PAN-O-PLY—INTEGRAL IMPOSION PROTECTION
(Provided by Formed Rim and Welded Tension Bands Around Periphery of Tube Panel—No Separate Safety-Glass or Integral Protective Window Required)

LOW-VOLTAGE ELECTROSTATIC FOCUS  114° MAGNETIC DEFLECTION

ELECTRICAL

Direct Interelectrode Capacitances
  Cathode to all other electrodes ... 5  pF
  Grid No.1 to all other electrodes ... 6  pF
  External conductive coating to anode ... 1700 min—2500 max  pF

Heater Current at 6.3 volts .......... 450 ± 20  mA
Heater Warm-Up Time (Average) ...... 11  s
Electron Gun. ................. Type Requiring No Ion-Trap Magnet

OPTICAL

Phosphor. ................. P4—Sulfide Type, Aluminized
  For curves, see front of this section
Faceplate. ................ Filterglass
  Light Transmission (Approx.) .... 42%

MECHANICAL

Weight (Approx.) ......... 28 lb
Overall Length ............. 14.531 ± 0.281 in
Neck Length .............. 5.125 ± .125 in
Projected Area of Screen .... 282 sq in

External Conductive Coating
  Type. ................ Modified-Band
  Contact area for grounding. ... Near Reference Line

For Additional Information on Coatings and Dimensions
See Picture-Tube Dimensional-Outlines and Bulb J187L sheets
at front of this section

Cap .................. Recessed Small Cavity (JEDEC No.J1-21)
Base .................. Small-Button Neoeightar 7-Pin,
  Arrangement I, (JEDEC No.B7-208)

TERMINAL DIAGRAM (Bottom View)

Pin 1—Heater
Pin 2—Grid No.1
Pin 3—Grid No.2
Pin 4—Grid No.4
Pin 6—Grid No.1
Pin 7—Cathode
Pin 8—Heater
  Cap—Anode (Grid No.3,
     Grid No.5, Screen,
     Collector)
  C—External Conductive
     Coating

←Indicates a change.
MAXIMUM AND MINIMUM RATINGS, DESIGN-MAXIMUM VALUES

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

Anode Voltage .................. 11000 min—23000 max V

Grid-No.4 (Focusing) Voltage
  Positive value .................. 1100 max V
  Negative value .................. 550 max V

Grid-No.2 Voltage .................. 200 min—550 max V

Grid-No.1 Voltage
  Negative peak value .................. 220 max V
  Negative bias value .................. 155 max V
  Positive bias value .................. 0 max V
  Positive peak value .................. 2 max V

Heater Voltage .................. 5.7 min—6.9 max V

Peak Heater-Cathode Voltage
  Heater negative with respect to cathode:
    During equipment warm-up period not exceeding 15 seconds .................. 450 max V
    After equipment warm-up period .................. 300 max V
  Heater positive with respect to cathode:
    Combined AC and DC voltage .................. 200 max V
    DC component .................. 100 max V

TYPICAL OPERATING CONDITIONS FOR CATHODE-DRIVE SERVICE

Unless otherwise specified, voltage values are positive with respect to grid No.1

Anode Voltage .................. 18000 V

Grid-No.4 Voltageb ................. 200 V

Grid-No.2 Voltage .................. 300 V

Cathode Voltage for visual extinction of focused raster ................. 28 to 62 V

Field Strength of required adjustable centering magnet .................. 0 to 12 G

MAXIMUM CIRCUIT VALUE

Grid-No.1 Circuit Resistance ........ 1.5 max MΩ

a External conductive coating and implosion protection hardware must be grounded.

b The grid-No.4 voltage required for optimum focus of any individual tube will have a value anywhere between 0 and +400 volts with the combined grid-No.1 and video-signal-voltage adjusted to give a 200-microamper e anode current.

