

DU MONT

MULTIPLIER PHOTOTUBE

TYPE 6911

The Du Mont Type 6911 is a 10-stage, flat end window, multiplier phototube with an infrared sensitive photocathode having an average luminous sensitivity of 18 microamperes per lumen. The dark current of the 6911 can be reduced considerably by applying dry ice or liquid air to the tube.

The Du Mont Type 6911 is useful in infrared spectroscopy, ranging applications, temperature analysis plus numerous other industrial and scientific applications.

GENERAL CHARACTERISTICS

<u>Electrical Data</u>	<u>Min.</u>	<u>Avg.</u>	<u>Max.</u>	<u>Units</u>
Spectral response	Infrared			
Cathode luminous sensitivity at 210 volts, 0 cycles between cathode and all other electrodes	14	18		$\mu\text{A/lumen}$
Anode luminous sensitivity 105 volts/stage, 0 cycles	3	9		A/lumen
Cathode sensitivity at maximum response at 210 volts between cathode and all other electrodes		.0016		$\mu\text{A}/\mu\text{W}$
Anode dark current at 105 volts/stage (25°C)			15	μA
IR Sensitivity (Note 1)		10		%
Current Amplification at 105 volts/stage		500,000		
Interelectrode capacitances				
anode to all other electrodes		3.3		μf
anode to last dynode		1.3		μf
Wavelength at maximum response		8000 $\pm$ 500		Angstroms

Mechanical Data

Window dimension, 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.
Base - Medium shell diheptal, 14 pin (B14-38)		
Mounting position	any	
Window index of refraction	1.5	

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MAXIMUM RATINGS

	<u>Max.</u>	<u>Units</u>
Peak cathode current (Note 2)	20	μ A
Average anode current (Note 3)	5	mA
Peak anode current	25	mA
Average anode dissipation (Note 3)	0.5	W
Peak anode dissipation	2.5	W
Supply voltage between anode and cathode (DC or peak AC)	1600	Volts
Supply voltage between last dynode and anode (DC or peak AC)	200	Volts
Supply voltage between cathode and 1st dynode (DC or peak AC)	400	Volts
Focusing electrode voltage (Note 4)	75	$^{\circ}$ C
Ambient Temperature		

NOTES

1. The IR response is measured in the following manner:
A tungsten filament lamp operating at 2870 K is used as a light source. The output of the tube is measured using an infrared filter in conjunction with the light source and another reading is obtained without the IR filter. The ratio of the reading with the filter to the reading without the filter $\times 100$ is the percentage IR response. A Corning Filter Type No. 2540, Form Melt 1613 and 2.61 mm thickness is employed as an infrared filter.
2. 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.
3. Averaged over a 30 second interval maximum.
4. 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.

