Infrared detector module with preamp
Thermoelectrically cooled type



Easy-to-use detector module with built-in preamp

Infrared detector modules operate just by connecting to a DC power supply. The detector element is selectable from among InGaAs, PbS, PbSe, MCT, InAs and InSb, which are all combined with a thermoelectric cooler. P4631-10 using an MCT detector is especially suited for CO_2 laser detection. We welcome requests for custom devices that suit your application.

Features

- High S/N
- Compact size
- Easy to use
  Operates just by connecting to DC power supply
- Circuit design optimized for detector element characteristics
- Built-in thermoelectric cooling control circuit (fixed control temperature)

Applications

- Infrared detection
- CO_2 laser detection

Accessories (Supplied)

- DC power cable (2 m): A4372-03
  When using a power supply other than Hamamatsu C3871-03/-04 power supplies designed for IR detector modules, use a mating connector (Hirose Electric RM12BRD-6S).
- Instruction manual

DC power supply (Optional)

- Power supply for module (±15 V, +2.5 V) C3871-03
- Power supply for module (±15 V, +4.5 V) C3871-04 (designed for P4631-03/-04)

■ Specifications / Absolute maximum ratings

Type No.	Detector element	Active area (mm)	Rated input voltage (V)		Absolute maximum ratings: Input voltage (V)		Absolute maximum ratings: Operating temperature Topr (°C)	Absolute maximum ratings: Storage temperature Tstg (°C)
G6122	InGaAs	φ1	±15 ± 0.5	$+2.5^{+1}_{-0.05}$	Vc=±18	V_{P1}=+5	0 to +40	-20 to +50
G6122-03		φ1						
G6126		φ5						
P4638	PbS	4 × 5						
P4639	PbSe	3 × 3						
P4631	MCT	1 × 1						
P4631-01	InAs	φ1						
P4631-03	InSb	1 × 1						
P4631-04	MCT	1 × 1		±4.5 ± 0.25		V_{P2}=+7		
P4631-10				$+2.5^{+1}_{-0.05}$		V_{P1}=+5		

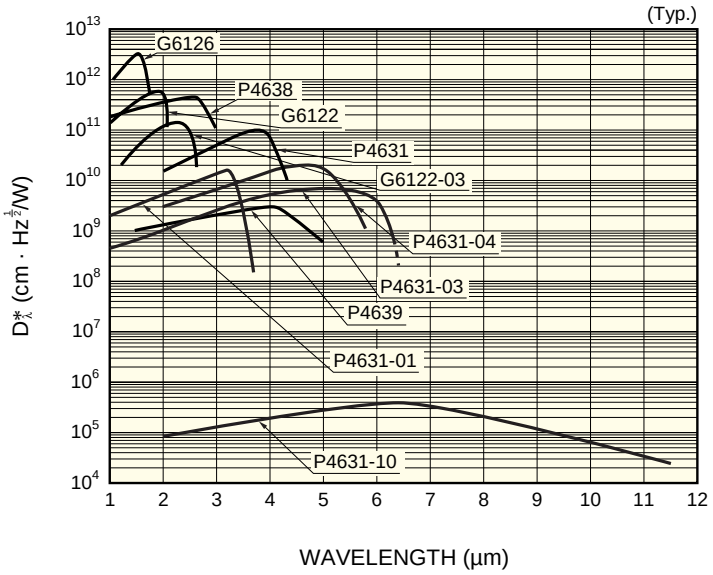
■ Electrical and optical characteristics (Typ. Ta=25 °C)

