Picture Tube

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)

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

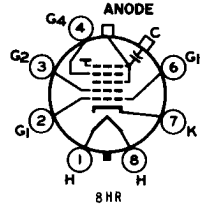
Phosphor	P4—Sulfide Type, Aluminized
For curves, see front of this section	
Faceplate	Filterglass
Light Transmission (Approx.)	42%

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[a]	
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 1, (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 Voltage[b]	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-microampere anode current.

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

Picture Tube

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 — 114° 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[a]	2500 max. / 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%

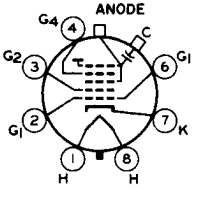
Mechanical:

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.B7-208)
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 max.	volts
	11000 min.	volts
Grid-No.4 (Focusing) Voltage:		
Positive value	1100 max.	volts
Negative value	550 max.	volts
Grid-No.2 Voltage	550 max.	volts
	200 min.	volts
Grid-No.1 Voltage:		
Negative peak value	220 max.	volts
Negative bias value	155 max.	volts
Positive bias value	0 max.	volts
Positive peak value	2 max.	volts
Heater Voltage	6.9 max.	volts
	5.7 min.	volts
Peak Heater-Cathode Voltage:		
Heater negative with respect to cathode:		
During equipment warm-up period not exceeding 15 seconds	450 max.	volts
After equipment warm-up period	300 max.	volts
Heater positive with respect to cathode:		
Combined AC and DC voltage	200 max.	volts
DC component	100 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	volts
Grid-No.4 Voltage[b]	200	volts
Grid-No.2 Voltage	300	volts
Cathode Voltage for visual extinction of focused raster	28 to 62	volts
Field Strength of required adjustable centering magnet	0 to 12	gauss

Maximum Circuit Values:

Grid-No.1 Circuit Resistance	1.5 max.	megohms

[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