

# DUMONT

## MULTIPLIER PHOTOTUBE

### TYPE 7064

The DuMont Type 7064 is a high gain, 10-stage, 2 inch diameter multiplier phototube with a flat end-window type photocathode having an S-11 spectral response and an average cathode luminous sensitivity of 60 microamperes per lumen.

The Type 7064 features a focusing shield that can be adjusted for optimum collection of photoelectrons. This is accomplished by varying the potential on the shield between photocathode and dynode 1 potentials. The 7064 is applicable in the fields of nuclear physics, medicine, biology, astronomy, and in industrial and scientific applications such as flying spot scanners, nuclear radiation detection and in the detection of very low light levels.

### GENERAL CHARACTERISTICS

<u>Electrical Data</u>	<u>Min.</u>	<u>Avg.</u>	<u>Max.</u>	<u>Units</u>
Spectral response		S-11		
Cathode luminous sensitivity at 210 volts, 0 cycles between cathode and all other electrodes	40	60		$\mu\text{A/lumen}$
Anode luminous sensitivity 90 volts/stage, 0 cycles	10	45		$\text{A/lumen}$
Cathode sensitivity at maximum response at 210 volts between cathode and all other electrodes		.056		$\mu\text{A}/\mu\text{W}$
Anode dark current at 90 volts/stage (25°C)			.05	$\mu\text{A}$
Current Amplification at 90 volts/stage		750,000		
Interelectrode capacitances anode to all other electrodes		3.3		$\mu\text{f}$
anode to last dynode		1.3		$\mu\text{f}$
Wavelength at maximum response		4400 $\pm$ 500		Angstroms
Wavelength at 10% of maximum response on long wavelength side		6125 $\pm$ 275		Angstroms
Wavelength at 10% of maximum response on short wavelength side		3250 $\pm$ 250		Angstroms
<u>Mechanical Data</u>				
Window dimensions, minimum		1 1/2		In. Dia.
Seated height to center of window		4 7/8 $\pm$ 3/16		In.
Tube diameter		2 $\pm$ 1/16		In.
Overall Length		5 5/8 $\pm$ 3/16		In.

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<u>Mechanical Data</u> (Cont'd)	<u>Avg.</u>	<u>Max.</u>	<u>Units</u>
Base-Medium diheptal 14 Pin (B14-38)			
Mounting Position	any		
Window index of refraction	1.5		

MAXIMUM RATINGS

Peak cathode current (Note 1)		20	$\mu$ A
Average anode current (Note 2)		.75	mA
Peak anode current		7.5	mA
Average anode dissipation (Note 2)		.075	W
Peak anode dissipation		1.125	W
Supply voltage between anode and cathode (DC or peak AC)		1300	Volts
Supply voltage between last dynode and anode (DC or peak AC)		150	Volts
Supply voltage between cathode and 1st dynode (DC or peak AC)		300	Volts
Focusing electrode voltage (Note 3)			
Ambient Temperature		75	$^{\circ}$ C