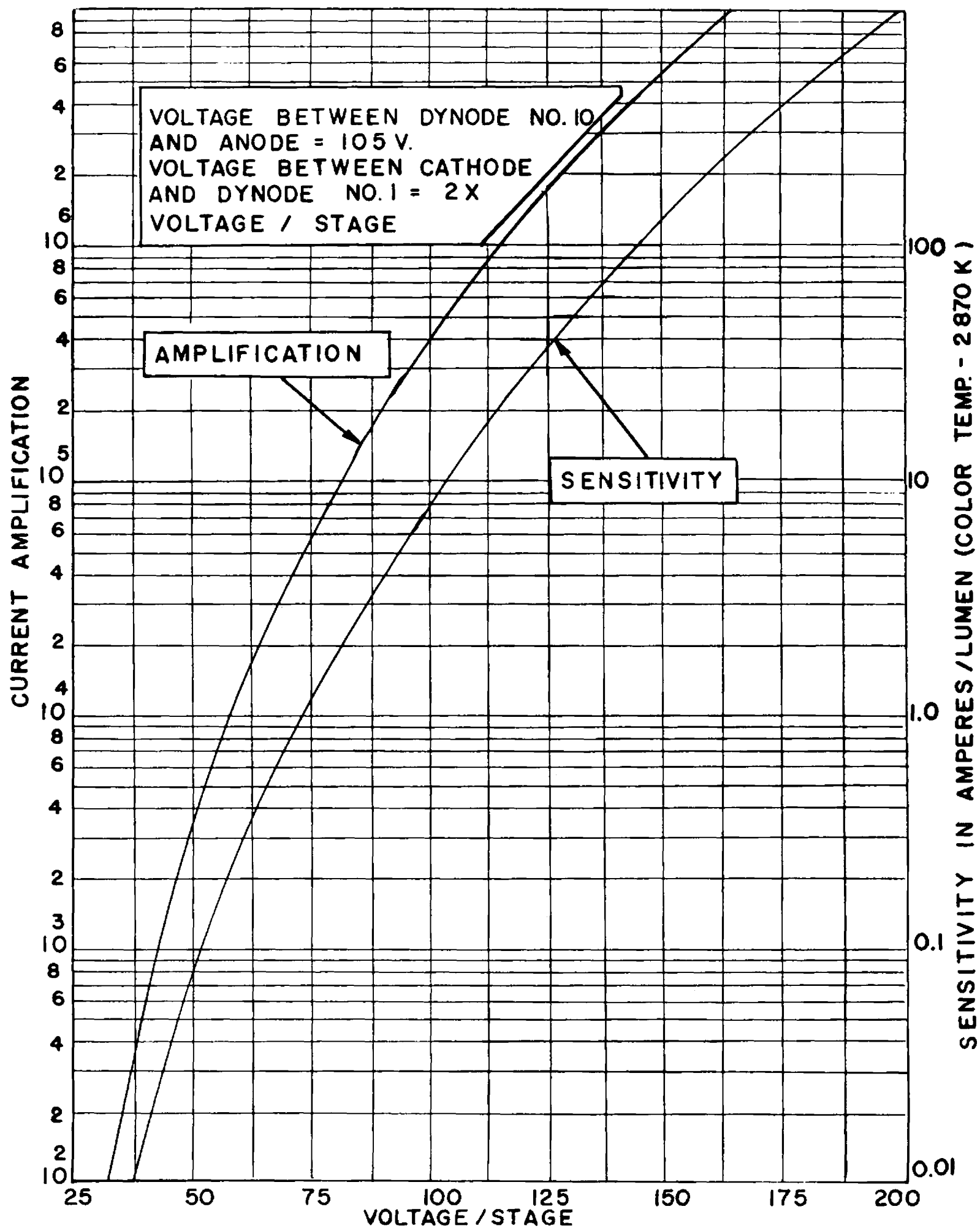
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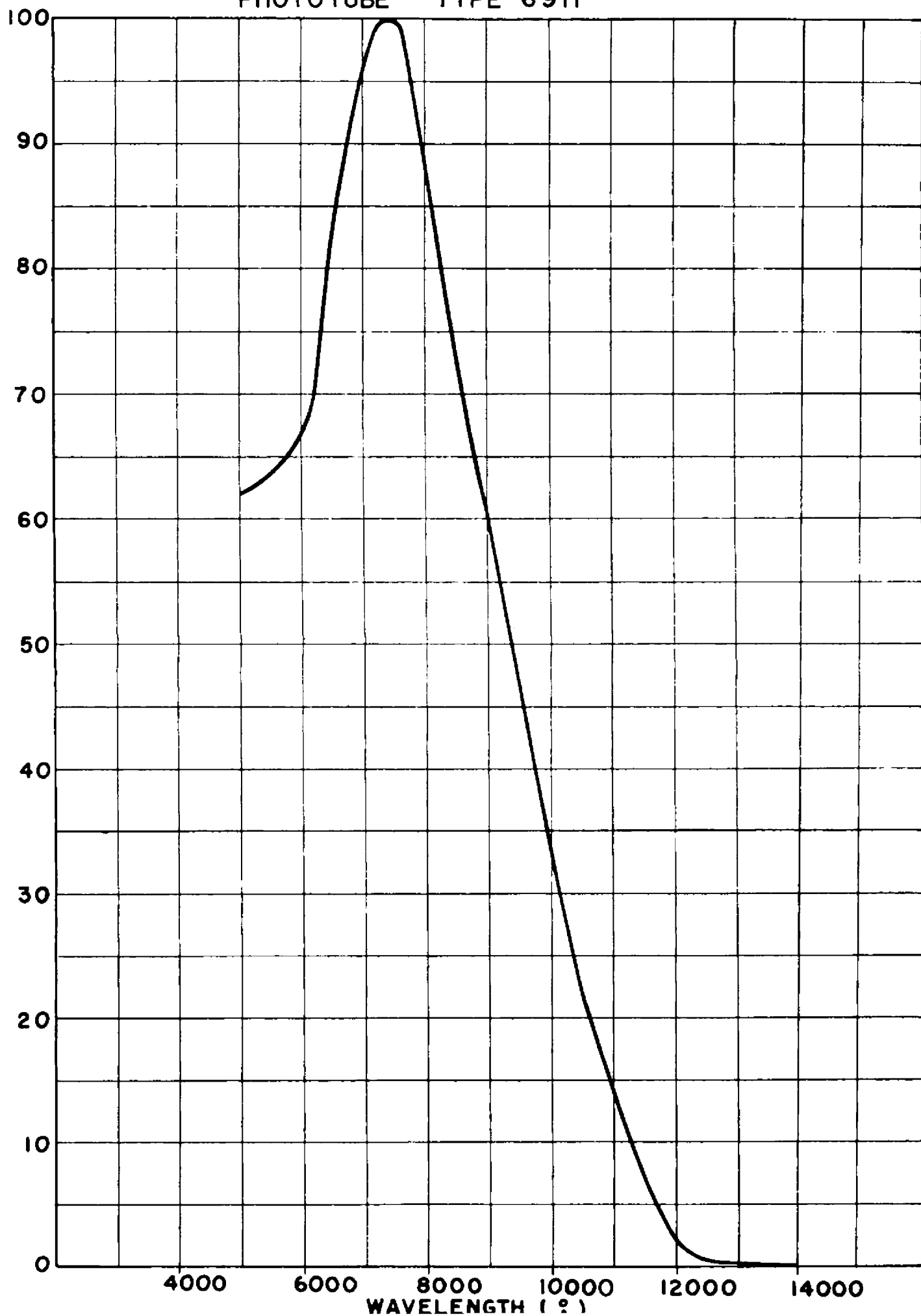
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AVERAGE MULTIPLIER CHARACTERISTICS DUMONT TYPE 6911

