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Electronic Industries Alliance

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

RESERVATION/REGISTRATION FORMAT

COLOUR TV PICTURE TUBE TYPE NO. A 48 ACB 31 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.

I. Description and General Data:

A. Viewable Screen Diagonal: 48 cm
B. Diagonal Deflection Angle 90 °
C. Electron Gun
   1. Configuration (delta or inline) INLINE
   2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL
D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) ____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. Optical Data

A. Light Transmittance of Panel 52 %
   1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. Mechanical Data

A. Tube Dimensions
   1. Overall length 434.22 mm
   2. Neck length (YRL to end of base) 145.57 mm
B. 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. Bulb Nomenclature
   1. Funnel (agency designation) J510B
   2. Panel (agency designation) F513A
   3. Anode contact (agency designation) J1-21
D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly aligns with anode bulb contact) SPACE BETWEEN PINS 9 AND 10
F. Anode Location (clock position, viewed from base) 12:00 o'clock
G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 2560 max. pF
   1460 min. pF

IV. Implosion Protection

A. Implosion Protection may be Listed as one of the Following 6
   1. None
   2. Tension Band (s)
   3. Filled Rim
   4. Rimband (s) and Tension band (s)
   5. Bonded Sheet
   6. Other, Heat Shrink
B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.
   1. Diagonal 526.0 mm
   2. Horizontal 448.5 mm
   3. Vertical 350.5 mm
C. Integral Mounting System (yes or no) yes
   1. Mounting hole center-to-center dimensions (horizontal x vertical) 434.24 x 337.31 mm
   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

      If Z point is not at screen diagonal,

      X Coordinate ____ mm
      Y Coordinate ____ mm
   3. Hole Dimensions (minimum) 13 mm

* 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).

+ 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 A48ACB31X

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

A. Isoexposure-Rate Limit Curves

1. For entire tube XC-30A
2. For tube face only XC-32A
3. For anode bulb contact XC-62

B. X-Radiation Limit Curves
1. For entire tube XC-29
2. For tube face only XC-31
3. For anode bulb contact XC-62

or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of _____ mA _____mR/h

VI. **Typical Design Values**
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 25 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage _____to _____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V

2. At cathode voltage of 150V 420 to 820 V

3. At cathode voltage of 200V __ to __ V

-or-

1. At grid #1 voltage of -100V __ to __ V

2. At grid #1 voltage at -150V __ to __ V

3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. **Drawings**

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII **Integral Tube/Yoke Combinations**

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

2. Vertical Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

B. Other Neck Components (specify)

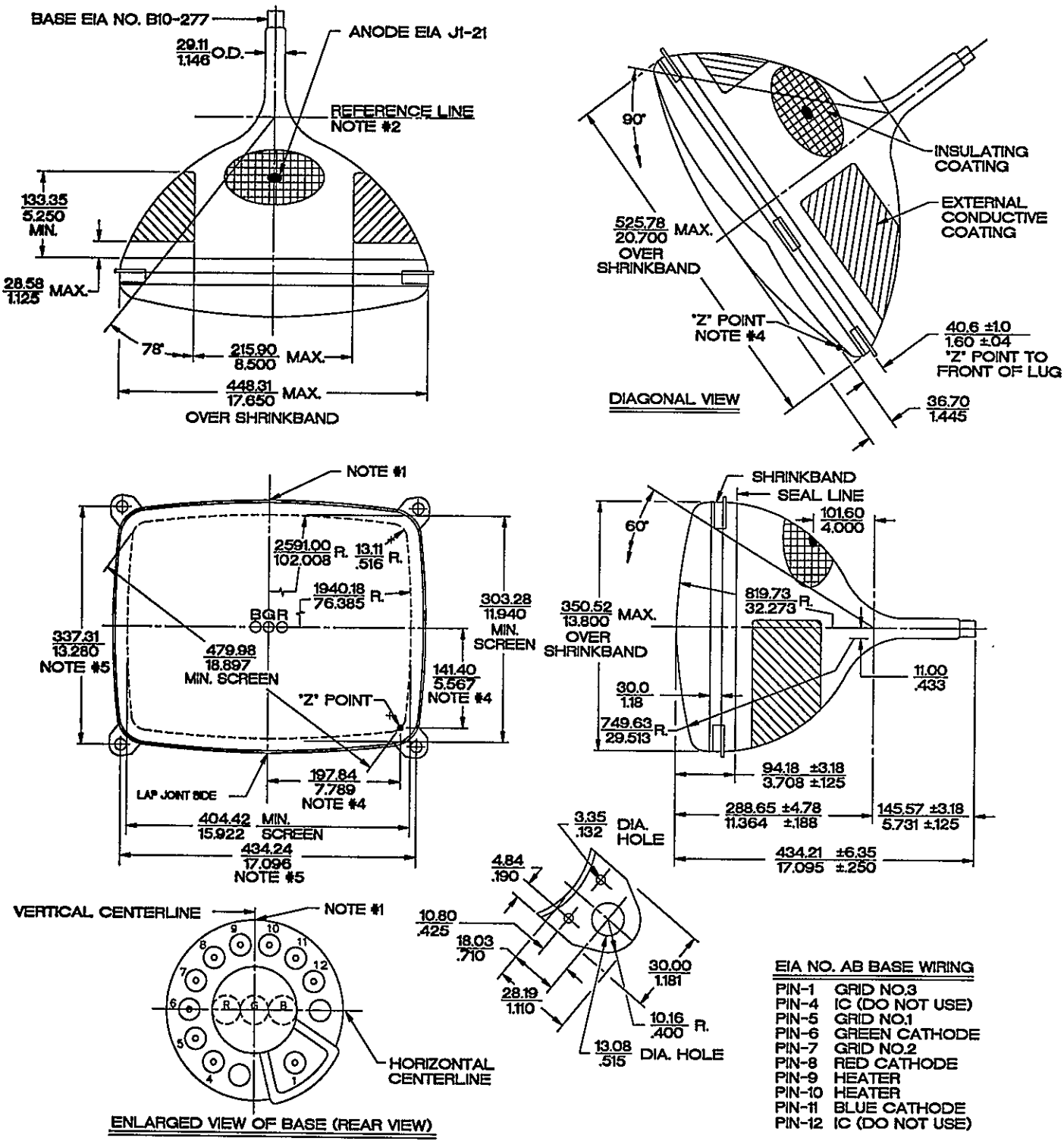
C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.

