

## FEATURES

- Compact size
- High efficiency cooling
- Simple operation/Low voltage drive

## APPLICATIONS

- NOx gas measurement
- Fluorescence measurement
- Chemiluminescence analysis
- NIR spectroscopy



## SPECIFICATIONS

Parameter		Value	Unit
Input voltage		+11.5 to +15.5	V
Max. input voltage for main unit		+18	V
Max. input current for main unit		8	mA
Max. input voltage for thermoelectric cooler		+14.5	V
Max. input current for thermoelectric cooler		2.0	A
Input voltage for cooling fan		+11.5 to +12.5	V
Input current for cooling fan		Typ. 0.27	A
Max. output signal current		58	μA
Max. control voltage		+1.25	V
Recommended control voltage adjustment range		+0.2 to +1.2	V
Effective area		10 × 14	mm
Spectral response range		185 to 900	nm
Peak sensitivity wavelength		400	nm
Cathode	Luminous sensitivity	Min. 140 Typ. 300	μA/lm
	Blue sensitivity index (Blue filter)	Typ. 9	
	Red / White ratio (Red filter)	Typ. 0.3	—
	Radiant sensitivity <sup>①</sup>	Typ. 76	mA/W
Anode	Luminous sensitivity <sup>②</sup>	Min. 400 Typ. 2000	A/lm
	Radiant sensitivity <sup>①②</sup>	Typ. 5 × 10 <sup>5</sup>	
	Gain <sup>②</sup>	Typ. 6.7 × 10 <sup>6</sup>	—
	Dark current <sup>②③</sup>	Typ. 0.08 Max. 0.4	nA
Rise time <sup>②</sup>	2.2		
Settling time <sup>④</sup>		10	s
Operating ambient temperature <sup>⑤</sup>		+5 to +35	°C
Storage temperature <sup>⑤</sup>		-20 to +50	°C
Weight		570	g

**NOTE:** ① At peak sensitivity wavelength    ② Control voltage +1.0 V (PMT supply voltage -1000 V), with cooler operated  
 ③ After 30 min storage in darkness  
 ④ The time required for the output to reach a stable level following a change in the control voltage from +1.0 V to +0.5 V.  
 ⑤ No condensation

## COOLING SPECIFICATIONS

Parameter	Description / Value	Unit
Cooling method	Thermoelectric cooling	—
Cooling temperature (ΔT) <sup>⑥⑦</sup>	30	°C
Thermal equilibrium arrival time <sup>⑥</sup>	1200	s

