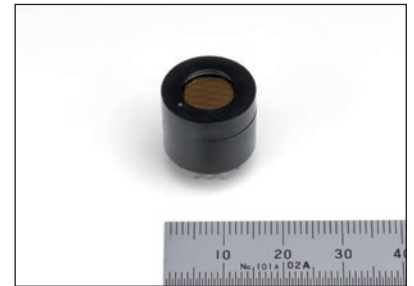


FEATURES

- Compact and light weight
- Fast time response
- High gain
- Effective area $\phi 8.0$ mm

APPLICATIONS

- Fluorescence measurement
- Radiation measurement
- Environmental monitoring
- LiDAR



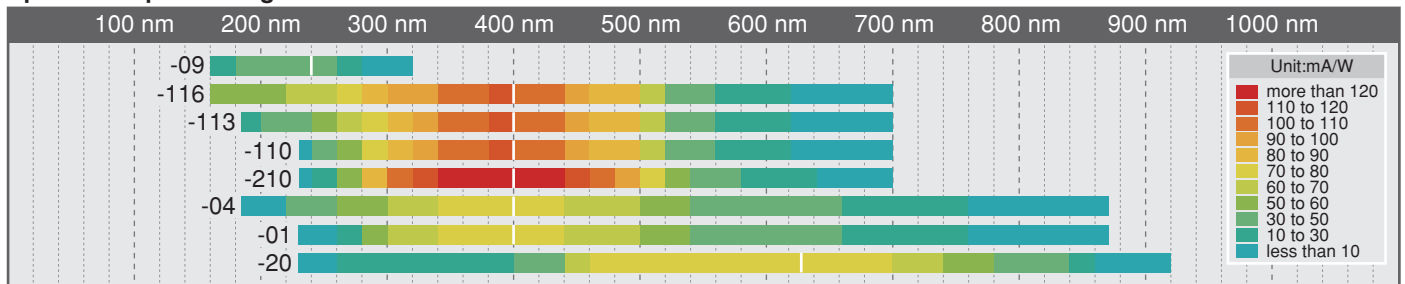
PRODUCT VARIATIONS

Type No.	-09	-116	-113	-110	-210	-04	-01	-20	Unit	
Photocathode ①	Cs-Te	SBA			UBA	MA		ERMA	—	
Spectral response	Range	160 to 320	160 to 700	185 to 700	230 to 700		185 to 870	230 to 870	230 to 920	nm
	Peak	240				400		630		nm
Window material	Quartz		UV	Borosilicate		UV	Borosilicate		—	

NOTE: ① Photocathode materials

SBA: Super bialkali, UBA: Ultra bialkali, MA: Multialkali, ERMA: Extended red multialkali

Spectral response range chart



SPECIFICATIONS

(at +25 °C)

Parameter		Value								Unit	
Suffix		-09	-116	-113	-110	-210	-04	-01	-20	—	
Dynode	Structure	Metal channel								—	
	Stages	10								—	
Maximum ratings	Supply voltage between anode and cathode	1100								V	
	Average anode output current in total ②	0.01	0.1							mA	
Cathode	Luminous	Min.	—	80	100		350			$\mu\text{A}/\text{lm}$	
		Typ.	—	105	135	200	500				
	Blue sensitivity index	Typ.	—	13.5	15.5		—			—	
	Red / White ratio	Typ.	—				0.2	0.45		—	
Anode ④	Radiant sensitivity ③	Typ.	35	110	130	77	78			mA/W	
	Luminous	Min.	—	80	100		350			A/lm	
Typ.		—	210	270	400	1000					
Anode ④	Gain	Typ.	2.0×10^6								—
	Dark current ⑤	Typ.	0.1	1				10			nA
		Max.	1	10				100			
	Time response	Rise time	Typ.	0.57							
Transit time		Typ.	2.7								
T.T.S.		Typ.	0.2								
Operating ambient temperature		-30 to +50								°C	
Storage temperature		-30 to +50								°C	

NOTE: ② Averaged over any interval of 30 seconds maximum. ③ Measured at peak wavelength

④ Measured with the supply voltage, and voltage distribution ratio shown in Table 1. (Next page)

⑤ After 30 minutes storage in darkness.

