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OPTICAL ENGINEERING

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Infrared Lens Application

Infrared lenses play a critical role in enabling advanced imaging systems by capturing thermal radiation beyond the visible spectrum. Depending on the wavelength range, **LWIR lenses (8-12 μ m)** and **MWIR lenses (3-5 μ m)** serve different applications and performance requirements across industries.

Common Applications

- Security & surveillance
- Firefighting & rescue operations
- Military & defence systems
- Long-range surveillance & targeting
- Scientific research & laboratory use
- Aerospace & aviation imaging



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Uncooled Long-Wave Infrared (LWIR) Lens



Category 1: Athermal Lens

Model	FL (mm)	F/#	Detector
SOT-LW-A8F1-612	8	1.0	640×512 / 12μm
SOT-LW-A9F12-617	9	1.2	640×512 / 17μm
SOT-LW-A9.1F1-612	9.1	1.0	640×512 / 12μm
SOT-LW-A10F1-612	10	1.0	640×512 / 12μm
SOT-LW-A15F1-612	15	1.0	640×512 / 12μm
SOT-LW-A19F1-8012	19	1.0	1280×1024 / 12μm
SOT-LW-A25F1-617	25	1.0	640×512 / 17μm
SOT-LW-A25F1-8012	25	1.0	1280×1024 / 12μm
SOT-LW-A267F12-612	26.7	1.2	640×512 / 12μm
SOT-LW-A35F1-617	35	1.0	640×512 / 17μm
SOT-LW-A35F1-8012	35	1.0	1280×1024 / 12μm
SOT-LW-A35F1-612-B	35	1.0	640×512 / 12μm
SOT-LW-A35F12-612	35	1.2	640×512 / 12μm
SOT-LW-A40F1-8012	40	1.0	1280×1024 / 12μm
SOT-LW-A40F12-612	40	1.2	640×512 / 12μm
SOT-LW-A45F11-8012	45	1.1	1280×1024 / 12μm
SOT-LW-A45F12-617	45	1.2	640×512 / 17μm
SOT-LW-A45F12-8012	45	1.2	1280×1024 / 12μm
SOT-LW-A50F1-617	50	1.0	640×512 / 17μm

Model	FL (mm)	F/#	Detector
SOT-LW-A50F1-8012	50	1.0	1280×1024 / 12μm
SOT-LW-A50F11-617	50	1.1	640×512 / 17μm
SOT-LW-A50F12-612	50	1.2	640×512 / 12μm
SOT-LW-A50F12-8012	50	1.2	1280×1024 / 12μm
SOT-LW-A55F1-612	55	1.0	640×512 / 12μm
SOT-LW-A60F1-612	60	1.0	640×512 / 12μm
SOT-LW-A60F11-8012	60	1.1	1280×1024 / 12μm
SOT-LW-A60F12-612	60	1.2	640×512 / 12μm
SOT-LW-A60F12-8012	60	1.2	1280×1024 / 12μm
SOT-LW-A60F12-612-B	60	1.2	640×512 / 12μm
SOT-LW-A60F12-8012-B	60	1.2	1280×1024 / 12μm
SOT-LW-A67F1-612	67	1.0	640×512 / 12μm
SOT-LW-A75F1-8012	75	1.0	1280×1024 / 12μm
SOT-LW-A75F11-612	75	1.1	640×512 / 12μm
SOT-LW-A75F12-617	75	1.2	640×512 / 17μm
SOT-LW-A75F12-8012	75	1.2	1280×1024 / 12μm
SOT-LW-A90F09-8012	90	0.9	1280×1024 / 12μm
SOT-LW-A90F12-612	90	1.2	640×512 / 12μm
SOT-LW-A100F12-8012	100	1.2	1280×1024 / 12μm

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Category 2: Motorized Continuous Zoom Lens

