

Photomultiplier Tubes^a

9-STAGE, SIDE-ON TYPES

S-4 RESPONSE

CONTROLLED SENSITIVITY ABOVE WAVELENGTH OF 5800Å

The 4471 and 4472 are the same as the 931A except for the following items:

Characteristics Range Values:

With $E = 1000$ volts

	Min.	Typ.	Max.	
Sensitivity:				
Luminous, at 0 cps ^b	10	100	600	a/lm
"Red-to-White" Ratio:				
4471	5	—	—	%
4472	7	—	—	%

^a Alternate designation for Multiplier Phototube.

^b Under the following conditions: The light source is a tungsten-filament lamp having a lime-glass envelope. It is operated at a color temperature of 2870°K and a light input of 10 microlumens is used.

OPERATING CONSIDERATIONS

The luminous-sensitivity ratings of the 4471 and 4472 are higher, and their sensitivities above the wavelength of 5800 angstroms are controlled. This control is important in applications where a high level of sensitivity in the red region of the spectral-response characteristic is required. The degree of this controlled sensitivity in the red region is specified by a "red-to-white" ratio of anode currents. Anode current is measured first using a tungsten-lamp source, and then measured with a red filter interposed between the light source and the phototube. The "red-to-white" ratio is greater than 5% for the 4471, and greater than 7% for the 4472.

The anode current comprising the "white" portion of this ratio is measured with a light input of 10 microlumens. The light source is a tungsten-filament lamp having a lime-glass envelope. It is operated at a color temperature of 2870°K.

The anode current comprising the "red" portion of the ratio is measured under conditions identical with the "white" measurement except that the light input of 10 microlumens is transmitted through a red filter (Corning C.S. No. 2-112—manufactured by the Corning Glass Works, Corning, N.Y., or equivalent) which has the following characteristics: the transmittance of all wavelengths from 3000 to 5790 angstroms is less than 0.5%; the 37% transmittance point lies between 6030 and 6070 angstroms; the transmittance from 6400 to 7000 angstroms is greater than 80%; and the difference between the wavelengths where transmittance is 15% and 60% is not greater than 150 angstroms.

