

**For High Energy Physics, Fast Time Response, High Pulse Linearity  
127mm (5 Inch) Diameter, Bialkali Photocathode, 14-Stage, Head-on Type**

## GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Useful Diameter	120	mm dia.
Window	Material	Borosilicate glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	14	—
Base		20-pin base	—
Suitable Socket		E678-20A (supplied)	—

## MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	3000	Vdc
	Between Anode and Last Dynode	500	Vdc
Average Anode Current		0.2	mA
Ambient Temperature		-30 to +50	°C

## CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	55	70	—	μA/lm
	Blue (with CS 5-58 filter)	7.0	9.0	—	μA/lm-b
	Quantum Efficiency at 390nm	—	22	—	%
Anode Sensitivity	Luminous (2856K)	300	1000	—	A/lm
	Blue (with CS 5-58 filter)	—	130	—	A/lm-b
Gain		—	$1.4 \times 10^7$	—	—
Anode Dark Current (after 30min. storage in darkness)		—	50	300	nA
Time Response	Anode Pulse Rise Time	—	2.5	—	ns
	Electron Transit Time	—	54	—	ns
	Transit Time Spread	—	1.2	—	ns
Pulse Height Resolution with <sup>137</sup> Cs		—	8.3	—	%
Gain Deviation	Long Term	—	1.0	—	%
	Short Term	—	1.0	—	%
Pulse Linearity *	2% Deviation	—	160	—	%
	5% Deviation	—	250	—	%

\* Measured with special voltage distribution ratios shown in the Table 2.

**Table 1: VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE**

Electrode	K	G1	G2	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	P
Ratio	2.5	7.5	0	1.2	1.8	1	1	1	1	1	1	1	1	1	1.5	1.5	3	2.5

Supply Voltage: 2000Vdc, K: Cathode, Dy: Dynode, P: Anode, G: Grid

**Table 2: SPECIAL VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE  
FOR PULSE LINEARITY MEASUREMENT**

Electrode	K	G1	G2	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	P
Ratio	2.5	7.5	0	1.2	1.8	1	1	1	1	1.2	1.5	2	2.8	4	5.7	8	5	
Capacitors in μF												0.01	0.01	0.02	0.02	0.02	0.04	0.06