Type No.	Detector element temperature at rated input T (°C)	Peak sensitivity wavelength λp (μm)	Cut-off wavelength λc (μm)	Photo sensitivity S λ=λp (V/W)	NEP λ=λp (W/Hz$^{1/2}$)	Frequency response -3 dB (Hz)	Output impedance (Ω)	Maximum output voltage R_L=1 kΩ (V)	Maximum current consumption *2 (mA) +Vc, -Vc	Maximum current consumption *2 (mA) V_{P1} or V_{P2}
G6122	-15	1.95	2.05	1.7×10^8	1×10^{-13}	DC to 2.2 k	50	+10	+60, -30	+1100
G6122-03		2.3	2.56	1.5×10^8	6×10^{-13}	DC to 3 k		+10	+60, -30	+1100
G6126		1.55	1.66	5×10^7	7×10^{-14}	DC to 1.2 k		+10	+50, -30	+1100
P4638		2.5	3.2	3×10^7	8×10^{-13}	0.2 to 300		±10	+50, -20	+1100
P4639		4.2	5.2	2×10^5	1×10^{-10}	0.2 to 10 k		±10	+50, -20	+1100
P4631	-25	3.6	4.3	2×10^7	1×10^{-12}	5 to 20 k		±2.5	+60, -10	+1100
P4631-01	-28	3.25	3.5	1×10^7	6×10^{-12}	5 to 300 k		±8	+60, -10	+1100
P4631-03	-58	5.5	6.3	1.5×10^5	1.5×10^{-11}	DC to 100 k		+10	+90, -30	+1100
P4631-04		4.8	5.5	1×10^7	5×10^{-12}	5 to 35 k		±5	+80, -10	+1100
P4631-10	-3	6.5	11.5	2 *1	2.5×10^{-6} *1	DC to 500 k		+10	+150, -30	+1400

*1: λ=10.6 μm
*2: Vc=15 V, V_{P1}=2.5 V or V_{P2}=4.5 V

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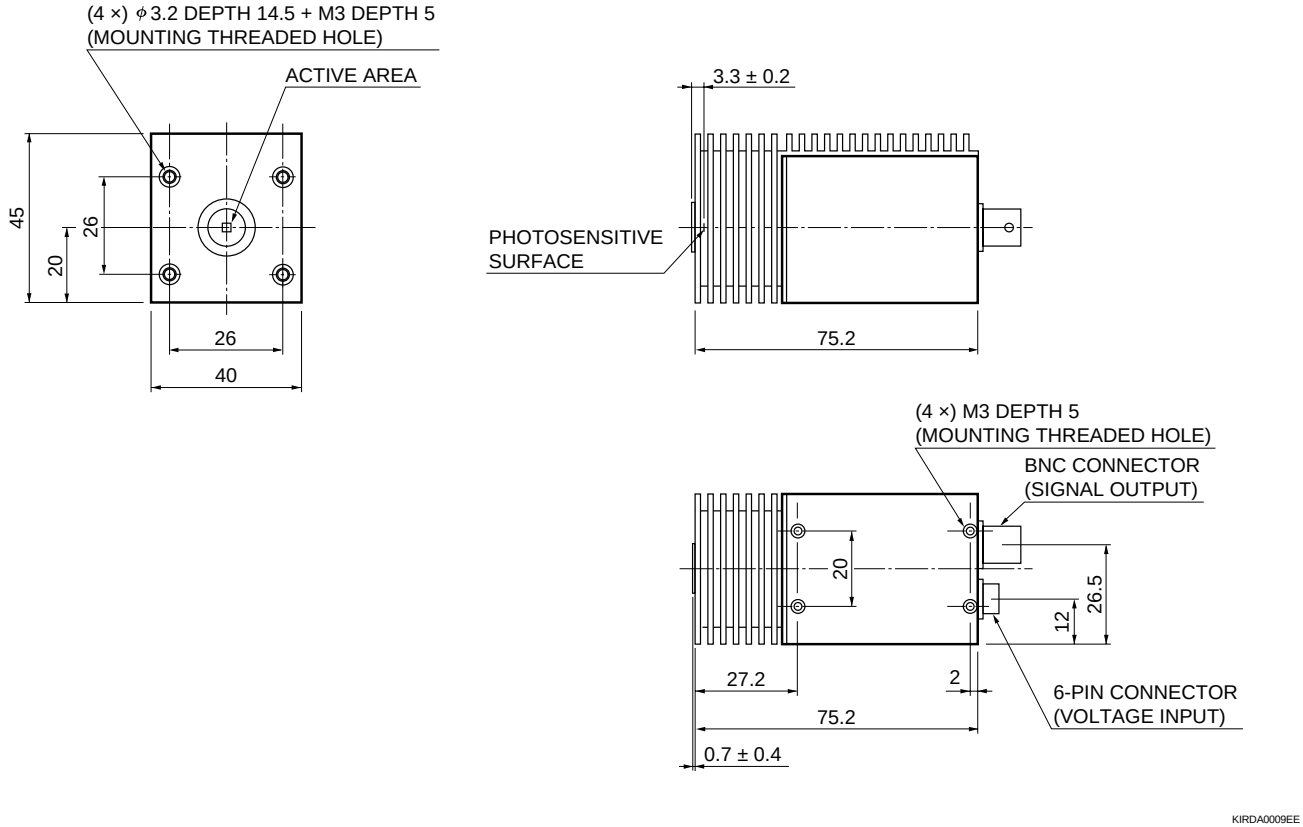
■ Spectral response



