# **JEDEC**



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Announcement

of

**Device Type Registrations** 

Release No. 7288

May 13, 1998

The Electronics Industries Association announces the registration of the following WTDS designations:

A48ACB31X A48AGD13X A68AGD02X A48ACB34X A48AGD14X A68AHE00X

According to the data sheets attached under the sponsorship of:

Zenith Electronics Corporation

Melrose Park, Illinois

COL	RESERVATION/REGIS OUR TV PICTURE TUBE TYPE NO. A	STRATION FOR ACI	ORMAT B_ <u>31</u> XX *
COL	OUR MONITOR TUBE TYPE NO. M		*
	Sponso	r: <u>ZENITH EI</u>	ECTRONICS CORPORATION
			<b>RAULAND DIVISION</b>
GENEI Where Compl	RAL agency designations have not been established, defining ete items in Section VIII only if product is integral tube/yo	data must be suppoke combination.	olied.
Descri	ption and General Data:	Mechanical Data	(cont.)
A. B. C.	Viewable Screen Diagonal: 48 cm Diagonal Deflection Angle 90 ° Electron Gun 1. Configuration (delta or inline) INLINE	E.	Pin Position Alignment (base pin which most nearly aligns with anode bulb contact)  SPACE BETWEEN PINS 9 AND 10
	<ol> <li>Configuration (delta or inline) <u>INLINE</u></li> <li>Type of focus unipotential, bipotential, tripotential, etc) <u>BIPOTENTIAL</u></li> </ol>	F.	Anode Location (clock position, viewed from base 12:00 o'clock
D. E. F. G.	Neck Diameter mm  Screen Structure (dot, line, etc)  TV-Line System (525, 625, etc)  Deflection Yoke Design, non-integral (yoke manufacturer's model number)ZENITH 95-3705	G.	External Conductive Coating-to-Anode Capacitance, including implosion protection hardware
Н.	Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	IV. implosio	on Protection
Optical	Data	Α.	Implosion Protection may be Listed as one of the Following6
A. B.	Light Transmittance of Panel 52 %  1. Selective Absorption (yes or no) NO  Anti-reflection (yes or no) NO		<ol> <li>None</li> <li>Tension Band (s)</li> <li>Filled Rim</li> </ol>
C. D.	Phosphor Sequence or Orientation R,G,B  Dark Surround or matrix (yes or no) YES		<ul><li>4. Rimband (s) and Tension band (s)</li><li>5. Bonded Sheet</li></ul>
E.	Selectively Filtered or Pigmented Phosphor (yes or no)YES		6. Other, Heat Shrink
	nical Data	В.	Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.
Α.	Tube Dimensions  1. Overall length434.22 mm		
	1. Overall length 434.22 mm  2. Neck length (YRL to end of base)		1. Diagonal <u>526.0</u> mm 2. Horizontal <u>448.5</u> mm
	145.57 mm		2. Horizontal <u>448.5</u> mm 3. Vertical <u>350.5</u> mm
В.	Minimum Useful Screen, Projected  1. Diagonal Axis <u>479.98</u> mm	c.	Integral Mounting System (yes or no) ves
	2. Horizontal Axis <u>404.42</u> mm  3. Vertical Axis <u>303.28</u> mm  4. Area <u>1194</u> sq. cm		Mounting hole center-to-center dimensions (horizontal x vertical)     434.24 x 337.31 mm
_			2. Panel Reference Z point to front of lug
C.	Bulb Nomenclature  1. Funnel (agency designation)		dimension ( Z points are normally at the ends of the minimum screen diagonals)
	2. Panel (agency designation) F513A 3. Anode contact (agency designation) J1-21		40.6mm
D.	Base and Pin Connections (agency designation)  B10-277-AB		If Z point is not at screen diagonal,  X Coordinatemm
	<del></del>		Y Coordinatemm

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Hole Dimensions (minimum) 13 mm

<sup>\*</sup> The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittence of the glass varies with the wavelength of the light output as shown in the attached figure. The specified panel transmittence is the effective integrated value when the tube screen is adjusted for a white raster having CIE coordinates of X = 0.313, Y = 0.329.

