



Electro Optical Components, Inc.

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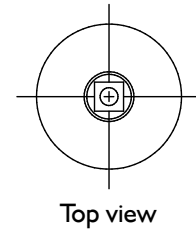
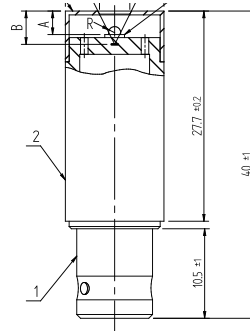
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Uncooled detectors are typically provided in packages (BNC, TO39) without windows. The exception is the specialized PEM package. Due to magnetic circuit incorporated into the package, a window is supplied to protect against pollution. There are two versions of packages dedicated for PEM detectors: PEM with SMA connector and PEM with TO8 base which allows to integrate detector with VIGO preamplifier.

BNC detector package

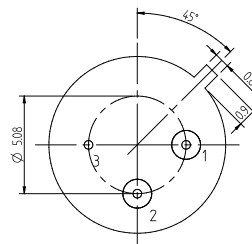
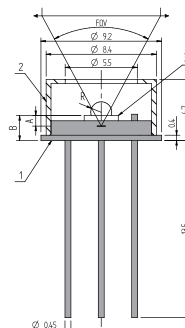


Top view

Dimensions [mm]

Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.50 – 1.25	infinity
A [mm]	4.6±0.3	5.5±0.3	6.8±0.3	3.1±0.3	1.6±0.3
B [mm]	3.10±0.15	3.10 ±0.15	3.10±0.15	3.10±0.15	1.60±0.15
FOV [°], Ø=4mm	~36	~36	~36	~66	~102
FOV [°], Ø=6mm	~36	~36	~36	~88	~124

TO39 detector package



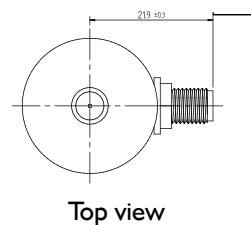
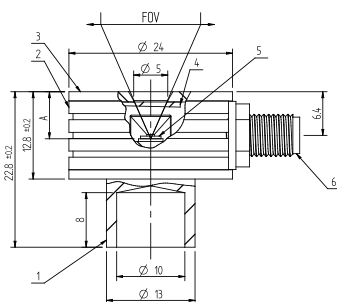
Bottom view

Pin number	Function
1(+), 2(-)	signal
3	chassis ground

Dimensions [mm]

Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	1.5±0.2	2.4±0.2	3.75±0.20	0	0
B [mm]	1.9±0.2	1.9±0.2	1.9±0.2	1.9±0.2	1.9±0.3
FOV [°]	~36	~36	~36	~90	~90

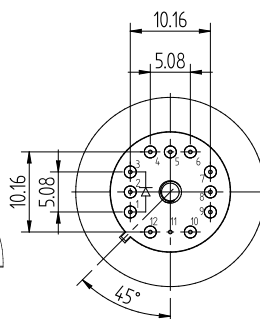
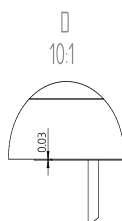
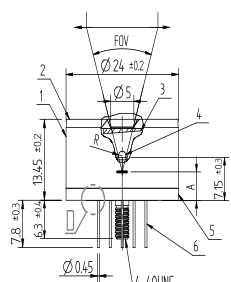
PEM detector package (with SMA connector)



Dimensions [mm]

Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	8.4±0.2	9.3±0.2	10.7±0.2	6.9±0.2	6.9±0.2
FOV [°], Ø=4mm	~35	~35	~35	~48	~48

PEM detector package (with TO8 base)



Pin number	Function
1, 3	signal
11	chassis ground
2, 4, 5, 6, 7, 8, 9, 10, 12,	not used

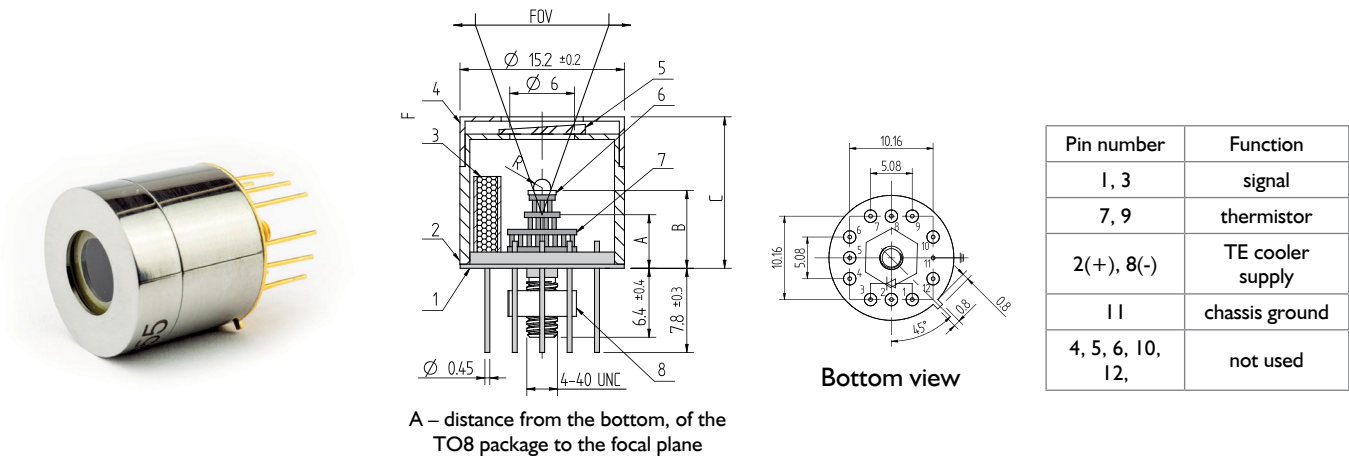
A – distance from the bottom of the PEM-TO8 package to the focal plane

