

ELECTRONIC TUBE REFERENCE

150AVP

Specialized - Photo Tube electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PHOTOEMISSIVEDETECTOR

Amperex ten-stage photomultiplier with at least a 32 mm useful photocathode diameter for sensitive optical measurement.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION1	PhotoemissiveDetector
No fixed ratings recorded.	
Amperex photomultiplier tube with 32 mm minimum useful photocathode diameter and 10 stages.	

150AVP Photomultiplier Tube

The **150AVP** is a ten-stage photomultiplier tube designed for light detection and amplification applications. It features a duodecal base and a useful photocathode diameter of at least 32 mm. The device is closely associated with the XP1010 designation.

Design and Construction

The 150AVP is constructed with a 10-stage multiplier structure to achieve high gain. It utilizes a standard duodecal base for electrical connections. The physical design provides a minimum useful photocathode diameter of 32 mm, ensuring an adequate active area for intercepting incident luminous flux.

Feature	Specification
Number of Stages	10
Base Type	Duodecal
Minimum Useful Photocathode Diameter	32 mm

Photoelectric and Sensitivity Characteristics

The photocathode of the 150AVP is sensitive to light in the ultraviolet and visible spectrum, exhibiting a maximum spectral response at 4200 Angstroms.

The tube's sensitivity parameters are characterized at both the photocathode and the anode:

- **Photocathode Sensitivity:** The minimum photocathode sensitivity is 25 microamperes per lumen (25 $\mu\text{A/lm}$), with an average value of 50 $\mu\text{A/lm}$.
- **Anode Sensitivity:** At a supply voltage of 1800 V, the minimum anode sensitivity is 60 A/lm, while the average anode sensitivity reaches 300 A/lm.

Electrical Ratings and Linearity

The 150AVP operates under specified electrical limits and conditions to ensure reliable performance and prevent damage to the anode structure:

- **Supply Voltage:** The nominal supply voltage for the specified sensitivity ratings is 1800 V.
- **Maximum Direct Dark Current:** The maximum direct dark current is rated at 50 nA when measured at an anode sensitivity of 60 A/lm.
- **Maximum Anode Dissipation:** The anode is rated for a maximum power dissipation of 0.5 W.

Linearity Limits

The linearity of the ratio between the incident luminous flux and the resulting anode current depends on the chosen voltage distribution network. The tube supports two distinct operating configurations:

- **Voltage Distribution A:** The luminous flux to anode current ratio remains linear up to an anode current of 30 mA.
- **Voltage Distribution B:** The linearity extends up to an anode current of 100 mA.

These distribution-specific limits require reference to the corresponding instructions for use to configure the dynode voltage divider correctly.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · PhotoemissiveDetector

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Minimum useful photocathode diameter	32 mm	—
Number of stages	10 count	—
Recommended supply voltage	1800 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum spectral response wavelength	4200 angstrom	—
Minimum photocathode sensitivity	25 uA/lm	—
Average photocathode sensitivity	50 uA/lm	—
Minimum anode sensitivity	60 A/lm	—

TUBE TINKER

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and their source documents.

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