

23CP4

Specialized - Cathode Ray electronic tube

Twenty-three-inch direct-view monochrome television picture tube with electrostatic focusing, magnetic deflection, and an aluminized P4 screen. Manufacturer documentation places it in the high-voltage receiver CRT family used for bright rectangular picture presentation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
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	12000 V
MAXIMUM SCREEN VOLTAGE	500 V
CRT-specific ratings, operating conditions, capacitances, focus/deflection, cutoff, optical, and screen data are retained in section parameters.	

23-inch direct-view monochrome television CRT with electrostatic focus, magnetic deflection, aluminized P4 screen, and gray/filter faceplate construction.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Phosphor	P4	—
Deflection method	Magnetic	—
Focusing method	Electrostatic	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Sylvania Electronic Tubes Vol3

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

1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focusing method	Electrostatic	—
Deflection method	Magnetic	—
Horizontal deflection angle	99 deg	—
Diagonal deflection angle	110 deg	—
Vertical deflection angle	82 deg	—
Fluorescence	White	—
Persistence	Short to medium	—
Heater voltage	6.3 V	—
Heater current	600 mA	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Phosphor	Aluminized P4	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum anode voltage	22000 V	—
Typical anode voltage	16000 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical focus-electrode voltage maximum	400 V	—
Typical grid2 voltage	300 V	—
Cutoff voltage range	-35 to -72 V	—
Grid1 circuit resistance maximum	1.5 Mohm	—
Focus-electrode voltage minimum	-550 V	—
Focus-electrode voltage maximum	1100 V	—
Grid2 voltage maximum	550 V	—
X-radiation precaution	Operate within published maximum anode-voltage rating; source carries X-radiation warning at elevated EHT.	

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1-to-all capacitance	6 pF	—
External conductive coating to anode capacitance maximum	2500 pF	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Monochrome television picture display	—



SOURCE DATA APPENDIX

1971 RCA HB3 Binder 1 of 7

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

1971 RCA HB3 BINDER 1 OF 7

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) – published value 1	6.3 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage (AC or DC) – published value 2	10 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current at 6.3 volts – published value 1	6.3 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current at 6.3 volts – published value 2	0.6 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current at 6.3 volts – published value 3	5 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid No.1 to all other electrodes	6	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Total light transmission (Approx)	40	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 1	50	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 2	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 3	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 1	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 2	35	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 3	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 4	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 1	45	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 2	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 3	2	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 4	35	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 1	2	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 2	31	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 3	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
nal deflection – published value 4	2	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 1	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 2	26	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 3	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
zontal deflection – published value 4	2	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 1	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 2	18	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 3	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
cal deflection – published value 4	2	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and grid-No.2 voltage (6-cZk) between zoo and goo volts	6 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
focus* – published value 1	0 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focus* – published value 2	400 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.4 Current – published value 1	-25	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.4 Current – published value 2	25	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Current – published value 1	-15	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Current – published value 2	15	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focused raster – published value 1	-44 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focused raster – published value 2	-94 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
With any ultor-to-grid-No.1 voltage f8cgg il between 12000	12000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and 20000 volts and grid-No.2-to-grid-No.1 voltage 18c2gi1 – published value 1	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and 20000 volts and grid-No.2-to-grid-No.1 voltage 18c2gi1 – published value 2	18 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage for focus* – published value 1	0 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage for focus* – published value 2	400 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
No.1 voltage of	18000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
for focus* – published value 1	0 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
for focus* – published value 2	400 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focused raster – published value 1	42 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focused raster – published value 2	78 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
i ninux ultor (or ultor-to-ggrid-No. 1) voltage is,11 000 volts below – published value 1	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
i ninux ultor (or ultor-to-ggrid-No. 1) voltage is,11 000 volts below – published value 2	11000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focus of any individual tube may have a value anywhere Det wean 0 and	0 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
No.2 (or grid-No.2-to-grid-Xo. 1) voltage, within design ranges sno wn	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
u ndeflected Focused spot will fall within a circie having a 3/9-inch – published value 1	3	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
u ndeflected Focused spot will fall within a circie having a 3/9-inch – published value 2	9	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
that the ea rth-s magnetic field can cause as much as 1/2-inch deflection – published value 1	1 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
that the earth's magnetic field can cause as much as 1/2-inch deflection – published value 2	2 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
SEE NOTE 6	6	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR VOLTS = 12000 TO 20000 – published value 1	12000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR VOLTS = 12000 TO 20000 – published value 2	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-N-4 VOWS ADJUSTED FOR FOCUS	4	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-N-2 VOLTS	2 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR-TO-GRID-N-IVOLTS=12000 TO 20000 – published value 1	12000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR-TO-GRID-N-IVOLTS=12000 TO 20000 – published value 2	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-N-4-TO-GRID-N-1 VOLTS ADJUSTED FOR FOCUS	4 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID -Ns 2-TO-GRID-N-1 VOLTS – published value 1	2 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID -Ns 2-TO-GRID-N-1 VOLTS – published value 2	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR-TO-GRID-N-1 VOLTS=16000 – published value 1	16000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GRID-No.2 VOLTAGE	500 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater positive with respect to cathode	180 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.1-Circuit Resistance	1.5 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.2-TO-GRID-No.1 VOLTAGE	640 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.2-TO-CATHODE VOLTAGE	500 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater positive with respect to cathode	180 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

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