CATHODE RAY

THE 24QP4 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

UNIPOTENTIAL CATHODE
EXTERNAL CONDUCTIVE COATING
21 7/8" X 16 7/8" 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 #1 TO ALL OTHER ELECTRODES: 6 µf
  MAXIMUM EXTERNAL CONDUCTIVE COATING: 750 µf
  MINIMUM EXTERNAL CONDUCTIVE COATING: 500 µf

OPTICAL DATA

PHOSPHOR NUMBER: NO. 4
FLUORESCENT COLOR: WHITE
PHOSPHORESCENT COLOR: WHITE
PERSISTENCE: MEDIUM
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.): 72 PERCENT

MECHANICAL DATA

OVERALL LENGTH: 21 1/8 ± 3/8 INCHES
GREATEST DIMENSIONS OF BULB:
  DIAGONAL: 24 ± 3/16 INCHES
  WIDTH: 22 11/16 ± 1/8 INCHES
  HEIGHT: 18 7/16 ± 1/8 INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:
  WIDTH: 21 7/8 INCHES
  HEIGHT: 16 7/8 INCHES
BULB CONTACT: RECESSED SMALL CAVITY CAP J4-21
BASE: SMALL SHELL DUODEC 5 PIN 85-57
BASING: 12N
BULB CONTACT ALIGNMENT:
  J1-J11 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

CONTINUED ON FOLLOWING PAGE
RATINGS
DESIGN CENTER VALUES

HEATER VOLTAGE 6.3 VOLTS
HEATER CURRENT 0.6 AMP.
MAXIMUM DC ANODE VOLTAGE\(^A\) 18,000 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 10.8kV, SHIELDING OF X-RAY RADIATION FROM THE TUBE MAY BE NECESSARY. THIS PRECAUTION SHOULD BE OBSERVED WHEN THE ANODE IS OPERATED IN EXCESS OF 16kV.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ANODE VOLTAGE 16,000 VOLTS
DC GRID #2 VOLTAGE 300 VOLTS
DC GRID #1 VOLTAGE\(^B\) -28 TO -72 VOLTS
DC FOCUSING COIL CURRENT\(^C\) (APPROX.) 100 \(\pm\) 20\% MA.
DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) 100 \(\pm\) 50\% MA.

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

\(^C\) FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDE SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 20 FOOT LAMBERTS ON A 21 7/8" BY 16 7/8" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3.95 INCHES.

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE 1.5 MEGOHMS