HAMAMATSU
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Infrared detector modules with preamp

Metal dewar type

High sensitivity modules of easy-to-use

These devices combine a dewar type detector with a compatible preamplifier, and easily operate to detect infrared radiation just by connecting to a DC power supply. InGaAs, InSb, and Type Ⅱ superlattice detectors are provided as standard devices (liquid nitrogen cooling). Custom-designed devices with different active areas, FOV or amplifier gain, etc. are also available to meet your specific needs.

Features

- **Compact integral detector unit**
- **Optimum connections between the detector element and preamplifier allow amplified signals to be easily obtained.**

Required power supply specifications

- G7754 series, P7751 series: ±15 V (±12.0 to ±17.5 V can also be used)
- Current capacity: 1.5 times or more of each module's maximum current consumption
- Ripple noise: 5 mVp-p or less
- Analog power supply only
- Recommended DC power supplies: PW18-3AD (TEXIO)
  E3630A (Keysight Technologies)

Applications

- **Infrared detection**

Accessories

- **Cable (for DC power supply): 2 m (connector installed at one end)** **A4372-02**
- **BNC-BNC coaxial cable (for signal output): 2 m**
- **Instruction manual**

Specifications / Absolute maximum ratings

Type no.	Detector element	Photo-sensitive area (mm)	External power supply*1				Absolute maximum ratings		
			Supply voltage (V)			Supply capacitance (mA)	External input voltage (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
			Min.	Typ.	Max.				
G7754-01	InGaAs (G12183-010 chip)	ϕ1	±12.0	±15.0	±17.5	±23	±18	0 to +40	-20 to +50
G7754-03	InGaAs (G12183-030 chip)	ϕ3							
P7751-01	InSb (P5968-060)	ϕ0.6				±30			
P7751-02	InSb (P5968-200)	ϕ2							
C15780-401	Type Ⅱ superlattice (P15409-901)	ϕ0.1	±14.5	±15.0	±15.5	+45, -30			

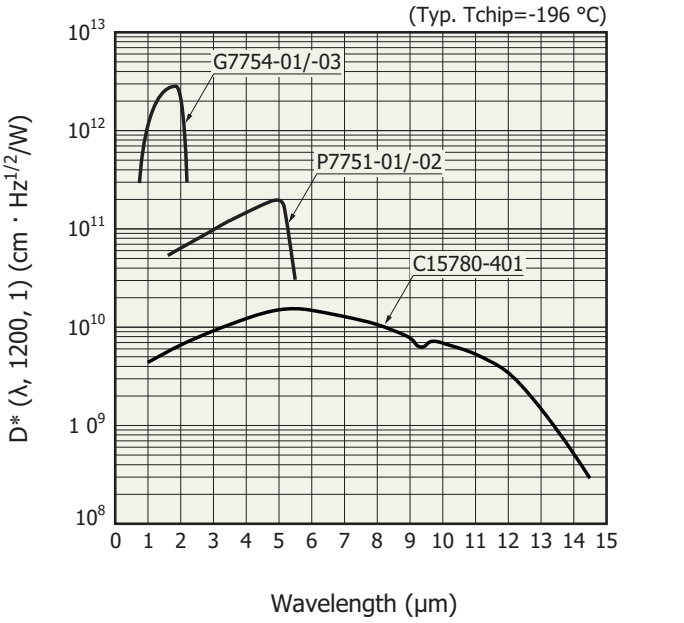
*1: Use only an analog power supply.
Note: Nitrogen hold time: 12 hours or more (at the time of shipment)
Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Typ. Ta=25 °C)