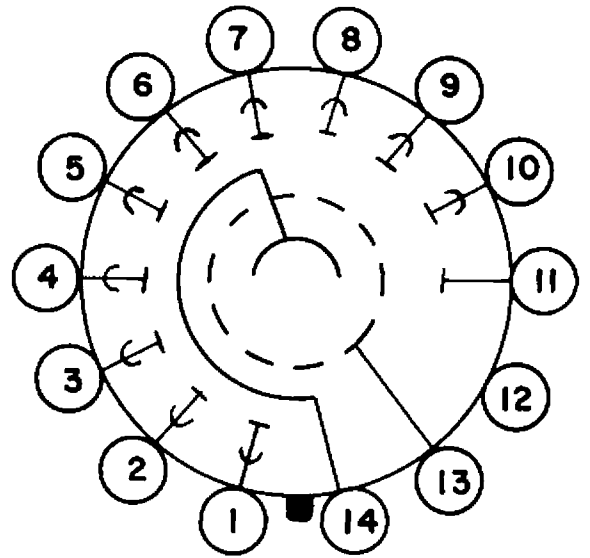
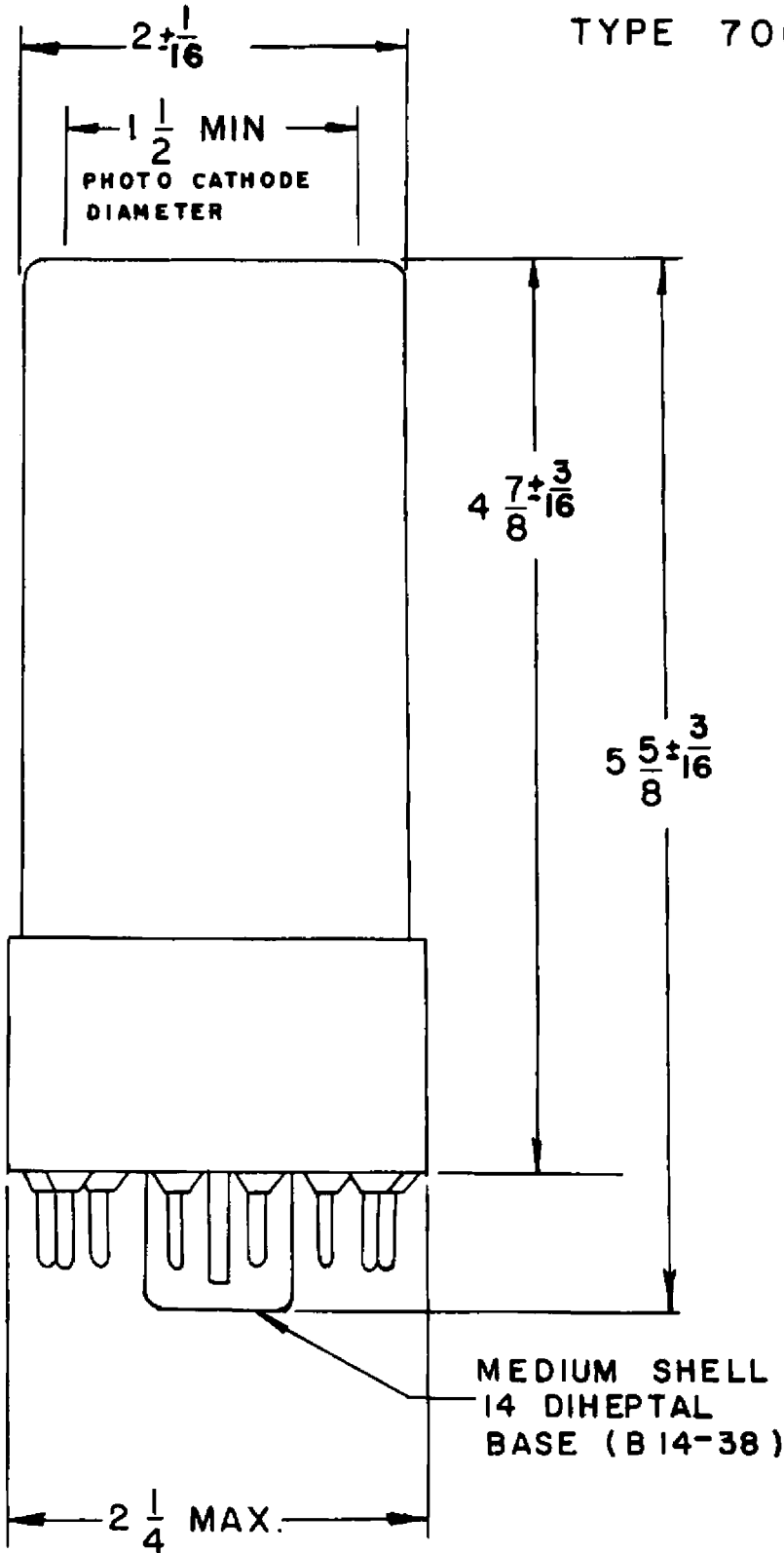
NOTES

1. The cathode current given here is that current at which the response of the cathode current ceases to be a linear function of the light intensity because of cathode resistance. In general, the cathode current must be kept well below this value in order to satisfy the maximum ratings on the anode current.
2. Averaged over a 30 second interval maximum.
3. The focusing electrode (shield) voltage should be adjusted between cathode and 1st dynode potentials for optimum photoelectron collection efficiency. This will vary from tube to tube but will usually be several volts more positive than the cathode.
4. Supply voltage between cathode and 1st dynode should be two times the supply voltage between succeeding dynodes.

