



SHAPE OPTICS

TECHNOLOGIES PTE LTD



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 (8-12µm) and MWIR lenses (3-5µm) serve different applications and performance requirements across industries.

Common Applications

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

Uncooled Long-Wave Infrared (LWIR) Lens

Category 1: Athermal Lens



Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-LW-A-91F1	9.1	1	45.8° x 37.3°	640x512 / 12µm	Athermal	AR	8.11g
SOT-LW-A-10F1	10	1	42.01° x 34.15°	640x512 / 12µm	Athermal	AR	25g
SOT-LW-A-13F1	13	1	32.9° x 26.6°	640x512 / 12µm	Athermal	AR	15g
SOT-LW-A-19F1	19	1	22.6° x 18.2°	640x512 / 12µm	Athermal	AR	30.6g
SOT-LW-A-25F1	25	1	14.6° x 11.7°	640x512 / 12µm	Athermal	AR	18.8g
SOT-LW-A-35F1	35	1	12.5° x 10°	640x512 / 12µm	Athermal	DLC	98.7g
SOT-LW-A-45F1	45	1	19.37° x 15.55°	1280x1024 / 12µm	Athermal	AR	162g
SOT-LW-A-50F1	50	1	12.4° x 10°	640x512 / 12µm	Athermal	AR	144.1g
SOT-LW-A-60F1	60	1	7.3° x 5.9°	640x512 / 12µm	Athermal	HD	231g
SOT-LW-A-75F1	75	1	8.3° x 6.6°	640x512 / 17µm	Athermal	AR	540.8g
SOT-LW-A-90F1	90	1	4.9° x 3.9°	640x512 / 12µm	Athermal	AR	561g
SOT-LW-A-100F1	100	1	8.78° x 7.03°	1280x1024 / 12µm	Athermal	AR	725g

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

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Category 2: Manual Focus Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-LW-M-13F1	13	1	32.9° x 26.6°	640x512 / 12µm	Manual	HD	41.7g
SOT-LW-M-19F1	19	1	22.9° x 18.4°	640x512 / 12µm	Manual	AR	63g
SOT-LW-M-25F1	25	1	17.5° x 14°	640x512 / 12µm	Manual	HD	41.9g
SOT-LW-M-35F1	35	1	12.5° x 10°	640x512 / 12µm	Manual	DLC	142.5g
SOT-LW-M-50F1	50	1	8.7° x 7°	640x512 / 12µm	Manual	DLC	124.5g
SOT-LW-M-75F1	75	1	8.3° x 6.6°	640x512 / 12µm	Manual	DLC	287g
SOT-LW-M-100F1	100	1	4.4° x 3.5°	640x512 / 12µm	Manual	HD	527.4g
SOT-LW-M-120F1	120	1	3.7° x 2.9°	640x512 / 12µm	Manual	DLC	716g

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Category 3: Motorized Focus Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-LW-MF-45F08	45	0.8	13.79° x 11.05°	640x512 / 17µm	Motorized	AR	TBD
SOT-LW-MF-50F1	50	1	8.8° x 7°	640x512 / 12µm	Motorized	HD	240g
SOT-LW-MF-75F1	75	1	5.86° x 4.69°	640x512 / 12µm	Motorized	DLC	550g
SOT-LW-MF-80F1	80	1	11° x 8.8°	1280x1024 / 12µm	Motorized	DLC	TBD
SOT-LW-MF-90F12	90	1.2	6.92° x 5.54°	640x512 / 12µm	Motorized	AR	TBD
SOT-LW-MF-100F1	100	1	4.4° x 3.5°	640x512 / 12µm	Motorized	HD	1010.6g
SOT-LW-MF-150F12	150	1.2	5.86° x 4.69°	1280x1024 / 12µm	Motorized	DLC	1410g
SOT-LW-MF-190F12	190	1.2	4.6° x 3.7°	1280x1024 / 12µm	Motorized	DLC	2200g