METAL PACKAGE PHOTOMULTIPLIER TUBE R9880U SERIES

Table 1: Voltage distribution ratio and supply voltage

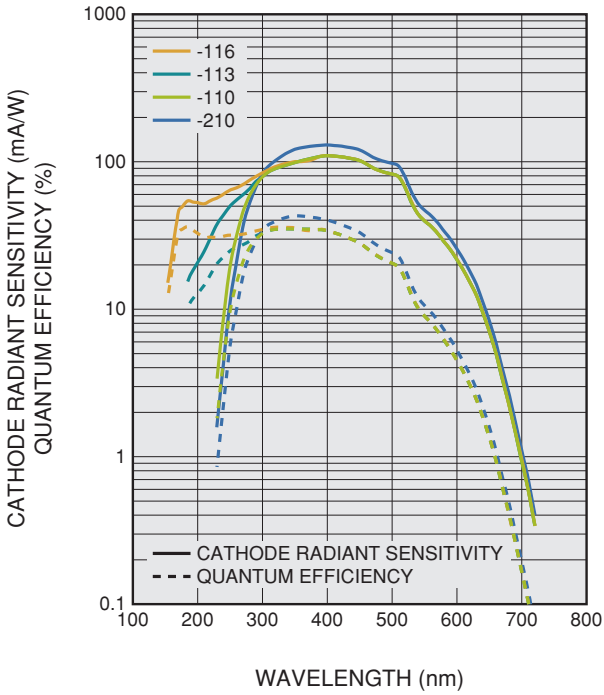
Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Distribution ratio	1	1	1	1	1	1	1	1	1	1	1	0.5

