

ELECTRONIC TUBE REFERENCE

24AUP4

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Twenty-four-inch direct-view monochrome television picture tube with a P4 screen and magnetic deflection. Manufacturer documentation provides the high-voltage operating, focusing, optical, and capacitance characteristics required for receiver display service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	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	20000 V
MAXIMUM SCREEN VOLTAGE	500 V
CRT-specific ratings, operating conditions, capacitances, focus/deflection, cutoff, optical, and screen data are retained in section parameters.	

24-inch 90-degree monochrome television CRT with electrostatic focus and magnetic deflection.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Westinghouse Data Book

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

1965 WESTINGHOUSE DATA BOOK

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	600 mA	—
Focusing Method	Low Voltage Electrostatic text	—
Deflection Method	Magnetic text	—
Horizontal Deflection Angle	85 deg	Approximate
Vertical Deflection Angle	68 deg	Approximate
Diagonal Deflection Angle	90 deg	Approximate
Phosphor	Aluminized P4 text	—
Fluorescence	White text	—
Light Transmittance	74 percent	Approximate
Cathode-to-All Capacitance	5 pF	Approximate
Grid1-to-All Capacitance	6 pF	Approximate
External Coating-to-Anode Capacitance Minimum	1700 pF	—
External Coating-to-Anode Capacitance Maximum	2500 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	22000 V	—
Minimum Anode Voltage	12000 V	—
Maximum Focus Electrode Positive Voltage	1100 V	Grid4
Maximum Focus Electrode Negative Voltage	-550 V	Grid4

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Grid2 Voltage	700 V	—
Minimum Grid2 Voltage	300 V	—
Maximum Heater-Cathode Voltage During Warmup	450 V	Duration<=15s
Maximum Heater-Cathode Voltage After Warmup	200 V	—
Typical Anode Voltage	18000 V	CathodeDrive
Typical Focus Voltage Minimum	0 V	Grid4
Typical Focus Voltage Maximum	400 V	Grid4
Typical Grid2 Voltage	500 V	CathodeDrive
Cathode Voltage for Raster Cutoff Minimum	45 V	CathodeDrive
Cathode Voltage for Raster Cutoff Maximum	95 V	CathodeDrive
Maximum Grid1 Circuit Resistance	1.5 Mohm	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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	6.3 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current – published value 1	0.6	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current – published value 2	5	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.
Light transmission (Approx.)	74	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR VOLTAGE	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
With	5 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
focus§ – published value 1	-75 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.
With ultor voltage of	18000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.4 Voltage for focus – published value 1	-75 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.4 Voltage for focus – published value 2	400 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
extinction of focused raster – published value 1	-35 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
extinction of focused raster – published value 2	-72 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 (Ec _{g1} between 1a000	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and 20000 volts and grid-No. a-to-grid-No.1 voltage (Ec _z g ₁)	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
for focus§ – published value 1	-75 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.
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.
Voltage for focus – published value 1	75 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage for focus – published value 2	40 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
of focused raster – published value 1	33 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
of focused raster – published value 2	60 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
lute siniwuw allot-or allot-to-grid-x o.1 voltage is 11,000 volts, De – published value 1	11 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
lute siniwuw allot-or allot-to-grid-x o.1 voltage is 11,000 volts, De – published value 2	0 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
deflected focused Spot will fall within a tittle having a 1/2-i ncn – published value 1	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
deflected focused Spot will fall within a tittle having a 1/2-i ncn – published value 2	2	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.
ULTOR-TO-GRID-NQIVOLTS=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-NQIVOLTS=12000 TO 20000 – published value 2	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
SCREEN WIDTH	21	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
UITOR-TO-GRID- Ngl VOLTS= I6000	16000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
RESPECT 70 GRID NCI TO GIVE	70	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR-TO-GRID-Nsl VOLTS= – published value 1	12000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
ULTOR-TO-GRID-Nsl VOLTS= – published value 2	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
12000 TO 20000 GRID NQI BIASED NEGATIVE. WITH – published value 1	12000	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
12000 TO 20000 GRID NQI BIASED NEGATIVE. WITH – published value 2	20000	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
External conductive coating to ultor	2500 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
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.
ULTOR-TO-GRID-No.1 VOLTAGE	20000 V	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.
Grid-No.1-Circuit Resistance	1.5 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.