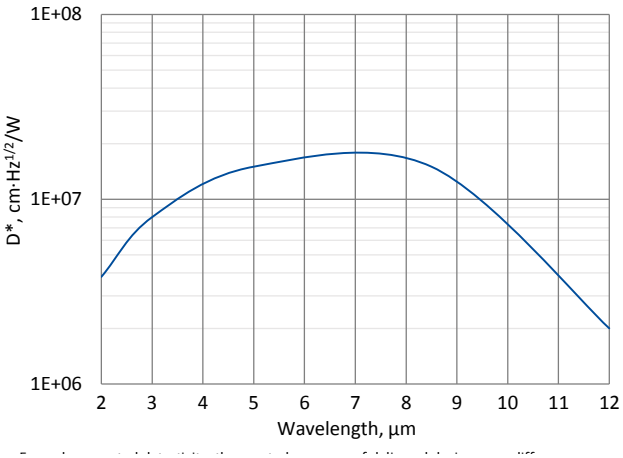
1.13 microM-10.6

1.13.1 2.0 – 12.0 µm and DC – 10 MHz HgCdTe micro-size IR detection module with photovoltaic multiple junction detector

microM-10.6 is a micro-size IR detection module. Uncooled photovoltaic mutiple junction detector, based on HgCdTe heterostructure, is integrated with transimpedance, DC coupled preamplifier. It is easy to assembly in space limited measuring systems of LWIR applications.

Spectral response (T_a = 20°C)



Exemplary spectral detectivity, the spectral response of delivered devices may differ.

Specification (T_a = 20°C)

Parameter	Typical value
Optical parameters	
Cut-on wavelength $\lambda_{cut\text{-}on}$ (10%), µm	≤2.0
Peak wavelength λ_{peak}, µm	8.0±1.5
Optimum wavelength λ_{opt}, µm	10.6
Cut-off wavelength $\lambda_{cut\text{-}off}$ (10%), µm	≥12.0
Detectivity D*(λ_{peak}), cm·Hz$^{1/2}$/W	≥1.5×10^{7}
Detectivity D*(λ_{opt}), cm·Hz$^{1/2}$/W	≥5.0×10^{6}
Output noise density v_n (100 kHz), µV/Hz$^{1/2}$	≤1
Electrical parameters	
Voltage responsivity R_v (λ_{peak}), V/W	≥1.2×10^{2}
Voltage responsivity R_v (λ_{opt}), V/W	≥5.0×10^{1}
Low cut-off frequency f_{lo}, Hz	DC
High cut-off frequency f_{hi}, Hz	≥10M
Output impedance R_{out}, Ω	50
Output voltage swing V_{out}, V	±1 (R_{Load} = 50 Ω)
Output voltage offset V_{off}, mV	max ±20
Power supply voltage V_{sup}, V	+9
Other information	
Active element material	epitaxial HgCdTe heterostructure
Active area A, mm×mm	1×1
Window	none
Acceptance angle Φ	~85°
Ambient operating temperature T_a, °C	10 to 30
Signal output plug	SMA
Power supply plug	03T-JWPF-VSLE-S (male)
Mounting hole	none
Fan	none

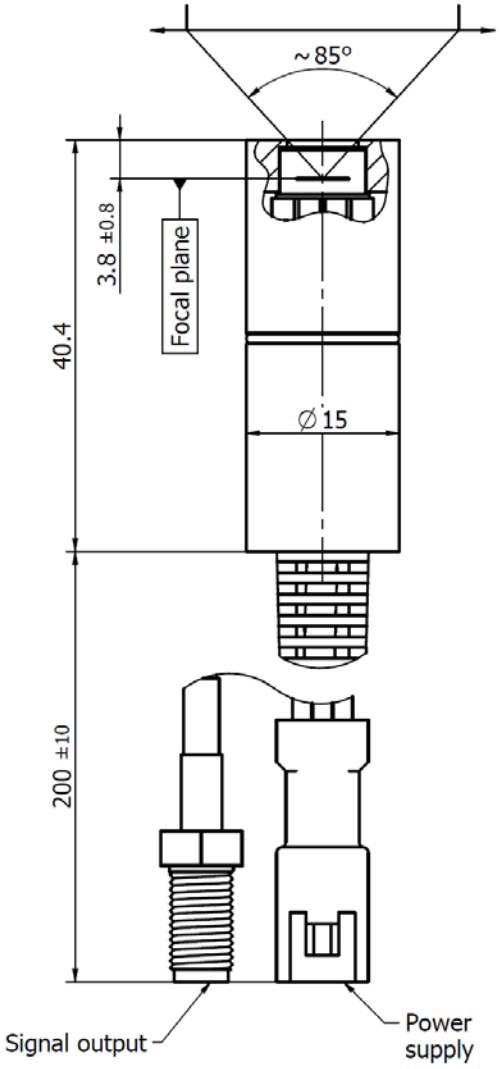
Features

- Very small size
- Convenient to use
- Versatility
- Sensitive to IR radiation polarisation
- Cost effective OEM version available
- Quantity discounted price
- Fast delivery

Applications

- Gas detection, monitoring and analysis
- CO_2 laser (10.6 µm) measurements
- Laser power monitoring and control
- Laser beam profiling and positioning
- Laser calibration

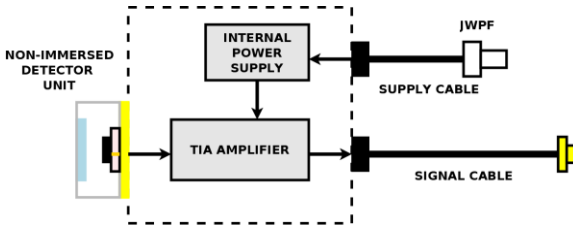
Mechanical layout, mm



Power supply plug 03T-JWPF-VSLE-S (male)

Function	Symbol	Pin number
Power supply input (–)	$-V_{sup}$	1
Ground	GND	2
Power supply input (+)	$+V_{sup}$	3

Schematic diagram



Included accessories

- SMA-BNC, JWPF-DB9 cables

Dedicated accessories

- PPS-03 preamplifier power supply + AC adaptor
- MH-1 module's holder
- DRB-2 base mounting system