2. Yoke connector designation or manufacturers' number _____.

3. Pin connections to yoke connector with signal polarity indicated.

4. Minimum lead length, if any, for yoke connection (show location on outline).

A48ACB31X



EIA NO. AB BASE WIRING

PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN-6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN..
4. "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.
5. 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 48 AGD 13 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.

I. **Description and General Data:**

A. Viewable Screen Diagonal: 48 cm
B. Diagonal Deflection Angle 90 °
C. Electron Gun
   1. Configuration (delta or inline) INLINE
   2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL

D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) _____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. **Optical Data**

A. Light Transmittance of Panel 42 %
   1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. **Mechanical Data**

A. Tube Dimensions
   1. Overall length 434.22 mm
   2. Neck length (YRL to end of base) 145.57 mm

B. 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. Bulb Nomenclature
   1. Funnel (agency designation) J510B
   2. Panel (agency designation) F513A
   3. Anode contact (agency designation) J1-21

D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly aligns with anode bulb contact) SPACE BETWEEN PINS 9 AND 10

F. Anode Location (clock position, viewed from base) 12:00 o'clock

G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 2560 max. pF
   1460 min. pF

IV. **Implosion Protection**

A. Implosion Protection may be Listed as one of the Following 6

   1. None
   2. Tension Band (s)
   3. Filled Rim
   4. Rimband (s) and Tension band (s)
   5. Bonded Sheet
   6. Other, Heat Shrink_____

B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.

   1. Diagonal 526.0 mm
   2. Horizontal 448.5 mm
   3. Vertical 350.5 mm

C. Integral Mounting System (yes or no) yes

   1. Mounting hole center-to-center dimensions (horizontal x vertical) 434.24 x 337.31 mm
   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

      If Z point is not at screen diagonal,

      X Coordinate _____ mm
      Y Coordinate _____ mm

   3. Hole Dimensions (minimum) 13 mm

* 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).

+ 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**

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

A. Isoexposure-Rate Limit Curves

1. For entire tube XC-30A
2. For tube face only XC-32A
3. For anode bulb contact XC-62

B. X-Radiation Limit Curves
1. For entire tube XC-29
2. For tube face only XC-31
3. For anode bulb contact XC-62

or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of _____ mA _____mR/h

VI. **Typical Design Values**
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 25 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage _____to _____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V

2. At cathode voltage of 150V 420 to 820 V

3. At cathode voltage of 200V __ to __ V

-or-

1. At grid #1 voltage of -100V __ to __ V

2. At grid #1 voltage at -150V __ to __ V

3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. **Drawings**

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII **Integral Tube/Yoke Combinations**

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

2. Vertical Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

B. Other Neck Components (specify)

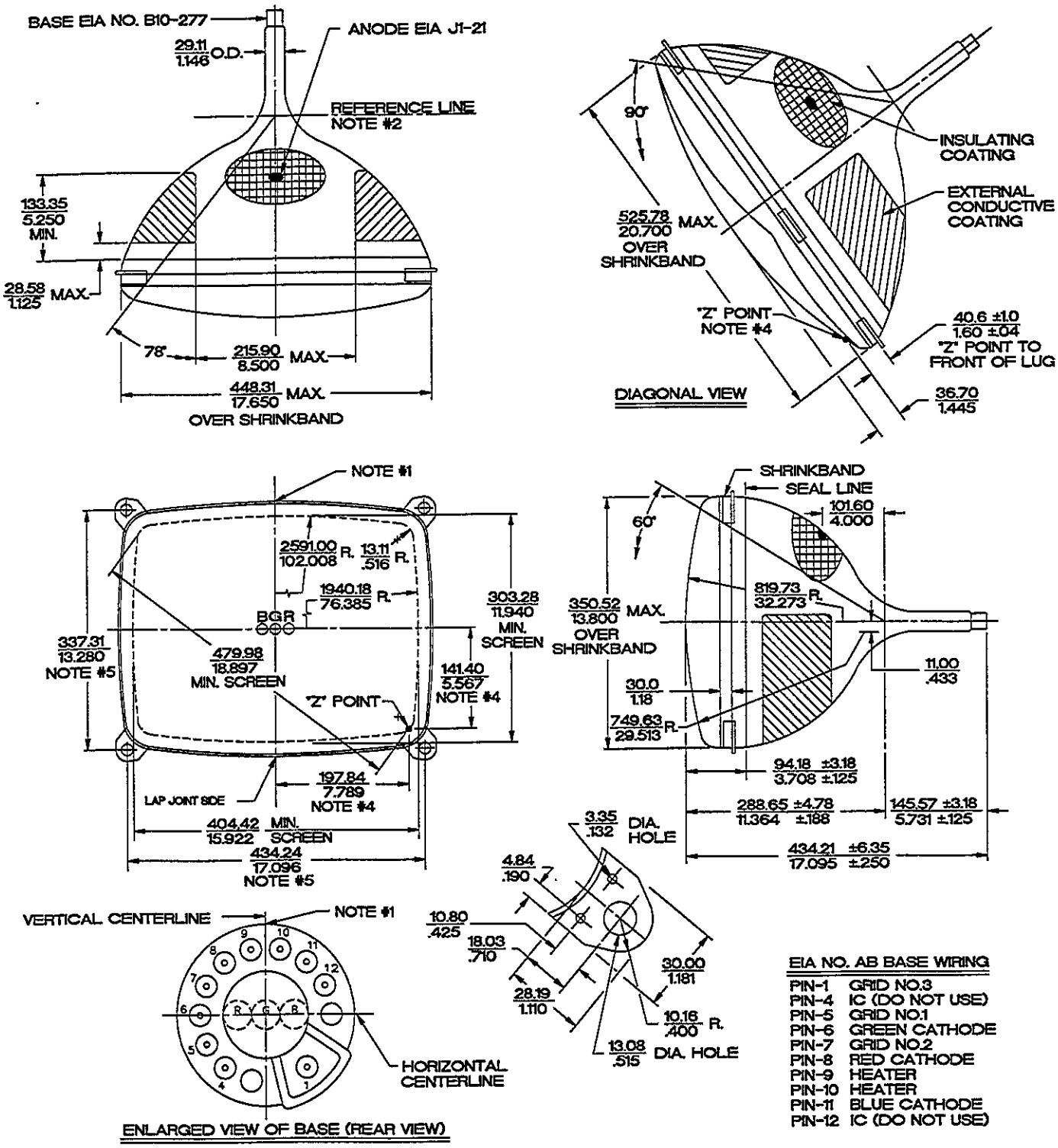
C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.

