

OVERVIEW

The H15620 series is NIR-PMT module using a compact NIR-PMT (near infrared photomultiplier tube) developed by our advanced photocathode technology.



SPECIFICATIONS

(at 25 °C)

Parameter		-25	-45	Unit	
Input voltage for main unit		+4.5 to +5.5		V	
Main unit	Max. input voltage	+5.5		V	
	Max. input current ^①	+100		mA	
Thermoelectric cooler	Max. input voltage	+10		V	
	Max. input current	5		A	
Input voltage for fan		+11.4 to +12.6		V	
Input current for fan		0.35		A	
Max. output signal current		1		μA	
Max. control voltage		+0.9 (Input impedance 200 kΩ)		V	
Recommended control voltage adjustment range		+0.5 to +0.8 (Input impedance 200 kΩ)		V	
Effective area		φ1.6		mm	
Spectral response		950 to 1200	950 to 1400	nm	
Peak quantum efficiency wavelength		1100	1300	nm	
Cathode	Quantum efficiency ^{②③}	Min.	1		%
		Typ.	2		
Cathode	Radiant sensitivity ^{②③}	Min.	9	10.5	mA/W
		Typ.	18	21	
Gain ^④		Typ.		1 × 10 ⁶	—
Anode	Radiant sensitivity ^{②③}	Min.	4.5 × 10 ³	5.3 × 10 ³	A/W
		Typ.	1.8 × 10 ⁴	2.1 × 10 ⁴	
Anode	Dark current ^{③④⑤}	Typ.	1.3	13	nA
		Max.	13	130	
Rise time ^③		Typ.		0.9	ns
Ripple noise ^{④⑥} (peak to peak)		Max.		0.6	mV
Settling time ^⑦		Max.		0.2	s
Operating ambient temperature ^⑧				+5 to +35	°C
Storage temperature ^⑧				-20 to +50	°C
Weight				Approx. 720	g

NOTE: ①At +5 V input voltage and +0.8 V control voltage in darkness

②Measured at peak quantum efficiency wavelength

③PMT setting temperature -30 °C

④Control voltage = +0.8 V

⑤After 30 min storage in darkness.

⑥Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF

⑦The time required for the output to reach a stable level following a change in the control voltage from +0.8 V to +0.5 V.

⑧No condensation

PHOTOMULTIPLIER TUBE MODULE H15620 SERIES

COOLING SPECIFICATIONS

(at 25 °C)

Parameter	H15620 series	Unit
Cooling method	Thermoelectric cooling	—
Max. cooling temperature (ΔT) ^⑨	65	°C
Time to reach Max. cooling temperature ^⑨	Approx. 20	min

NOTE: ⑨ Input current to thermoelectric cooler = 3.5 A

Figure 1: Spectral response (Typ.)

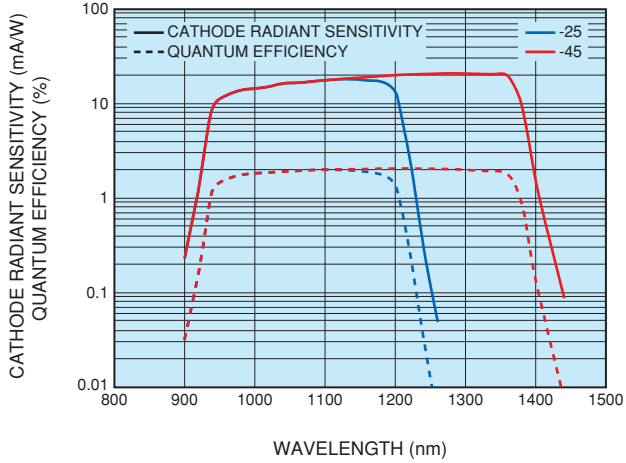


Figure 2: Gain (Typ.)