Supply voltage: 1000 V, K: Cathode, Dy: Dynode, P: Anode

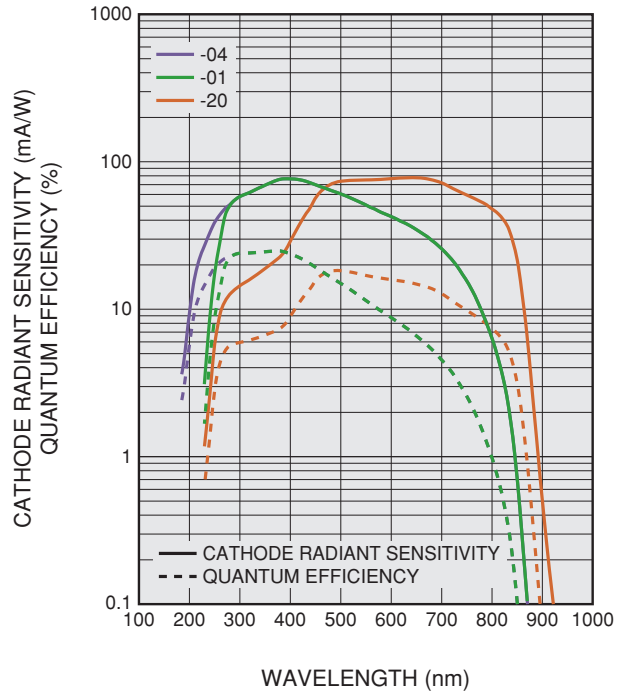
CHARACTERISTICS

Figure 1: Typical spectral response

Bialkali photocathode



Multialkali photocathode



Cs-Te photocathode

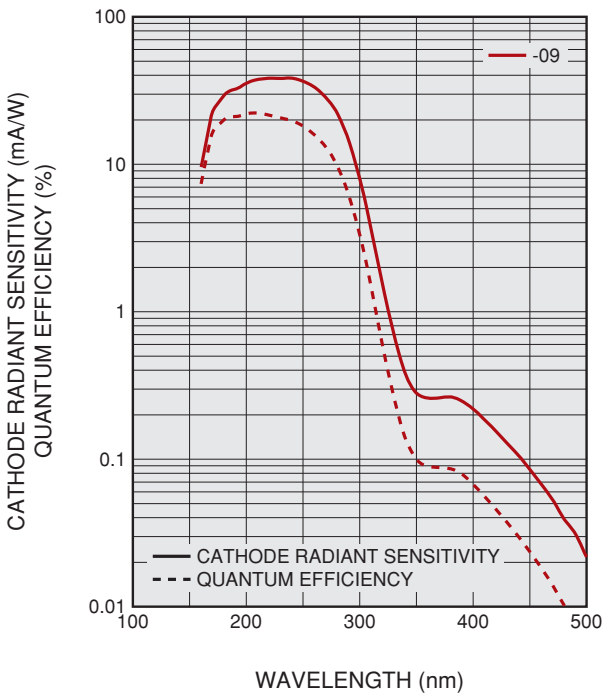


Figure 2: Typical gain

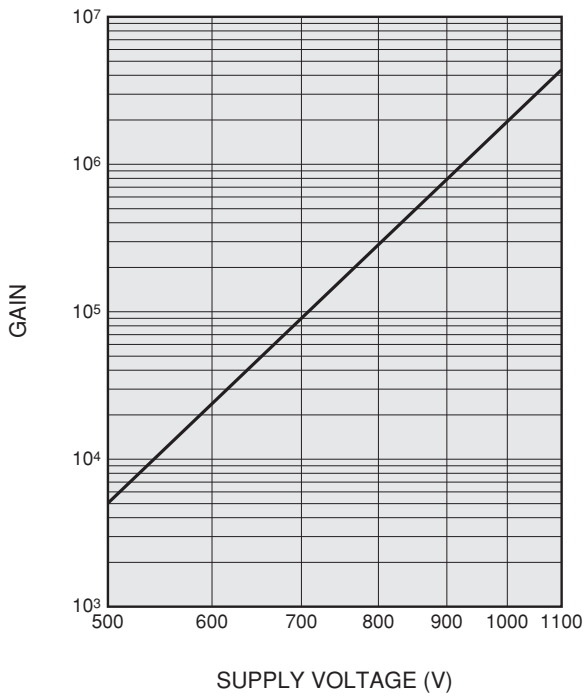


Figure 3: Output waveform

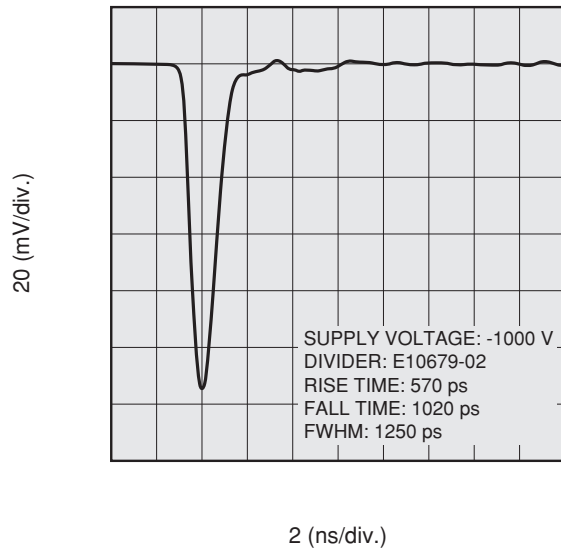
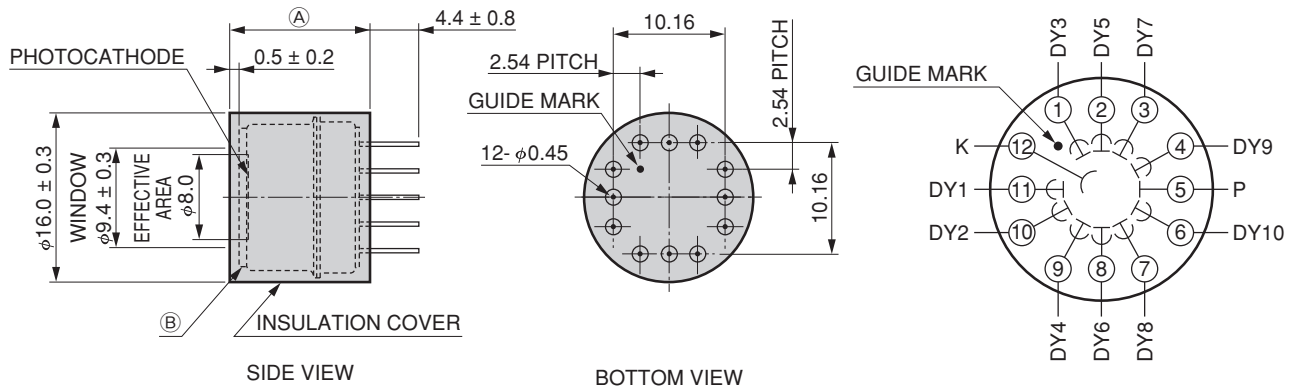


Figure 4: Dimensional outline and basing diagram (Unit: mm)



Suffix	①	② (Window thickness)
-01/-04/-20/-110/-113/-210	12.4 ± 0.4	0.8
-09/-116	13.1 ± 0.4	1.2

