



ELECTRONIC TUBE REFERENCE

17LP4A

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Seventeen-inch direct-view television picture tube with magnetic focusing, magnetic deflection, and a white P4 screen. The approximately 90-degree deflection system is intended for conventional high-voltage monochrome receiver display service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	EB-63	BASE PINS	6
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Cathode Ray	
MAXIMUM SCREEN VOLTAGE	500 V
<i>CRT-specific electrode/focus/deflection data retained as parameter rows.</i>	

17LP4A Cathode Ray Picture Tube

The **17LP4A** is a direct-view rectangular glass cathode ray picture tube designed for television applications. It features a cylindrical faceplate, a grey filter faceplate, and an external conductive coating. A key distinguishing feature of the 17LP4A is its aluminized screen. The tube utilizes magnetic deflection and low-voltage electrostatic focusing, along with an external single-field ion trap.

Mechanical and Optical Design

The 17LP4A is constructed with a rectangular glass bulb and has the following physical dimensions:

- **Overall Length:** 19 3/16 ± 3/8 inches
- **Bulb Diagonal:** 16 5/8 ± 1/8 inches

- **Bulb Width:** 15 3/8 ± 1/8 inches
- **Bulb Height:** 12 1/4 ± 1/8 inches
- **Minimum Useful Screen Diagonal:** 15 5/16 inches
- **Minimum Useful Screen Width:** 14 1/4 inches
- **Minimum Useful Screen Height:** 10 3/4 inches
- **Raster Size:** 14 1/4 inches by 10 3/4 inches

The deflection system operates magnetically, providing a horizontal deflection angle of 65 degrees and a diagonal deflection angle of 70 degrees.

Optically, the tube is equipped with a No. 4 phosphor screen, which is a sulfide type that produces white fluorescence and phosphorescence with medium persistence. The faceplate light transmission at the center is approximately 66%.

Electrical Ratings and Typical Operation

The electrical ratings for the 17LP4A are established under the design center system. The heater operates at a nominal voltage of 6.3 V with a current of 0.6 A.

Maximum Ratings (Design Center Values)

- **Grid No. 3, Grid No. 5, and Collector Voltage:** 16,000 V DC
- **Grid No. 4 Voltage:** -500 to +1000 V DC
- **Grid No. 2 Voltage:** 500 V DC
- **Grid No. 1 Voltage:**
 - DC negative-bias: 125 V
 - DC positive-bias: 0 V
 - Peak positive: 2 V
- **Peak Heater-Cathode Voltage:**
 - Heater negative to cathode during warm-up (less than or equal to 15 seconds): 410 V
 - Heater negative to cathode after warm-up: 180 V
 - Heater positive to cathode: 180 V
- **Grid No. 1 Circuit Resistance:** 1.5 megohms maximum

Typical Operating Conditions

Under typical operating conditions, the tube is configured with the following parameters:

- **Grid No. 3, Grid No. 5, and Collector Voltage:** 12,000 V DC
- **Grid No. 2 Voltage:** 300 V DC
- **Grid No. 1 Voltage (for visual extinction of undeflected spot):** -33 to -77 V DC
- **Grid No. 4 Voltage (approximate):** -48 to +260 V DC. This corresponds to a focus range of -0.4% to +2.2% of the collector voltage.
- **Grid No. 4 Current:** -15 to +25 μ A
- **Grid No. 2 Current:** -15 to +15 μ A

- **Ion Trap Field Strength:** Approximately 35 Gauss, achieved using a single-field magnet such as the RETMA #111 or an equivalent.

Wiring, Pin Connections, and Capacitances

The 17LP4A uses a small shell duodecal 6-pin base (designation B6-63) with a 12L basing arrangement. The high-voltage bulb contact is a recessed small cavity cap (J1-21), which aligns with pin position #6 within a tolerance of ± 30 degrees.

Pinout Configuration (Bottom View)

The electrical connections to the base pins and anode cap are assigned as follows:

Pin / Cap	Connection
Pin 1	Heater
Pin 2	Grid No. 1
Pin 6	Grid No. 4
Pin 10	Grid No. 2
Pin 11	Cathode
Pin 12	Heater
Anode Cap	Grid No. 3, Grid No. 5, Collector

Interelectrode Capacitances

The approximate capacitances of the tube's electrodes are:

- **Cathode to all other electrodes:** 5 uuf
- **Grid No. 1 to all other electrodes:** 6 uuf
- **External conductive coating to collector:** 750 uuf minimum to 1,500 uuf maximum

Technical Summary

The **17LP4A** is a 17-inch class rectangular glass television picture tube featuring an aluminized screen, low-voltage electrostatic focus, and magnetic deflection. Operating with a 6.3 V, 0.6 A heater, it is rated for a maximum collector voltage of 16,000 V, with a typical operating point of 12,000 V. Its physical design incorporates a duodecal 6-pin base and a recessed cavity cap for high-voltage connection, supported by an external single-field ion trap for beam alignment.



SOURCE OPERATING CONDITIONS

1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1961 TUNG SOL

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	18000 V	—
Typical Anode Voltage	14000 V	—
Maximum Grid2 Voltage	500 V	—
Typical Grid2 Voltage	300 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FocusingMethod	Magnetic	—
DeflectingMethod	Magnetic	—
DeflectionAngleApproximate	90 degree	—
PhosphorNumber	4	—
FluorescentColor	White	—
Variant	Published faceplate/screen variant on shared datasheet	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 4 of 4

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1966 TUNG SOL ELECTRONIC TUBES 4 OF 4

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Grid No. 2 voltage	500 V	Published maximum Grid No. 2 voltage
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)	56 %	FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.) 56 PERCENT
HEATER VOLTAGE	6.3 V	HEATER VOLTAGE 6.3 VOLTS
HEATER CURRENT	600 mA	HEATER CURRENT 0.6 AMP.
MAXIMUM DC GRID #3, GRID #5, COLLECTOR VOLTAGE	16000 V	MAXIMUM DC GRID #3, GRID #5, COLLECTOR VOLTAGE 16 000 VOLTS
MAXIMUM DC GRID #4 VOLTAGE -500 TO }	1000 V	MAXIMUM DC GRID #4 VOLTAGE -500 TO }1000 VOLTS
MAXIMUM DC GRID #2 VOLTAGE	500 V	MAXIMUM DC GRID #2 VOLTAGE 500 VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE 1\$	0 V	HEATER POSITIVE WITH RESPECT TO CATHODE 1\$0 VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5 Mohm	MAXIMUM GRID #1 CIRCUIT RESISTANCE 1.5 MEGOHMS
DC GRID #1, GRID #5, COLLECTOR VOLTAGE	12000 V	DC GRID #1, GRID #5, COLLECTOR VOLTAGE 12 000 VOLTS
DC GRID #2 VOLTAGE	300 V	DC GRID #2 VOLTAGE 300 VOLTS
DC GRID #i VOLTAGE S -33 To -	77 V	DC GRID #i VOLTAGE S -33 To -77 VOLTS
f DC GRID #4 VOLTAGE (APPROX.)C -4g To +	260 V	f DC GRID #4 VOLTAGE (APPROX.)C -4g To +260 VOLTS

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
CATHODE TO ALL OTHER ELECTRODES	5 MMF	CATHODE TO ALL OTHER ELECTRODES 5 µmf
GRID #1 TO ALL OTHER ELECTRODES	6 MMF	GRID #1 TO ALL OTHER ELECTRODES 6 µmf

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