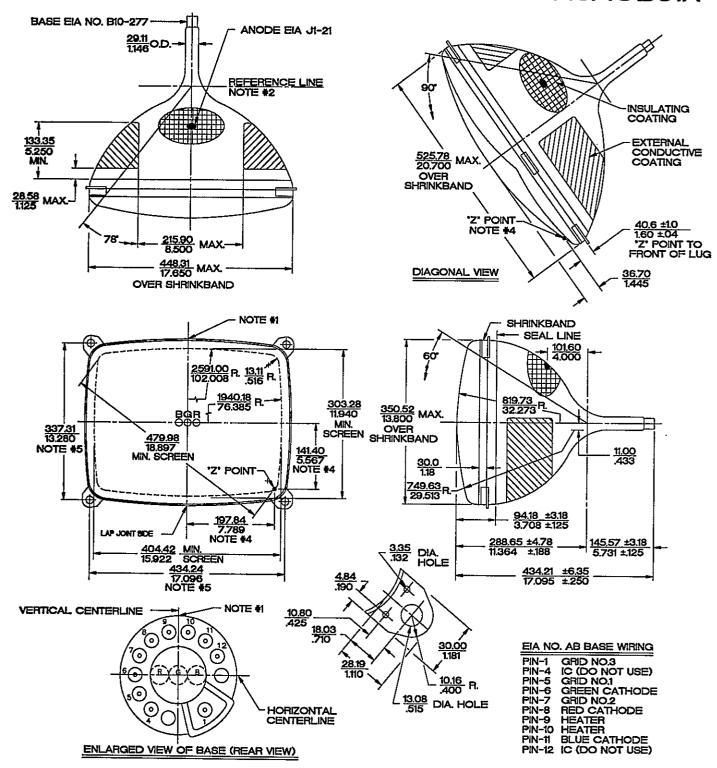
A48ACB31X Type Number

<b>/.</b>	X-Radiation Characteristics Per latest issue of EIA Publication TEP-94, EIA Standards RS-501 and RS-503, or IEC Publication 65, or EIAJ Publication				н.	Ratio of cathode currents to produce a white light output having CIE coordinates of $X = 0.313$ , $Y = 0.329$ (or $X = 0.281$ , $Y = 0.311$ )			
	ET-101.	2				1.	Red/blue		
		_	But I think Coming			••	A. Minimum <u>1.49</u>		
	A.	Isoexpo	osure-Rate Limit Curves				B. Typical <u>2.04</u>		
		_	- d. ada VO 204				C. Maximum <u>2.52</u>		
		1.	For entire tube XC-30A				C. Maximum		
		2.	For tube face only XC-32A			2	Dadlerson		
		3.	For anode bulb contact XC-62			2.	Red/green		
							A. Minimum <u>1.16</u>		
	В.	X-Radia	ation Limit Curves				B. Typical <u>1.56</u>		
		1.	For entire tube XC-29				C. Maximum <u>1.95</u>		
		2.	For tube face only XC-31						
		3.	For anode bulb contact XC-62			3.	Blue/green		
		•-	or				A. Minimum <u>0.57</u>		
	c.	Maxim	um x-radiation at Typical Anode Voltage and				B. Typical <u>0.76</u>		
	0.		Current of mAmR/h				C. Maximum 0.96		
. 44		D	taban a	VII.	Drawir	nas			
VI.	Typical Uniess	Design V	ratues se specified, values are for each gun and	¥ 11.	Diaw.				
	voitage	values a	re positive with respect to (cathode or grid		A.	Tube o	outline with essential dimensions, tolerances		
	no. 1).		, , , , , , , , , , , , , , , , , , , ,			and pir	n connections.		
		Llastor	Voltage 6.3 V	VIII	Integra	al Tube/Yo	ke Combinations		
	Α.	Heater	Current 700 mA	•	,,.cog,ro				
	В.				A.	Deflect	tion Yoke Specifications		
	C.		Voltage Absolute-maximum value 33 kV			1.	Horizontal Coils		
		1.				••	A. Connection (series or parallel)		
		2.	Typical value 25 kV				B. Inductance mH		
			a 14 1 11 12 12 12 12 12 12 12 12 12 12 12 1				C. Resistance		
	D.	Grid N	o. 3 (focusing electrode)				C. Nesistance		
			e in percent of typical anode voltage			•	Vertical Cailo		
		_22_1	to <u>26  </u> %			2.	Vertical Coils		
							A. Connection (series or parallel)		
	Ē.	Grid N	os (other high voltage grids) Voltage in				B. Inductance mH		
		percen	t of typical anode voltageto %				C. Resistance		
	F.	Contro	ol voltages for visual cutoff of focused spot at		В.	Other	Neck Components (specify)		
	••		anode voltage						
		1. At	cathode voltage of 100V to V		C.	Drawit	ngs		
		,, ,,,				1.	Assembly outline must meet same		
		2. At	cathode voltage of 150V 420 to 820 V				requirements as listed in items III and IV		
							with the addition of clearance dimensions		
		3. At	cathode voltage of 200V to V				for the integral components.		
		1. At	grid #1 voltage of -100V _ to _ V			2.	Yoke connector designation or		
		2 Δ+	grid #1 voltage at -150V to V				manufacturers' number		
		۷. ۸۱	gita # , voitage at 1000 to !			3.	Pin connections to yoke connector with		
		3. At	grid #1 voltage of -200V to V				signal polarity indicated.		
	G.	Maxim	num ratio of grid #2 voltages, highest gun to			4.	Minimum lead length, if any, for yoke		
	<b>→•</b>		t gun for spot cutoff at grid #1 of				connection (show location on outline).		
		Mayin	num ratio of cathode cutoff voltages, highest						
			to lowest gun (with grid #2 of gun having						
			at cathode voltage adjusted to give 150V spot						
		~	1.25						

н.

Ratio of cathode currents to produce a white light

# A48ACB31X



## NOTES:

- TOP OF TUBE IN NORMAL OPERATING POSITION.

  REFERENCE LINE IS DETERMINED BY PLANE 'C-C' OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.

  THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN.
- CIMENSIONS AFIC IN MAD LUSS.

  'Z' POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUGS.

  THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 9.53/.375

  DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

COLO	RESERVATION/REGIS	48 AGD	
COLO	OUR MONITOR TUBE TYPE NO. M		*
GENER	Sponso  AL  agency designations have not been established, defining	or: ZENITH ELE	CTRONICS CORPORATION RAULAND DIVISION
-	te items in Section VIII only if product is integral tube/your tion and General Data:	Mechanical Data (co	ont.)
A. B. C.	Viewable Screen Diagonal: 48 cm Diagonal Deflection Angle 90 ° Electron Gun		Pin Position Alignment (base pin which most nearly aligns with anode bulb contact)  SPACE BETWEEN PINS 9 AND 10
-	<ol> <li>Configuration (delta or inline) <u>INLINE</u></li> <li>Type of focus unipotential, bipotential, tripotential, etc) <u>BIPOTENTIAL</u></li> </ol>	F	Anode Location (clock position, viewed from base)  12:00 o'clock
D. E. F. G.	Neck Diameter 29 mm  Screen Structure (dot, line, etc) LINE  TV-Line System (525, 625, etc)  Deflection Yoke Design, non-integral (yoke		External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. <u>2560</u> max. pF  1460 min. pF
н.	manufacturer's model number) ZENITH 95-3705 Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	·	Protection Implosion Protection may be Listed as one of the
Optical	Data		Following 6
A.	Light Transmittance of Panel 42 %  1. Selective Absorption (yes or no) NO		1. None 2. Tension Band (s) 3. Filled Rim
B. C. D. E.	Anti-reflection (yes or no) NO  Phosphor Sequence or Orientation R,G,B  Dark Surround or matrix (yes or no) YES  Selectively Filtered or Pigmented Phosphor (yes or		4. Rimband (s) and Tension band (s) 5. Bonded Sheet 6. Other, Heat Shrink
Mecha	no)YES		Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.
A.	Tube Dimensions  1. Overall length 434.22 mm  2. Neck length (YRL to end of base) 145.57 mm		1. Diagonal <u>526.0</u> mm 2. Horizontal <u>448.5</u> mm 3. Vertical <u>350.5</u> mm
В.	Minimum Useful Screen, Projected  1. Diagonal Axis 479.98 mm  2. Horizontal Axis 404.42 mm  3. Vertical Axis 303.28 mm  4. Area 1194 sq. cm	C.	1. Mounting hole center-to-center dimensions (horizontal x vertical)  434.24 x 337.31 mm  Panel Reference Z point to front of lug
C.	Bulb Nomenclature  1. Funnel (agency designation)		dimension ( Z points are normally at the ends of the minimum screen diagonals)  40.6 mm  If Z point is not at screen diagonal,
Đ.	Base and Pin Connections (agency designation)		

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B10-277-AB

X Coordinate \_

3.

Y Coordinate \_\_\_\_\_

Hole Dimensions (minimum) 13 mm

<sup>\*</sup> The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittance of the glass varies with the wavelength of the light output as shown in the attached figure. The specified panel transmittance is the effective integrated value when the tube screen is adjusted for a white raster having CIE coordinates of X = 0.313, Y = 0.329.