METAL PACKAGE PHOTOMULTIPLIER TUBE R9880U SERIES

WARNING: HIGH VOLTAGE



HIGH VOLTAGE

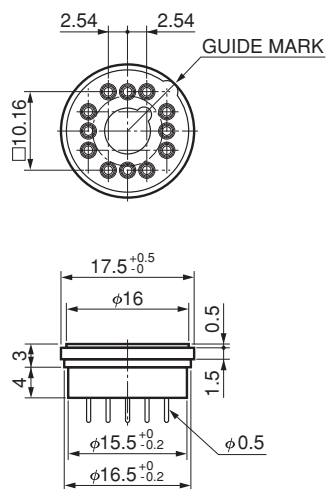
The metal package photomultiplier tubes are operated by applying a high voltage. Use extreme caution to avoid electrical shock and damage to the peripheral equipment and be sure to provide adequate safety measures as needed. As safety measures, an insulation cover is fitted to the metal package which is electrically connected to the photocathode. When operated with the cathode at a high voltage (anode ground scheme), the metal package will be at this same high voltage level. Removing the insulation cover is extremely dangerous, so never attempt to remove it from the package.

RELATED PRODUCTS

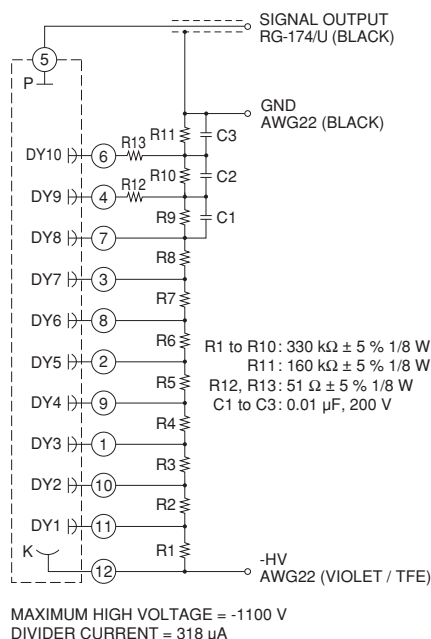
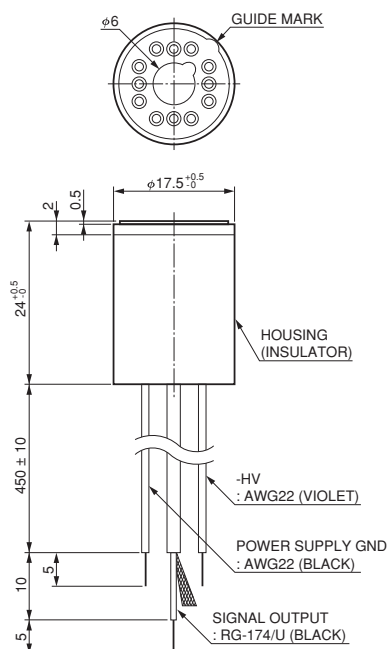
[ACCESSORIES] (Unit: mm)

SOLD SEPARATELY

● Socket E678-12-01



● D Type socket assembly E10679-02



● Related socket assembly series

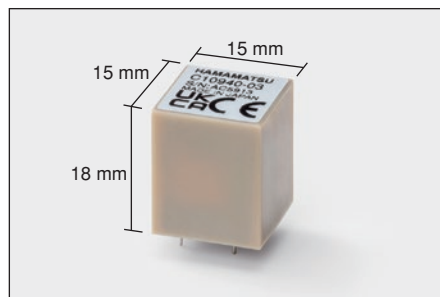
D type

Type No.	Notes
E10679-02	Cable output
E10679-03	SHV / BNC connector
E10679-51	Pin output
E13643	All stage active divider, Cable output

DA type (Model with built-in amplifier)

Type No.	Output type	Frequency bandwidth
C16138-01	Pin	DC to 200 kHz
C16138-02		DC to 2 MHz
C16138-03		DC to 20 MHz

HIGH VOLTAGE POWER SUPPLY C10940 SERIES



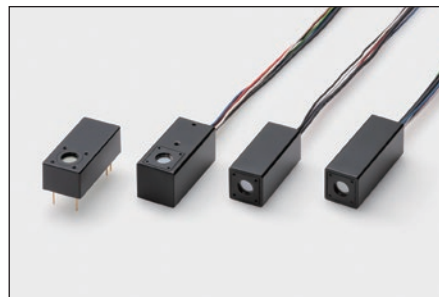
Compact and high stability

PHOTOMULTIPLIER TUBE ASSEMBLY H13175U SERIES



Photomultiplier tube with voltage divider circuit

PHOTOMULTIPLIER TUBE MODULES SERIES



Photomultiplier tube with voltage divider circuit and high voltage power supply

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