Supply Voltage: 2500Vdc, K: Cathode, Dy: Dynode, P: Anode, G: Grid

# PHOTOMULTIPLIER TUBE R1250

Figure 1: Typical Spectral Response

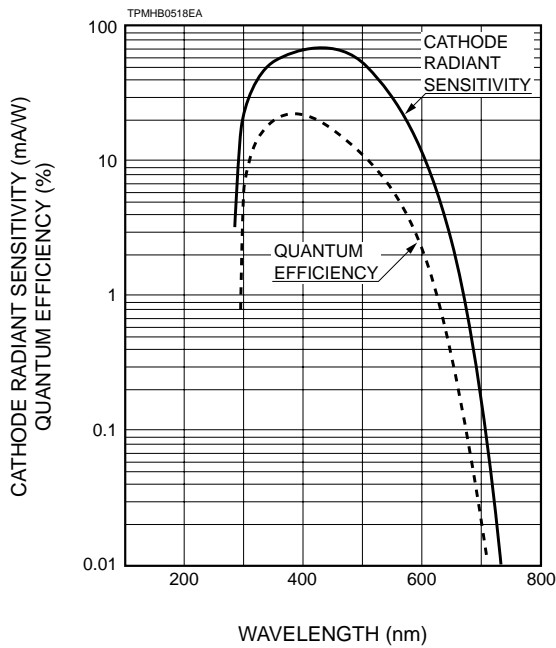


Figure 2: Typical Gain Characteristics

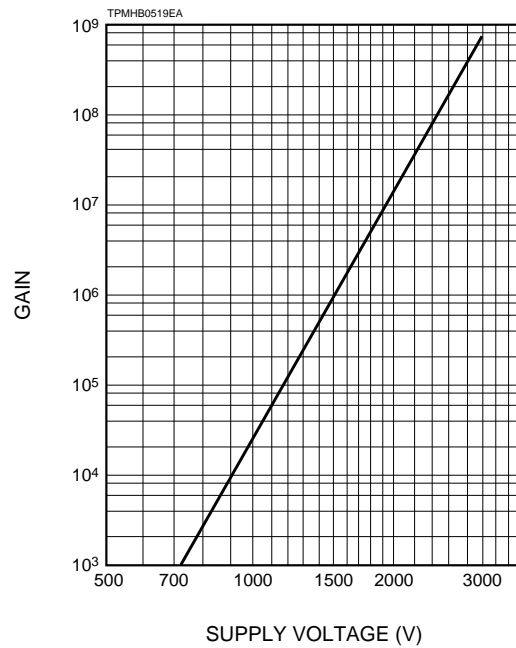
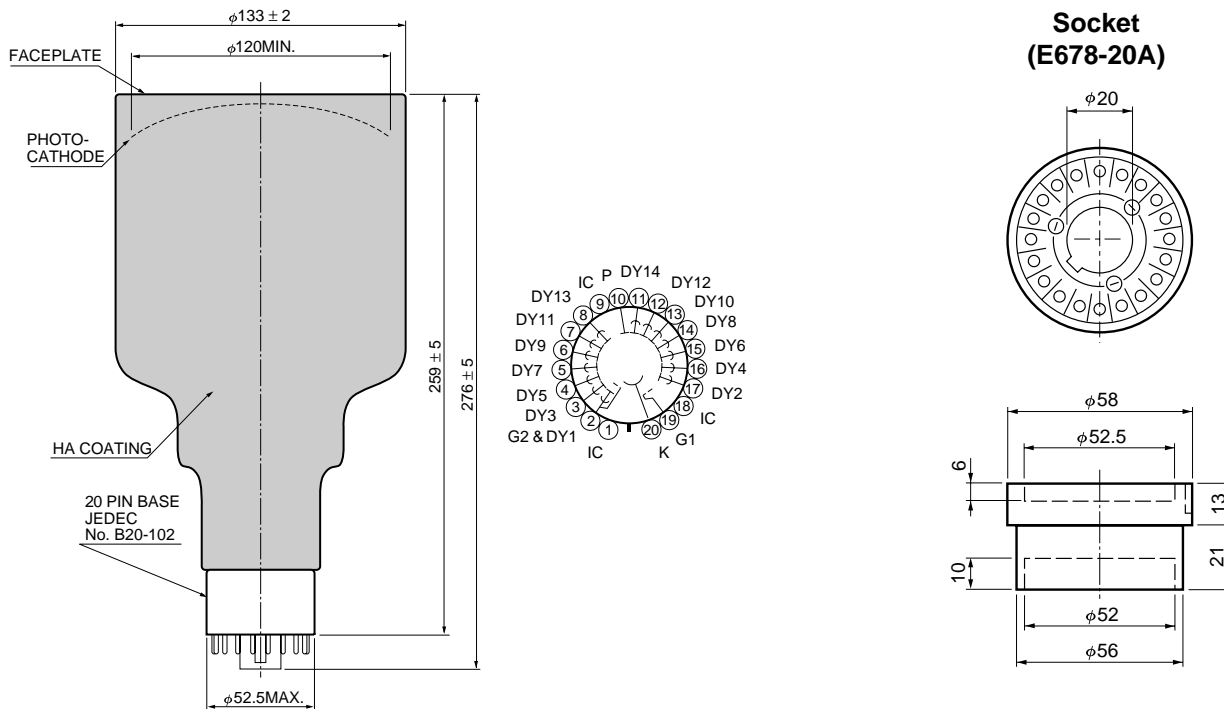


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



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