

MULTIPLIER PHOTOTUBE

10-STAGE, HEAD-ON TYPE WITH 1-11/16" SEMITRANSPARENT CATHODE AND S-11 RESPONSE

#### DATA

1	= 11111					
	General:					
	Spectral Response					
1	Spectral Response					
ļ						
	Cathode, Semitransparent: ShapeCircular					
	Window:					
	Area 2.2 sq. in.					
1	Minimum diameter					
	Index of refraction 1.51					
	Direct Interelectrode Capacitances (Approx.):					
1	Anode to dynode No.10 4.4 $\mu\mu$ f Anode to all other electrodes 7 $\mu\mu$ f					
ł	Anode to all other electrodes					
ı	Seated Length					
ı	Maximum Diameter	4				
	Mounting Position Any					
	Weight (Approx.)	4				
1	Bulb					
1	Base Medium-Shell Diheptal 14-Pin (JETEC No.B14-38),					
1	Non-hygroscopic					
	Basing Designation for BOTTOM VIEW 14AA	1				
Į	Pin 1 - Dynode No.1 (7) 8 Pin 10 - Dynode No.10					
ļ	Pin 2 - Dynode No. 2 Pin 11 - Anode Pin 3 - Dynode No. 3 (9) Pin 12 - Internal	Ì				
-	Time Dynode No.	Ì				
Ì	Pin 4 – Dynode No.4 (4) (1) Connection—	Ì				
-	Pin 5 - Dynode No.5  Pin 6 - Dynode No.6  Pin 13 - Focusing	Ì				
į	Pin 7 - Dynode No.7	ĺ				
	Pin 8 – Dynode No.8 DIRECTION OF LIGHT. Pin 14 – Cathode					
į	Pin 8 - Dynode No.8 Pin 9 - Dynode No.9  DIRECTION OF LIGHT: Pin 14 - Cathode INTO END OF BULB	ĺ				
ı	Maximum Ratings, Absolute Values:					
	ANODE-SUPPLY VOLTAGE (DC or Peak AC) 1250 max. volts					
	SUPPLY VOLTAGE BETWEEN DYNODE No.10					
-	AND ANODE (DC or Peak AC) 250 max. volts	4				
	DYNODE-No.1 SUPPLY VOLTAGE					
ļ	(DC or Peak AC)					
-	FOCUSING-ELECTRODE VOLTAGE					
	(DC or Peak AC)					
	AVERAGE ANODE CURRENT					
i	AMIDIENT FLIVILENATURE /J HAX. U					
	Averaged over any interval of 30 seconds maximum.					
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MOLIII		K IIIOIC	TODE	
Characteristics Range		-	=	
Under conditions wit divider providing 1/6 1/12 of E for each so between dynode No.10	of E	between cath ling dynode s	ode and dy	node No.1;
With E = 1000 volts (ex			d	
Focusing Electrode* con				ocket
-		Median		
Sensitivity:				
Radiant, at				
4400 angstroms	-	20000	-	$\mu$ amp/ $\mu$ watt
Cathode radiant, at		0.040		,
4400 angstroms Luminous: <b>↓</b>	_	0.040		$\mu$ amp/ $\mu$ watt
At 0 cps	10	25		amp/lumen
With dynode No. 10	10	25		amp/ ramen
as output elec-				
trode**	_	15	_	amp/lumen
Cathode luminous:				
With tungsten		50		/1
light source▲	40	50	<del></del>	$\mu$ amp/lumen
With blue light source⊕	0 04	_	_	$\mu$ amp
Current Amplification.		500000	_	μαπρ
Equivalent Anode-Dark-		30000		
Current Input⊕■	_	$8.5 \times 10^{-10}$	$2 \times 10^{-9}$	lumen
Equivalent Noise Input*	_	$7 \times 10^{-12}$	_	lumen
Dark Current to Any				
Electrode Except			0.75	
Anode (At 25°C)		_	0.75	$\mu$ amp
With $E = 750$ volts (exc				
Focusing Electrode* con				ocret
	Min.	Median	Max.	
Sensitivity:				
Radiant, at		2000		
4400 angstroms Cathode radiant, at		2000	_	μamp/μwatt
4400 angstroms		0.040	_	μamp/μwatt
Luminous:		0.010		μαπρημιίαει
At O cps	_	2.5	_	amp/lumen
Cathode Tuminous:				
With tungsten				. 3
light source▲	40	50	_	μamp/lumen
With blue light	0 04			113mn
source <sup>⊕</sup> ♥ Current Amplification.	0.04	50000	_	$\mu$ amp
i.	_	50000	-	
For conditions where the ated at a color temperature is used. The load resist	ight s ire of or has	ource is a tung 2870°K. A light a value of 0.0	gsten-filam ; input of )1 megohm.	ent lamp oper— 10 microlumens
*, **, ♠, ⊕, ♠, ♣, ♣, ★: See next	pæge.		→ India	cates a change.