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Category 4: Continuous Zoom Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-LW-Z-1560	15-60	1.1-1.2	28.7°~23.2° x 7.3°~5.9°	640x512 / 12µm	Motorized	DLC	316.5g
SOT-LW-Z-20120	20-120	0.8-1.1	21.74°~17.46° x 3.67°~2.93°	640x512 / 12µm	Motorized	AR/DLC	1700g
SOT-LW-Z-2575	25-75	1.2	24.6°~19.8° x 8.3°~6.6°	640x512 / 17µm	Motorized	DLC	750g
SOT-LW-Z-25150	25-150	0.9-1.2	24.6°~19.8° x 4.2°~3.3°	640x512 / 12µm	Motorized	DLC	1903g
SOT-LW-Z-25225	25-225	0.8-1.5	34.2°~27.6° x 3.9°~3.1°	640x512 / 12µm	Motorized	DLC	3640g
SOT-LW-Z-30120	30-120	0.92-1.05	28.72°~23.15° x 7.32°~5.86°	1280x1024 / 12µm	Motorized	DLC	2550g
SOT-LW-Z-30150	30-150	1.0-1.2	28.7°~23.2° x 5.9°~4.7°	1280x1024 / 12µm	Motorized	DLC	2910g
SOT-LW-Z-30180	30-180	1.0-1.2	28.7°~23.2° x 4.9°~3.9°	1280x1024 / 12µm	Motorized	DLC	3800g

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Category 5: Dual FOV Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-LW-D-2575	25/75	0.8/1.0	24.55°x19.75° / 8.3°x6.64°	640x512 / 17µm	Motorized	AR	1020g
SOT-LW-D-40120	40/120	0.9/1.2	15.49°x12.42° / 5.19°x4.15°	640x512 / 17µm	Motorized	DLC	1410g
SOT-LW-D-50100	50/100	1.0/1.14	8.78°x7.03° / 4.4°x3.52°	640x512 / 12µm	Motorized	AR	950g
SOT-LW-D-60180	60/180	0.9/1.2	10.36°x8.3° / 3.46°x2.77°	640x512 / 12µm	Motorized	DLC	2200g

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Cooled Mid-Wave Infrared (MWIR) Lens

Category 1: Athermal Lens



Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Cold Stop/CPFD (mm)	Weight
SOT-MW-A-10F2	10	2	31.28°x42.01°	640x512 / 15µm	Athermal	DLC	19.8	180g
SOT-MW-A-25F2	25	2	21.74°x17.46°	640x512 / 15µm	Athermal	AR	20	50g
SOT-MW-A-916F2	91.6	2	6°x4.8°	640x512 / 15µm	Athermal	AR	20.47	360g

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Category 2: Manual Focus Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Cold Stop/CPFD (mm)	Weight
SOT-MW-M-19F2	19	2	28.36°x22.85°	640x512 / 15µm	Manual	AR	19.45	180g
SOT-MW-M-20F2	20	2	21.74°x17.46°	1280x1024 / 10µm	Manual	AR	28.3	120g
SOT-MW-M-50F2	50	2	10.97°x8.78°	640x512 / 15µm	Manual	AR	20.5	150g
SOT-MW-M-75F2	75	2	7.32°x5.86°	640x512 / 15µm	Manual	AR	20.5	210g
SOT-MW-M-100F2	100	2	10.97°x8.78°	1280x1024 / 15µm	Manual	AR	28.15	600g

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Category 3: Motorized Focus Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Cold Stop/CPFD (mm)	Weight
SOT-MW-MF-50F15	50	1.5	10.97° x 8.78°	640x512 / 15µm	Motorized	DLC	19.49	3200g
SOT-MW-MF-120F2	120	2.0	3.67° x 4.58°	640x512 / 15µm	Motorized	AR	19.1	2050g
SOT-MW-MF-180F18	180	1.8	3.06° x 2.44°	640x512 / 15µm	Motorized	AR	25	1460g

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Category 4: Continuous Zoom Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Cold Stop/CPFD (mm)	Weight
SOT-MW-Z-15500F4	15-500	4	35.49°~28.72° x 1.83°~1.47°	640x512 / 15µm	Motorized	AR	19.1	1450g
SOT-MW-Z-20200F4	20-200	4	26.99°~21.74° x 2.75°~2.2°	640x512 / 15µm	Motorized	AR	19.1	390g
SOT-MW-Z-30300F4	30-300	4	24.09°~19.37° x 2.44°~1.96°	1280x1024 / 10µm	Motorized	AR	19.1	950g
SOT-MW-Z-35690F4	35-690	4	15.62°~12.52° x 0.8°~0.64°	640x512 / 15µm	Motorized	AR	20.47	3800g

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Category 5: Dual FOV Lens

Model	Focal Length (mm)	F/#	FOV (HxV)	Detector	Focusing Method	Coating	Weight
SOT-MW-D-80200	80/200	2	6.87°~5.50° x 2.75°~2.20°	640x512 / 15µm	Motorized	AR	TBD
SOT-MW-D-300600	300/600	4	1.83°~1.47° x 0.92°~0.73°	640x512 / 15µm	Motorized	AR	TBD

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