

# 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:  $\pm 15$  V ( $\pm 12.0$  to  $\pm 17.5$  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)	$\phi 1$	$\pm 12.0$	$\pm 15.0$	$\pm 17.5$	$\pm 23$	$\pm 18$	0 to +40	-20 to +50
G7754-03	InGaAs (G12183-030 chip)	$\phi 3$							
P7751-01	InSb (P5968-060)	$\phi 0.6$							
P7751-02	InSb (P5968-200)	$\phi 2$				$\pm 30$			
<b>NEW</b> C15780-401	Type II superlattice (P15409-901)	$\phi 0.1$	$\pm 14.5$	$\pm 15.0$	$\pm 15.5$	+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)**

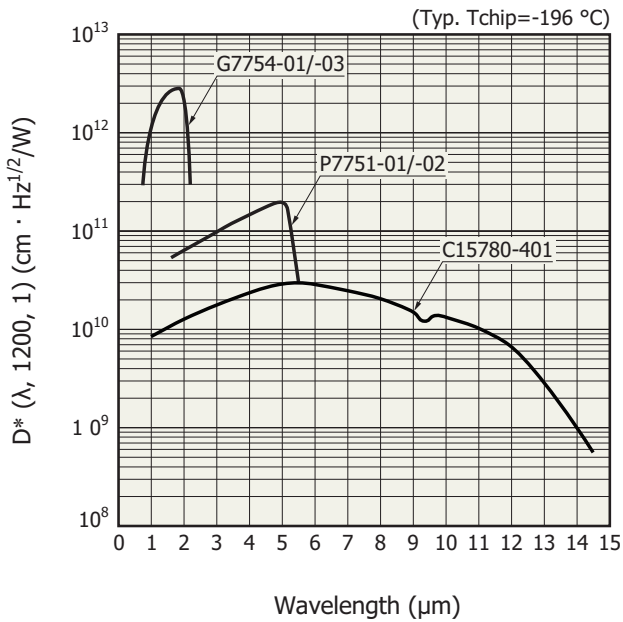
Type No.	Measurement condition	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Cutoff wavelength $\lambda_c$ ( $\mu\text{m}$ )	Photo-sensitivity S $\lambda=\lambda_p$ *2 (V/W)	Noise equivalent power NEP $\lambda=\lambda_p$ (W/Hz <sup>1/2</sup> )	Cutoff frequency fc (Hz)	Output impedance ( $\Omega$ )	Maximum output voltage $R_L=1\text{ k}\Omega$ (V)	Maximum current consumption*3 (mA)
	Element temperature T (°C)								
G7754-01	-196	2.0	2.4	$2 \times 10^9$	$3 \times 10^{-14}$	2 to 500	50	$\pm 10$	$\pm 15$
G7754-03				$5 \times 10^8$	$1.5 \times 10^{-13}$	2 to 500		$\pm 10$	$\pm 15$
P7751-01*4		5.3	5.5	$3 \times 10^8$	$3 \times 10^{-13}$	5 to 10000		$\pm 10$	$\pm 20$
P7751-02*4				$1.5 \times 10^8$	$1 \times 10^{-12}$	5 to 12000		$\pm 10$	$\pm 20$
<b>NEW</b> C15780-401*4		5.4	14.5	$2 \times 10^6$	$3 \times 10^{-12}$	7 to 100000		$\pm 14$	+30, -20

\*2: f=100 Hz (G7754-01, G7754-03), f=1.2 kHz (P7751-01, P7751-02, C15780-401)

\*3: Vs=±15 V

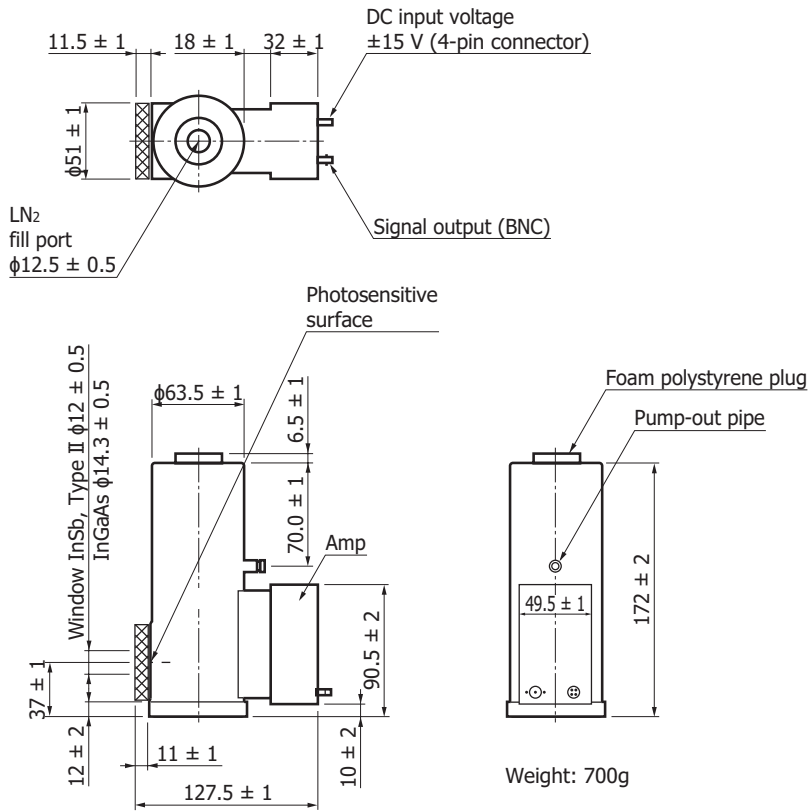
\*4: FOV=60°

**Spectral response**



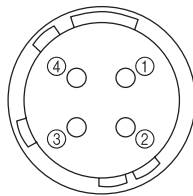
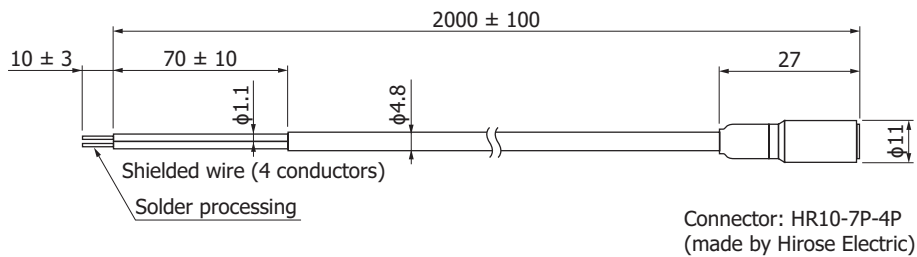
KIRD80076EH

**Dimensional outline (unit: mm)**



KIRDA0010EE

Cable (for DC power supply) A4372-02



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](http://www.hamamatsu.com/sp/ssd/doc_en.html)

#### ■ Precautions

- Disclaimer
- Compound opto-semiconductors

Information described in this material is current as of July 2020.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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