

# Infrared detector modules with preamps



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 and InSb 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 pre-amplifier 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:  
E3620A, E3630A (Agilent 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	Active 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	$\phi 1$	$\pm 12.0$	$\pm 15.0$	$\pm 17.5$	$\pm 23$	$\pm 18$	0 to +40	-20 to +50
G7754-03		$\phi 3$							
P7751-01	InSb (P5968-060)	$\phi 0.6$				$\pm 30$			
P7751-02	InSb (P5968-200)	$\phi 2$							

\*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.)

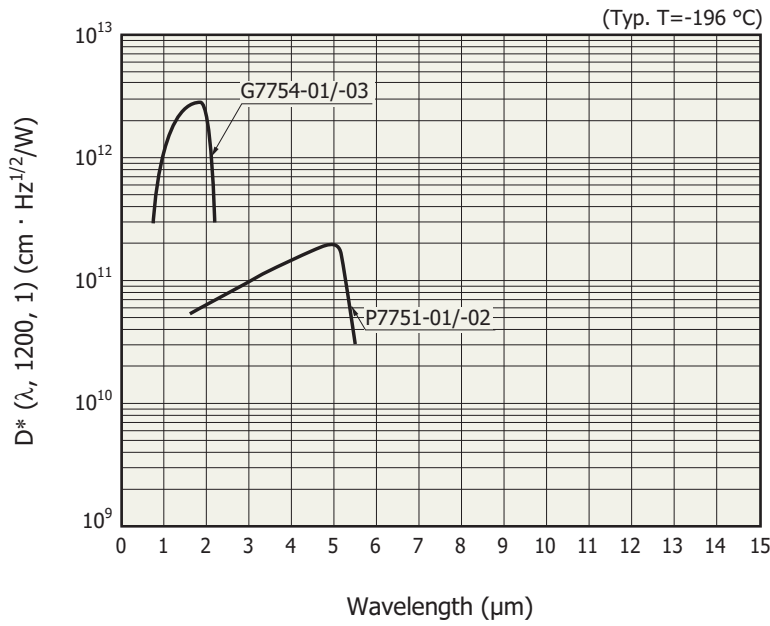
Type No.	Measurement condition Element temperature T (°C)	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Cut-off wavelength $\lambda_c$ ( $\mu\text{m}$ )	Photo sensitivity S $\lambda = \lambda_p$ *2 (V/W)	Noise equivalent power NEP $\lambda = \lambda_p$ (W/Hz <sup>1/2</sup> )	Cutoff frequency $f_c$ (Hz)	Output impedance ( $\Omega$ )	Maximum output voltage RL=1 k $\Omega$ (V)	Maximum current consumption*3 (mA)
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		$\pm 10$	$\pm 20$

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

\*3:  $V_s = \pm 15$  V

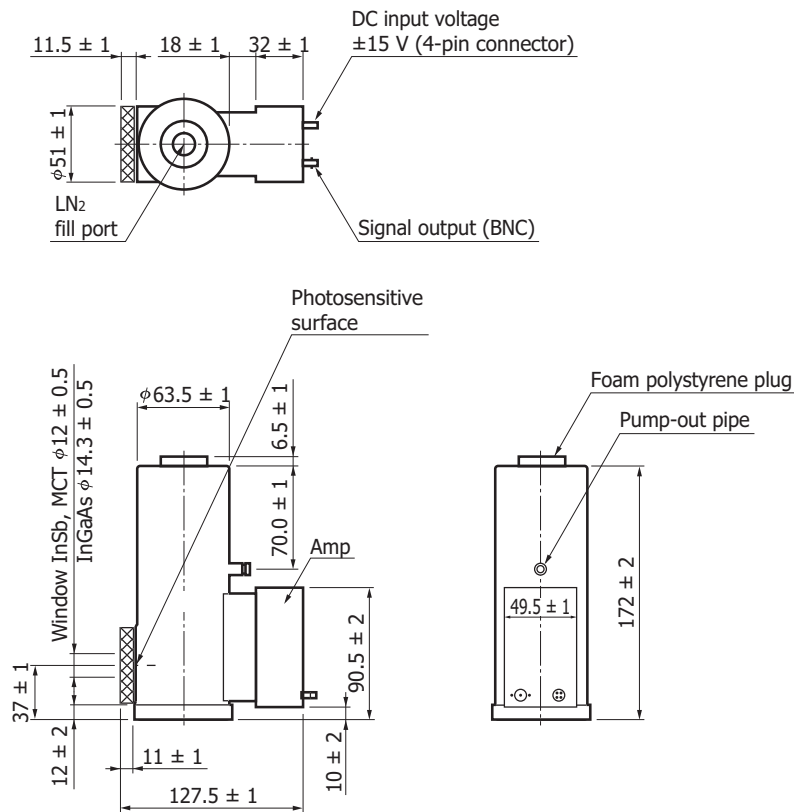
\*4: FOV=60°

**Spectral response**



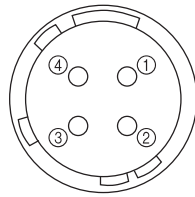
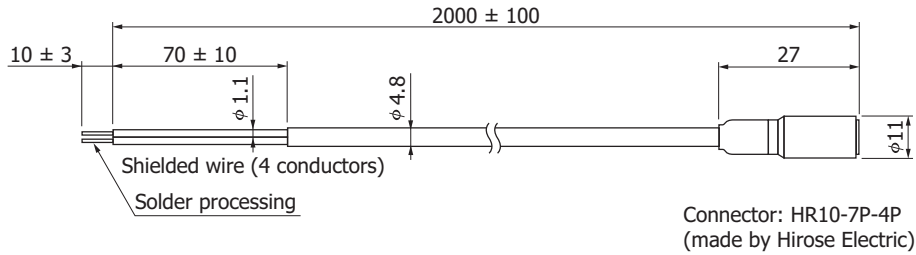
KIRD80076EF

**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.



The P7751-01 conforms to European EMC directives:  
EN 61326-1 Class B.

Information described in this material is current as of November, 2012.  
Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.  
Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.  
The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.  
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