For X-radiation shielding considerations, see sheet X-RADIATION PRECAUTIONS FOR CATHODE-RAY TUBES at front of this section
PAN-O-PLY — INTEGRAL IMPLOSION PROTECTION

(Provided by Formed Rim and Welded Tension Bands Around Periphery of Tube Panel—No Separate Safety-Glass or Integral Protective Window Required)

RECTANGULAR GLASS TYPE ALUMINIZED SCREEN
LOW-VOLTAGE ELECTROSTATIC FOCUS 110° MAGNETIC DEFLECTION
NO ION-TRAP MAGNET REQUIRED

Electrical:

Direct Interelectrode Capacitances:
- Cathode to all other electrodes: 5 pf
- Grid No. 1 to all other electrodes: 6 pf
- External conductive coating to anode: 2500 max. pf
- 1700 min. pf

Heater Current at 6.3 volts: 450 ± 20 ma
Heater Warm-Up Time (Average): 11 seconds
Electron Gun: Type Requiring No Ion-Trap Magnet

Optical:

Phosphor (For curves, see front of this section): P4—Sulfide Type, Aluminized Faceplate: Filterglass
Light Transmission (Approx.): 42%

Mechanical:

Weight (Approx.): 28 lbs
Overall Length: 14.531" ± 0.281"
Neck Length: 5.125" ± .125"
Projected Area of Screen: 282 sq. in.
External Conductive Coating:
- Type: Regular-Band
- Contact area for grounding: Near Reference Line

For Additional Information on Coatings and Dimensions:
See Picture-Tube Dimensional-Outlines and Bulb J187L sheets at front of this section

Cap.: Recessed Small Cavity (JEDEC No. J1-21)
Base: Small-Button Neoeightar 7-Pin, Arrangement 1, (JEDEC No. B7-20B)

Basing Designation for BOTTOM VIEW: 8HR

Pin 1—Heater
Pin 2—Grid No. 1
Pin 3—Grid No. 2
Pin 4—Grid No. 4
Pin 6—Grid No. 1
Pin 7—Cathode
Pin 8—Heater
Cap—Anode (Grid No. 3, Grid No. 5, Screen, Collector)
C—External Conductive Coating
Maximum and Minimum Ratings, Design-Maximum Values:

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

Anode Voltage. \[23000 \text{ max. volts} \]
\[11000 \text{ min. volts} \]

Grid-No.4 (Focusing) Voltage:
Positive value. \[1100 \text{ max. volts} \]
Negative value. \[550 \text{ max. volts} \]

Grid-No.2 Voltage:
\[550 \text{ max. volts} \]
\[200 \text{ min. volts} \]

Grid-No.1 Voltage:
Negative peak value. \[220 \text{ max. volts} \]
Negative bias value. \[155 \text{ max. volts} \]
Positive bias value. \[0 \text{ max. volts} \]
Positive peak value. \[2 \text{ max. volts} \]

Heater Voltage:
\[6.9 \text{ max. volts} \]
\[5.7 \text{ min. volts} \]

Peak Heater-Cathode Voltage:
Heater negative with respect to cathode:
During equipment warm-up period not exceeding 15 seconds. \[450 \text{ max. volts} \]
After equipment warm-up period. \[300 \text{ max. volts} \]

Heater positive with respect to cathode:
Combined AC and DC voltage. \[200 \text{ max. volts} \]
DC component. \[100 \text{ max. volts} \]

Typical Operating Conditions for Cathode-Drive Service:

Unless otherwise specified, voltage values are positive with respect to grid No. 1.

Anode Voltage. \[18000 \text{ volts} \]
Grid-No.4 Voltage. \[200 \text{ volts} \]
Grid-No.2 Voltage. \[300 \text{ volts} \]

Cathode Voltage for visual extinction of focused raster. \[28 \text{ to } 62 \text{ volts} \]

Field Strength of required adjustable centering magnet. \[0 \text{ to } 12 \text{ gauss} \]

Maximum Circuit Values:

Grid-No.1 Circuit Resistance. \[1.5 \text{ max. megalohms} \]

\( a \) External conductive coating and implosion protection hardware must be grounded.

\( b \) The grid-No.4 voltage required for optimum focus of any individual tube will have a value anywhere between 0 and +400 volts with the combined grid-No.1 and video-signal-voltage adjusted to give a 200-microampere anode current.

For X-radiation shielding considerations, see sheet X-RADIATION PRECAUTIONS FOR CATHODE-RAY TUBES at front of this Section.