Dimensions [mm]

Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.50-1.25	infinity
A [mm]	5.65±0.30	4.75±0.30	3.35±0.30	7.15±0.30	7.15±0.30
FOV [°]	~35	~35	~35	~53	~53

The packages of cooled detectors (TO8, TO66) are filled with dry, heavy noble gases for low thermal conductivity (Kr/Xe mixtures). Water vapor condensation is prevented by careful sealing and water absorbers applied inside the package. The packages are hermetically sealed with IR windows.

TO8 detector package



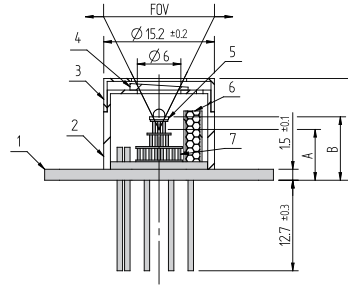
Dimensions [mm]

Two-stage thermoelectric cooler (2TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.25	infinity
A [mm]	4.1±0.3	3.2±0.3	1.85±0.30	5.6±0.3	5.6±0.3
B [mm]	5.6±0.3	5.6±0.3	5.6±0.3	5.6±0.3	5.6±0.3
C [mm]	11.0±0.3	1.10±0.3	11.0±0.3	11.0±0.3	11.0±0.3
FOV [°]	~36	~36	~36	~70	~70

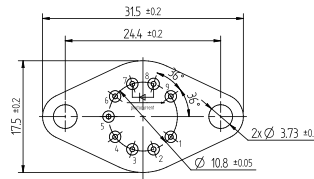
Three-stage thermoelectric cooler (3TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	5.70±0.35	4.80±0.35	3.45±0.35	7.20±0.35	7.20±0.35
B [mm]	7.20±0.35	7.20±0.35	7.20±0.35	7.20±0.35	7.20±0.35
C [mm]	12.4±0.3	12.4±0.3	12.4±0.3	12.4±0.3	12.4±0.3
FOV [°]	~36	~36	~36	~70	~70

Four-stage thermoelectric cooler (4TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	7.3±0.4	6.4±0.4	5.0±0.4	8.8±0.4	8.8±0.4
B [mm]	8.8±0.4	8.8±0.4	8.8±0.4	8.8±0.4	8.8±0.4
C [mm]	14.0±0.3	14.0±0.3	14.0±0.3	14.0±0.3	14.0±0.3
FOV [°]	~36	~36	~36	~70	~70

TO66 detector package



A – distance from the bottom of the TO66 package to the focal plane



Bottom view

Pin number	Function
7, 8	signal
5, 6	thermistor
I(+), 9(-)	TE cooler supply
II	chassis ground
2, 3, 4	not used

Dimensions [mm]

Two-stage thermoelectric cooler (2TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	5.1±0.3	4.2±0.3	12.9±0.3	6.6±0.3	6.6±0.3
B [mm]	6.6±0.3	6.6±0.3	6.6±0.3	6.6±0.3	6.6±0.3
C [mm]	12.1±0.3	12.1±0.3	12.1±0.3	12.1±0.3	12.1±0.3
FOV [°]	~36	~36	~36	~70	~70

Three-stage thermoelectric cooler (3TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	7.20±0.35	6.30±0.35	5.00±0.35	8.70±0.35	8.70±0.35
B [mm]	8.70±0.35	8.70±0.35	8.70±0.35	8.70±0.35	8.70±0.35
C [mm]	14.0±0.3	14.0±0.3	14.0±0.3	14.0±0.3	14.0±0.3
FOV [°]	~36	~36	~36	~70	~70

Four-stage thermoelectric cooler (4TE)					
Lens shape	Hyperhemisphere			Hemisphere	Flat
Optical area [mm x mm]	0.5×0.5	1×1	2×2	0.5×0.5 - 2×2	0.01×0.01 - 4×4
R [mm]	0.5	0.8	1.25	0.5 - 1.6	infinity
A [mm]	8.3±0.4	7.4±0.4	6.1±0.4	9.8±0.4	9.8±0.4
B [mm]	9.8±0.4	9.8±0.4	9.8±0.4	9.8±0.4	9.8±0.4
C [mm]	15.2±0.3	15.2±0.3	15.2±0.3	15.2±0.3	15.2±0.3
FOV [°]	~36	~36	~36	~70	~70