

ELECTRONIC TUBE REFERENCE

15AEP22

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

P22 cathode-ray picture tube documented by RCA; the available extracted source data is limited, but the P22 designation identifies its multicolor picture-screen family.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Cathode Ray
No fixed ratings recorded.
CRT-specific ratings, operating conditions, capacitances, focus/deflection, cutoff, optical, and screen data are retained in section parameters.

15AEP22 Color Picture Tube

The **15AEP22** is a cathode-ray color picture tube designed for television receiver applications. It is engineered to be used in conjunction with the technical data for the **15NP22** color picture tube. For all general characteristics, maximum and minimum ratings, equipment design ranges, limiting circuit values, and terminal connections, the 15AEP22 is identical to the 15NP22, except for the specific mechanical dimensions, mounting configurations, and physical tolerances detailed below.

Mechanical Dimensions and Weight

The physical envelope of the 15AEP22 is defined by precise mechanical tolerances to ensure proper fitment within television chassis. The primary dimensions of the tube, excluding its mounting lugs, are:

- **Diagonal:** 14.910 ± 0.093 inches (378.21 ± 2.36 mm)
- **Greatest Width:** 12.949 ± 0.093 inches (328.90 ± 2.36 mm)
- **Greatest Height (including tension-band clip):** 10.613 ± 0.100 inches (269.57 ± 2.54 mm)
- **Weight (Approximate):** 11.3 lb (5.1 kg)

The outer diameter (O.D.) of the tension band along the diagonal is specified as 14.910 ± 0.093 inches (378.71 ± 2.36 mm). The outer diameter of the tension band and crimp seal along the vertical axis is 10.613 ± 0.100 inches (269.57 ± 2.54 mm).

Mounting Lug Configuration and Reference Geometry

The 15AEP22 features an integrated mounting lug system designed to secure the tube within a receiver cabinet. The placement and tolerances of these lugs are referenced to a specific geometric point on the faceplate:

- **Reference Point "Z":** This reference point is located on the outside surface of the faceplate, positioned on the screen diagonal at a point 0.094 inches (2.39 mm) beyond the minimum screen boundary. All mounting lug locations are established relative to this point.
- **Mounting Lug Dimensions:**
 - **Lug Thickness:** 0.125 inches (3.18 mm)
 - **Hole Diameter:** 0.313 inches (7.95 mm)
 - **Lug Radius:** 0.500 inches (12.70 mm)
 - **Lug Width:** 1.000 inch (25.40 mm)
 - **Lug Offset/Depth Dimensions:** 0.926 inches (23.52 mm), 0.544 inches (13.82 mm), and 0.625 inches (15.88 mm) define the structural profile and depth of the mounting ears.
 - **Tension Band Depth:** 1.274 ± 0.100 inches (32.36 ± 2.54 mm) from the front reference plane.

Mounting Hole Spacing and Tolerances

The mounting holes are arranged in a rectangular pattern around the faceplate:

- **Horizontal Spacing:** The distance between the left and right mounting hole centers is 12.890 inches (327.41 mm).
- **Vertical Spacing:** The distance between the upper and lower mounting hole centers is 9.150 inches (232.41 mm).
- **Symmetry:** The mounting holes are symmetrical about the tube's centerlines. The vertical distance from the horizontal centerline to the mounting hole centers is 4.575 ± 0.125 inches (116.21 ± 3.18 mm).
- **Maximum Lug Span:** The maximum width across the mounting lugs is 13.948 inches (354.28 mm), and the maximum height across the lugs is 10.264 inches (260.71 mm).
- **Screw Compatibility:** The tolerances of the mounting lug holes are designed to accommodate mounting screws up to 0.250 inches (6.35 mm) in diameter when the screws are positioned on the true hole centers.

Faceplate and Electron Gun Orientation

The front profile of the tube is characterized by specific faceplate dimensions and internal component alignment:

- **Faceplate Half-Width:** The distance from the vertical centerline to the edge of the faceplate is 5.604 inches (142.34 mm).
- **Faceplate Half-Height:** The distance from the horizontal centerline to the edge of the faceplate is 3.977 inches (101.02 mm).
- **Tension Band Clearance:** The distance from the horizontal centerline to the outer edge of the tension band is 5.206 inches (132.23 mm).
- **Blue Gun Alignment:** The internal electron gun assembly is oriented such that the Blue Gun is positioned at the top of the structure, aligned directly with the vertical centerline of the tube. This orientation is critical for establishing correct color registration and convergence.
- **Tension-Band Clip Clearance:** The envelope design includes dedicated clearance areas to accommodate the tension-band clip and crimp seal without interfering with the mounting structure.

Technical Summary

The **15AEP22** is a color picture tube that shares its electrical, rating, and terminal configurations with the **15NP22**, but features a distinct mechanical outline and mounting lug design. With a diagonal dimension of 14.910 inches (378.21 mm) and an approximate weight of 11.3 lb (5.1 kg), the tube utilizes a tension-band design with four integrated mounting lugs. These lugs are positioned relative to a faceplate reference point "Z" and are spaced to accept mounting hardware up to 0.250 inches (6.35 mm) in diameter. The internal gun structure features a top-aligned Blue Gun for standardized convergence and deflection alignment.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

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Section 1 · Cathode Ray

CHARACTERISTICS

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
on the screen diagonal at a point .094 in (2.39 mm) beyond the min	2.39	Published CRT datasheet value; multiple numbers on one source row represent its separate limits or operating conditions.

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