Model	FL (mm)	F/#	Detector	FOV (° H×V)
SOT-LW-Z20100-612	20-100	0.9-1.2	640×512 / 12μm	4.40×3.52 – 21.74×17.46
SOT-LW-Z20100-8012	20-100	1.2	1280×1024 / 12μm	8.78×7.03 – 42.01×34.15
SOT-LW-Z20120-612	20-120	0.8-1.1	640×512 / 12μm	3.67×2.93 – 21.74×17.46
SOT-LW-Z2575-617	25-75	0.9-1.2	640×512 / 17μm	8.30×6.64 – 24.55×19.75
SOT-LW-Z25100-617	25-100	0.9-1.1	640×512 / 17μm	6.23×4.98 – 24.55×19.75
SOT-LW-Z25150-612	25-150	1.1	640×512 / 12μm	2.93×2.35 – 17.46×14.01
SOT-LW-Z25190-612	25-190	0.83-1.2	640×512 / 12μm	2.32×1.85 – 17.46×14.01
SOT-LW-Z25225-612	25-225	1.35-1.37	640×512 / 12μm	1.96×1.56 – 17.46×14.01
SOT-LW-Z30150-612	30-150	0.9-1.2	640×512 / 12μm	2.93×2.35 – 14.59×11.69
SOT-LW-Z30150B-8012	30-150	0.87-1.24	1280×1024 / 12μm	5.86×4.69 – 28.72×23.15
SOT-LW-Z30150-8012	30-150	1.2	1280×1024 / 12μm	5.86×4.69 – 28.72×23.15
SOT-LW-Z30180-612	30-180	0.8-1.2	640×512 / 12μm	2.44×1.96 – 14.59×11.69
SOT-LW-Z30180-617	30-180	0.8-1.2	640×512 / 17μm	3.46×2.77 – 20.56×16.51

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Category 3: Motorized Focus Lens

Model	FL (mm)	F/#	Detector	FOV (° H×V)
SOT-LW-EA4508-617	45	0.8	640x512 / 17μm	13.79 x 11.05
SOT-LW-EA5010-617	50	1	640x512 / 17μm	12.42 x 9.95
SOT-LW-EA5012-617	50	1.2	640x512 / 17μm	12.42 x 9.95
SOT-LW-EA6010-617	60	1	640x512 / 17μm	10.36 x 8.30
SOT-LW-EA6910-617	69	1	640x512 / 17μm	9.02 x 7.22
SOT-LW-EA7510-617	75	1	640x512 / 17μm	8.30 x 6.64
SOT-LW-EA9012-617	90	1.2	640x512 / 17μm	6.92 x 5.54
SOT-LW-EA10010-617	100	1	640x512 / 17μm	6.23 x 4.98
SOT-LW-E7510-612	75	1	640x512 / 12μm	5.86 x 4.69
SOT-LW-E10010-612	100	1	640x512 / 12μm	4.40 x 3.52
SOT-LW-E11512-8012	115	1.2	1280x1024 / 12μm	7.64 x 6.12
SOT-LW-E12012-612	120	1.2	640x512 / 12μm	3.67 x 2.93

Standard models only. Contact us for more options or customization.



Category 4: Cooled Fixed Focus Lens

Model	FL (mm)	F/#	Detector	FOV (° H×V)
SOT-LW-L50F2-615	50	2	640x512 / 15μm	10.97 x 8.78
SOT-LW-L100F2-615	100	2	640x512 / 15μm	5.50 x 4.40
SOT-LW-LA100F2-615	100	2	640x512 / 15μm	5.50 x 4.40
SOT-LW-LS100F2-615	100	2	640x512 / 15μm	5.50 x 4.40
SOT-LW-L120F2-615	120	2	640x512 / 15μm	4.58 x 3.67
SOT-LW-LD100200F2-615	100-200	2	640x512 / 15μm	3.67 x 2.93

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Cooled Midwave Infrared (MWIR) Lens



Category 1: Cooled Fixed Focus Lens

Model	FL (mm)	F/#	Detector	FOV (° H×V)
SOT-MW-M25F2-615	25	2	640x512 / 15µm	21.74 x 17.46
SOT-MW-M30F4-615	30	4	640x512 / 15µm	18.18 x 14.59
SOT-MW-M35I0-612	35	1	640x512 / 12µm	12.52 x 10.03
SOT-MW-M50F2-615	50	2	640x512 / 15µm	10.97 x 8.78
SOT-MW-M50F4-615	50	4	640x512 / 15µm	10.97 x 8.78
SOT-MW-M100F2-615	100	2	640x512 / 15µm	5.50 x 4.40
SOT-MW-M100F2-8015	100	2	1280x1024 / 15µm	10.97 x 8.78
SOT-MW-M100F4-615	100	4	640x512 / 15µm	5.50 x 4.40

Standard models only. Contact us for more options or customization.