**NOTE:** ⑥ At peltier input current 1.5 A    ⑦ At 25 degrees of ambient temperature

# PHOTOMULTIPLIER TUBE MODULE WITH THERMOELECTRIC COOLER H14768

Figure 1: Integrated sensor temperature vs. Cooling time

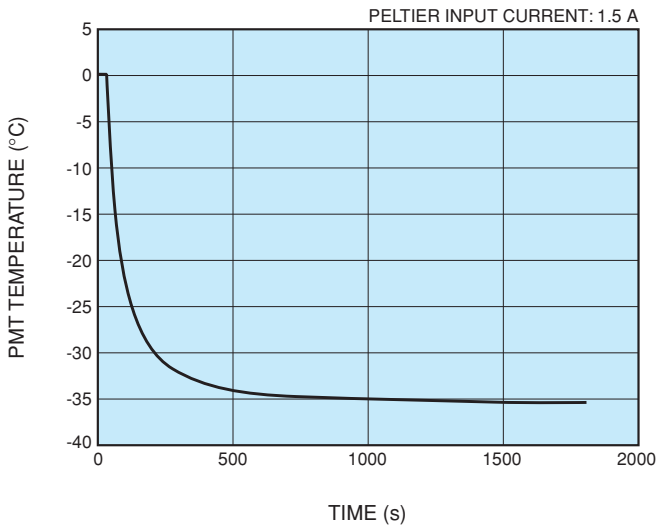


Figure 2: Typical spectral response

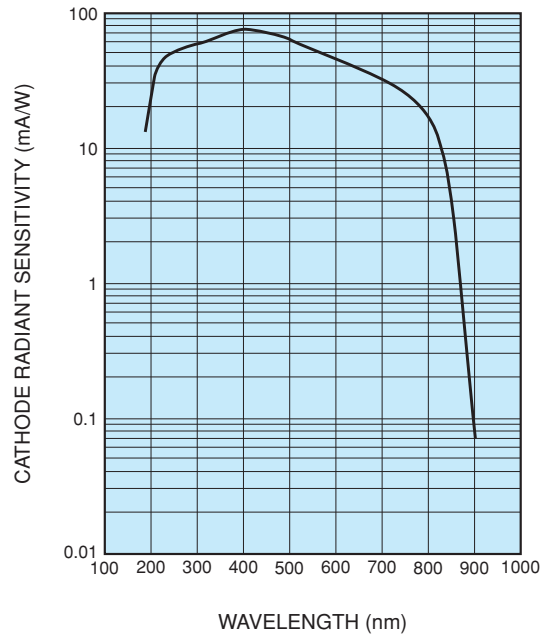


Figure 3: Gain vs. Control voltage

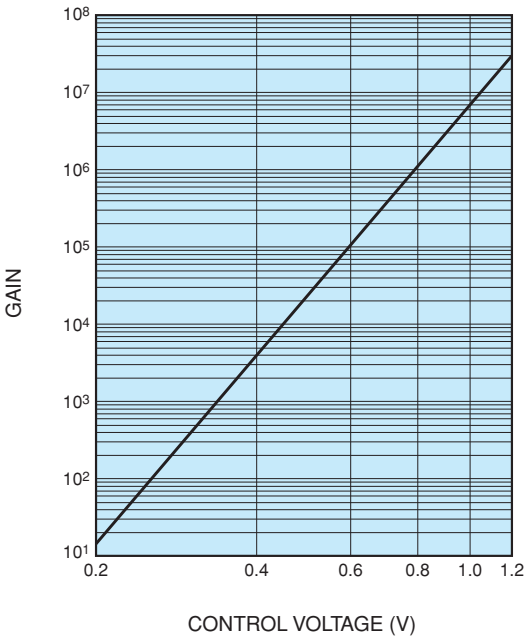


