

Three-inch cathode-ray tube for oscilloscope and instrument display service, using electrostatic focusing and electrostatic deflection. Its P1 screen designation identifies the phosphor variant within this compact oscillographic family.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
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
No fixed ratings recorded.
CRT section; maximum anode voltage 2750 V and capacitances retained in parameter table.

Three-inch direct-view oscilloscope CRT with electrostatic focus and electrostatic deflection.



SOURCE OPERATING CONDITIONS

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1950 General Electric Transmitting Types

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

1950 GENERAL ELECTRIC TRANSMITTING TYPES

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focusing method	Electrostatic	—
Deflection method	Electrostatic	—
Phosphor	P1	—



SOURCE OPERATING CONDITIONS

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1950 Sylvania

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1950 SYLVANIA

Section 1 · Cathode Ray

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Phosphor	P1	—
Focusing Method	Electrostatic	—
Deflecting Method	Electrostatic	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode No. 2 Voltage	2750 V	—
Typical Anode No. 2 Voltage	2000 V	—

SOURCE OPERATING CONDITIONS

1960 Waterman Products

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

1960 WATERMAN PRODUCTS

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RAYONIC®	3	RAYONIC® 3MP1 CATHODE RAY TUBE
Heater Voltage ..vrcmeecrnmmnnssimssonion e	3 mm	Heater Voltage ..vrcmeecrnmmnnssimssonion e 003 VOIS
Heater Current ... s [1]	600 mA	Heater Current ... s 0.6 +=10% Amperes
Heater Current ... s [2]	10 A	Heater Current ... s 0.6 +=10% Amperes
Cathode to all other electrodes ..o	7.5	Cathode to all other electrodes ..o 7.5 upf
Grid # [1]	1 pF	Grid #1 to all other electrodes ... 8.0 ppf
Grid # [2]	8 pF	Grid #1 to all other electrodes ... 8.0 ppf
Minimum Useful Screen Diameter	2 in	Minimum Useful Screen Diameter ... 2% Inches
Positive voltage on D1 deflects beam approximately toward pin #	4	Positive voltage on D1 deflects beam approximately toward pin #4
Positive voltage on D3 deflects beam approximately toward pin #	1	Positive voltage on D3 deflects beam approximately toward pin #1
Anode Voltage (A2)	2190	Anode Voltage (A2) .. 2190 VOIEs DC
Anode (A2) Input ..o	6	Anode (A2) Input ..o . 6 Watts
Anode = [1]	1 V	Anode =1 (Focusing Electrode) Voltage 1000 Volts
Anode = [2]	1000 V	Anode =1 (Focusing Electrode) Voltage 1000 Volts
Grid	41	Grid 41 (G1) Voltage
Heater positive with respect to cathode ... T	125 V	Heater positive with respect to cathode ... T 125 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Voltage between Anode # [1]	2 V	Peak Voltage between Anode #2 and any deflecting Plate i 500 Volts
Peak Voltage between Anode # [2]	500 V	Peak Voltage between Anode #2 and any deflecting Plate i 500 Volts
Focusing Electrode (A1) Current for any operating condition [1]	-15 A	Focusing Electrode (A1) Current for any operating condition ... —15t0 +10 pAmps
Focusing Electrode (A1) Current for any operating condition [2]	10 A	Focusing Electrode (A1) Current for any operating condition ... —15t0 +10 pAmps
Spot Position (Undelected) (Note [1])	1 mm	Spot Position (Undelected) (Note 1) 15 Max. mm
Spot Position (Undelected) (Note [2])	15 mm	Spot Position (Undelected) (Note 1) 15 Max. mm
A1 Voltage [1]	12	A1 Voltage 12% to 30% of A2 Voltage
A1 Voltage [2]	30	A1 Voltage 12% to 30% of A2 Voltage
G1 Voltage [1]	2.7	G1 Voltage 2.7% to 6.3% of A2 Voltage (Note 2)
G1 Voltage [2]	6.3	G1 Voltage 2.7% to 6.3% of A2 Voltage (Note 2)
G1 Voltage [3]	2	G1 Voltage 2.7% to 6.3% of A2 Voltage (Note 2)
Anode Voltage (A2) [1]	500 V	Anode Voltage (A2) 500 1000 2000 Volts
Anode Voltage (A2) [2]	1000 V	Anode Voltage (A2) 500 1000 2000 Volts
Anode Voltage (A2) [3]	2000 V	Anode Voltage (A2) 500 1000 2000 Volts
Focusing Electrode Voltage (A1) [1]	60 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Focusing Electrode Voltage (A1) [2]	150 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Focusing Electrode Voltage (A1) [3]	120 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Focusing Electrode Voltage (A1) [4]	300 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Focusing Electrode Voltage (A1) [5]	240 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Focusing Electrode Voltage (A1) [6]	600 V	Focusing Electrode Voltage (A1) 60 to 150 120 to 300 240 to 600 Volts
Grid # [1]	1 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [2]	2 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid # [3]	13.5 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [4]	-31.5 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [5]	-27 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [6]	-63 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [7]	-54 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Grid # [8]	-126 V	Grid #1 Voltage (Note 2) ~13.5t0 -31.5 [—27to —63 —54to —126 Volts
Deflection Factor D1-D2 [1]	57.51072 V	Deflection Factor D1-D2 57.51072.5 115to0 145 23010290 Volts DC/Inch
Deflection Factor D1-D2 [2]	5 V	Deflection Factor D1-D2 57.51072.5 115to0 145 23010290 Volts DC/Inch
Deflection Factor D1-D2 [3]	115 V	Deflection Factor D1-D2 57.51072.5 115to0 145 23010290 Volts DC/Inch
Deflection Factor D1-D2 [4]	145 V	Deflection Factor D1-D2 57.51072.5 115to0 145 23010290 Volts DC/Inch
Deflection Factor D1-D2 [5]	23010290 V	Deflection Factor D1-D2 57.51072.5 115to0 145 23010290 Volts DC/Inch
Deflection Factor D3-D4 [1]	55 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Deflection Factor D3-D4 [2]	70 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Deflection Factor D3-D4 [3]	0 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Deflection Factor D3-D4 [4]	140 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Deflection Factor D3-D4 [5]	220 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Deflection Factor D3-D4 [6]	280 V	Deflection Factor D3-D4 55t0 70 i10to 140 220to 280 Volts DC/Inch
Grid # [1]	1	Grid #1 Circuit Resistance . 1.5 Megohms
Grid # [2]	1.5	Grid #1 Circuit Resistance . 1.5 Megohms
Resistance in any Deflecting Electrode Circuit (NOte [1]	3 mm	Resistance in any Deflecting Electrode Circuit (NOte 3) wcrmcrrssmmessmns 1.0 Megohms