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■ Dimensional outlines (unit: mm)

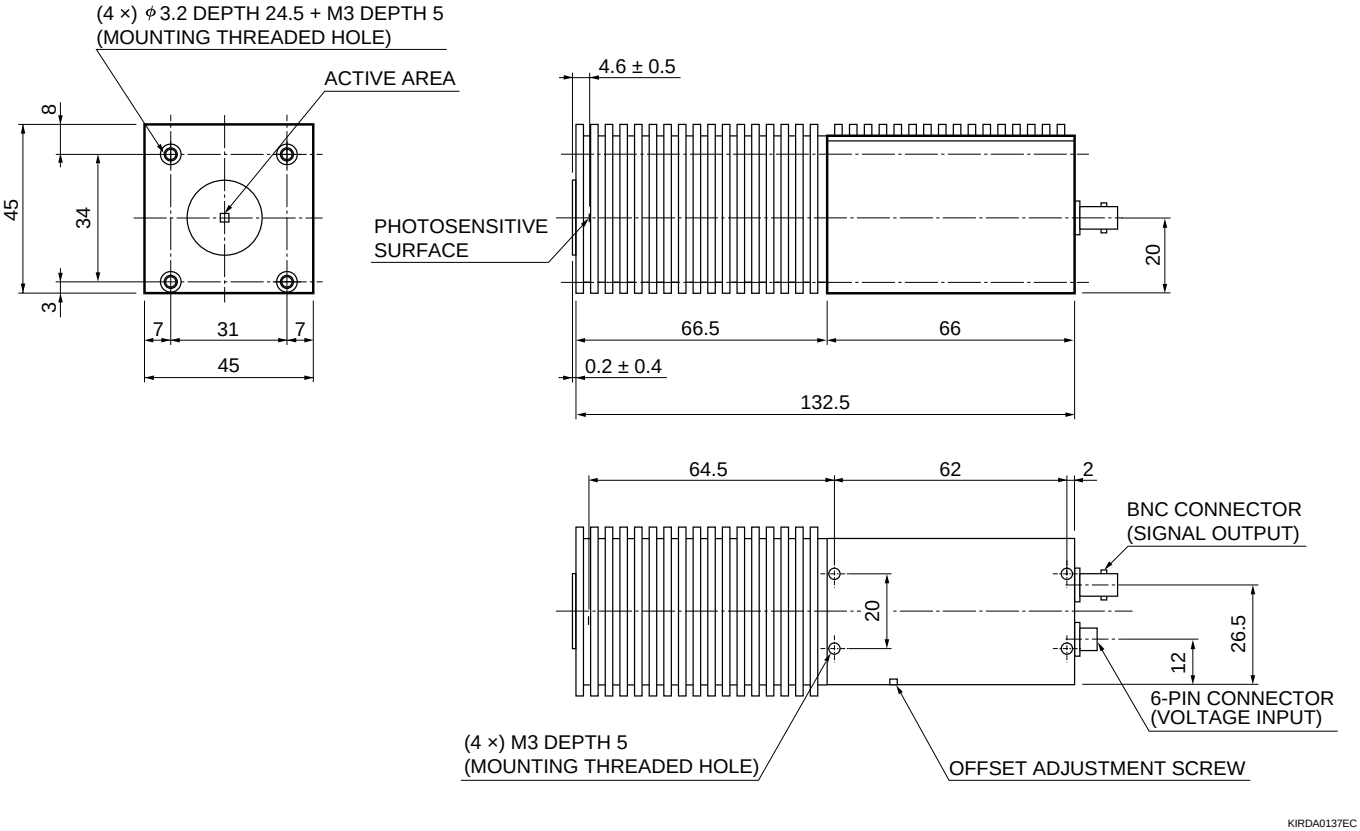
G6122/-03, G6126, P4638, P4639, P4631/-01



