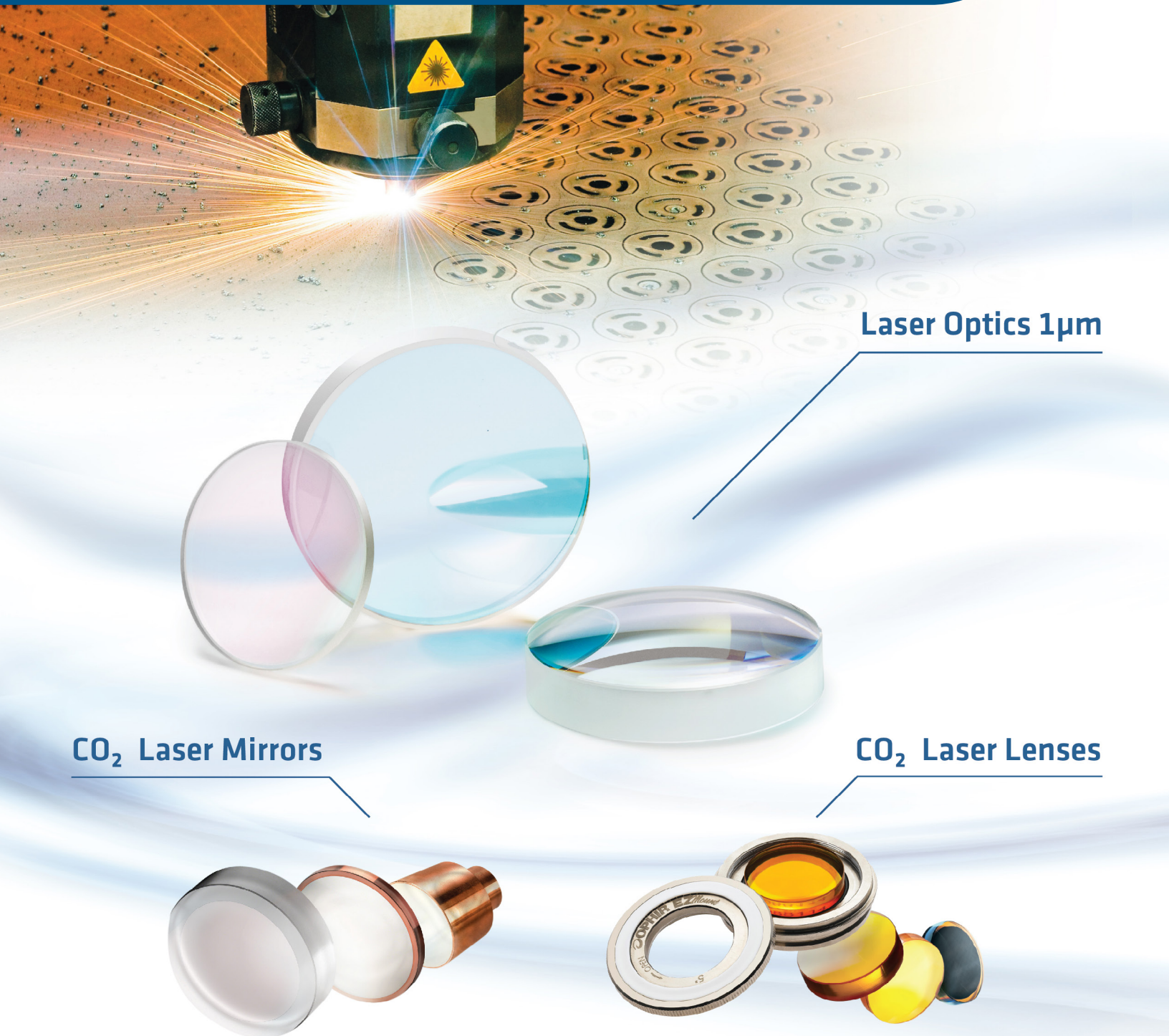


Optimize the Optics for Your High Power Laser Applications



CO₂ Laser Mirrors

Laser Optics 1μm

CO₂ Laser Lenses

High power optics configurations for most popular OEM laser models

Optics for Solid-State Lasers (1 μm)



High power lasers are a growing industry with numerous applications. As technology advances, and lasers become more sophisticated, the optics used in such systems must provide increasingly superior levels of performance. Ophir with its 1 μm high power laser optics range, guarantees maximum focus stability and minimum aberrations, by using advanced manufacturing technologies, for high optical performance.