Figure 4: Peltier performance vs. Ambient temperature

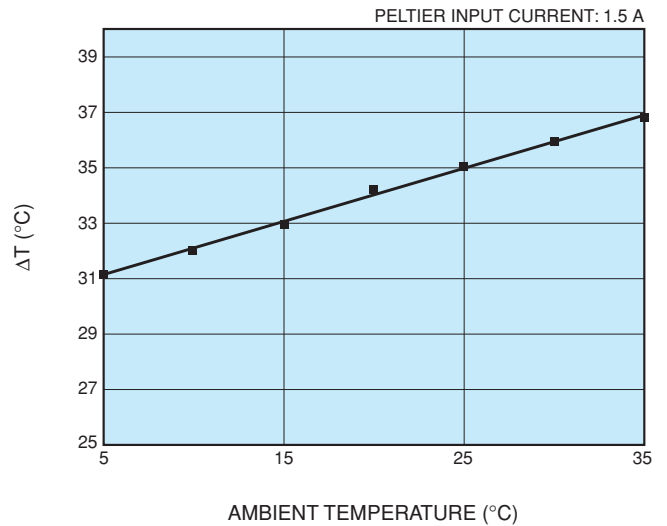


Figure 5: Temperature sensor output voltage vs. PMT temperature

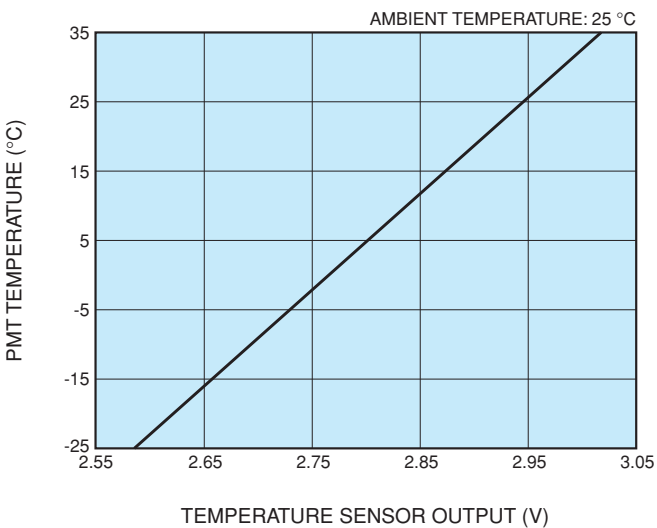


Figure 6: Internal structure and wiring diagram

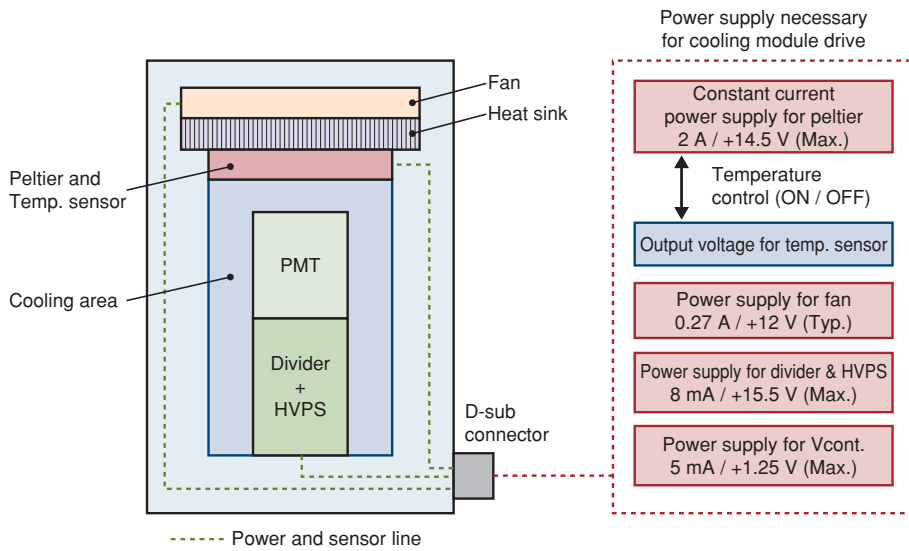
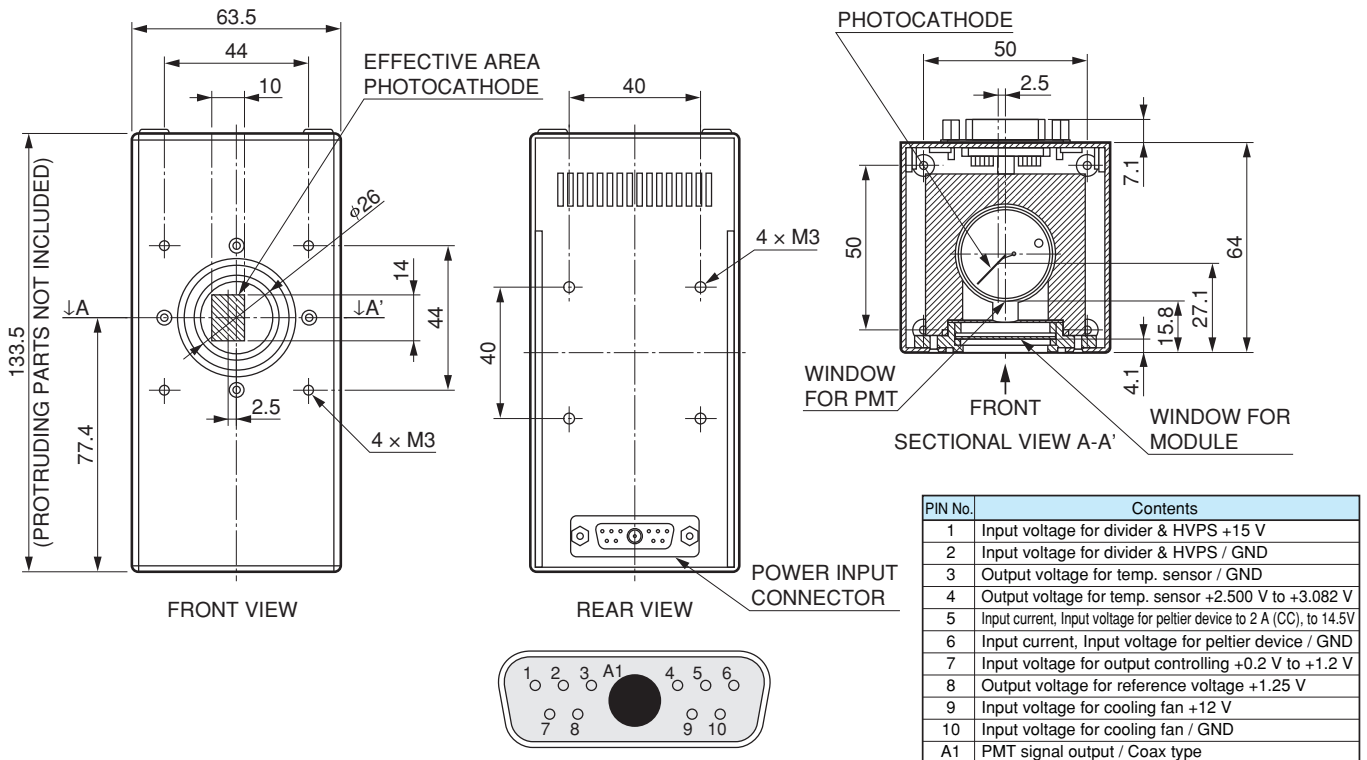


Figure 7: Dimensional outline and basing diagram (Unit: mm)



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