TEST SPECIFICATIONS FOR TYPE T7400 SERIES CATHODE RAY TUBE

All the given specifications refer to the following test voltages (measured with respect to cathode.)

ELECTRODE	VOLTAGES
Post Accelerator	15,000 VDC ± 5%
Post Accelerator Grid	2,960* VDC ± 5 VDC
D1D2 Shield	2,960 to 3,090 VDC**
Lower Conductive Coating Band) Isolation Shield)	2,987 VDC ± 5 VDC
D3D4 Shield	2,987 VDC ± 5 VDC
Average of (D1D2 Plates (D3D4 Plates	3,008 ± 4 VDC 2,987 ± 4 VDC
Astigmatism Electrode	2,945 to 3,090 VDC***
Focusing Electrode	640 to 790 VDC***
Accelerator Electrode	2,987 VDC ± 5 VDC
Heater Voltage	6.3 VAC ± 3% RMS

* In an actual test set up, the cathode voltage may vary ± 1 % of the above voltage.

** Recommended Range - Adjust for best geometry.

*** Recommended Range - Adjust for best overall focus.

NOTE: Refer to Pages 2, 3, and 4 when testing CRT's having 1.22 cm/Div. Graticules.

Refer to Pages 5, 6, and 7 when testing CRT's having 1.00 cm/Div. Graticules.

REVISIONS	05							
Mod. No.	4246							
Date	7-14-72							
Pages Changed	All (7) Deleted "Step" Col.							

(1.22 CM/DIV GRATICULE ONLY)

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TEST CHARACTERISTICS		CONDITIONS	SPECIFICATION LIMIT
Phosphor defects and opaque spots from frame grid defects.			See P.S.8-0598
Gun-graticule alignment. Grat: Internal Fixed		Align trace on left side of graticule	± 3° (± 2.5 minor divisions)
Trace alignment			
High voltage connection to screen			See P.S.8-0595
Cathode Interface			See P.S.8-0595
H-K Leakage			See P.S.8-0595
Trace Orthogonality			± 1.4° (± 1.0 minor division)
Geometry		With a normal 8 x 10 div. square raster or time markers	Maximum deviation from straight line: Horiz: 0.5 minor division. Vert: 0.5 minor division
Horizontal Resolution		Resolution is checked with time mark generator set at 100 μs and time/sweep switch at 5.0 ms. I_b = 1 μA	200 markers visible in 10 major division. No distorted lines visible in 10 major divisions.
Mesh Profile - Horizontal			No visible deviation from a straight line due to mesh profile.
Mesh Profile - Vertical			1 trace width maximum deviation from straight line due to mesh profile.
Spot Centering		Horizontal	Within ± 2.5 minor divisions from geometric center.
Spot Centering		Vertical	Within ± 2.5 minor divisions of geometric center.

(1.22 CM/DIV GRATICULE ONLY)

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Test Characteristics		Conditions	Specification Limit
D3 D4 scan (vertical)		At 8 div. scan, maximum beam interception per plate. I_b = 10 μA	25%
D1 D2 scan (horizontal)		At 10 div. scan, maximum beam interception per plate. I_b = 10 μA	35%
D3 D4 deflection factor (horizontal)		At optimum geometry. Range meter setting = 50	28.0 - 32.8 V/total scan (3.5 - 4.1 V/div)
D1 D2 deflection factor (horizontal)		At optimum geometry. Range meter setting = 100	85 - 105 V/total scan (8.5 - 10.5 V/div)
Grid #1 cutoff		Visual extinction of undeflected focused spot (unblanking off)	80 - 110 V
Cathode current		With grid #1 drive of 50 V from cutoff, use following table:	
		V_{co}	I_k
		80 - 85	.42 mA minimum
		86 - 90	.40 " "
		91 - 95	.38 " "
		96 - 100	.36 " "
		101 - 105	.34 " "
		106 - 110	.33 " "
Beam current		With a small display approximately 2 x 2 div to avoid current interception by the deflection plates and erroneous reading at I_k = 0.4 mA	$I_b \geq 11$ μA

(1.22 CM/DIV GRATICULE ONLY)