2. Yoke connector designation or manufacturers' number _____.

3. Pin connections to yoke connector with signal polarity indicated.

4. Minimum lead length, if any, for yoke connection (show location on outline).

A48AGD13X



EIA NO. AB BASE WIRING

PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN-6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN..
4. "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.
5. 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 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.

I. Description and General Data:

A. Viewable Screen Diagonal: 68 cm
B. Diagonal Deflection Angle 110 °
C. Electron Gun
  1. Configuration (delta or inline) INLINE
  2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL

D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) ____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3797
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. Optical Data

A. Light Transmittance of Panel 37.5 %
  1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. Mechanical Data

A. Tube Dimensions
  1. Overall length 448 mm
  2. Neck length (YRL to end of base) 139.5 mm

B. Minimum Useful Screen, Projected
  1. Diagonal Axis 675.6 mm
  2. Horizontal Axis 540.5 mm
  3. Vertical Axis 405.4 mm
  4. Area 2191 sq. cm

C. Bulb Nomenclature
  1. Funnel (agency designation) J 720B
  2. Panel (agency designation) F722A
  3. Anode contact (agency designation) J1-21

D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly align with anode bulb contact) SPACE BETWEEN PINS 9 AND 10

F. Anode Location (clock position, viewed from base) 12:00 o'clock

G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 3245 max. pF
2545 min. pF

IV. Implosion Protection

A. Implosion Protection may be Listed as one of the Following 6

  1. None
  2. Tension Band (s)
  3. Filled Rim
  4. Rimband (s) and Tension band (s)
  5. Bonded Sheet
  6. Other Heat Shrink Band

B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.

  1. Diagonal 732 mm
  2. Horizontal 613 mm
  3. Vertical 485 mm

C. Integral Mounting System (yes or no) yes

  1. Mounting hole center-to-center dimensions (horizontal x vertical) 592.3 x 469.1 mm
  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

     If Z point is not at screen diagonal,

     X Coordinate ____ mm
     Y Coordinate ____ mm

  3. Hole Dimensions (minimum) 11.75 mm

* 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).

+ 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

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

A. Isoexposure-Rate Limit Curves

1. For entire tube XC-26A
2. For tube face only XC-28A
3. For anode bulb contact XC-70

B. X-Radiation Limit Curves
1. For entire tube XC-25
2. For tube face only XC-27
3. For anode bulb contact XC-69

or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of _____ mA _____mR/h

VI. **Typical Design Values**
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 30 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage _____to _____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V

2. At cathode voltage of 150V 420 to 820 V

3. At cathode voltage of 200V __ to __ V

-or-

1. At grid #1 voltage of -100V __ to __ V

2. At grid #1 voltage at -150V __ to __ V

3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. **Drawings**

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII **Integral Tube/Yoke Combinations**