Products for 1 μm high power fiber lasers

Ophir offers a wide array of first-class optical coatings for high power fiber lasers in the 1 μm wavelength range, including:

- Protective windows
- Spheric & aspheric lenses
- Optical collimation and focusing assemblies (doublets and singlets)

Ophir Aspherical Lenses

Aspherical surfaces on collimating and focusing lenses provide improved performance over conventional, spherical surfaces in high-power industrial fiber laser and direct diode laser systems. The aspherical shape of the optics reduces spherical aberration resulting in a smaller spot size, a uniform spot shape and greater depth of focus.

Capabilities

- High laser induced damage threshold (LIDT) coatings 20J/ cm^2
- Low absorption 10-50ppm
- %R @1030-1090 < 0.1%-0.2%
- %T @650-670 > 60%-95% (2 sides)

Quality Assured

- Chosen by top-tier laser OEM manufacturers
- Extensively tested and utilized in laser applications above 8kW



Best performance



Superior coating



Approved and used by leading OEMs



Best cost/ benefit ratio

High power optics configurations for most popular OEM laser models

Optics for CO2 lasers



Clear Magic™
Ultra Low Absorption

- Focusing lens made of high quality ZnSe substrate
- **Radioactive-free coating***
- $\leq 0.13\%$ absorption (guaranteed)
- Designed specifically for high power laser systems
- Superior focus stability
- Transparent for red laser pointer
- Longer life expectancy at strained working conditions



Black Magic™
Low Absorption

- Focusing lens made of high quality ZnSe substrate
- **Radioactive-free coating***
- $\leq 0.15\%$ absorption (guaranteed)
- Highest durability available
- Humidity resistant
- Superior cost/benefit ratio
- High resistance to back spatter
- Ideal for cutting aluminum and stainless steel



Duralens™

- Focusing lens made of high quality ZnSe substrate
- High durability
- $\leq 0.2\%$ absorption
- OEM approved
- Available mounted or non-mounted
- Available for all common laser machines



Mirrors

- Copper and Silicon
- Total reflectors
- Phase retarders
- Maximum Metal Reflector (MMR)
- Absorbing Thin-Film Reflectors (ATFR)
- Output couplers
- Rear mirrors
- OEM approved

*Thorium, $_{90}\text{Th}$ free

EZ your laser application maintenance. Prolong its lifespan.



EZ Mount™

- Reusable lens mounts compatible with Amada laser applications
- Unbeatable cost savings
- Minimized downtime
- No tools required
- No Indium wire



EZ Clean™

- Wipes for routine cleaning of optical laser lenses
- Quick and easy to use
- Superior cleaning results
- Disposable, single-use packets
- Resistant to shop contamination
- “No touch” holders available



EZ Test™

- Portable lens stress analyzers
- Immediate problem identification before lens failure occurs
- Non-contact holders
- Replaceable polarizing filters
- No additional hardware required

Ophir Laser Optics

With vast knowledge and extensive experience accumulated over four decades, Ophir Laser Optics Group, an MKS (NASDAQ: MKSI) company, offers a full range of high quality OEM and replacement optics for high power CO₂ laser and 1μm laser applications. Used by leading laser manufacturers around the world, our products meet the highest industry standards and have been widely tested, with outstanding results.

All manufacturing is carried out in-house using automated CNC, patented diamond turning technologies, and advanced, cutting-edge coating processes and measuring equipment. With a global distribution and support network, our commitment to our customers is unparalleled.

Lenses for high power fiber lasers

Ophir P/N	Diameter (inch/mm)	F.L. (inch/mm)	E.T. (mm)
Focusing Doublet			
633859-117	1.18/ 30.0	4.92/ 125.00	Assembly #680339-001
633860-117	1.18/ 30.0	4.92/ 125.00	
633910-117	1.46/ 37.0	5.91/ 150.00	Assembly #680337-001
633911-117	1.46/ 37.0	5.91/ 150.00	
633771-117	1.18/ 30.0	5.91/ 150.00	
633772-117	1.18/ 30.0	5.91/ 150.00	
Collimating Doublet			
633861-117	1.18/ 30.0	3.94/ 100.00	Assembly #680340-001
633862-117	1.18/ 30.0	3.94/ 100.00	
634132-117	1.46/ 37.0	3.94/ 100.00	Assembly #680355-001
634133-117	1.46/ 37.0	3.94/ 100.00	
Single Lens			
632284-117	1.50/ 38.1	7.50/ 190.50	7.00
631669-117	1.50/ 38.1	5.00/ 127.00	7.00
632291-117	1.50/ 38.1	7.09/ 180.00	3.00
632292-117	1.50/ 38.1	8.66/ 220.0	3.30
632294-117	2.00/ 50.8	5.91/ 150.00	11.60
633112-117	2.00/ 50.8	7.50/ 190.00	11.45
632331-117	1.18/ 30.0	7.87/ 200.00	2.45
632754-117	1.00/ 25.4	8.00/ ~200.00	6.00
633842-117	1.00/ 25.4	4.43/ 112.5	2.40
633214-117	1.00/ 25.4	3.94/ 100.00	2.00
631521-117	1.38/ 35.0	5.91/ 150.00	9.00
633841-117	1.00/ 25.4	8.86/ 229.00	3.20
633415-117	1.50/ 38.1	8.27/ 210.00	6.38
633120-117	1.97/ 50.0	8.66/ 220.00	2.80
633230-117	1.57/ 40.0	5.91/ 150.00	5.00