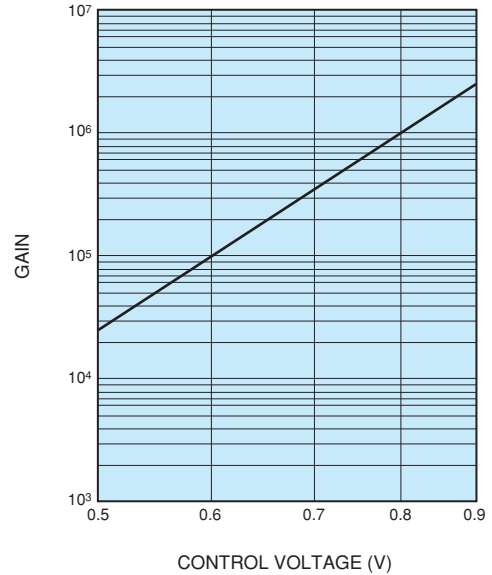
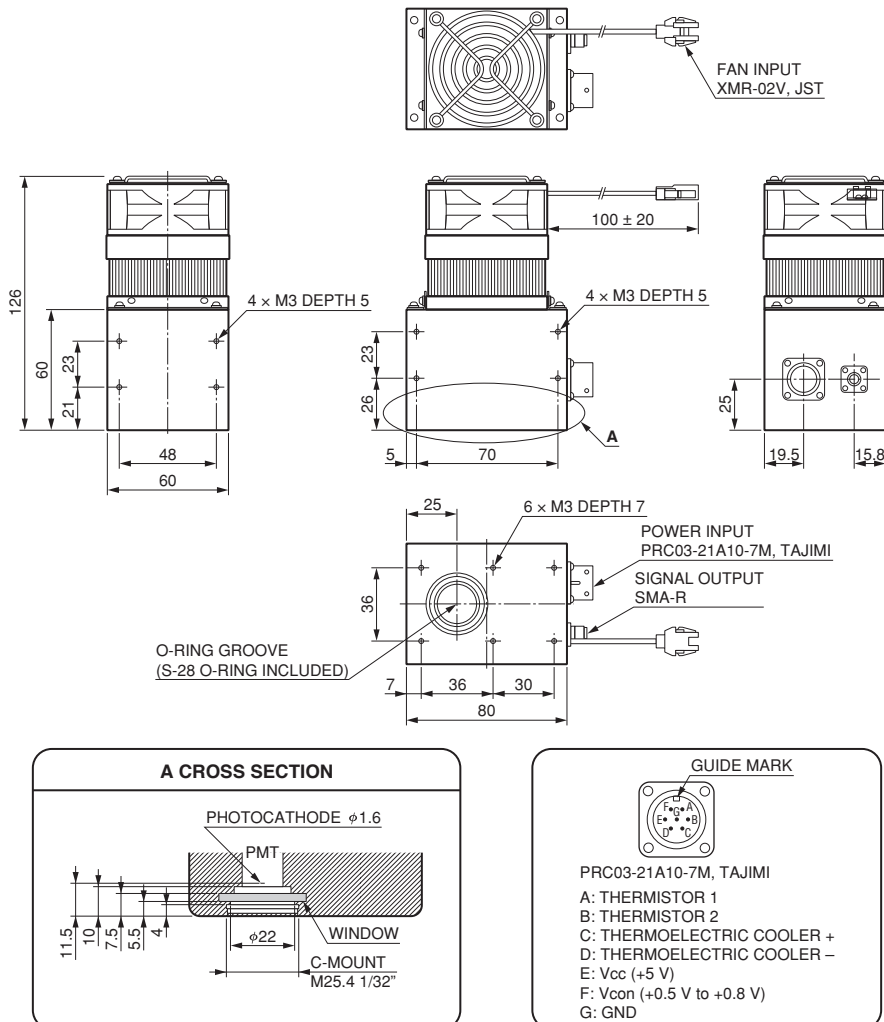


Figure 3: Dimensional outline (Unit: mm)



RELATED PRODUCTS

CONTROLLER C16137 SERIES

The C16137 series is a bench-top power supply unit with a temperature control function. Just connecting to an AC source of 100 V to 240 V generates the output voltages for the thermoelectric cooler and the fan, which are needed for the H15620 series operation. The photomultiplier tube temperature can be maintained to -30 °C by monitoring the thermistor and regulating the output current for the thermoelectric cooler. Control voltage can be varied by a dial on the front panel.