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

2. Vertical Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

B. Other Neck Components (specify)

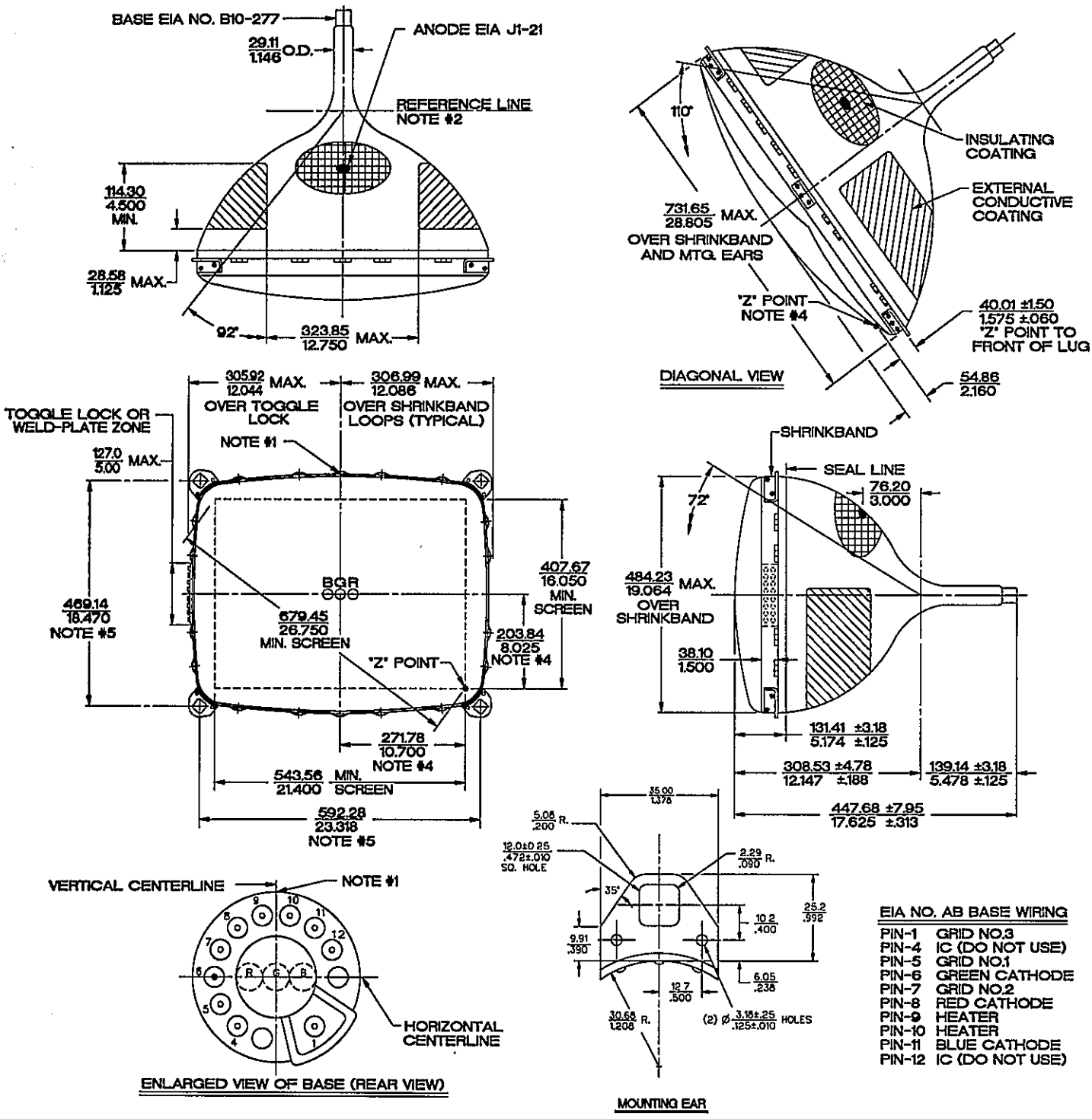
C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.

2. Yoke connector designation or manufacturers' number _____.

3. Pin connections to yoke connector with signal polarity indicated.

4. Minimum lead length, if any, for yoke connection (show location on outline).

A68AGD02X



EIA NO. AB BASE WIRING	
PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN-6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-195 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN..
4. "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.
5. THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 7.60/.299 DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.

RESERVATION/REGISTRATION FORMAT

COLOUR TV PICTURE TUBE TYPE NO. A 48 ACB 34 XX ____ *

(SOUTHERN HEMISPHERE)

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.

I. Description and General Data:

A. Viewable Screen Diagonal: 48 cm
B. Diagonal Deflection Angle 90 °
C. Electron Gun
   1. Configuration (delta or inline) INLINE
   2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL

D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) ____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. Optical Data

A. Light Transmittance of Panel 52 %
   1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. Mechanical Data

A. Tube Dimensions
   1. Overall length 434.22 mm
   2. Neck length (YRL to end of base) 145.57 mm

B. 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. Bulb Nomenclature
   1. Funnel (agency designation) J5108
   2. Panel (agency designation) F513A
   3. Anode contact (agency designation) J1-21

D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly aligns with anode bulb contact) SPACE BETWEEN PINS 9 AND 10

F. Anode Location (clock position, viewed from base) 12:00 o'clock

G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 2560 max. pF
   1460 min. pF

IV. Implosion Protection

A. Implosion Protection may be Listed as one of the Following 6

   1. None
   2. Tension Band (s)
   3. Filled Rim
   4. Rimband (s) and Tension band (s)
   5. Bonded Sheet
   6. Other, Heat Shrink____

B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.

   1. Diagonal 526.0 mm
   2. Horizontal 448.5 mm
   3. Vertical 350.5 mm

C. Integral Mounting System (yes or no) yes

   1. Mounting hole center-to-center dimensions (horizontal x vertical) 434.24 x 337.31 mm
   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

      If Z point is not at screen diagonal,

      X Coordinate ____ mm
      Y Coordinate ____ mm

   3. Hole Dimensions (minimum) 13 mm

* 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).