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Resistance in any Deflecting Electrode Circuit (N0te [2])	1 mm	Resistance in any Deflecting Electrode Circuit (N0te 3) wcrmcrrssmmessmns 1.0 Megohms
Published value	1	1. With deflecting electrodes connected to Anode (A2).
Published value	2	2. For visual extinction of undeflected focused spot.
Published value	3	3. The resistance in each deflecting electrode circuit should be approximately equal.
fiuorescent, yellow phosphorescent, long persistence phosphor. Use of	3	fiuorescent, yellow phosphorescent, long persistence phosphor. Use of 3MP7 at anode voltages below



SOURCE OPERATING CONDITIONS

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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	1 code	Electrostatic
Deflection method	1 code	Electrostatic
Deflection factor D1-D2 minimum	230 V/in	—
Deflection factor D1-D2 maximum	290 V/in	—
Deflection factor D3-D4 minimum	220 V/in	—
Deflection factor D3-D4 maximum	280 V/in	—
Useful screen / scan	1 code	2.75 in minimum useful screen diameter

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode No. 2 / accelerator voltage maximum	2750 V	—
Anode No. 2 / accelerator voltage	2000 V	—
Focusing electrode voltage maximum	1100 V	—
Focusing electrode voltage minimum	400 V	—
Focusing electrode voltage maximum	700 V	—
Grid No. 1 cutoff voltage minimum	-126 V	—
Grid No. 1 cutoff voltage maximum	0 V	—
Peak heater-to-cathode voltage	140 V	—
Peak voltage between accelerator and any deflection plate	550 V	—
Grid No. 1 negative bias maximum	220 V	—
Grid No. 1 circuit resistance maximum	1.5 MOhm	—
Deflection circuit resistance maximum	5 MOhm	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode to all other electrodes	2.2 pF	Approximate or published bound
Grid No. 1 to all other electrodes	10.3 pF	Approximate or published bound
Deflection plates 1-2 capacitance	1.3 pF	Approximate or published bound
Deflection plates 3-4 capacitance	1.2 pF	Approximate or published bound