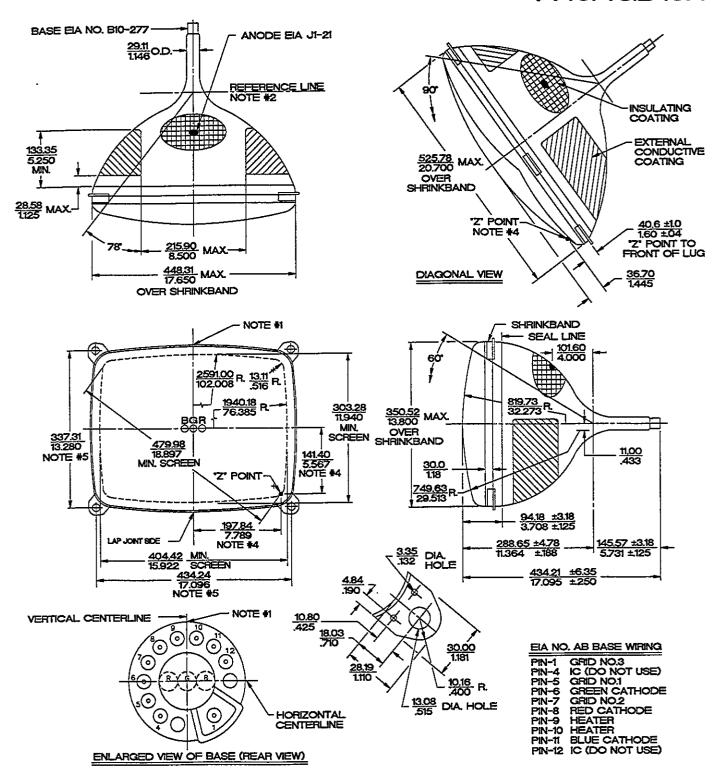
Type Number A48AGD13X

X-Radiation Characteristics

V.

٧.			racteristics of EIA Publication TEP-94, EIA Standards RS-		Н.	Ratio o	f cathode currents to produce a white light having CIE coordinates of $X = 0.313$ , $Y =$
11	501 a ET-10	nd RS-503	3, or IEC Publication 65, or EIAJ Publication			0.329	fraving the coordinates of $X = 0.313$ , $Y = 0.313$ , $Y = 0.311$
· .	Α.		osure-Rate Limit Curves			1.	Red/blue A. Minimum 1.49
		1.	For entire tube XC-30A				B. Typical <u>2.04</u> C. Maximum <u>2.52</u>
	•	2.	For tube face only XC-32A				
٠ .		3.	For anode bulb contact XC-62		•	2.	Red/green
		V 0- 4					A. Minimum <u>1.16</u>
	В.		ation Limit Curves				B. Typical <u>1.56</u>
		1.	For entire tube XC-29				C. Maximum <u>1.95</u>
		2.	For tube face only XC-31			_	
		3.	For anode bulb contact XC-62			3.	Blue/green
	c.	Mavim	Or				A. Minimum <u>0.57</u>
	C.		um x-radiation at Typical Anode Voltage and Current of mAmR/h				B. Typical <u>0.76</u> C. Maximum <u>0.96</u>
VI.		l Design V		VII.	Drawii	ngs	
	Unless voltage	otherwis e values a	e specified, values are for each gun and re positive with respect to (cathode or grid		Α.	·	utline with essential dimensions, tolerances
•	no. 1).		•		• ••		connections.
	Α.		Voltage 6.3 V	VIII	Integra	al Tube/Yol	ce Combinations
	В. С.		Current 700 mA				
	<b>U</b> ,	1.	Voltage Absolute-maximum value <u>33</u> kV		Α.	_	on Yoke Specifications
		2.	Typical value <u>25</u> kV			1.	Horizontal Coils
3		2.	rypical value <u>25                                    </u>				A. Connection (series or parallel)
	D.	Grid No	5. 3 (focusing electrode)				B. Inductance mH C. Resistance
			in percent of typical anode voltage				C. Resistatice
			o <u>26</u> %			2.	Vertical Coils
							A. Connection (series or parallel)
a,	E.	Grid No	os (other high voltage grids) Voltage in				B. Inductance mH
		percent	t of typical anode voltageto %				C. Resistance
	F.		voltages for visual cutoff of focused spot at		В.	Other N	eck Components (specify)
			anode voltage cathode voltage of 100V to V		_		
		1. AL	satisfied voltage of 100V to v		C.	Drawing	
		2. At a	eathode voltage of 150V 420 to 820 V			1.	Assembly outline must meet same requirements as listed in items III and IV
		3. At 0	cathode voltage of 200V to V				with the addition of clearance dimensions for the integral components.
		1. At g	grid #1 voltage of -100V to V			2.	Yoke connector designation or
		2. At g	grid #1 voltage at -150V _ to _ V			•	manufacturers' number
		3. At g	grid #1 voltage of -200V _ to _ V			3.	Pin connections to yoke connector with signal polarity indicated.
	G.		m ratio of grid #2 voltages, highest gun to			4.	Minimum lead length, if any, for yoke
			gun for spot cutoff at grid #1 of				connection (show location on outline).
		Maximu	ım ratio of cathode cutoff voltages, highest				
		highest	to lowest gun (with grid #2 of gun having cathode voltage adjusted to give 150V spot				
		cutoff)	<u>1.25</u>				

# A48AGD13X



## NOTES

- TOP OF TUBE IN NORMAL OPERATING POSITION. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY).
- DIMENSIONS ARE IN MM / IN. "Z" POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUGS.
  THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 9.53/.375
- 5. DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

RESERVATION/REGISTRATION FORMAT				
COLOUR TV PICTURE TUBE TYPE NO. A 68 AGD 02 XX	*			
or				
COLOUR MONITOR TUBE TYPE NO. M *				

# Sponsor: ZENITH ELECTRONICS CORPORATION RAULAND DIVISION

## **GENERAL**

Where agency designations have not been established, defining data must be supplied. Complete items in Section VIII only if product is integral tube/yoke combination.