+ 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 A48ACB34X

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

A. Isoexposure-Rate Limit Curves
1. For entire tube XC-30A
2. For tube face only XC-32A
3. For anode bulb contact XC-62

B. X-Radiation Limit Curves
1. For entire tube XC-29
2. For tube face only XC-31
3. For anode bulb contact XC-62
or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of ____ mA ____mR/h

VI. Typical Design Values
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 25 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage ____to ____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V
2. At cathode voltage of 150V 420 to 820 V
3. At cathode voltage of 200V __ to __ V
-or-
1. At grid #1 voltage of -100V __ to __ V
2. At grid #1 voltage at -150V __ to __ V
3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. Drawings

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII Integral Tube/Yoke Combinations

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) ____
B. Inductance _____ mH
C. Resistance _____ Ω

2. Vertical Coils
A. Connection (series or parallel) ____
B. Inductance _____ mH
C. Resistance _____ Ω

B. Other Neck Components (specify)

C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.

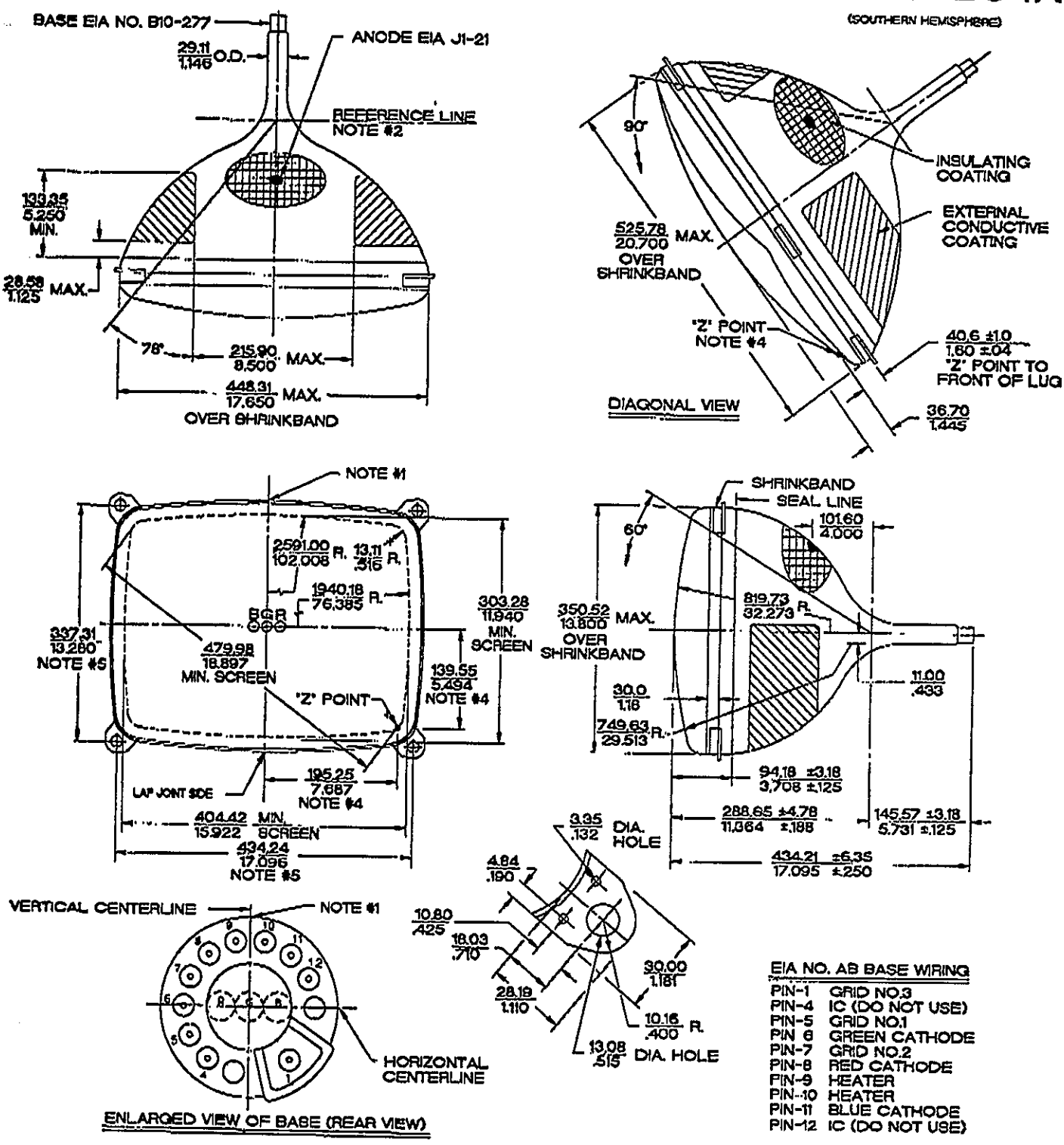
2. Yoke connector designation or manufacturers' number _____.

3. Pin connections to yoke connector with signal polarity indicated.

4. Minimum lead length, if any, for yoke connection (show location on outline).

A48ACB34X

(SOUTHERN HEMISPHERE)



EIA NO. A8 BASE WIRING

PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN 6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN.
4. "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.
5. 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 48 AGD 14 XX ____ *

(SOUTHERN HEMISPHERE)

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.