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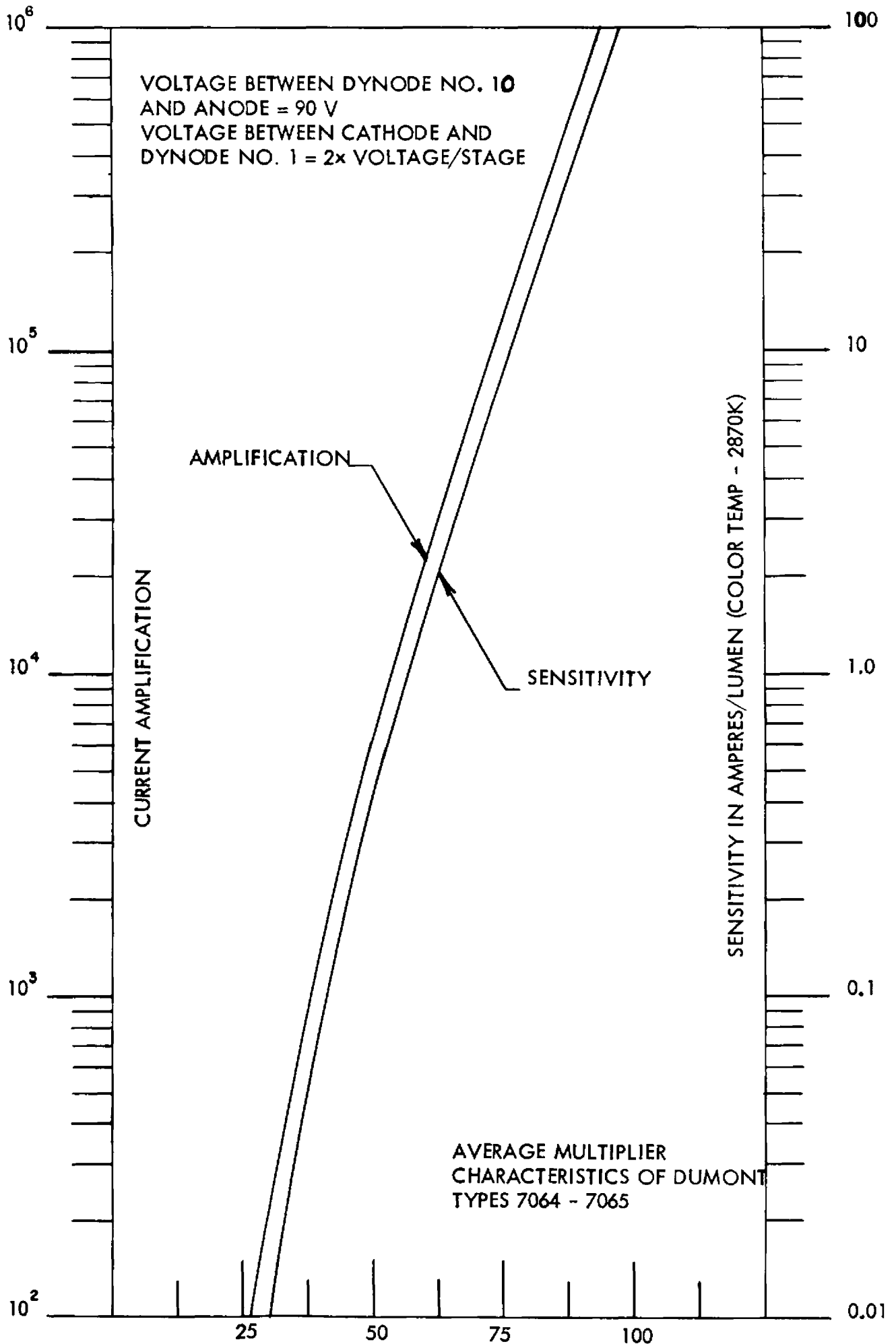
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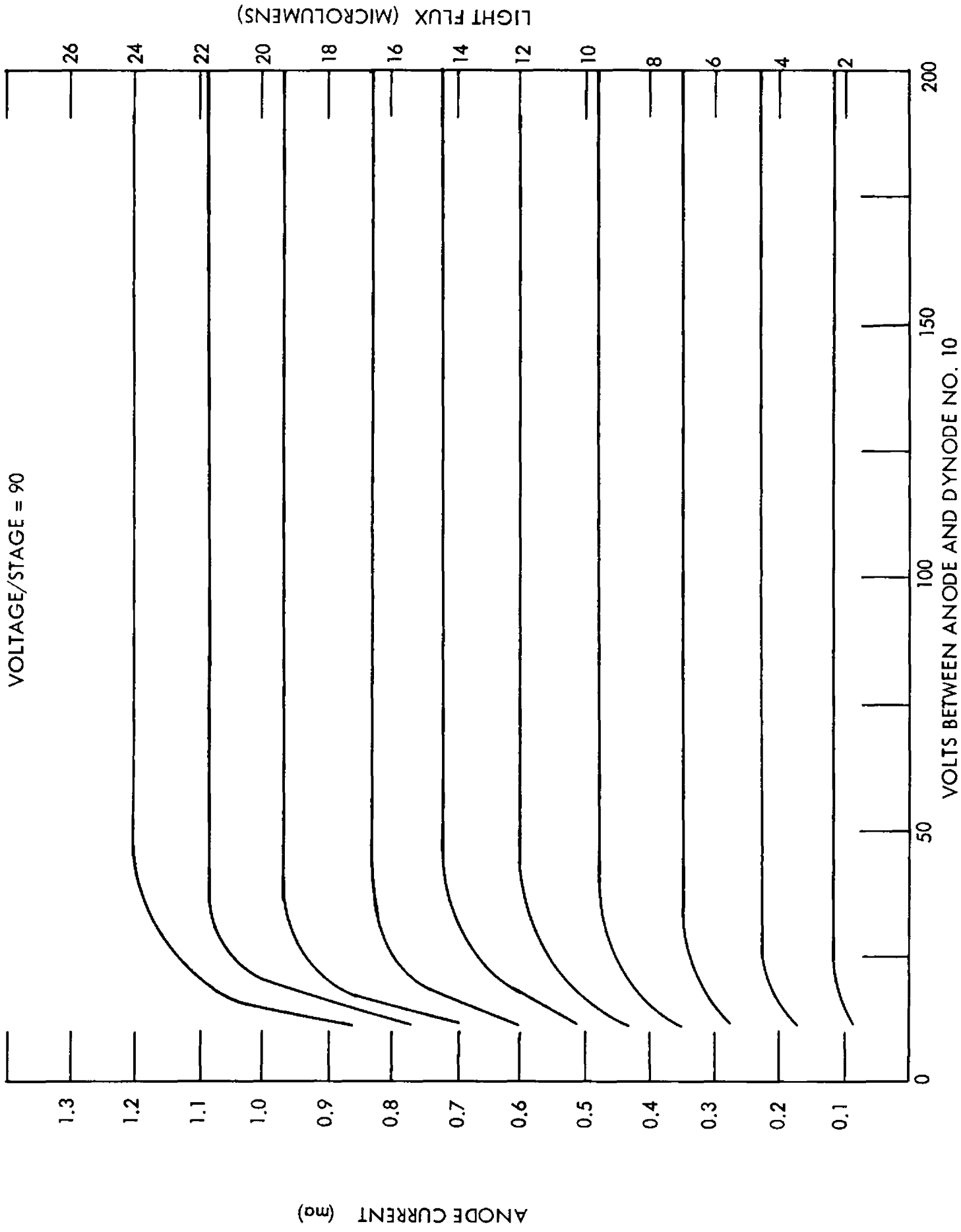
BOTTOM VIEW

PIN NO	ELEMENT
1	DYNODE NO 1
2	DYNODE NO 2
3	DYNODE NO 3
4	DYNODE NO 4
5	DYNODE NO 5
6	DYNODE NO 6
7	DYNODE NO 7
8	DYNODE NO 8
9	DYNODE NO 9
10	DYNODE NO 10
11	ANODE
12	INTERNAL CONNECTION
13	FOCUSING ELECTRODE (SHIELD)
14	CATHODE

NOTE: DIRECTION OF LIGHT INTO END OF BULB



AVERAGE ANODE CHARACTERISTICS OF DUMONT MULTIPLIER PHOTOTUBE TYPES 7064 - 7065



# SPECTRAL SENSITIVITY CHARACTERISTICS OF S-II RESPONSE