1.	Desc	ription and General Data:	Mech	anical Dat	ta (cont.)
	A. B. C.	Viewable Screen Diagonal: 68 cm Diagonal Deflection Angle 110 ° Electron Gun 1. Configuration (delta or inline) INLINE 2. Type of focus unipotential, bipotential,		E. F.	Pin Position Alignment (base pin which most near align with anode bulb contact)  SPACE BETWEEN PINS 9 AND 10
		tripotential, etc) BIPOTENTIAL		1.	Anode Location (clock position, viewed from bas 12:00 o'clock
	D.	Neck Diameter 29 mm		G.	External Conductive Coating-to-Anode
	E.	Screen Structure (dot, line, etc) LINE			Capacitance, including implosion protection
	F. G.	TV-Line System (525, 625, etc)			hardware. 3245 max. pF
	G.	Deflection Yoke Design, non-integral (yoke			2545 min. pF
	н.	manufacturer's model number) ZENITH 95-3797 Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	IV.	Implos	sion Protection
II.	Optica	al Data		Α.	Implosion Protection may be Listed as one of the Following 6
	A.	Light Transmittance of Panel 37.5 %			1. None
		Selective Absorption (yes or no) NO			2. Tension Band (s)
	В.	Anti-reflection (yes or no) NO			3. Filled Rim
	C.	Phosphor Sequence or Orientation R,G,B			4. Rimband (s) and Tension band (s)
	Đ.	Dark Surround or matrix (yes or no) YES			5. Bonded Sheet
	E.	Selectively Filtered or Pigmented Phosphor (yes or no) YES			6. Other <u>Heat Shrink Band</u>
II.	Macha	inical Data		В.	Greatest Tube Face Axes Dimensions, includir
***					implosion protection hardware and excludin mounting lugs, if any,
	A.	Tube Dimensions			
		1. Overall length 448 mm			1. Diagonal <u>732</u> mm
		2. Neck length (YRL to end of base)			2. Horizontal <u>613</u> mm
		139.5mm			3. Vertical <u>485</u> mm
	₿.	Minimum Useful Screen, Projected		C.	Integral Mounting System (yes or no)yes
		1. Diagonal Axis 675.6 mm			<del></del>
		2. Horizontal Axis 540.5 mm			1. Mounting hole center-to-cente
		3. Vertical Axis <u>405.4</u> mm 4. Area 2191 sq. cm			dimensions (horizontal x vertical)
		4. Area <u>2191</u> sq. cm			<u>592.3</u> x <u>469.1</u> mm
	C.	Bulb Nomenclature			<ol><li>Panel Reference Z point to front of lu</li></ol>
	٠.	Funnel (agency designation) J 7208_			dimension ( Z points are normally at th
		2. Panel (agency designation) F722A			ends of the minimum screen diagonals)
		3. Anode contact (agency designation)			40.01 mm
		J1-21			If Z point is not at screen diagonal,
	D.	Base and Pin Connections (agency designation)			( at all adjusting
		B10-277-AB			X Coordinatemm
					Y Coordinate mm
					3. Hole Dimensions (minimum) 11.75 mm

<sup>\*</sup> The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittance of the glass varies with the wavelength of the light output as shown in the attached figure. The specified panel transmittance is the effective integrated value when the tube screen is adjusted for a white raster having CIE coordinates of X = 0.313, Y = 0.329.

## Type Number A68AGD02X

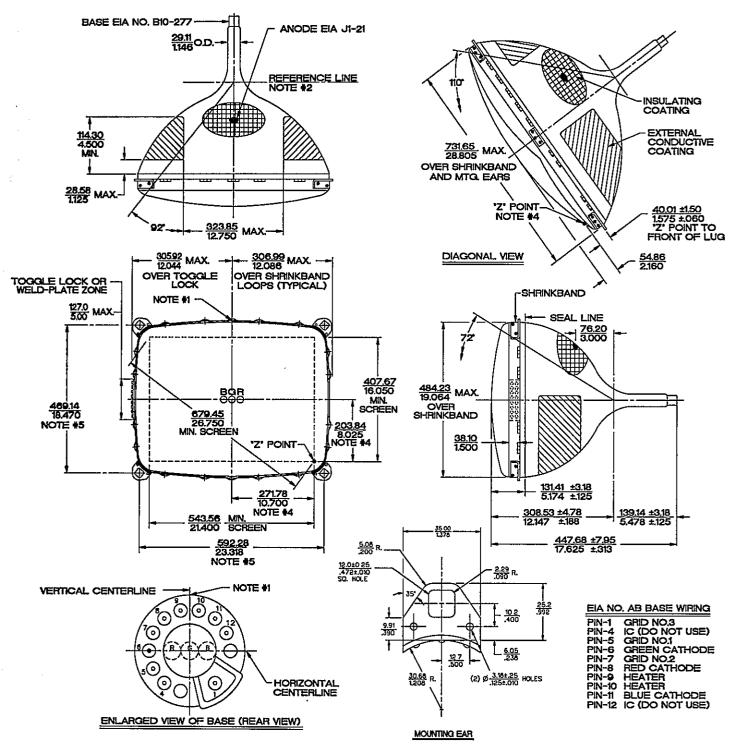
cutoff) \_\_\_\_1.25\_

v.	501 ar	est issue of EIA Publication TEP-94, EIA Standards RS- id RS-503, or IEC Publication 65, or EIAJ Publication		output having CIE coordinates of $X = 0.313$ , $Y = 0.329$ (or $X = 0.281$ , $Y = 0.311$ )			
	ET-101	2			1.	Red/blue	
		m . 11 % O				A. Minimum <u>1.49</u>	
	A.	Isoexposure-Rate Limit Curves				B. Typical 2.04	
						C. Maximum 2.52	
		1. For entire tube XC-26A				C. Waxiiiidii 2.52	
		2. For tube face only XC-28A					
		3. For anode bulb contact XC-70			2.	Red/green	
		0, 10, 0, 0, 0				A. Minimum <u>1.16</u>	
	_	X-Radiation Limit Curves				B. Typical <u>1.56</u>	
	В.					C. Maximum 1.95	
		1. For entire tube XC-25					
		2. For tube face only XC-27			3.	Blue/green	
		<ol> <li>For anode bulb contact XC-69</li> </ol>			٥.	A. Minimum <u>0.57</u>	
		or				B. Typical <u>0.76</u>	
	C.	Maximum x-radiation at Typical Anode Voltage and					
		Beam Current ofmAmR/h				C. Maximum 0.96	
VI.	Typica	l Design Values	VII.	Drawin	ıgs		
	Unless	otherwise specified, values are for each gun and				uther with according dimensions, toloroppes	
	voltage	e values are positive with respect to (cathode or grid		Α.		utline with essential dimensions, tolerances	
	no. 1).				and pin	connections.	
		Heater Voltage6.3V	VIII	integra	i Tube/Yol	ke Combinations	
	Α.	Heater Current 700 mA					
	В.	Anode Voltage		A.	Deflecti	ion Yoke Specifications	
	C.				1.	Horizontal Coils	
						A. Connection (series or parallel)	
		2. Typical value 30 kV				B. InductancemH	
						C. Resistance	
	D.	Grid No. 3 (focusing electrode)				C. Medistando	
		Voltage in percent of typical anode voltage			•	Vertical Cails	
		<u>22</u> to <u>26</u> %			2.	Vertical Coils	
		•				A. Connection (series or parallel)	
	E.	Grid Nos (other high voltage grids) Voltage in				B. Inductance mH	
		percent of typical anode voltageto%				C. Resistance	
	F.	Control voltages for visual cutoff of focused spot at		В.	Other N	Neck Components (specify)	
	г.	typical anode voltage					
		1. At cathode voltage of 100V _ to _ V		C.	Drawin	ngs .	
		1. At cathode voltage of 1004 to v			1.	Assembly outline must meet same	
		0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				requirements as listed in items III and IV	
		<ol><li>At cathode voltage of 150V 420 to 820 V</li></ol>				with the addition of clearance dimensions	
		3. At cathode voltage of 200V to V				for the integral components.	
		*Or-					
		1. At grid #1 voltage of -100V to V			2.	Yoke connector designation or manufacturers' number	
		2. At grid #1 voltage at -150V to V				<del></del> -	
		Z. At grid #1 voltage at *100v to v			3.	Pin connections to yoke connector with	
		3. At grid #1 voltage of -200V to V				signal polarity indicated.	
	G.	Maximum ratio of grid #2 voltages, highest gun to			4.	Minimum lead length, if any, for yoke	
	٥.	lowest gun for spot cutoff at grid #1 of				connection (show location on outline).	
		-100V					
		Maximum ratio of cathode cutoff voltages, highest					
		to gun to lowest gun (with grid #2 of gun having					
		highest cathode voltage adjusted to give 150V spot					

