

ELECTRONIC TUBE REFERENCE

20HP4A

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

CATHODERAY

Twenty-inch direct-view television picture tube with low-voltage electrostatic focusing, magnetic deflection, and a P4 white screen. Its anode is rated around 16 kV, with radiation production explicitly recorded for this variant.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12L	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

SECTION1 Cathode Ray	
MAXIMUM PLATE VOLTAGE	16000 V
MAXIMUM SCREEN VOLTAGE	500 V
CRT section; LowVoltageElectrostatic focus with magnetic deflection.	

Direct-view television picture tube with lowvoltageelectrostatic focus, magnetic deflection, P4 white phosphor, and published high-voltage CRT operating data.



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
Heater voltage	6.3 V	Nominal
Heater current	600 mA	Nominal
Anode voltage	16 V	Published CRT data
Grid 2 voltage	500 V	Published CRT data

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Deflection angle	66 deg	Published CRT data



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

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focusing method	LowVoltageElectrostatic	—
Deflecting method	Magnetic	—
Phosphor	P4	White

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Horizontal deflection angle	66 deg	Approximate
Diagonal deflection angle	70 deg	Approximate
Persistence	Medium	—
Faceplate light transmission at center	73 %	Approximate

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode to all other electrodes capacitance	5 pF	Approximate
Grid #1 to all other electrodes capacitance	6 pF	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	600 mA	—
Maximum DC anode voltage	16000 V	—
Maximum DC grid #2 voltage	500 V	—
Maximum grid #1 negative bias magnitude	125 V	—
Maximum grid #1 positive DC bias	0 V	—
Maximum grid #1 positive peak	2 V	—
Maximum heater-cathode voltage during warm-up	410 V	HeaterNegative;Warmup<=15s
Maximum heater-cathode voltage after warm-up	150 V	HeaterNegative
Maximum heater-cathode voltage heater positive	150 V	HeaterPositive
Typical DC anode voltage	14000 V	TelevisionPictureTube
Typical DC grid #2 voltage	300 V	TelevisionPictureTube
Typical grid #1 visual-extinction range	-33 to -77 V	VisualExtinction
Ion trap setting	50 mA	Approximate

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum focusing-electrode voltage range	-500 to +1000 V	—
Typical anode voltage	14000 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical Anode Voltage	14000 V	—
Typical Grid No. 2 Voltage	300 V	—
Grid No. 1 Maximum Negative Bias	125 V	—
Grid No. 1 Maximum Positive Peak	2 V	—

TUBE TINKER

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

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