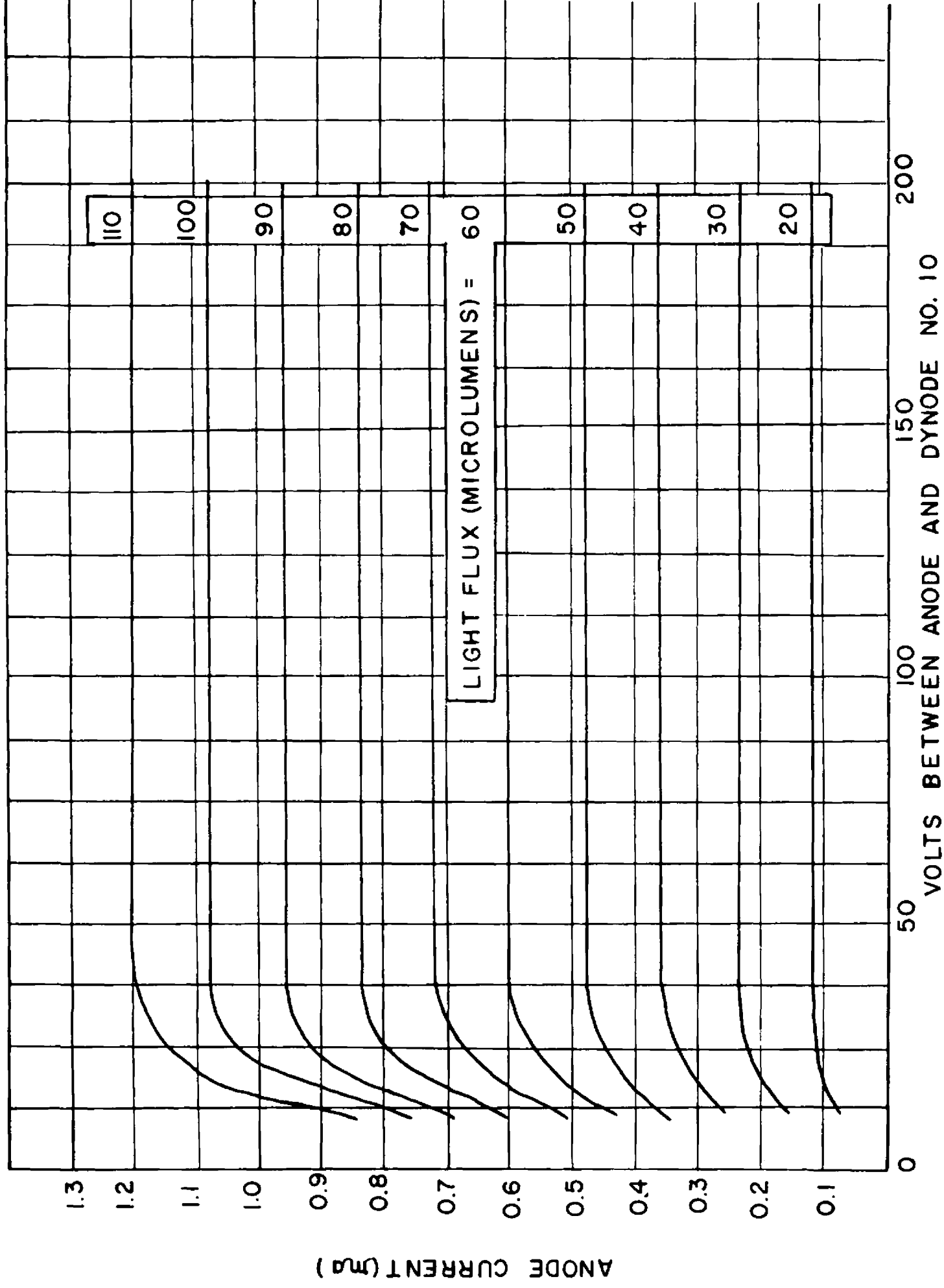


SPECTRAL RESPONSE-TYPICAL DUMONT INFRARED MULTIPLIER
PHOTOTUBE TYPE 6911

RELATIVE RESPONSE - ARBITRARY UNITS

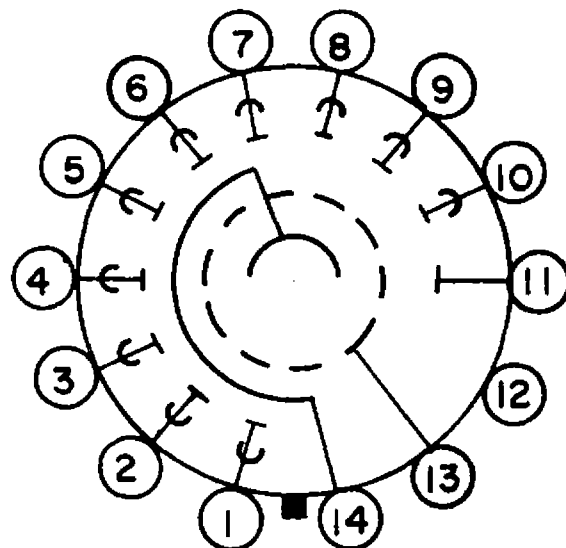
