DESCRIPTION

The GL-931-A is an eleven-electrode vacuum phototube unique in that the photo-current produced at the cathode is multiplied many times by secondary emission occurring at successive dynodes within the tube. This tube can multiply feeble currents produced by weak illuminations as much as 200,000 times. This feature combined with its high sensitivity, low-noise level, low-dark current, and freedom from distortion renders the GL-931-A very useful for relays and in applications involving low-light levels.

TECHNICAL INFORMATION

These data are for reference only. For design information refer to specifications.

GENERAL CHARACTERISTICS

Number of electrodes .......................... 11

Electrical
Spectral response .................................. S-4
Interelectode capacitances
Anode to dynode No. 9 ........................... 3.5 micromicrofarads
Anode to all other electrodes ........................ 6.5 micromicrofarads
Wavelength of maximum response ................. 3750 angstroms
TECHNICAL INFORMATION (CONT'D)

Mechanical

Cathode window area ........................................... 0.25 square inch
Seated height to center of useful cathode area .................... 1 3/8 + 3/16 inches
Maximum over-all height ........................................ 3 3/8 inches
Maximum seated height ......................................... 3 3/8 inches
Maximum diameter ............................................... 1 7/8 inches
Base ..................................................................... small-shell submagnal 11-pin

Mounting position .................................................. any
Net weight, approx ................................................. 1 ounce
Shipping weight, approx ........................................ 3 pounds

MAXIMUM RATINGS

Anode voltage, d-c or peak a-c* .................................. 1250 volts
Cathode current density ......................................... 230 milliamperes per square inch

Ambient temperature ............................................ 50 centigrade
Voltage between Dynode No. 9 and Anode ......................... 250 volts
Anode current ..................................................... 2.5 milliamperes
Anode dissipation ............................................... 0.5 watt

TYPICAL OPERATION

Voltage per stage .................................................. 75 100 volts
Luminous sensitivity† .............................................. 0.3 2.0 amperes per lumen

Current amplifications‡ .......................................... 30,000 200,000
Sensitivity at 3750 angstroms ................................... 270 1800 microamperes per microwatts

* Referred to cathode.
† On basis of lighted cathode area approximately 3 mm in diameter.
‡ On basis of lighted cathode area approximately 3 mm in diameter.

GL-931-A
AVERAGE ANODE CHARACTERISTICS

VOLTS/STAGE = 100

PLATE MILLIAMPERES

0.00025

LIGHT FLUX - LUMENS = 0.00075

0.00050

0.00100

0.00125

0 80 160 240 320 400

VOLTS BETWEEN ANODE & DYNO NOE NO. 9

K-8277045

10-14-44
S-4 PHOTOSURFACE
SPECTRAL SENSITIVITY CHARACTERISTIC
FOR EQUAL VALUES OF RADIANT FLUX
AT ALL WAVELENGTHS

RELATIVE SENSITIVITY - ARBITRARY UNITS

WAVELENGTH - ANGSTROM UNITS

BOTTOM VIEW OF BASE

PIN CONNECTION
1-9 DYNODE
10 ANODE
11 CATHODE

OUTLINE
GL-931-A MULTIPLIER PHOTOTUBE