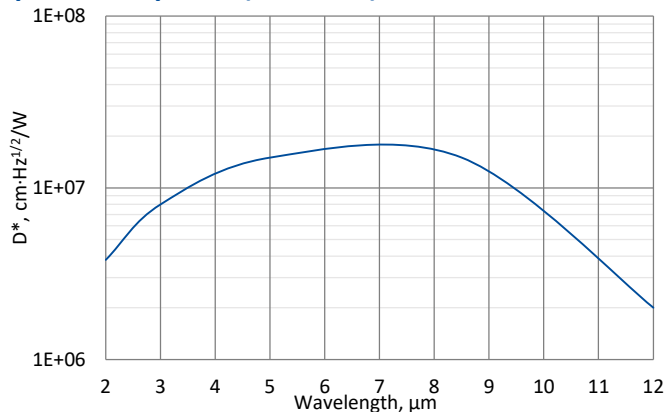


## microM-10.6

### 2.0 – 12.0 $\mu\text{m}$ 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 multiple 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 ( $T_a = 20^\circ\text{C}$ )



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



#### Specification ( $T_a = 20^\circ\text{C}$ )

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

\*<sup>o</sup>)  $R_L$  – load resistance

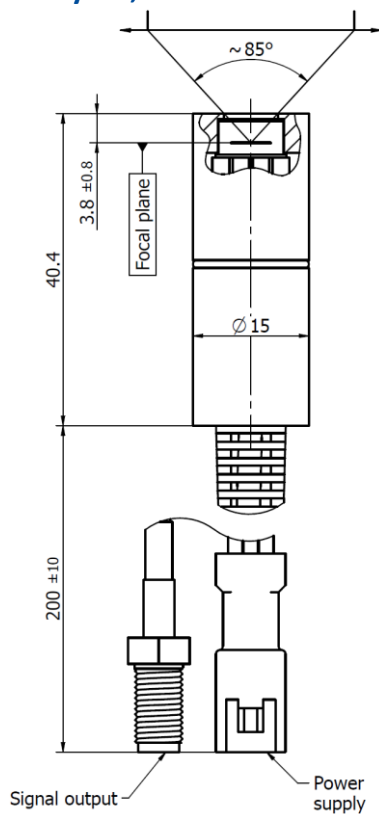
#### Features

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

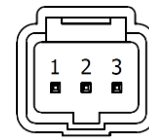
#### Applications

- Gas detection, monitoring and analysis
- CO<sub>2</sub> laser (10.6  $\mu\text{m}$ ) measurements
- Laser power monitoring and control
- Laser beam profiling and positioning
- Laser calibration

### Mechanical layout, mm

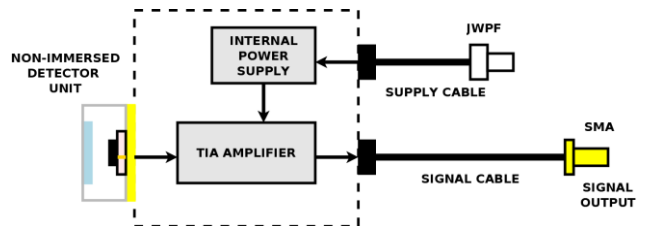


### Power supply plug 03T-JWPF-VSLE-S (male)



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

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