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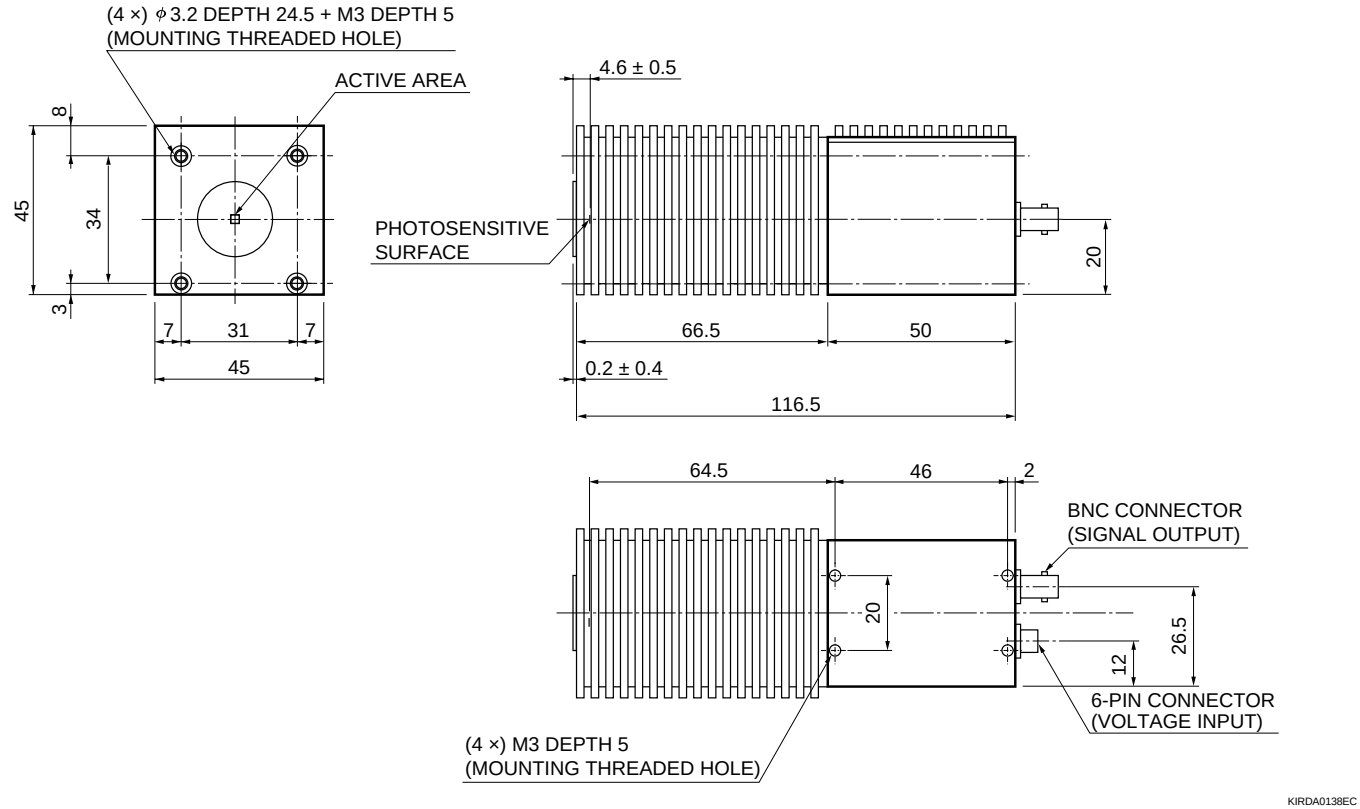
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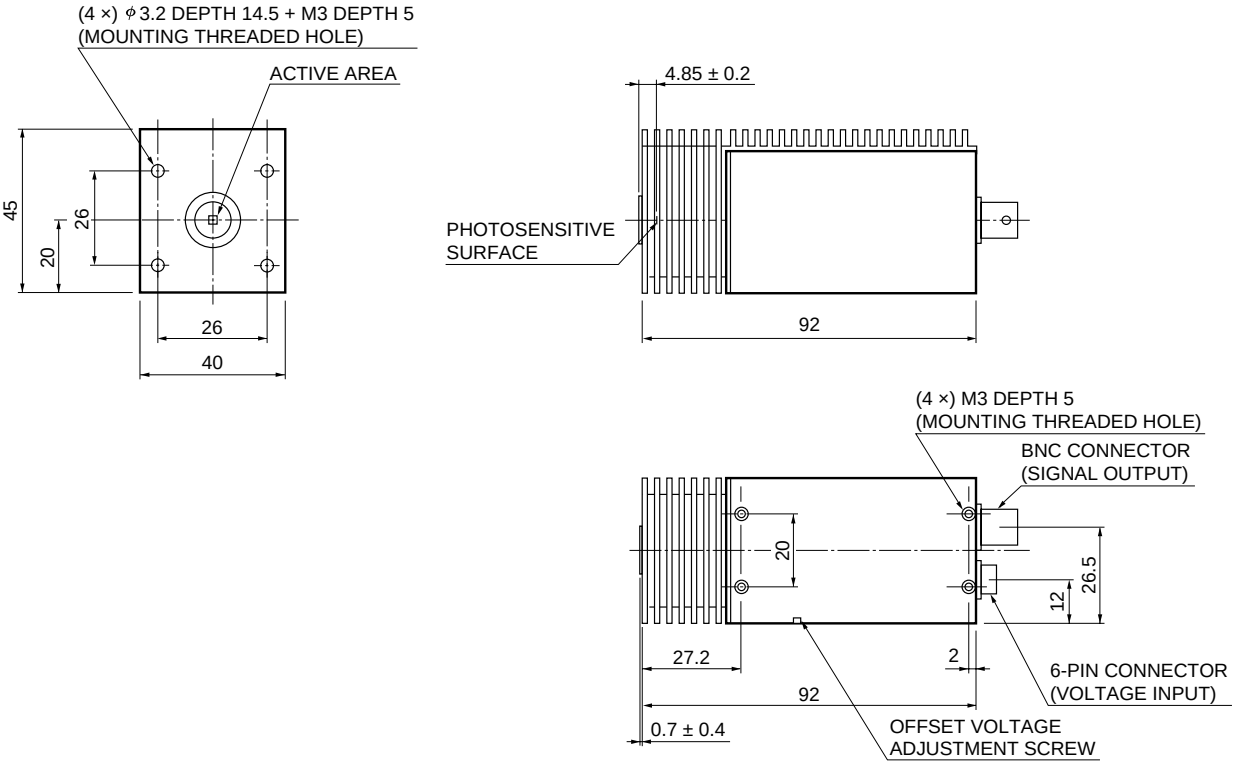
P4631-04



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(unit: mm)

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Handling precaution

The infrared detector modules (TE-cooled type) do not operate if not cooled. Always supply +2.5 V or +4.5 V to cool the detector element.

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