Protective windows for high power fiber lasers

Ophir P/N	Diameter (inch/mm)	E.T. (mm)	Ophir P/N	Diameter (inch/mm)	E.T. (mm)
633267-117	0.85/ 21.5	2.00	632851-117	1.42/ 36.0	5.00
632252-117	0.88/ 22.4	4.00	633411-117	1.46/ 37.0	7.00
632445-117	1/ 25.4	3.00	632958-117	1.5/ 38.1	5.00
633723-117	1/ 25.4	5.00	633347-117	1.5/ 38.1	1.50
633481-117	1/ 25.4	4.00	632933-117	1.65/ 42.0	9.00
632830-117	1.18/ 30.0	5.00	632498-117	1.97/ 50.0	2.00
632240-117	1.18/ 30.0	1.50	632346-117	2/ 50.8	6.35
632755-117	1.26/ 32.0	6.35	632713-117	2.17/ 55.0	1.50
632595-117	1.31/ 33.3	1.50	633824-117	1.38/ 35.0	1.50
632251-117	1.34/ 34.0	5.00			

Popular CO2 lenses for high power lasers

Ophir PN	Optics Type	Diameter Inch	Focal Length Inch	E.T. mm	Max. BAR	Mounting Distance	OEM
60260	Meniscus	1.5"	5.0"	6.00mm	21.70	120.84	Bystronic
60602	Meniscus	1.5"	7.5"	6.00mm	21.70	183.19	Bystronic
61171	Meniscus	1.5"	7.5"	7.87mm	37.30	185.31	Shanghai Unity
61960	Meniscus	1.5"	10.0"	7.40mm	32.67	245.45	Trumpf
61961	Meniscus	1.5"	9.0"	7.40mm	33.02	219.31	Trumpf
61982	Meniscus	1.5"	5.0"	7.40mm	32.10	120.80	Trumpf
61983	Meniscus	1.5"	7.5"	7.40mm	32.10	185.45	Trumpf
61962	Meniscus	1.5"	3.75"	7.40mm	33.02	89.13	Trumpf
631916-117	Plano-convex	1.5"	7.5"	7.80mm	37.00	185.88	Amada / Han's Laser
631917-117	Plano-convex	1.5"	5.0"	7.80mm	37.00	123.70	Amada / Han's Laser
631079-117	Meniscus	1.5"	5.0"	9.00mm	48.80	119.03	Bystronic
60616	Meniscus	1.5"	7.5"	9.00mm	48.80	184.04	Bystronic
633126-117	Meniscus	50mm	170mm	8.9mm	33.00	168.20	Trumpf Cut Lens with RFID
631089-117	Meniscus	50mm	175mm	8.9mm	33.00	171.02	Trumpf Cut Lens with RFID
631088-117	Meniscus	50mm	250mm	8.9mm	33.00	244.86	Trumpf Cut Lens with RFID
633125-117	Meniscus	50mm	170mm	8.9mm	33.00	168.20	Trumpf Cut lens NO RFID
62440	Meniscus	50mm	175mm	8.9mm	33.00	171.02	Trumpf Cut lens NO RFID
62439	Meniscus	50mm	250mm	8.9mm	33.00	244.86	Trumpf Cut lens NO RFID
631091-117	Meniscus	40mm	130mm	7.5mm	33.00	244.86	Trumpf Cut Lens with RFID
631090-117	Meniscus	40mm	250mm	7.5mm	33.00	124.54	Trumpf Cut Lens with RFID
630790-117	Meniscus	40mm	130mm	7.5mm	33.00	244.86	Trumpf Cut lens NO RFID
630789-117	Meniscus	40mm	250mm	7.5mm	33.00	124.54	Trumpf Cut lens NO RFID
62728	Plano-convex	2.0"	5.0"	7.90mm	21.00	122.74	Mazak / Mitsubishi
62729	Plano-convex	2.0"	7.5"	7.90mm	21.00	185.45	Mazak / Mitsubishi
61405	Plano-convex	2.0"	7.5"	9.65mm	31.20	185.67	Mazak / Amada / JFY
61019	Plano-convex	2.0"	5.0"	9.65mm	31.20	122.31	Mazak / Amada / JFY

* Please contact us for our full range of lenses and mirrors

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