



Electro Optical Components, Inc.

5460 Skylane Boulevard, Santa Rosa, CA 95403

Toll Free: 855-EOC-6300

www.eoc-inc.com | info@eoc-inc.com



Photoelectromagnetic detectors PEM

PEM series features room temperature IR detectors operate on the on the photoelectromagnetic effect in the semiconductors.

Detector type	Cooling, operating temperature T [K]	Optimal wavelength ^{*)} λ_{opt} [μm]	Detectivity ^{**) [cm$\cdot\sqrt{Hz}$ / W]}		Current responsivity length product @ λ_{opt} $R_{\lambda} \cdot L$ [$\frac{A \cdot mm}{W}$]	Time constant τ [ns]	Resistance R [Ω]	Acceptance angle \varnothing [$^{\circ}$] _{1/2V_A}	Optical area ^{****)} [$mm \times mm$]	Package	Window ^{****)}
			@ λ_{peak}	@ λ_{opt}							
PEM	uncooled, ~300	10.6	$\geq 1.6 \times 10^7$	$\geq 1.0 \times 10^7$	≥ 0.002	≤ 1.2	40 to 100	~48, 1.23	1x1 2x2	PEM-SMA, PEM-TO8	wedged ZnSe AR coated

^{*)} Other optimal wavelengths available upon request.

^{**) Data sheet states minimum guaranteed D^* values for each detector model. Higher performance detectors can be provided upon request.}

^{****)} Other optical area available upon request.

^{****)} Other windows available upon request.

Photoelectromagnetic detectors optically immersed PEMI

PEMI series features room temperature IR detectors operating on the on the photoelectromagnetic effect in the semiconductor, optically immersed (achieved by using high refractive index micro lenses) in order to improve performance of the devices, different acceptance angle and saturation level. Both PEM/PEMI devices are typically optimized for the best performance at 10.6 μm . The detectors include active element based on HgCdTe band gap engineered with selected composition and doping profiles, and miniature permanent magnets to produce a magnetic field. Exhibiting no flicker noise, they can be used at the same time for detection of CW and low frequency modulated radiation in the whole 2 to 11 μm spectral range.

Detector type	Cooling, operating temperature T [K]	Optimal wavelength ^{*)} λ_{opt} [μm]	Detectivity ^{**) [cm$\cdot\sqrt{Hz}$ / W]}		Current responsivity length product @ λ_{opt} $R_{\lambda} \cdot L$ [$\frac{A \cdot mm}{W}$]	Time constant τ [ns]	Resistance R [Ω]	Acceptance angle \varnothing [$^{\circ}$] _{1/2V_A}	Optical area ^{****)} [$mm \times mm$]	Package	Window ^{****)}
			@ λ_{peak}	@ λ_{opt}							
PEMI	uncooled, ~300	10.6	$\geq 1.6 \times 10^8$	$\geq 1.0 \times 10^8$	≥ 0.01	≤ 1.2	40 to 100	~36, 1.62	1x1 2x2	PEM-SMA, PEM-TO8	wedged ZnSe AR coated

^{*)} Other optimal wavelengths available upon request.

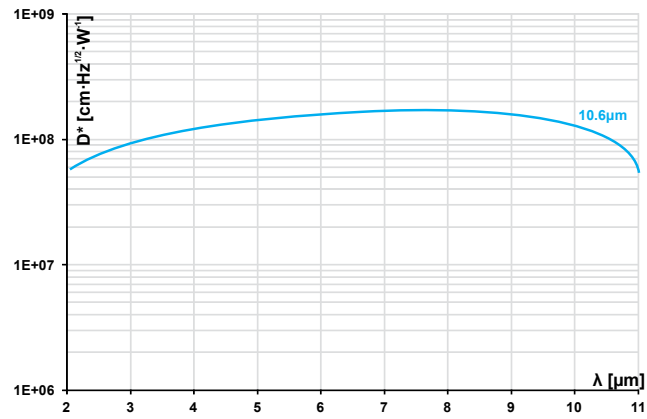
^{**) Data sheet states minimum guaranteed D^* values for each detector model. Higher performance detectors can be provided upon request.}

^{****)} Other optical area available upon request.

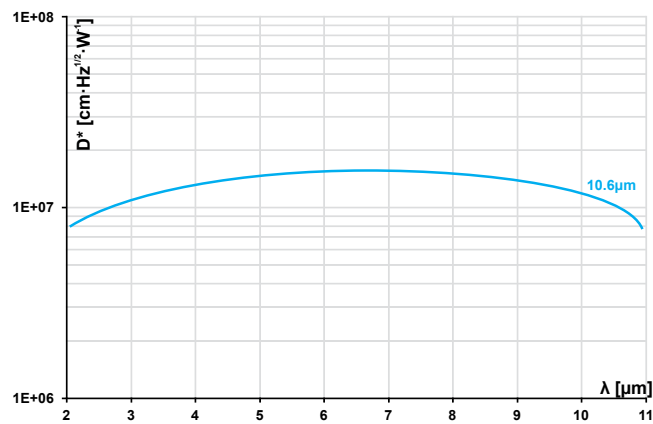
^{****)} Other windows available upon request.

Spectral characteristics^{*)}

PEMI



PEM



^{*)}Example of D^* vs wavelength λ for HgCdTe detectors.
Spectral characteristics of individual detectors may vary from those shown in the chart.