н.

Ratio of cathode currents to produce a white light

# A68AGD02X



#### NOTES:

- TOP OF TUBE IN NORMAL OPERATING POSITION. REFERENCE LINE IS DETERMINED BY PLANE 'C-C' OF EIA GAUGE G-195 WHEN GAUGE IS SEATED AGAINST FUNNEL. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY).
- DIMENSIONS ARE IN MM / IN.
- "Z" POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUGS.

  THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 7.60/.299
  DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

III.

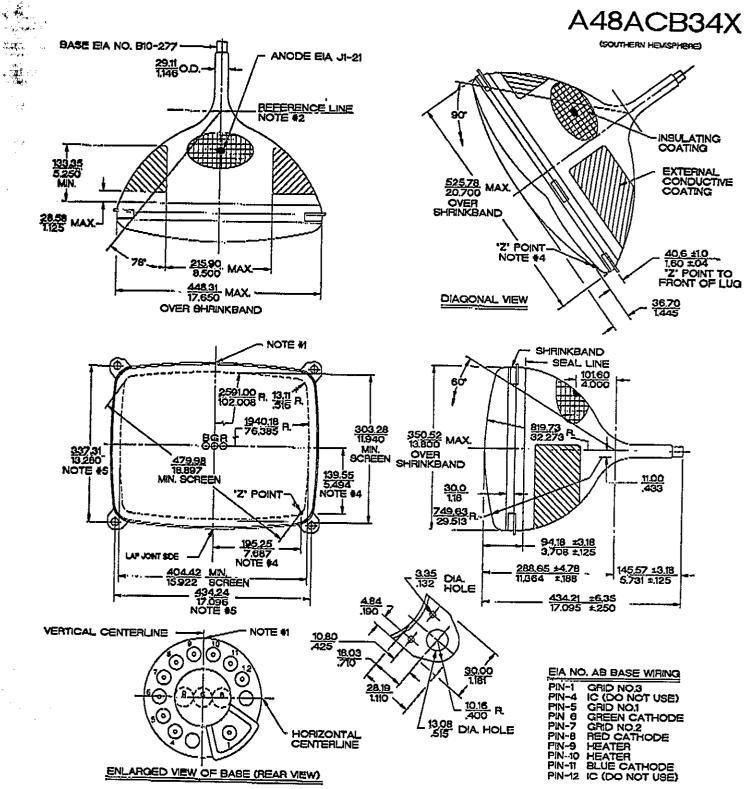
COL	RESERVATION/REGIOUR TV PICTURE TUBE TYPE NO. A	ISTRATION FO	DRMAT * * * * * * * * * * * * * * * * * * *
COL	OUR MONITOR TUBE TYPE NO. M _	(Southern Hemisf	HERE) *
	Sponse	or: <u>ZENITH EL</u>	ECTRONICS CORPORATION
GENER Where Compi	RAL agency designations have not been established, defining te items in Section VIII only if product is integral tube/y	g data must be suppl oke combination.	RAULAND DIVISION red.
Descri	ption and General Data:	Mechanical Data (	cont.)
A, B, C.	Viewable Screen Diagonal: 48 cm Diagonal Deflection Angle 90 ° Electron Gun 1. Configuration (delta or inline) INLINE	E.	Pin Position Alignment (base pin which most nearly aligns with snode bulb contact)  SPACE BETWEEN PINS 9 AND 10
	2. Type of focus unipotential, bipotential, tripotential, etc) BIPOTENTIAL	F.	Anode Location (clock position, viewed from base)  12:00 o clock
D. E. F. G.	Neck Diameter 29 mm Screen Structure (dot, line, etc) LINE TV-Line System (525, 825, etc) Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705	G.	External Conductive Coating-to-Anode Capacitance, including implesion protection hardware. 2560 max. pF 1460 min. pF
н.	Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	IV. Implosion	Protection
Optical	Data	Α.	Implosion Protection may be Listed as one of the Following6_
A. B. C. D. E.	Light Transmittance of Panel 52 %  1. Selective Absorption (yes or no) NO Anti-reflection (yes or no) NO Phosphor Sequence or Orientation R.G.B  Dark Surround or matrix (yes or no) YES Selectively Filtered or Pigmented Phosphor (yes or no) YES		<ol> <li>None</li> <li>Tension Band (s)</li> <li>Filled Rim</li> <li>Rimband (s) and Tension band (s)</li> <li>Bonded Sheet</li> <li>Other, Heat Shrink</li> </ol>
Mechai	nical Data	В.	Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.
Α.	Tube Dimensions  1. Overell length 434.22 mm  2. Neck length (YRL to end of base) mm		1. Diagonal <u>526.0</u> mm 2. Horizontal <u>448.5</u> mm 3. Verticul <u>350.5</u> mm
В.	Minimum Useful Screen, Projected  1. Diagonal Axis 479.98 mm	c.	Integral Mounting System (yes or no)yes
	2. Horizontal Axis 404,42 mm  3. Vertical Axis 303.28 mm  4. Area 1194 sq. cm		1. Mounting hole center-to-center dimensions (horizontal x vertical)  434.24 x 337.31 mm
C.	Bulb Nomenclature  1. Funnel (agency designation) J510B  2. Panel (agency designation) F513A  3. Anoda contact (agency designation)		2. Panel Reference Z point to front of lug dimension ( Z points are normally at the ends of the minimum screen diagonals)  40.6 mm
D.	Base and Pin Connections (agency designation) B10-277-AB		If Z point is not at screen diagonal,  X Coordinate mm
			Y Coordinate mm
			3. Hole Dimensions (minimum) 13 mm

<sup>&</sup>quot; The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittance of the glass varies with the wavelength of the light output as shown in the attached. Figure. The specified panel transmittence is the effective integrated value when the tube screen is adjusted for a white restor having CIE coordinates of X = 0.313, Y = 0.329.