■ SPECIFICATIONS

(at 25 °C)

Parameter	C16137 series	Unit
Setting cooling temperature (preset at factory)	-30	°C
Output voltage for main circuit	+4.5 to +5.5	V
Max. output current for main circuit	100	mA
Max. output voltage for thermoelectric cooler	10.6	V
Max. output current for thermoelectric cooler	5	A
Output voltage for fan	+11.4 to +12.6	V
Control voltage (variable voltage range)	0 to +0.9	V
AC input voltage	100 to 240	V
Input power frequency	50/60	Hz
Power consumption	140	V·A
Operating Ambient Temperature ①	+5 to +35	°C
Storage Temperature ①	-20 to +50	°C
Usage environment	In door use, up to 2000 m altitude	—
Weight ②	1870	g

NOTE: ① No condensation
② Including power cable and fan cable.

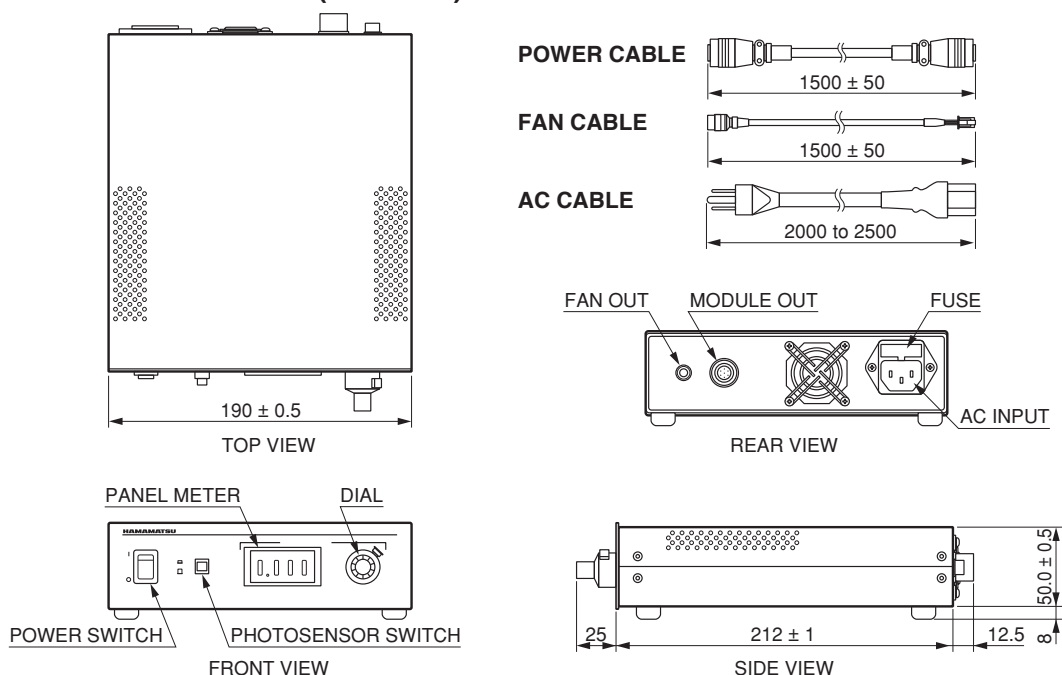
■ Type No. guide

C16137-C □

Number in □ indicates power cable specifications

2: For Japan / For North America 3: For EU 4: For China 5: For UK 6: For Australia

■ Dimensional outline (Unit: mm)



PHOTOMULTIPLIER TUBE MODULE H15620 SERIES

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