CATHODE RAY

THE 27RP4 IS A DIRECT-VIEW PICTURE TUBE DESIGNED FOR USE IN TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

SPHERICAL FACEPLATE  ALUMINIZED SCREEN
GREY FILTER FACEPLATE  UNIPOTENTIAL CATHODE
MAGNETIC FOCUS & DEFLECTION  EXTERNAL CONDUCTIVE COATING
RECTANGULAR GLASS CONSTRUCTION  EXTERNAL SINGLE FIELD ION TRAP

24° X 10 1/2° RASTER SIZE

ELECTRICAL DATA

FOCUSING METHOD  MAGNETIC
DEFLECTING METHOD  MAGNETIC
DEFLECTION ANGLE (APPROX.):
HORIZONTAL  85 DEGREES
DIAGONAL  90 DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):
CATHODE TO ALL OTHER ELECTRODES  5 μμf
GRID #1 TO ALL OTHER ELECTRODES  6 μμf
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  750 μμf
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  500 μμf

OPTICAL DATA

PHOSPHOR NUMBER  NO. 4
FLUORESCENT COLOR  WHITE
PHOSPHORESCENT COLOR  WHITE
PERSISTENCE  MEDIUM
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)  66 PERCENT

MECHANICAL DATA

OVERALL LENGTH  23 1/16 ± 3/8 INCHES
GREATEST DIMENSIONS OF BULB:
  DIAGONAL  26 13/16 ± 3/16 INCHES
  WIDTH  25 9/32 ± 3/16 INCHES
  HEIGHT  20 7/32 ± 3/16 INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:
  WIDTH  24 INCHES
  HEIGHT  18 1/2 INCHES
BULB CONTACT  RECESSSED SMALL CAVITY CAP
BASE  SMALL SHELL DUODECAL 5 PIN
BASING  BS-57
12N
BULB CONTACT ALIGNMENT  J1-21 CONTACT ALIGNS WITH PIN POSITION #6 ± 30 DEGREES

PIN CONNECTIONS

PIN 1 - HEATER
PIN 2 - GRID NO. 1
PIN 10 - GRID NO. 2
PIN 11 - CATHODE
PIN 12 - HEATER
ACCELERATOR CAP

CONTINUED ON FOLLOWING PAGE
RATINGS

HEATER VOLTAGE 6.3 VOLTS
HEATER CURRENT 0.6 AMP
MAXIMUM DC ACCELERATOR VOLTAGE 20,000 VOLTS
MAXIMUM DC GRID #2 VOLTAGE 500 VOLTS
MAXIMUM GRID #1 VOLTAGE:
  DC NEGATIVE-BIAS VALUE 125 VOLTS
  DC POSITIVE-BIAS VALUE 0 VOLTS
  POSITIVE-PEAK VALUE 2 VOLTS
MAXIMUM DC PEAK HEATER-CATHODE VOLTAGE:
  HEATER NEGATIVE WITH RESPECT TO CATHODE
    *DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS 410 VOLTS
    AFTER EQUIPMENT WARM-UP PERIOD 180 VOLTS
  HEATER POSITIVE WITH RESPECT TO CATHODE 180 VOLTS

A BECAUSE THE RATING OF THIS TUBE PERMITS ANODE VOLTAGES AS HIGH AS 19.8 KV, SHIELDING OF X-RAY RADIATION FROM THE TUBE MAY BE NECESSARY. THIS PRECAUTION SHOULD BE OBSERVED WHEN THE ANODE IS OPERATED IN EXCESS OF 10 KV.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ACCELERATOR VOLTAGE 16,000 VOLTS
DC GRID #2 VOLTAGE 300 VOLTS
DC GRID #1 VOLTAGE\(^B\) -33 TO -77 VOLTS
DC FOCUSING COIL CURRENT (APPROX.)\(^C\) 105 ± 20\(^%\) MA.
DC ION TRAP CURRENT STANDARD COIL #11 (APPROX.) 85 ± 50\(^%\) MA.

\(^B\) VISUAL EXTINCTION OF UNDEFOCUSED FOCUSED SPOT.

\(^C\) FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO-SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 20 FOOT LAMBERTS ON A 24" BY 18 1/2" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3.0 INCHES.

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE 1.5 MEGOHMS