Туре	Number	A48ACB34X
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<i>I</i> .	Per late	tion Characteristics st issue of EIA Publication TEP-94, EIA Standards RS- d RS-503, or IEC Publication 65, or EIAJ Publication 2		н.	output	f cathode currents to produce a white light having CIE coordinates of $X=0.313$ , $Y=$ (or $X=0.281$ , $Y=0.311$ )
	<b>A</b> .	Isoexposure-Rate Limit Curves  1. For entire tube XC-30A			1.	Red/blue         A. Minimum 1.49         B. Typical 2.04         C. Maximum 2.52
		2. For tube face only XC-32A 3. For anode bulb contact XC-62			2.	Red/green A. Minimum 1.18
	В.	X-Radiation Limit Curves  1. For entire tube XC-29  2. For tube face only XC-31			_	8. Typical <u>1.56</u> C. Maximum <u>1.95</u>
	C.	3. For anode bulb contact XC-62 or Maximum x-radiation at Typical Anode Voltage and			3.	Blue/green A. Minimum <u>0.57</u> B. Typical <u>0.76</u> C. Maximum 0.98
		Beam Current of mAmR/h				C. Waximum <u>0.95</u>
/I <b>.</b>	Unless	Design Values otherwise specified, values are for each gun and	VII.	Drawin	•	
	voltage no. 1).	values are positive with respect to (cathode or grid		Α.		utline with essential dimensions, tolerances connections.
	A. B.	Heater Voltage <u>6.3</u> V Heater Current <u>700</u> mA	VIII	Integra	l Tube/Yo	ke Combinations
	C.	Anode Voltage  1. Absoluts-maximum value 33 kV  2. Typical value 25 kV		A.	Deflect 1.	ion Yoke Specifications Horizontal Coils A. Connection (series or parallel) B. InductancemH
	D.	Grid No. 3 (focusing electrods) Voltage in percent of typical anode voltage			2.	C. Resistance
	E.				4.	A. Connection (series or parallel)
	F.	Control voltages for visual cutoff of focused spot at		в.	Other !	Neck Components (specify)
		typical anode voltage  1. At cathode voltage of 100V to V		c.	Drawin	igs Assembly outline must meet same
		2. At cathode voltage of 150V 420 to 820 V			1.	requirements as listed in items III and IV with the addition of clearance dimensions
		3. At cathode voltage of 200V to V				for the integral components.
		1. At grid #1 voltage of -100V _ to _ V			2.	Yoke connector designation or manufacturers' number
		2. At grid #1 voltage at -150V to V			3.	Pin connections to yake connector with
		3. At grid #1 voltage of -200V _ to _ V				signal polarity indicated.
	G.	Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -100V			4.	Minimum lead length, if any, for yoke connection (show location on outline).
		Maximum ratio of cathode cutoff voltages, highest to gun to lowest gun (with grid #2 of gun having highest cathode voltage adjusted to give 150V spot cutoff)				



## NOTES

TOP OF TUBE IN NORMAL OPERATING POSITION,
REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM \* 1 INCH EXACTLY).

"Z" POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUCS.

THE TOLERANCE OF THE MOUNTING LUCY HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 9.53/.375

DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

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COL	OUR TV PICTURE TUBE TYPE NO. A		
COL	OUR MONITOR TUBE TYPE NO. M	(Southern Hemis	*
	Snonso	r: 7FNITH FI	ECTRONICS CORPORATION
	Оролос	n. <u>Legini</u>	RAULAND DIVISION
	AL agency designations have not been established, defining te items in Section VIII only if product is integral tube/yo		plied.
Descrip	tion and General Data:	Mechanical Data	(cont.)
A. B. C.	Viewable Screen Diagonal: 48 cm Diagonal Deflection Angle 90 • Electron Gun 1. Configuration (delta or inline) INLINE	Ę.	Pin Position Alignment (base pin which most nearly aligns with anode bulb contact)  SPACE BETWEEN PINS 9 AND 10
	Type of focus unipotential, bipotential, tripotential, etc) BIPOTENTIAL	F.	Anode Location (clock position, viewed from base)  12:00 o'clock
D. E. F. G.	Neck Diameter 29 mm  Screen Structure (dot, line, etc) LINE  TV-Line System (525, 625, etc)  Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705	G.	External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 2560 max. pF 1460 min, pF
н.	Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	IV. implasi	on Protection  Implosion Protection may be Listed as one of the
Optical	Data		Following 6
A. 8. C. D. E.	Light Transmittance of Panel 42 %  1. Selective Absorption (yes or no) NO Anti-reflection (yes or no) NO Phosphor Sequence or Orientation R,G,B Dark Surround or matrix (yes or no) YES Selectively Filtered or Pigmented Phosphor (yes or no) YES		<ol> <li>None</li> <li>Tension Band (s)</li> <li>Filled Rim</li> <li>Rimband (s) and Tension band (s)</li> <li>Bonded Shoot</li> <li>Other, Heat Shrink</li> </ol>
Mechan	olcal Data	В.	Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting large if any
A.	Tube Dimensions  1. Overall length 434.22 mm  2. Neck length (YRL to end of base) 145.57 mm		mounting lugs, if any.  1. Diagonal <u>526.0</u> mm  2. Horizontal <u>448.5</u> mm  3. Vertical <u>350.5</u> mm
В.	Minimum Useful Screen, Projected  1. Disgonal Axis 479.98 mm  2. Horizontal Axis 404.42 mm  3. Vertical Axis 303.28 mm  4. Area 1194 sq. cm	C.	Integral Mounting System (yes or no)yes
C.	Bulb Nomenclature  1. Funnel (agency designation) J5108  2. Panel (agency designation) F513A  3. Anode contact (agency designation)		Panal Reference Z point to front of lug dimension ( Z points are normally at the ends of the minimum screen diagonals)  40.6 mm
D.	J1-21  Base and Pin Connections (agency designation)  B10-277-AB		If Z point is not at screen diagonal,  X Coordinatemm  Y Coordinatemm
			3. Hole Dimensions (minimum) 13 mm