Category 2: In-line Cooled Continuous Zoom Lens



Model	FL (mm)	F#	Detector	FOV (° H×V)
SOT-MW-Z15300F4-615	15-300	4	640x512 / 15µm	35.49 x 35.49 ~ 1.83 x 1.83
SOT-MW-Z15330F4-615	15-330	4	640x512 / 15µm	35.49 x 35.49 ~ 1.67 x 1.67
SOT-MW-Z18275F55-615	18-275	5.5	640x512 / 15µm	29.86 x 29.86 ~ 2.00 x 2.00
SOT-MW-Z20200F4-615	20-200	4	640x512 / 15µm	26.99 x 26.99 ~ 2.75 x 2.75
SOT-MW-Z22.5450F4-615	22.5-450	4	640x512 / 15µm	24.09 x 24.09 ~ 1.22 x 1.22
SOT-MW-Z22.5450F4-615 (B) No magnification lens	22.5-450	4	640x512 / 15µm	24.09 x 24.09 ~ 1.22 x 1.22
SOT-MW-Z30300F2-615	30-300	2	640x512 / 15µm	18.18 x 18.18 ~ 1.83 x 1.83
SOT-MW-Z30600F4-615	30-600	4	640x512 / 15µm	18.18 x 18.18 ~ 0.92 x 0.92
SOT-MW-Z35900F4-615	35-900	4	640x512 / 15µm	15.62 x 15.62 ~ 0.61 x 0.61
SOT-MW-Z37.5750F4-615	37.5-750	4	640x512 / 15µm	14.59 x 14.59 ~ 0.73 x 0.73
SOT-MW-Z40220F4-615	40-220	4	640x512 / 15µm	13.69 x 13.69 ~ 2.50 x 2.50
SOT-MW-Z45900F4-615	45-900	4	640x512 / 15µm	12.18 x 12.18 ~ 0.61 x 0.61
SOT-MW-Z901000F4-615	90-1000	4	640x512 / 15µm	6.11 x 6.11 ~ 0.55 x 0.55

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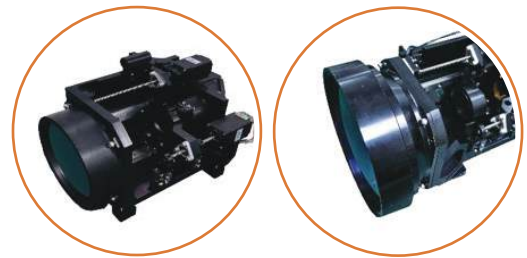
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Category 3: Catadioptric Cooled Continuous Zoom Lens

Model	FL (mm)	F#	Detector	FOV (° H×V)
SOT-MW-ZF15300F4-615L	15-300	4	640x512 / 15μm	35.49 x 35.49 ~ 1.83 x 1.83
SOT-MW-ZF15300F4-615S	15-300	4	640x512 / 15μm	35.49 x 35.49 ~ 1.83 x 1.83
SOT-MW-ZF20420F4-615S	20-420	4	640x512 / 15μm	26.99 x 26.99 ~ 1.31 x 1.31
SOT-MW-ZF20500F55-615	20-500	5.5	640x512 / 15μm	26.99 x 26.99 ~ 1.10 x 1.10
SOT-MW-ZF20550F55-615	20-550	5.5	640x512 / 15μm	26.99 x 26.99 ~ 1.00 x 1.00
SOT-MW-ZF23500F4-615L	23-500	4	640x512 / 15μm	23.58 x 23.58 ~ 1.10 x 1.10
SOT-MW-ZF23500F4-615S	23-500	4	640x512 / 15μm	23.58 x 23.58 ~ 1.10 x 1.10
SOT-MW-ZF23700F4-615S	23-700	4	640x512 / 15μm	23.58 x 23.58 ~ 0.79 x 0.79
SOT-MW-ZF25600F4-615L	25-600	4	640x512 / 15μm	21.74 x 21.74 ~ 0.92 x 0.92
SOT-MW-ZF30200F2-615S	30-200	2	640x512 / 15μm	18.18 x 18.18 ~ 2.75 x 2.75
SOT-MW-ZF50200F2-615S	50-200	2	640x512 / 15μm	10.97 x 10.97 ~ 2.75 x 2.75

Standard models only. Contact us for more options or customization.



Category 4: Scanning Dual FOV Lens

Model	FL (mm)	F#	Detector	FOV (° H×V)
SOT-MW-SDF80200F2-615	80-200	2	640x512 / 15μm	6.87 x 6.87 ~ 2.75 x 2.75
SOT-MW-SDF300600F4-615	300-600	4	640x512 / 15μm	1.83 x 1.83 ~ 0.92 x 0.92

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