I. **Description and General Data:**

A. Viewable Screen Diagonal: 48 cm
B. Diagonal Deflection Angle 90 °
C. Electron Gun
1. Configuration (delta or inline) INLINE
2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL

D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) ____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-3705
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. **Optical Data**

A. Light Transmittance of Panel 42 %
1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. **Mechanical Data**

A. Tube Dimensions
1. Overall length 434.22 mm
2. Neck length (YRL to end of base) 145.57 mm

B. 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. Bulb Nomenclature
1. Funnel (agency designation) J510B
2. Panel (agency designation) F513A
3. Anode contact (agency designation) J1-21

D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly aligns with anode bulb contact) SPACE BETWEEN PINS 9 AND 10

F. Anode Location (clock position, viewed from base) 12:00 o'clock

G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 2560 max. pF
1460 min. pF

IV. **Implosion Protection**

A. Implosion Protection may be Listed as one of the Following 6

1. None
2. Tension Band (s)
3. Filled Rim
4. Rimband (s) and Tension band (s)
5. Bonded Sheet
6. Other, Heat Shrink

B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.

1. Diagonal 526.0 mm
2. Horizontal 446.5 mm
3. Vertical 350.5 mm

C. Integral Mounting System (yes or no) yes

1. Mounting hole center-to-center dimensions (horizontal x vertical) 434.24 x 337.31 mm
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

If Z point is not at screen diagonal,

X Coordinate ____ mm
Y Coordinate ____ mm

3. Hole Dimensions (minimum) 13 mm

* 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).

+ 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 A48AGD14X

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

A. Isoexposure-Rate Limit Curves
1. For entire tube XC-30A
2. For tube face only XC-32A
3. For anode bulb contact XC-62

B. X-Radiation Limit Curves
1. For entire tube XC-29
2. For tube face only XC-31
3. For anode bulb contact XC-62

or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of ____ mA ____ mR/h

VI. Typical Design Values
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 25 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage ____ to ____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V
2. At cathode voltage of 150V 420 to 820 V
3. At cathode voltage of 200V __ to __ V

-or-

1. At grid #1 voltage of -100V __ to __ V
2. At grid #1 voltage at -150V __ to __ V
3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. Drawings

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII Integral Tube/Yoke Combinations

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) ____
B. Inductance ____ mH
C. Resistance ____ Ω

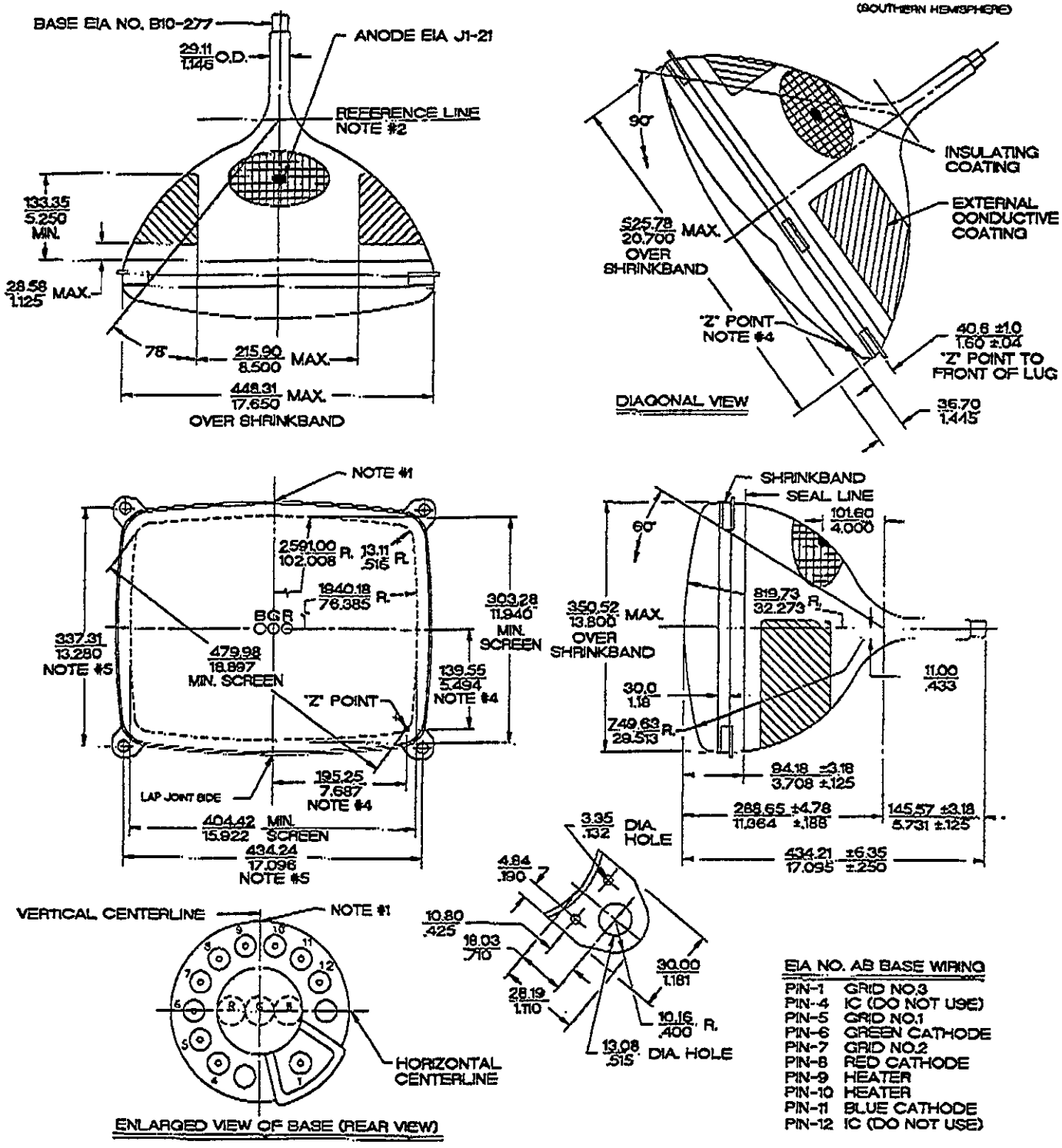
2. Vertical Coils
A. Connection (series or parallel) ____
B. Inductance ____ mH
C. Resistance ____ Ω

B. Other Neck Components (specify)

C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.
2. Yoke connector designation or manufacturers' number ____.
3. Pin connections to yoke connector with signal polarity indicated.
4. Minimum lead length, if any, for yoke connection (show location on outline).