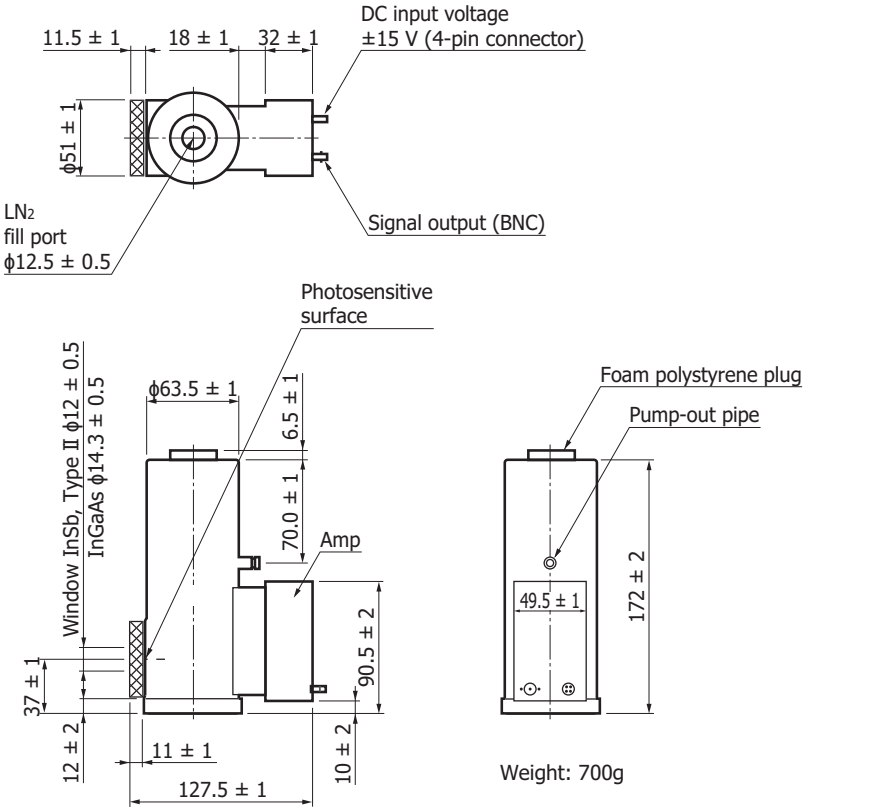
Type No.	Measurement condition: Element temperature T (°C)	Peak sensitivity wavelength λp (μm)	Cutoff wavelength λc (μm)	Photo-sensitivity S λ=λp *2 (V/W)	Noise equivalent power NEP λ=λp (W/Hz$^{1/2}$)	Cutoff frequency fc (Hz)	Output impedance (Ω)	Maximum output voltage RL=1 kΩ (V)	Maximum current consumption*3 (mA)
G7754-01	-196	2.0	2.4	2×10^{9}	3×10^{-14}	2 to 500	50	±10	±15
G7754-03				5×10^{8}	1.5×10^{-13}	2 to 500		±10	±15
P7751-01*4		5.3	5.5	3×10^{8}	3×10^{-13}	5 to 10000		±10	±20
P7751-02*4				1.5×10^{8}	1×10^{-12}	5 to 12000		±10	±20
C15780-401*4		5.4	14.5	2×10^{6}	5.5×10^{-12}	7 to 100000		±14	+30, -20

*2: f=100 Hz (G7754-01, G7754-03), f=1.2 kHz (P7751-01, P7751-02, C15780-401)
*3: Vs=±15 V
*4: FOV=60°

Spectral response

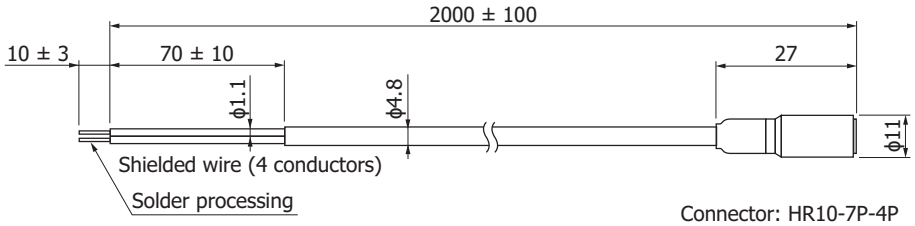


Dimensional outline (unit: mm)

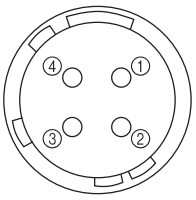


KIRDA0010EE

Cable (for DC power supply) A4372-02



Connector: HR10-7P-4P
(made by Hirose Electric)



Pin no.	Pin connection	Lead color
①	-Vs	Blue
②	GND	Black/white/blue stranded wire
③	GND	
④	+Vs	White

KIRDA0196EB

Precaution for use

· The detector should not be placed horizontally during use.
· Using these detectors in an environment subjected to vibration may cause microphonic noise. Take measures to prevent vibration as needed.

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions
· Disclaimer
· Compound opto-semiconductors (photosensors, light emitters)

■ Technical information
· Compound semiconductor photosensors / Technical note

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