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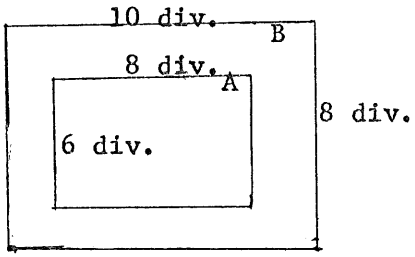
Test Characteristics		Conditions	Specification Limits
Linearity		Maximum (with 2 horizontal lines 2 major divisions apart vertically.)	0.5 minor division
Burrs			See P.S. 8-0595
Helix Flare (use hood)			See P.S. 8-0595
Gun Flare			See P.S. 8-0595
Grid Emission			See P.S. 8-0595
Trace width		With I_b = 1 μA, triggered 1 KHz square wave, amplitude 2 Major Div. 	Area A = 0.065" Max. Area B = 0.070" Max.
Photographic Writing Speed		P31 Phosphor QA sample only P11 Phosphor	580 cm/μSec. Min. (C-27) 1400 cm/μSec. min. (C-27)
Rod Charge			See P.S. 8-0595
After Test Phosphor			See P.S. 8-0595
D3 D4 effective capacitance		Measure on Q.A. sample only.	7.0 μμF Maximum
D1 D2 effective capacitance		Measure on Q.A. sample only.	13.5 μμF Maximum

(1.00 CM/DIV GRATICULE ONLY)

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Test Characteristics		Conditions	Specification Limit
Phosphor defects and opaque spots from frame grid defects			See P.S. 8-0598
Gun-graticule alignment. Grat: Internal Fixed .		Align trace on left side of graticule	± 3° (± 2.5 minor divisions)
Trace alignment			
High voltage connection to screen			See P.S. 8-0595
Cathode Interface			See P.S. 8-0595
H-K Leakage			See P.S. 8-0595
Trace Orthogonality			± 1.4° (± 1.0 minor division)
Geometry		With a normal 8 x 10 div. square raster or time Markers	Maximum deviation from straight line: Horiz: 0.5 minor division. Vert: 0.5 minor division
Horizontal Resolution		Resolution is checked with time mark generator set at 100 µs and time/sweep switch at 5.0 ms. 1_b = µA	160 markers visible in 10 major division. No distorted lines visible in 10 major divisions.
Mesh Profile - Horizontal			No visible deviation from a straight line due to mesh profile.
Mesh Profile - Vertical			1 trace width maximum deviation from straight line due to mesh profile.
Spot centering		Horizontal	Within ± 3 minor divisions from geometric center
Spot centering		Vertical	Within ± 3 minor divisions of geometric center.

(1.00 CM/DIV GRATICULE ONLY)

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Test Characteristics		Conditions	Specification Limit
D3 D4 scan (vertical)		At 8 div. scan, maximum beam interception per plate. I_b = 10 µA	15%
D1 D2 scan (horizontal)		At 10 div. scan, maximum beam interception per plate. I_b = 10 µA	25%
D3 D4 deflection factor (vertical)		At optimum geometry Range meter setting = 50	22.9 - 26.9 V/total scan (2.9 - 3.4 V/div)
D1 D2 deflection factor (horizontal)		At optimum geometry Range meter setting = 100	70 - 86 V/total scan (7.0 - 8.6 V/div)
Grid #1 cutoff		Visual extinction of undeflected focused spot (unblanking off)	80 - 110 V
Cathode current		With grid #1 drive of 50 V from cutoff, use following table: V_{co} 80 - 85 86 - 90 91 - 95 96 - 100 101 - 105 106 - 110	I_k .42 mA minimum .40 " " .38 " " .36 " " .34 " " .33 " "
Beam current		With a small display approximately 2 x 2 div to avoid current interception by the deflection plates and erroneous reading at I_k = 0.4 mA	$I_b \geq 11$ µA

(1.00 CM/DIV GRATICULE ONLY)

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Test Characteristics		Conditions	Specification Limits
Linearity		Maximum (with 2 horizontal lines 2 major divisions apart vertically)	0.5 minor division
Burrs			See P.S. 8-0595
Helix Flare (use hood)			See P.S. 8-0595
Gun Flare			See P.S. 8-0595
Grid Emission			See P.S. 8-0595
Trace width		With I_b = 1 μA, triggered 1 KHz square wave, amplitude 2 Major Div.	0.065" Within Graticule Area
Photographic Writing Speed		P31 Phosphor QA sample only P11 Phosphor	580 cm/μSec. Min. (C-27) 1400 cm/μSec. Min. (C-27)
Rod Charge			See P.S. 8-0595
After Test Phosphor Check			See P.S. 8-0595
D3 D4 effective capacitance		Measure on Q.A. sample only.	7.0 μμF Maximum
D1 D2 effective capacitance		Measure on Q.A. sample only.	13.5 μμF Maximum