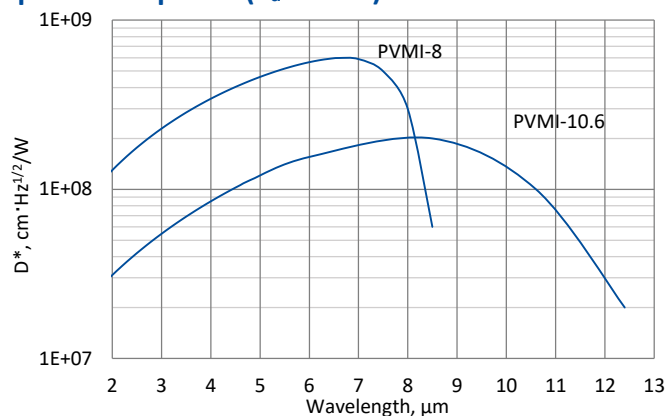


PVMI series

2 – 12 μm HgCdTe ambient temperature, optically immersed photovoltaic multiple junction detectors

PVMI series features uncooled IR photovoltaic multiple junction detectors based on sophisticated HgCdTe heterostructures for the best performance and stability, optically immersed in order to improve parameters of the devices. The detectors are optimized for the maximum performance at λ_{opt} . They are especially useful as large optical area detectors operating within 2 to 12 μm spectral range.

Spectral response ($T_a = 20^\circ\text{C}$)



BNC

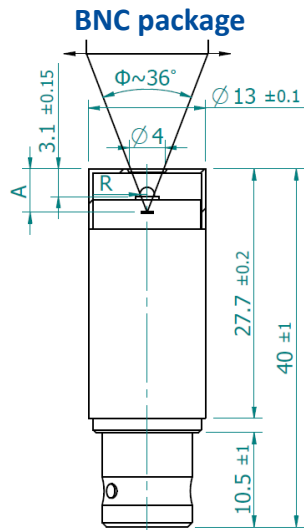
TO39

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

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

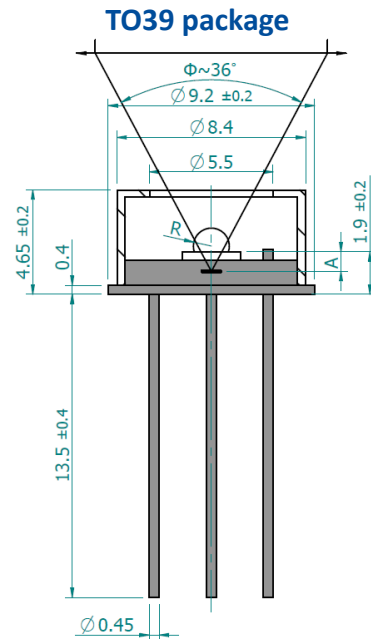
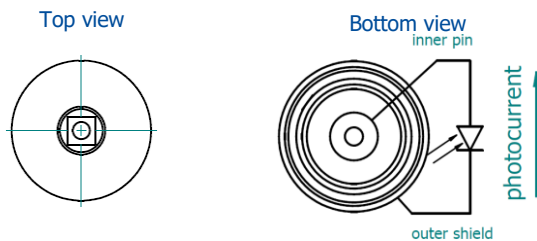
Parameter	Detector type	
	PVMI-8	PVMI-10.6
Active element material	epitaxial HgCdTe heterostructure	
Optimal wavelength λ_{opt} , μm	8.0	10.6
Detectivity $D^*(\lambda_{\text{peak}})$, $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	$\geq 6.0 \times 10^8$	$\geq 2.0 \times 10^8$
Detectivity $D^*(\lambda_{\text{opt}})$, $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	$\geq 3.0 \times 10^8$	$\geq 1.0 \times 10^8$
Current responsivity-optical area length product $R_i(\lambda_{\text{opt}}) \cdot L_O$, $\text{A}\cdot\text{mm}/\text{W}$	≥ 0.04	≥ 0.01
Time constant τ , ns	≤ 4	≤ 1.5
Resistance R , Ω	50 to 300	20 to 150
Optical area A_O , $\text{mm}\times\text{mm}$	1×1	1×1, 2×2
Package	TO39, BNC	
Acceptance angle Φ	$\sim 36^\circ$	
Window	none	

Mechanical layout, mm



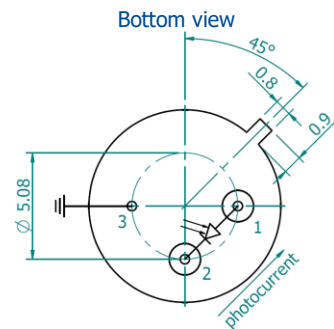
Parameter	Value	
Immersion microlens shape	hyperhemisphere	
Optical area A_o , mm×mm	1×1	2×2
R, mm	0.8	1.25
A, mm	5.5±0.3	6.85±0.30

Φ – acceptance angle
 R – hyperhemisphere microlens radius
 A – distance from the top of BNC package to the focal plane



Parameter	Value	
Immersion microlens shape	hyperhemisphere	
Optical area A_o , mm×mm	1×1	2×2
R, mm	0.8	1.25
A, mm	2.4±0.2	3.75±0.20

Φ – acceptance angle
 R – hyperhemisphere microlens radius
 A – distance from the bottom of hyperhemisphere microlens to the focal plane



Function	Pin number
Detector	1, 2
Chassis ground	3

Dedicated preamplifier



small SIP-TO39