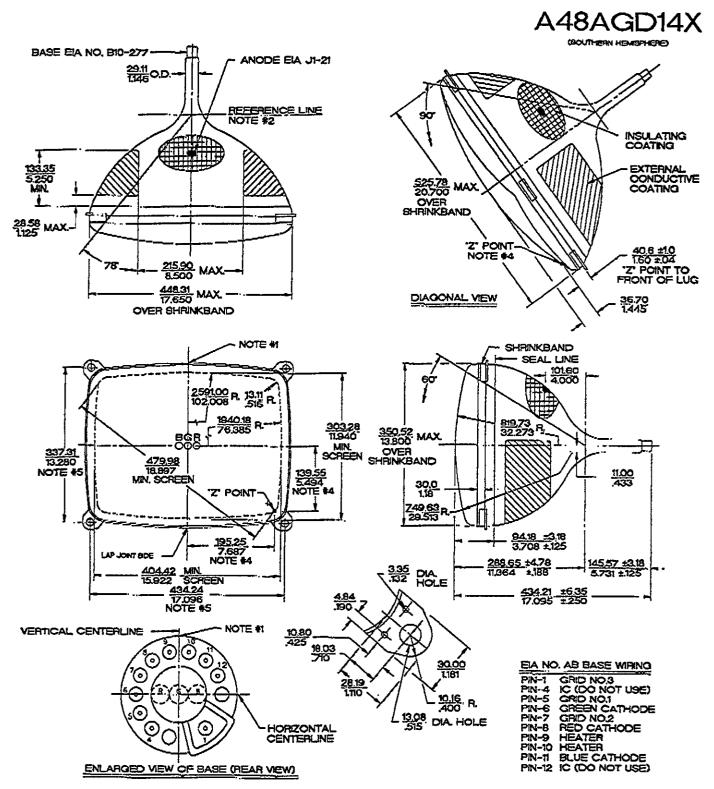
RESERVATION/REGISTRATION FORMAT

The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittance of the glass varies with the wavelength of the light output as shown in the otteched figure. The specified panel transmittance is the effective integrated value when the tube screen is adjusted for a white rester having CIE coordinates of X= 0.313, Y = 0.328.

		Type Number A48AGD14X				
•	Per lat	iation Characteristics lest issue of EIA Publication TEP-94, EIA Standards RS- and RS-503, or IEC Publication 65, or EIAJ Publication 12		н.	output	of cathode currents to produce a white light having CIE coordinates of $X=0.313$ , $Y=0.311$
	A.	Isoexposure-Rate Limit Curves			1.	Red/blue A. Minimum <u>1.49</u>
		For entire tube XC-30A     For tube face only XC-32A				8. Typical <u>2.04</u> C. Maximum <u>2.52</u>
		3. For anode bulb contact XC-62			2.	Red/green
	B.	X-Radiation Limit Curves  1. For entire tube XC-29  2. For tube face only XC-31				A. Minimum 1.16  B. Typical 1.56  C. Maximum 1.95
		3. For anode bulb contact XC-62			3.	Blue/graen A. Minimum 0.57
	C.	Maximum x-radiation at Typical Anode Voltage and Beam Current of mAmR/h				B. Typical <u>0.76</u> C. Maximum <u>0.96</u>
•		l Design Values otherwise specified, values are for each gun and	VII.	Drawin	gs	
	voltagi no. 1).	e values are positive with respect to (cathode or grid		A.		utline with essential dimensions, tolerances a connections.
	A. B.	Heater Voltage 6.3 V Heater Current 700 mA	VIII	integra	l Tube/Yo	ke Combinations
	C.	Anode Voltage  1. Absolute-maximum value 33 kV  2. Typical value 25 kV		A.	Deflect 1.	ion Yoke Specifications Horlzontal Coils A. Connection (series or parallel)
	D.	Grid No. 3 (focusing electrode) Voltage in percent of typical anode voltage				B. Inductance mH C. Resistance N
	E.				2.	Vertical Coils A. Connection (series or parallel) B. InductancemH C. Resistance
	<b>F.</b>	Control voltages for visual cutoff of focused spot at typical anode voltage		В.	Other I	visck Components (specify)
		1. At cathode voltage of 100V _ to _ V		C.	Drawin 1.	gs Assembly outline must meet same
		2. At cethode voltage of 150V 420 to 820 V				requirements as listed in items III and IV with the addition of clearance dimensions
		3. At cathode voltage of 200V _ to _ V				for the integral components.
		<ol> <li>At grid #1 voltage of -100V to V</li> <li>At grid #1 voltage at -150V to V</li> </ol>			2.	Yoke connector designation or manufacturers' number
		3. At grid #1 voltage of -200V _ to _ V			3.	Pin connections to yoke connector with signal polarity indicated.
	G.	Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -100V			4.	Minimum lead length, if any, for yoke connection (show location on outline).

Maximum ratio of cathode cutoff voltages, highest to gun to lowest gun (with grid #2 of gun having highest cathode voltage adjusted to give 150V spot cutoff) 1.25



## NOTES

- TOP OF TUBE IN NORMAL OPERATING POSITION.
  REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
  THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25,4 MM = 1 INCH EXACTLY).
- THE MILLMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION CO.4 MIN 1 11001 LACOLUMN DIMENSIONS ARE IN MAY IN...

  Z' POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUGS.

  THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 9.53/.375

  DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

RESERVATION/REGISTRATION FORMAT									
COLOUR TV PICTURE TUBE TYPE NO. A 68 AHE 00 XX *									
COLOUR MONITOR TUBE TYPE NO. M *									
Sponsor: <u>ZENITH ELECTRONICS CORPORATION</u> RAULAND DIVISION									
GENERAL  Where agency designations have not been established, defining data must be supplied.  Complete items in Section VIII only if product is integral tube/yoke combination.									
Description and General Data: Mechanical Data (cont.)									
A. B. C.	Viewable Screen Diagonal: 68_cm Diagonal Deflection Angle 110_° Electron Gun	E.	Pin Position Alignment (base pin which most nearly align with anode bulb contact)  SPACE BETWEEN PINS 9 AND 10						
	<ol> <li>Configuration (delta or inline) <u>INLINE</u></li> <li>Type of focus unipotential, bipotential, tripotential, etc) <u>BIPOTENTIAL</u></li> </ol>	F.	Anode Location (clock position, viewed from base)  12:00 o'clock						
D. E. F. G.	Neck Diameter mm Screen Structure (dot, line, etc) TV-Line System (525, 625, etc) Deflection Yoke Design, non-integral (yoke	G.	External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 3245 max. pF 2545 min. pF						
Ç.	manufacturer's model number) ZENITH 95-4486-	IV. Implosion	Protection						
н.	Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL	Α.	Implosion Protection may be Listed as one of the Following6						
Optical D	Pata		1. None						
A. B. C. D. E.	Light Transmittance of Panel 37.5 %  1. Selective Absorption (yes or no) NO  Anti-reflection (yes or no) NO  Phosphor Sequence or Orientation R,G,B  Dark Surround or matrix (yes or no) YES  Selectively Filtered or Pigmented Phosphor (yes or no) YES		2. Tension Band (s) 3. Filled Rim 4. Rimband (s) and Tension band (s) 5. Bonded Sheet 6. Other HEAT SHRINK						
Mechani		В.	Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.						
Α.	Tube Dimensions  1. Overall length 440.1 MAX. mm  2. Neck length (YRL to end of base) 142.3 MAX. mm		1. Diagonal <u>733</u> mm  2. Horizontal <u>607.32/(615.4 over loops)</u> mm  3. Vertical <u>476.02/(485.7 over loops)</u> mm						
В.	Minimum Useful Screen, Projected  1. Diagonal Axis 679.45 mm  2. Horizontal Axis 543.56 mm  3. Vertical Axis 407.67 mm	c.	1. Mounting hole center-to-center dimensions (horizontal x vertical)						
C.	<ul> <li>Area 2216 sq. cm</li> <li>Bulb Nomenclature</li> <li>Funnel (agency designation) J 720B</li> <li>Panel (agency designation) F723B</li> <li>Anode contact (agency designation)</li> </ul>		2. Panel Reference Z point to front of lug dimension ( Z points are normally at the ends of the minimum screen diagonals)  40.01 mm						
D.	Base and Pin Connections (agency designation) B10-277-AB		If Z point is not at screen diagonal, X Coordinate mm Y Coordinate mm  Hole Dimensions (minimum) 11.75 mm						