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- In general, the focusing electrode is connected to dynode No.1 at the socket and operated at the same fixed potential as dynode No.1. However, in applications critical as to magnitude, uniformity, or speed of the response, the focusing electrode may be connected to the adjustable arm of a potentiometer between cathode and dynode No.1 in the voltage divider, and operated at an optimum potential within a range of 10 to 60 per cent of the dynode—No.1 potential.
- \*\* An output current of opposite polarity to that obtained at the anode may be provided by using dynode No.10 as the output electrode. With this arrangement, the load is connected in the dynode—No.10 circuit and the anode serves only as collector.
- ▲ For conditions the same as shown under (♠) except that the value of light flux is 0.01 lumen and 200 volts are applied between cathode and all other electrodes connected together as anode.
- Under the following conditions: Light incident on the cathode is transmitted through a blue filter (Corning, Glass Code No.5113 polished to 1/2 stock thickness) from a tungsten-filament lamp operated at a color temperature of 2870°K. The value of light flux on the filter is 0.01 lumen. The load resistor has a value of 0.01 megohm, and 200 volts are applied between cathode and all other electrodes connected together as anode.
- For spectral characteristic of this source, see sheet SPECTRAL CHARACTERISTIC OF 2870°K LIGHT SOURCE AND SPECTRAL CHARACTERISTIC OF LIGHT FROM 2870°K SOURCE AFTER PASSING THROUGH INDICATED BLUE FILTER at front of this section.
- Measured at a tube temperature of 25°C and with the supply voltage (E) adjusted to give a luminous sensitivity of 20 amperes per lumen. Dark current caused by thermionic emission and ion feedback may be reduced by the use of a refrigerant.
- For maximum signal-to-noise ratio, operation with a supply voltage (E) below 1000 volts is recommended.
- ★ Under the following conditions: Supply voltage (E) is 1000 volts, 25°C tube temperature, ac-amplifier bandwidth of 1 cycle per second, tungsten light source of 2870°K interrupted at a low audio frequency to produce incident radiation pulses alternating between zero and the value stated. The "on" period of the pulse is equal to the "off" period. The output current is measured through a filter which passes only the fundamental frequency of the pulses.

#### OPERATING CONSIDERATIONS

The operating stability of the 6655 is dependent on the magnitude of the anode current and its duration. When the 6655 is operated at high values of anode current, a drop in sensitivity (sometimes called fatigue) may be expected. The extent of the drop below the tabulated sensitivity values depends on the severity of the operating conditions. After a period of idleness, the 6655 usually recovers a substantial percentage of such loss in sensitivity.

The use of an average anode current well below the maximum rated value of 0.75 milliampere is recommended when stability of operation is important. When maximum stability is required, the anode current should not exceed 100 microamperes.

Electrostatic and/or magnetic shielding of the 6655 may be necessary.

SPECTRAL-SENSITIVITY CHARACTERISTIC of Phototube having S-II Response is shown at the front of this Section

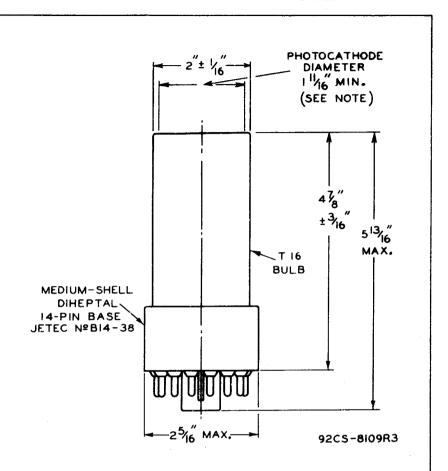
Indicates a change.

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## MULTIPLIER PHOTOTUBE



NOTE: WITHIN MINIMUM DIAMETER, DEVIATION FROM FLAT-NESS WILL NOT EXCEED 0.010" FROM PEAK TO VALLEY.