A48AGD14X

(SOUTHERN HEMISPHERE)



EIA NO. A8 BASE WIRING	
PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN-6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-193 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN.
4. "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.
5. 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 _____ *

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.

I. Description and General Data:

A. Viewable Screen Diagonal: 68 cm
B. Diagonal Deflection Angle 110 °
C. Electron Gun
  1. Configuration (delta or inline) INLINE
  2. Type of focus unipotential, bipotential, tripotential, etc..) BIPOTENTIAL

D. Neck Diameter 29 mm
E. Screen Structure (dot, line, etc..) LINE
F. TV-Line System (525, 625, etc..) _____
G. Deflection Yoke Design, non-integral (yoke manufacturer's model number) ZENITH 95-4486-02
H. Integral (internal or external) Magnetic Shield (yes or no) YES, INTERNAL

II. Optical Data

A. Light Transmittance of Panel 37.5 %
  1. Selective Absorption (yes or no) NO
B. Anti-reflection (yes or no) NO
C. Phosphor Sequence or Orientation R,G,B
D. Dark Surround or matrix (yes or no) YES
E. Selectively Filtered or Pigmented Phosphor (yes or no) YES

III. Mechanical Data

A. Tube Dimensions
  1. Overall length 440.1 MAX. mm
  2. Neck length (YRL to end of base) 142.3 MAX. mm

B. Minimum Useful Screen, Projected
  1. Diagonal Axis 679.45 mm
  2. Horizontal Axis 543.56 mm
  3. Vertical Axis 407.67 mm
  4. Area 2216 sq. cm

C. Bulb Nomenclature
  1. Funnel (agency designation) J 720B
  2. Panel (agency designation) F723B
  3. Anode contact (agency designation) J1-21

D. Base and Pin Connections (agency designation) B10-277-AB

Mechanical Data (cont.)

E. Pin Position Alignment (base pin which most nearly align with anode bulb contact) SPACE BETWEEN PINS 9 AND 10

F. Anode Location (clock position, viewed from base) 12:00 o'clock

G. External Conductive Coating-to-Anode Capacitance, including implosion protection hardware. 3245 max. pF
2545 min. pF

IV. Implosion Protection

A. Implosion Protection may be Listed as one of the Following 6

  1. None
  2. Tension Band (s)
  3. Filled Rim
  4. Rimband (s) and Tension band (s)
  5. Bonded Sheet
  6. Other HEAT SHRINK

B. Greatest Tube Face Axes Dimensions, including implosion protection hardware and excluding mounting lugs, if any.

  1. Diagonal 733 mm
  2. Horizontal 607.32/(615.4 over loops)mm
  3. Vertical 476.02/(485.7 over loops) mm

C. Integral Mounting System (yes or no) yes

  1. Mounting hole center-to-center dimensions (horizontal x vertical) 593.39 x 470.1 mm
  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

     If Z point is not at screen diagonal,
     X Coordinate _____ mm
     Y Coordinate _____ mm
  3. Hole Dimensions (minimum) 11.75 mm

* 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).

+ 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

A. Isoexposure-Rate Limit Curves

1. For entire tube XC-26A
2. For tube face only XC-88
3. For anode bulb contact XC-70

B. X-Radiation Limit Curves
1. For entire tube XC-25
2. For tube face only XC-87
3. For anode bulb contact XC-69

or

C. Maximum x-radiation at Typical Anode Voltage and Beam Current of ____ mA _____mR/h

VI. **Typical Design Values**
Unless otherwise specified, values are for each gun and voltage values are positive with respect to (cathode or grid no. 1).

A. Heater Voltage 6.3 V
B. Heater Current 700 mA
C. Anode Voltage
1. Absolute-maximum value 33 kV
2. Typical value 30 kV

D. Grid No. 3 (focusing electrode)
Voltage in percent of typical anode voltage
22 to 26 %

E. Grid Nos. ___ (other high voltage grids) Voltage in percent of typical anode voltage _____to _____ %

F. Control voltages for visual cutoff of focused spot at typical anode voltage
1. At cathode voltage of 100V __ to __ V

2. At cathode voltage of 150V 420 to 820 V

3. At cathode voltage of 200V __ to __ V

-or-

1. At grid #1 voltage of -100V __ to __ V

2. At grid #1 voltage at -150V __ to __ V

3. At grid #1 voltage of -200V __ to __ V

G. Maximum ratio of grid #2 voltages, highest gun to lowest gun for spot cutoff at grid #1 of -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 cutoff) 1.25

H. 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)

1. Red/blue
A. Minimum 1.49
B. Typical 2.04
C. Maximum 2.52

2. Red/green
A. Minimum 1.16
B. Typical 1.56
C. Maximum 1.95

3. Blue/green
A. Minimum 0.57
B. Typical 0.76
C. Maximum 0.96

VII. **Drawings**

A. Tube outline with essential dimensions, tolerances and pin connections.

VIII **Integral Tube/Yoke Combinations**

A. Deflection Yoke Specifications
1. Horizontal Coils
A. Connection (series or parallel) ____
B. Inductance _____ mH
C. Resistance _____ Ω

2. Vertical Coils
A. Connection (series or parallel) _____
B. Inductance _____ mH
C. Resistance _____ Ω

B. Other Neck Components (specify)

C. Drawings
1. Assembly outline must meet same requirements as listed in items III and IV with the addition of clearance dimensions for the integral components.