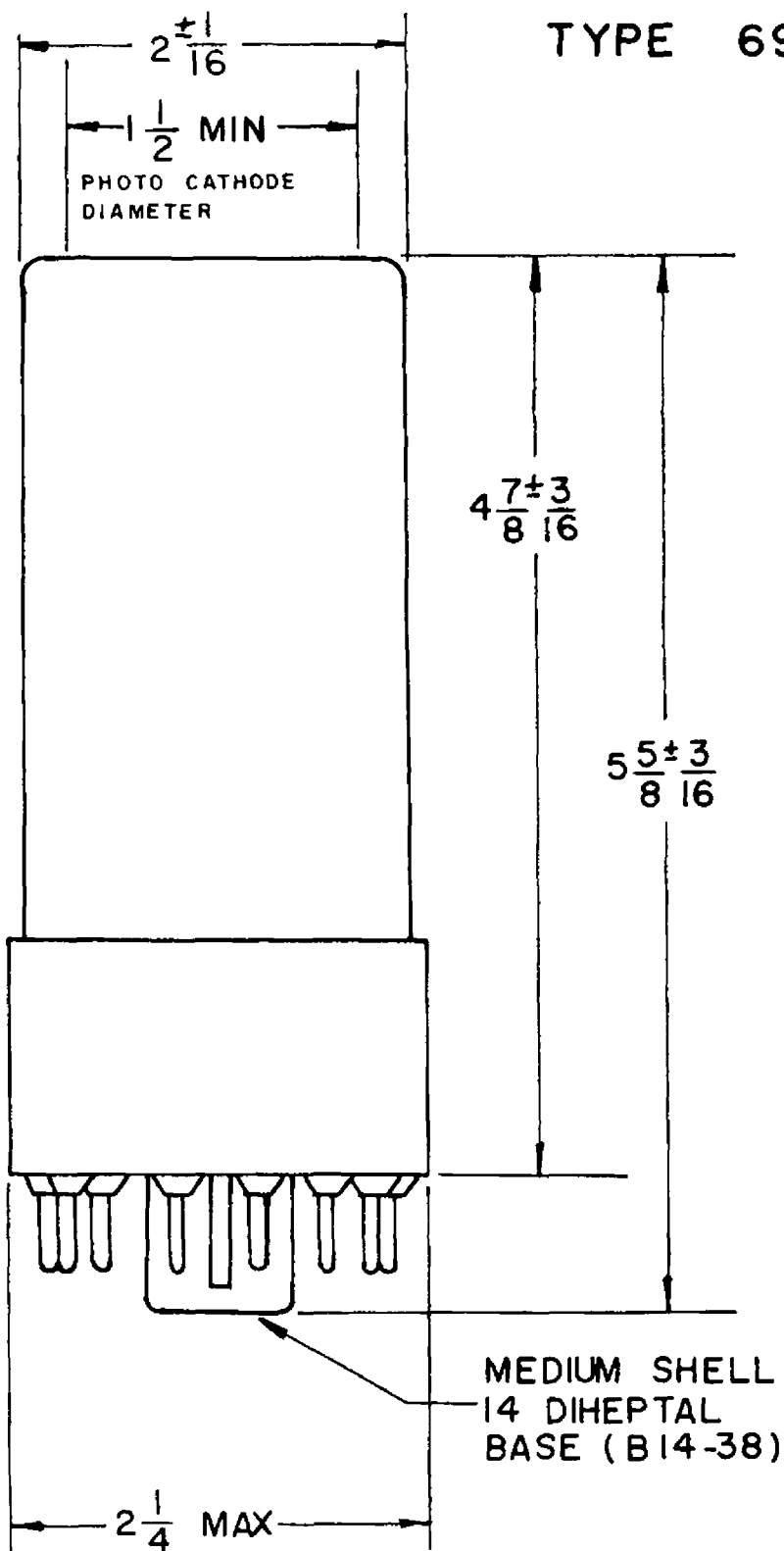


AVERAGE ANODE CHARACTERISTICS OF DUMONT
TYPE 69II



DUMONT

MULTIPLIER PHOTOTUBE TYPE 6911



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.

mw mrd T&R