CATHODE RAY

THE 27EP4 IS A DIRECT-VIEW PICTURE TUBE DESIGNED FOR USE IN TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

SPHERICAL FACEPLATE
GREY FILTER FACEPLATE
MAGNETIC FOCUS & DEFLECTION
RECTANGULAR GLASS CONSTRUCTION

ALUMINIZED SCREEN
UNIPOTENTIAL CATHODE
24" X 18 1/2" RASTER SIZE
EXTERNAL SINGLE FIELD ION TRAP

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 µF
  GRID #4 TO ALL OTHER ELECTRODES 6 µF

OPTICAL DATA

PHOSPHOR NUMBER SULFIDE TYPE NO. 4
FLUORESCENT COLOR WHITE
PHOSPHORESCENT COLOR WHITE
PERSISTENCE SHORT
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.): 70 PERCENT

MECHANICAL DATA

OVERALL LENGTH 23 1/16 ± 1/8 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:
  DIAGONAL 25 3/4 INCHES
  WIDTH 24 INCHES
  HEIGHT 18 1/2 INCHES
BULB CONTACT RECESSED SMALL CAVITY CAP J4-21
BASE SMALL SHELL DUODECAL 5 PIN B5-57
BASING 120
BULB CONTACT ALIGNMENT J4-21 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 ANODE CAP:
    GRID NO. 3

CONTINUED ON FOLLOWING PAGE
RATINGS
DESIGN CENTER VALUES

HEATER VOLTAGE  6.3  VOLTS
HEATER CURRENT  0.6  AMP.
MAXIMUM DC ANODE, GRID #3 VOLTAGE  20 000  VOLTS
MAXIMUM DC GRID #2 VOLTAGE  300  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 THESE MAXIMUM RATINGS CONTAIN A 20% SAFETY FACTOR IN ACCORDANCE WITH THE STANDARD DESIGN CENTER SYSTEM IN RATING CATHODE-RAY TUBES. CONSEQUENTLY, THE TUBE WILL WITHSTAND VARIATIONS IN SUPPLY LINE VOLTAGE WHICH DO NOT CAUSE THE MAXIMUM RATINGS TO BE EXCEEDED BY MORE THAN 10%.

B IF THE TUBE IS OPERATED AT VOLTAGE IN EXCESS OF 16,000 VOLTS, X-RAY RADIATION SHIELDING MAY BE NECESSARY TO PREVENT DANGER FROM PROLONGED EXPOSURE AT CLOSE RANGE.

C CATHODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ANODE, GRID #3 VOLTAGE  12 000  VOLTS
DC GRID #2 VOLTAGE  300  VOLTS
DC GRID #1 VOLTAGE  -33 TO -77  VOLTS
DC FOCUSING COIL CURRENT (APPROX.)  87 ± 20%  MA.
DC ION TRAP CURRENT STANDARD COIL #44 (APPROX.)  75 ± 50%  MA.
ION TRAP MAGNET (RATED STRENGTH) APPROX.  38  GAUSSES

D VISUAL EXTINCTION OF UNDEFOCUSED SPOT.

E FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIASES VOLTAGE AND VIDEO-SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 20 FOOT LUMIERTS ON A 24" BY 36 3/8" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP OR FOCUS COIL SHALL BE 3.0 INCHES.

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE  1.5  MEGOHMS