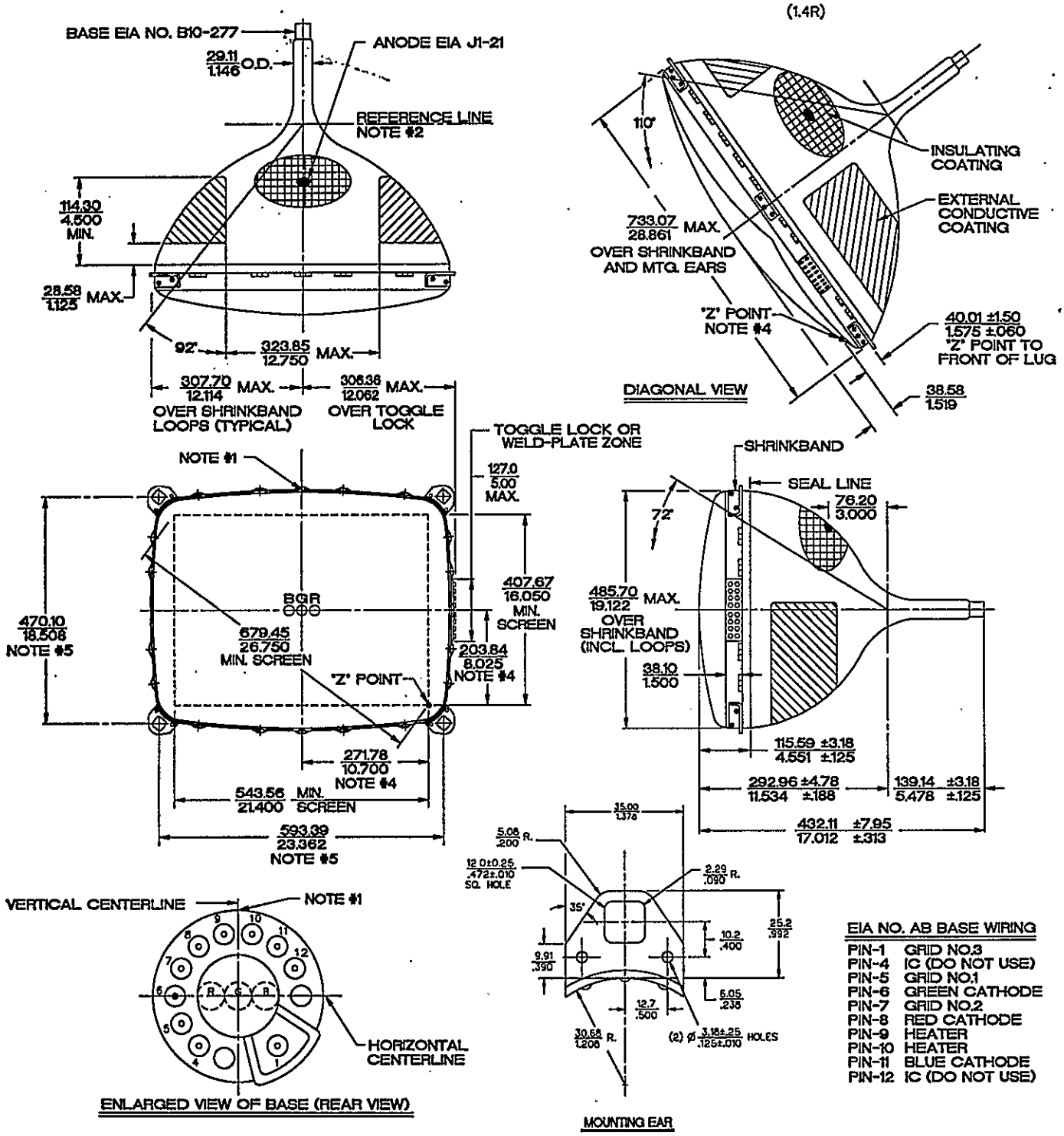
2. Yoke connector designation or manufacturers' number _____.

3. Pin connections to yoke connector with signal polarity indicated.

4. Minimum lead length, if any, for yoke connection (show location on outline).

A68AHE00X

(1.4R)



EIA NO. AB BASE WIRING	
PIN-1	GRID NO.3
PIN-4	IC (DO NOT USE)
PIN-5	GRID NO.1
PIN-6	GREEN CATHODE
PIN-7	GRID NO.2
PIN-8	RED CATHODE
PIN-9	HEATER
PIN-10	HEATER
PIN-11	BLUE CATHODE
PIN-12	IC (DO NOT USE)

NOTES:

1. TOP OF TUBE IN NORMAL OPERATING POSITION.
2. REFERENCE LINE IS DETERMINED BY PLANE "C-C" OF EIA GAUGE G-195 WHEN GAUGE IS SEATED AGAINST FUNNEL.
3. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE INCH DIMENSION (25.4 MM = 1 INCH EXACTLY). DIMENSIONS ARE IN MM / IN..
4. "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.
5. THE TOLERANCE OF THE MOUNTING LUG HOLES WILL ACCOMMODATE MOUNTING SCREWS UP TO 7.60/.299 DIAMETER WHEN POSITIONED ON TRUE HOLE CENTERS.