint-free cloth.

4. Bulge at splice line may increase the indicated values for envelope width, diagonal, and height by not more than 1/8" but at any point around the seal, the bulge will not protrude more than 1/16" beyond the envelope surface at the mold-match line.

5. Distance between mold-match line and seal bulge is 11/16" minimum. This should be the maximum width of a tube support band. Support mechanisms must be spaced from the tube by cushioning pads of asphalt impregnated felt or equivalent.

WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at anode voltages higher than 16,000 volts.