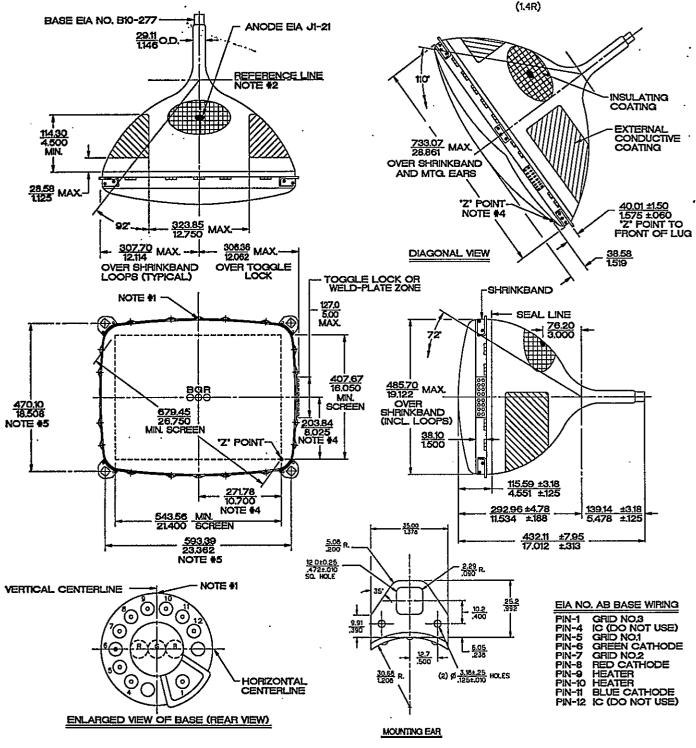
<sup>\*</sup> The sponsor is to fill in the second symbol (tube size), fourth symbol and the sixth symbol. The Type administrator will fill in the third symbol (family code).

<sup>+</sup> The transmittance of the glass varies with the wavelength of the light output as shown in the attached figure. The specified panel transmittance is the effective integrated value when the tube screen is adjusted for a white raster having CIE coordinates of X= 0.313, Y = 0.329.

Type Number A68AHE00X

V.	X-Radiation Characteristics Per latest issue of EIA Publication TEP-94, EIA Standards RS-501 and RS-503, or IEC Publication 65, or EIAJ Publication ET-1012			Н.	Ratio of cathode currents to produce a white light output having CIE coordinates of $X=0.313, Y=0.329$ (or $X=0.281, Y=0.311$ )	
	A.	Isoexposure-Rate Limit Curves  1. For entire tube XC-26A			1.	Red/blue A. Minimum <u>1.49</u> B. Typical <u>2.04</u> C. Maximum 2.52
		2. For tube face only XC-88 3. For anode bulb contact XC-70			2.	Red/green A. Minimum 1.16
	В.	X-Radiation Limit Curves  1. For entire tube XC-25				B. Typical 1.56 C. Maximum 1.95
		2. For tube face only XC-87 3. For anode bulb contact XC-69 or			3.	Blue/green A. Minimum 0.57
	C.	Maximum x-radiation at Typical Anode Voltage and Beam Current of mAmR/h				B. Typical <u>0.76</u> C. Maximum <u>0.96</u>
VI.	Unless	Design Values otherwise specified, values are for each gun and	VII.	Drawing		
	voltage no. 1).	values are positive with respect to (cathode or grid		Α.		rtline with essential dimensions, tolerances connections.
	A. B.	Heater Voltage <u>6.3</u> V Heater Current <u>700</u> mA	VIII	Integral	al Tube/Yoke Combinations	
	C.	Anode Voltage  1. Absolute-maximum value 33 kV  2. Typical value 30 kV		A.	Deflecti 1.	on Yoke Specifications Horizontal Coils A. Connection (series or parallel) B. Inductance mH
	D.	Grid No. 3 (focusing electrode) Voltage in percent of typical anode voltage			2.	C. Resistance
	_	22_to 26_%			2.	Vertical Coils A. Connection (series or parallel) B. Inductance mH
	E.	Grid Nos (other high voltage grids) Voltage in percent of typical anode voltage to %				C. Resistance
	F.	Control voltages for visual cutoff of focused spot at typical anode voltage		B.	Other N	leck Components (specify)
		<ol> <li>At cathode voltage of 100V _ to _ V</li> <li>At cathode voltage of 150V 420 to 820 V</li> </ol>		C.	Drawing 1.	gs Assembly outline must meet same requirements as listed in items III and IV
		3. At cathode voltage of 200V _ to _ V				with the addition of clearance dimensions for the integral components.
		-or- 1. At grid #1 voltage of -100V to V			2.	Yoke connector designation or manufacturers' number
		2. At grid #1 voltage at -150V _ to _ V			3.	Pin connections to yoke connector with
		3. At grid #1 voltage of -200V _ to _ V				signal polarity indicated.
	G.	Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -100V			4.	Minimum lead length, if any, for yoke connection (show location on outline).
		Maximum ratio of cathode cutoff voltages, highest to gun to lowest gun (with grid #2 of gun having highest cathode voltage adjusted to give 150V spot cutoff) 1.25				

# A68AHE00X



### NOTES:

- TOP OF TUBE IN NORMAL OPERATING POSITION.
  REFERENCE LINE IS DETERMINED BY PLANE 'C-C' OF EIA GAUGE G-195 WHEN GAUGE IS SEATED AGAINST FUNNEL.
  THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY).
  DIMENSIONS ARE IN \_MM / IN.,
- "Z' POINT IS LOCATED ON THE OUTSIDE SURFACE OF THE FACE PANEL AT THE END OF THE MINIMUM PUBLISHED SCREEN DIAGONAL. THIS POINT IS USED AS A REFERENCE FOR THE MOUNTING LUGS.
  THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 7.60/.299
  DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.