

High-precision optics for next-generation medical technologies

As an EU-based manufacturer and supplier, we offer flexible production capabilities: from small-batch custom orders to dedicated manufacturing lines tailored for high-scale medical OEM production.



Ophthalmology
solutions



Aesthetic &
dermatology



Vascular
treatment



ENT & dental
surgery

Why choose EKSMA Optics



EKSMA Optics offers optical components and optical assemblies for medical and aesthetic laser-based systems manufacturers. Our quality assurance and stringent quality control procedures ensure a reliable supply of advanced optical components dedicated to medical applications.

100% vertical integration

From the cutting and grinding of optical raw materials to final flat optics polishing, spherical/aspherical surfaces CNC polishing, advanced coating and optical assemblies

7300 m² facility

New manufacturing facility, including >1000 m² ISO 7 class cleanrooms. Ready to Scale & Double manufacturing areas quickly.

40 years of expertise

More than 40 years of experience in manufacturing and supply of optical, crystal and electro-optical components and systems.

From concept to certified excellence



In-house design and R&D

Expert team: over 10 seasoned scientists with more than a decade of experience

- Optical systems design
- Optomechanical design
- Electronics design



Manufacturing and assembly

End-to-end traceability: full control over optical component production, from raw materials to final testing

- Optical materials processing
- Precision lenses manufacturing
- Advanced UV, VIS, NIR, IR coatings
- Specialized optics assembly



Quality control and testing

Multi-stage quality assurance: stringent procedures to ensure product excellence & reliability

- Environmental durability
- First Article Inspection (FAI)
- Innovative testing solutions



Vascular lesions treatment

Laser Type: Nd:YAG Lasers emitted at 1064 nm

EKSMA Optics offers:

- Exceptional durability and long lifetime with high-LIDT coatings and precision-engineered components
- Ultra-high-reflectivity mirrors with $R > 99.95\%$
- Precision beamsplitters featuring reflection tolerance within $\pm 0.5\%$
- High-extinction-ratio polarizers ($T_p/T_s > 1000:1$) for superior polarization control
- DKDP Pockels cells optimized for reliable Q-switching applications



Hair and tattoo removal

Laser Type: Alexandrite, Ruby and Diode Lasers (Near-Infrared)

EKSMA Optics offers:

- Broadband dielectric mirrors with $R > 99\%$ over 750–1100 nm and AOI from 0° to 45°
- BBAR-coated lenses optimized for 650–1100 nm to ensure maximum transmission and minimal reflection
- Low-absorption DKDP Pockels cells designed for 694 nm Ruby and 755 nm Alexandrite laser systems



Skin resurfacing

Laser Type: Erbium Lasers emitting at 1550 nm

EKSMA Optics offers:

- High LIDT, long-lifetime precision engineered optics and assemblies
- Ultra-high-reflectivity mirrors with $R > 99.95\%$ for maximum efficiency
- Precision beamsplitters with reflection tolerance within $\pm 0.5\%$
- High-extinction-ratio polarizers ($T_p/T_s > 1000:1$) ensuring superior polarization purity

Medical & surgical solutions



Vascular lesions surgery

Laser Type: Pulsed Dye Lasers (Visible wavelengths)

EKSMA Optics offers:

- Broadband dielectric mirrors with $R > 99\%$ across 400–750 nm, AOI from 0° to 45°
- BBAR-coated lenses optimized for 400–700 nm, providing excellent transmission and minimal reflection



Prostate surgery, kidney stone removal

Laser Type: Holmium Lasers emitting at 2.1 μm

EKSMA Optics offers:

- Ultra-high-reflectivity mirrors with $R > 99.95\%$ for maximum performance
- Precision beamsplitters featuring reflection tolerance within $\pm 0.5\%$
- High-extinction-ratio polarizers ($T_p/T_s > 1000:1$) ensuring exceptional polarization purity



ENT surgery, dentistry

Laser Type: Alexandrite, Ruby and Diode Lasers (Near-Infrared)

EKSMA Optics offers:

- High-reflectivity or anti-reflective (AR) coatings with absorption levels below 0.05% on IRFS and CaF_2 substrates
- Mirrors offering over 99% reflectivity across the 2800–3300 nm spectral range



Ophthalmology solutions

Vision correction, corneal flaps, retinal and glaucoma treatment

Laser type: femtosecond lasers emitting at 700–1100 nm range, green color pulse lasers

EKSMA Optics offers:

- High LIDT and low GDD optics engineered for superior stability and pulse integrity
- Ultra-high-reflectivity mirrors with $R > 99.95\%$ for maximum efficiency
- Precision beamsplitters with reflection tolerance within $\pm 0.5\%$
- High-extinction-ratio polarizers ($T_p/T_s > 1000:1$) for exceptional polarization control
- Optical density > 6 ($\text{OD} > 6$) Notch filters designed to protect surgeons' eyes from laser radiation

Advanced coating technologies

Our specialized production capabilities include precision manufacturing of spherical, aspherical, and free-form lenses, as well as space-qualified dielectric coatings using Ion Beam Sputtering (IBS) and eBeam IAD technologies, already approved by leading industry partners.

eBeam IAD coatings

- Enhanced coating density and durability
- Excellent adhesion and resistance to humidity
- Cost-effective solution with high optical performance
- Suitable for a wide range of medical and industrial laser systems

IBS coatings (Ion Beam Sputtering)

- Ultra-low absorption and scattering
- Excellent process reproducibility
- High Laser-Induced Damage Threshold (LIDT)
- Exceptional environmental stability
- Ideal for high-power and ultrafast laser applications

ISO 9001
ISO 14001
BUREAU VERITAS
Certification



ISO 9001:2015 certified
ISO 14001:2015 certified

We operate ISO Class 7 certified cleanrooms, dedicated to optical assembly for high-power laser systems and advanced photonic instruments, ensuring the highest levels of reliability and performance.



Ready to
partner with
EKSMA Optics?

Leverage our 40+ years of photonics expertise for your medical applications. From R&D prototypes to high-volume production.

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