

ELECTRONIC TUBE REFERENCE

21FP4C

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Twenty-one-inch direct-view monochrome television picture tube with magnetic deflection and high-voltage operation. Manufacturer documentation describes its focusing system, picture-screen construction, and receiver-display characteristics for large-screen television service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12L	BASE PINS	12
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	18000 V
MAXIMUM SCREEN VOLTAGE	500 V
MAXIMUM HEATER-CATHODE VOLTAGE	180 V
Maximum anode voltage mapped to MaxPlateVoltage; CRT grid/focusing limits retained as parameters rather than mis-promoted as ordinary screen-grid data.	

Aluminized-screen 21FP4-family rectangular picture tube with electrostatic focus, magnetic deflection, grey-filter faceplate, and conductive coating.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1956 National Video

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

1956 NATIONAL VIDEO

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical Anode Voltage	13600 V	—
Phosphor	P4	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage Nominal	6.3 V	—
Heater Current Nominal	600 mA	—

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



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
HighVoltageAnodeMaximum	20000 V	CRT

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
CathodeToOtherElectrodesCapacitance	5 pF	Approximate



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	Electrostatic	—
Deflecting method	Magnetic	—
Phosphor	P4	White;MediumPersistence
External conductive coating	Present	—
Aluminized screen	Present	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Deflection angle	70 deg	Approximate
Faceplate light transmission at center	66 %	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	600 mA	—
Maximum DC anode voltage	18000 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum DC grid #2 voltage	500 V	—
Maximum grid #1 negative-bias magnitude	125 V	—
Maximum grid #1 positive DC voltage	0 V	—
Maximum grid #1 positive peak voltage	2 V	—
Typical DC anode voltage	14000 V	TelevisionPictureTube
Typical DC grid #2 voltage	300 V	TelevisionPictureTube
Typical grid #1 voltage minimum	-77 V	VisualExtinctionRange
Typical grid #1 voltage maximum	-33 V	VisualExtinctionRange
Maximum grid #1 circuit resistance	1.5 megohm	—
Ion trap magnet rated strength	35 gauss	Approximate
Focusing electrode voltage minimum	-570 V	ElectrostaticFocus
Focusing electrode voltage maximum	330 V	ElectrostaticFocus
Maximum focusing electrode voltage minimum	-500 V	ElectrostaticFocus
Maximum focusing electrode voltage maximum	1000 V	ElectrostaticFocus
X-ray shielding warning	Present	HighAnodeVoltage

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

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Direct-view television picture tube	—



SOURCE OPERATING CONDITIONS

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
Maximum Anode Voltage	18000 V	—
Maximum Grid No. 2 Voltage	500 V	—
Anode Voltage	16000 V	Typical
Heater Voltage	6.3 V	—
Heater Current	600 mA	—

TUBE TINKER

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

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