

Large P4 monochrome television picture tube in the 24-inch class, designed for high-voltage direct-view service with manufacturer-specified focusing, magnetic deflection, and beam-control characteristics for type 24AHP4.

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	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 110-degree monochrome television CRT with low-voltage electrostatic focus and magnetic deflection.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1940 RCA

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

1940 RCA

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Low-Voltage Electrostatic Aluminized Screen	8	Low-Voltage Electrostatic Aluminized Screen 21-7/16" x 16-7/8" Screen
110° Magnetic Deflection Requires No Ion-Trap Magnet 16-3/16	16	110° Magnetic Deflection Requires No Ion-Trap Magnet 16-3/16™ Max. Length
slightly curved sides and rounded corners and a power than is required to scan a tube with	90	slightly curved sides and rounded corners and a power than is required to scan a tube with 90°
voltage (AC or DC)	6.3 V	voltage (AC or DC) 6.3 volts
current. « « . . o	10 A	current. « « . . o . 0 e 0 . e e 0.6 t 10% amp
Grid No	6 pF	Grid No.1 to all other electrodes. . . 6 uuf
Diagonal	110	Diagonal 110°
Designed with a IIOO—diagonal deflection Horizontal	105	Designed with a IIOO—diagonal deflection Horizontal 105°
angle, the	87	angle, the 24AHP4 has very short length--a length vertical 87°
the same size faceplate and	16	the same size faceplate and 90° deflection. As Overall length . 15-7/8" + 5/16"
Screen Dimensions {Minimum): GRID~NO	1	Screen Dimensions {Minimum): GRID~NO.4~TO-GRID-No.1 VOLTAGE:
Greatest width	1000 V	Greatest width 21-7/16" Positive value . . 1000 max. volts
Greatest height	500 V	Greatest height. 16-7/8" Negative value . . C e e 500 max. volts
Diagonal	640 V	Diagonal 4 v u e e e 22-13/16" GRID~NO.2~TO~-GRID-No.0.1 VOLTAGE e e e 640 max. volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Projected area	500 V	Projected area 332 sq. in. GRID-NO.2-TO-CATHODE VOLTAGE 500 max. volts
cap. Recessed Small Cavity (JETEC No.1)	1	cap. Recessed Small Cavity (JETEC No.1-21) CATHODE-TO-GRID-No.1 VOLTAGE:
Bulb + v v v v o	200 V	Bulb + v v v v o J192 (1100) Positive peak value. « . . + « . . . 200 max. volts
Base . . . Small—Button Eightar	140 V	Base . . . Small—Button Eightar 7-Pin Positive bias value. 140 max. volts
Arrangement	0 V	Arrangement 2, (JETEC No.B7-183) Negative bias value. . . « . . . 0 max. volts
weight (APProx.) « v v v v v v v v e	2 V	weight (APProx.) « v v v v v v v v v v e 28 lbs Negative peak value. 2 max. volts
Mounting Position. + +« + + +« « v	4	Mounting Position. + +« + + +« « v 4 « v« <« . . . Any PEAK HEATER-CATHODE VOLTAGE:
Unless otherwise specified, not exceeding	410 V	Unless otherwise specified, not exceeding 15 seconds. 410 max. volts
voltage values are positive with respect to cathode After equipment warm—up period	180 V	voltage values are positive with respect to cathode After equipment warm—up period . . 180 max. volts
to cathode . . C e e	180 V	to cathode . . C e e 180 max. volts
ULTOR®[] VOLTAGE + + o+ v v v o v	2000	ULTOR®[] VOLTAGE + + o+ v v v o v . . 2000
Positive value	12000 V	Positive value . . . 1000 max. volts With any wltor-to-grid-No.1 voltage (Ecjgl) between 12000
Negative value	2 V	Negative value 500 max. volts and 20000 volts and grid-No.2-to-grid-No.1 voltage (EC2E1)
GRID-No	640 V	GRID-No.2 VOLTAGE. 500 max. volts between 225 and 640 volts
GRID-No	1	GRID-No.1 VOLTAGE: Grid-No.U-to-Grid-Ng.1
Negative peak value	350 V	Negative peak value. 200 max. volts voltage for Focus\$. . . ~50 to +350 volts
Negative bias value	1 V	Negative bias value. 140 max. volts cathode-to-Grid-No.1 Voltage
Positive bias value	0 V	Positive bias value. 0 max. volts (Exgy) for visual Extinction
Positive peak value. Ce e	2 V	Positive peak value. Ce e 2 max. volts of Focused Raster. . . See Raster-Cutoff-Range Chart

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
not exceeding	410 V	not exceeding 15 seconds. 410 max. volts
After equipment warm-up period	180 V	After equipment warm-up period . . 180 max. volts



SOURCE DATA APPENDIX

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	105 deg	Approximate
Vertical Deflection Angle	87 deg	Approximate
Diagonal Deflection Angle	110 deg	Approximate
Phosphor	Aluminized P4 text	—
Fluorescence	White text	—
Light Transmittance	76 percent	Approximate
Cathode-to-All Capacitance	5 pF	Approximate
Grid1-to-All Capacitance	6 pF	Approximate
External Coating-to-Anode Capacitance Minimum	2000 pF	—
External Coating-to-Anode Capacitance Maximum	2500 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	22000 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Minimum Anode Voltage	12000 V	—
Maximum Focus Electrode Positive Voltage	1100 V	Grid4
Maximum Focus Electrode Negative Voltage	-550 V	Grid4
Maximum Grid2 Voltage	500 V	—
Minimum Grid2 Voltage	200 V	—
Maximum Heater-Cathode Voltage During Warmup	450 V	Duration<=15s
Maximum Heater-Cathode Voltage After Warmup	200 V	—
Typical Anode Voltage	16000 V	CathodeDrive
Typical Focus Voltage Minimum	0 V	Grid4
Typical Focus Voltage Maximum	400 V	Grid4
Typical Grid2 Voltage	400 V	CathodeDrive
Cathode Voltage for Raster Cutoff Minimum	36 V	CathodeDrive
Cathode Voltage for Raster Cutoff Maximum	78 V	CathodeDrive
Maximum Grid1 Circuit Resistance	1.5 Mohm	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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	63 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current – published value 1	0	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current – published value 2	6	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current – published value 3	10	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)	76	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.4 VOLTAGE	112000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
With any ultor voltage (E _c k) between 10000 and 20000 volts	20000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No 4 Voltage for	4 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focus – published value 1	-50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focus – published value 2	350 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.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focus – published value 1	-50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focus – published value 2	350 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focus – published value 3	-50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focus – published value 4	350 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focused Raster – published value 1	-28 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focused Raster – published value 2	-72 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focused Raster – published value 3	-36 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Focused Raster – published value 4	-94 V	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.
Voltage for Focus§ – published value 1	-50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage for Focus§ – published value 2	350 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Ultimate sin iauta alto r-or alto r-to-grid-No.1 voltage is 11000 volts, be	11000 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.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
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.

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 – published value 1	1 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.1-Circuit Resistance – published value 2	5 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.2-T0-CATHODE VOLTAGE	500 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

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