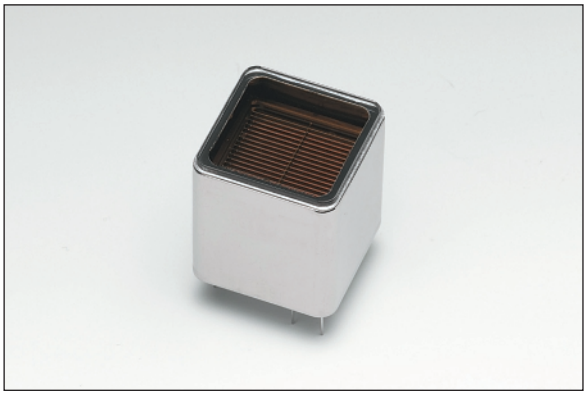
HAMAMATSU

PHOTON IS OUR BUSINESS

PHOTOMULTIPLIER TUBE
R8520-406

FEATURES

- For Low Temperature Operation Down to -110 °C
- Low Radioactivity 26 mm (1 Inch) square
- High UV Sensitivity by Synthetic Silica Window



APPLICATIONS

- High Energy Physics
- Academic Research

SPECIFICATIONS

GENERAL

Parameter		Description / Value	Unit
Spectral Response		160 to 650	nm
Wavelength of Maximum Response		420	nm
Window Material		Synthetic silica	—
Photocathode	Material	Bialkali	—
	Minimum Effective Area	20.5 × 20.5	mm^2
Dynode	Structure	Metal channel	—
	Number of Stages	10	—
Operating Ambient Temperature		-110 to +50	°C
Storage Temperature		-110 to +50	°C
Weight		22.9	g

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	900	V
	Between Anode and Last Dynode	150	V
Average Anode Current		0.1	mA

CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856 K)	80	100	—	mA/lm
	Blue Sensitivity Index (CS 5-58)	9.0	11.0	—	—
	Radiant at 420 nm	—	100	—	mA/W
	Quantum Efficiency at 175 nm	—	30	—	%
Anode Sensitivity	Luminous (2856 K)	40	100	—	A/W
	Gain (× 10^6)	—	1	—	—
Anode Dark Current (After 30 minute storage in darkness)		—	2	20	nA
Time Response	Anode Pulse Rise Time	—	1.8	—	ns
	Electron Transit Time	—	12.4	—	ns
	Transit Time Spread (FWHM)	—	0.8	—	ns
Pulse Linearity (±2 % Deviation)		—	30	—	mA

NOTE: Anode characteristics are measured with a voltage distribution ratio and supply voltage shown below.

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	0.5	1.5	2	1	1	1	1	1	1	1	1	0.5	

Supply Voltage: 800 V, K: Cathode, G: Grid, Dy: Dynode, P: Anode

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Figure 1: Typical Spectral Response

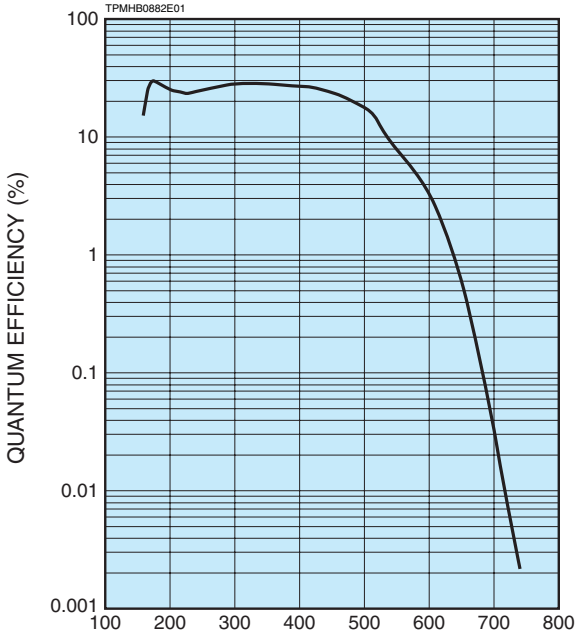


Figure 2: Typical Gain

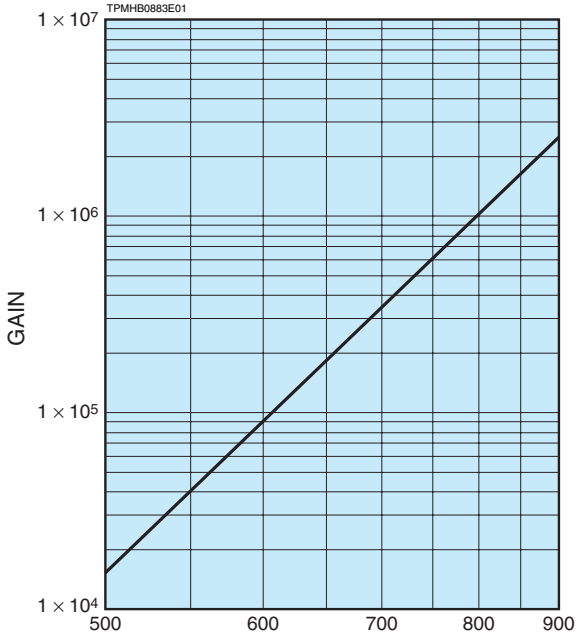
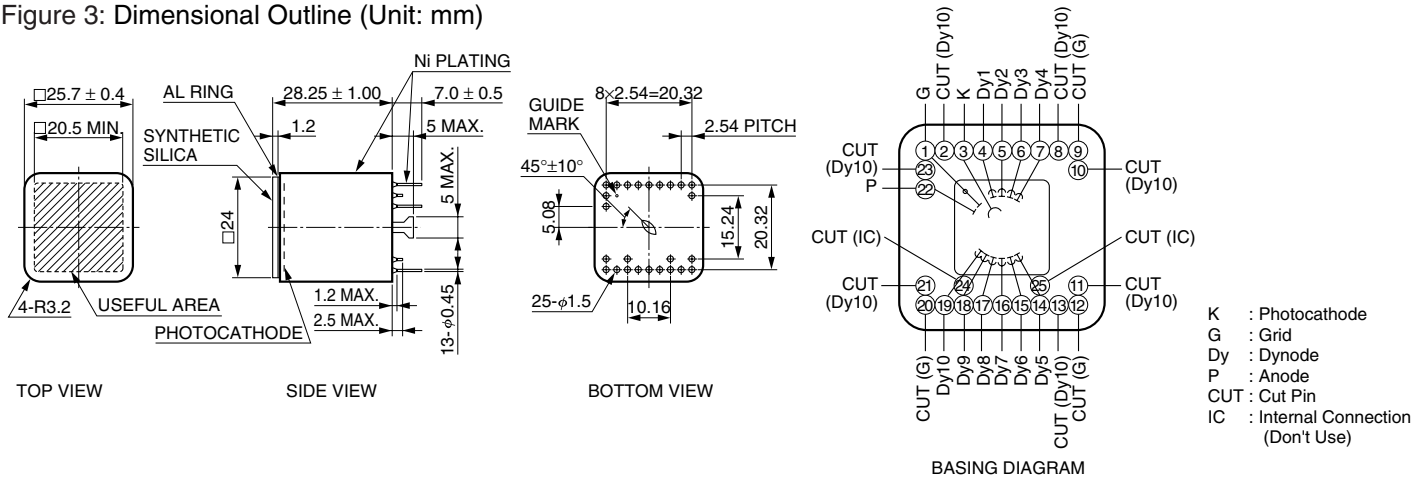


Figure 3: Dimensional Outline (Unit: mm)



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