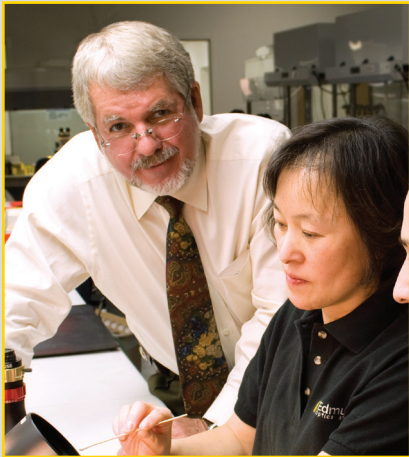


CORPORATE PROFILE



MORE OPTICS
MORE TECHNOLOGY
MORE SERVICE

Company HISTORY



FOUNDED IN 1942 by Norman Edmund

Managed today by
Robert Edmund (CEO & Chairman of the Board)

Family run and privately held

ABOUT 1.000 STAFF MEMBERS GLOBALLY:
sales – engineering – manufacturing

Well recognized as WORLD'S LARGEST
INVENTORY OF OFF-THE-SHELF OPTICS

EO MISSION STATEMENT:

BUILDING A GLOBAL NETWORK OF OPTICAL EXPERTISE
AND OPTICAL PRODUCTS IN SERVICE TO OUR CUSTOMERS.

“ They have more of the products we use daily. ”

-Optics Purchaser, Readex Research Survey

World's LARGEST INVENTORY of Optical Components

Edmund Optics® is a PHOTONICS and IMAGING company that manufactures and supplies industries around the globe with precision optical components and subassemblies. **We offer more than 30.100 products** in our catalog or online, but that is just the beginning of the services EO offers.

We DESIGN. We MANUFACTURE. We DELIVER.

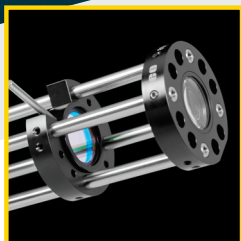


“A wide variety of stock components are available for overnight delivery. Custom components are available; however, I always find what I need from their stock.”

-Optics Purchaser, Readex Research Survey



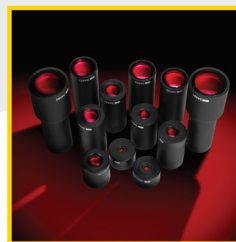
Filters



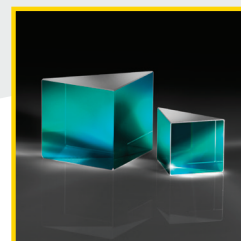
Optomechanics



Lenses



Laser Optics



Prisms

Why EDMUND OPTICS®?

RELIABILITY

We process and ship **95% of orders the same day**.

With over **75 years in business**, EO's promise to customers is

MORE OPTICS, MORE TECHNOLOGY,
AND MORE SERVICE.

QUALITY

- ISO 9001 Certified and MIL-SPEC quality systems
- Complete testing and metrology services

CAPABILITIES AND SERVICE

- Global optical manufacturing
- Free global technical support, applications engineering, and design assistance – available in 8 languages
- Over 30,100 unique optical components available for next day delivery

#1 PREFERRED SUPPLIER

of optical components 9 years in a row.

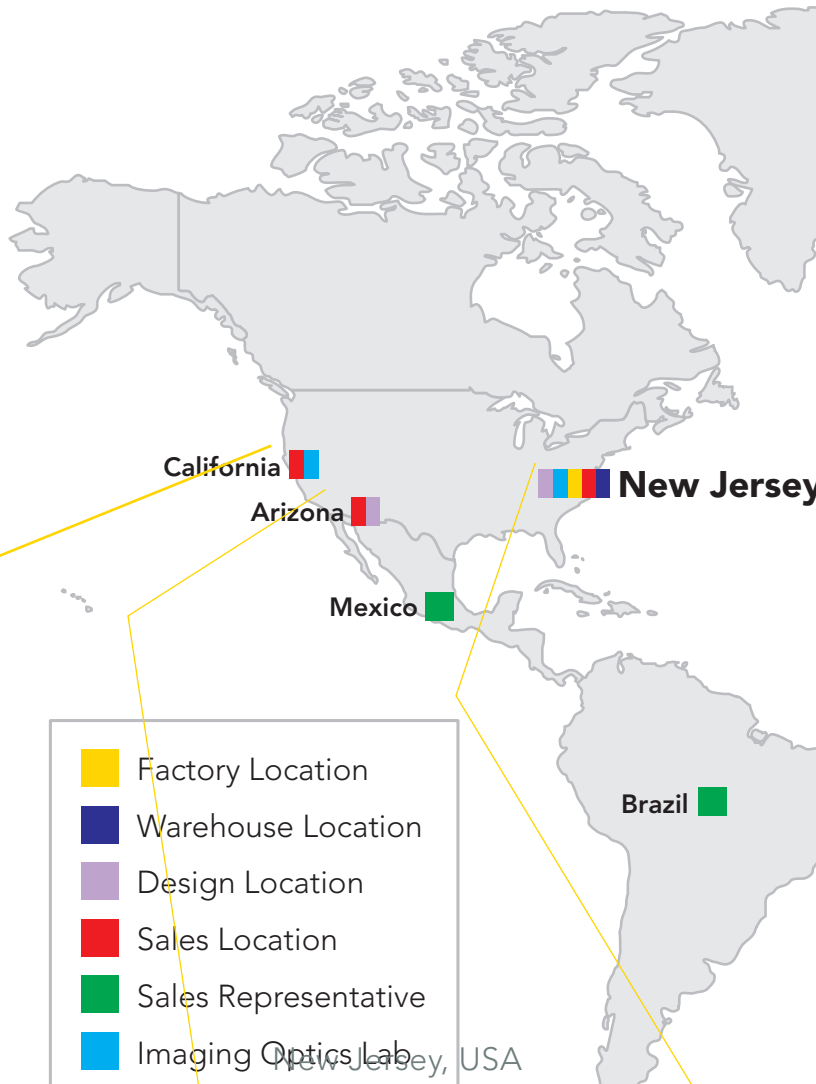
From industry-leading customer service to real-world technical support, Edmund Optics® is dedicated to serving your needs and making your next project a success.



GLOBAL SALES, DESIGN, & MANUFACTURING

With over 198,000 sq. ft. (18,400 m²) of manufacturing space and two world-class design centers, Edmund Optics® is ready to take your next project from design to prototype to volume production.

ARIZONA, USA
CALIFORNIA, USA
NEW JERSEY, USA
MAINZ, GERMANY
SINGAPORE
SHENZHEN, CHINA
AKITA, JAPAN



California, USA



- **Silicon Valley Office** housing business development, sales, and applications engineering dedicated to servicing the unique needs of the Silicon Valley region
- On-site lab for testing and system development
- Classroom for hosting regularly scheduled training courses

Arizona, USA

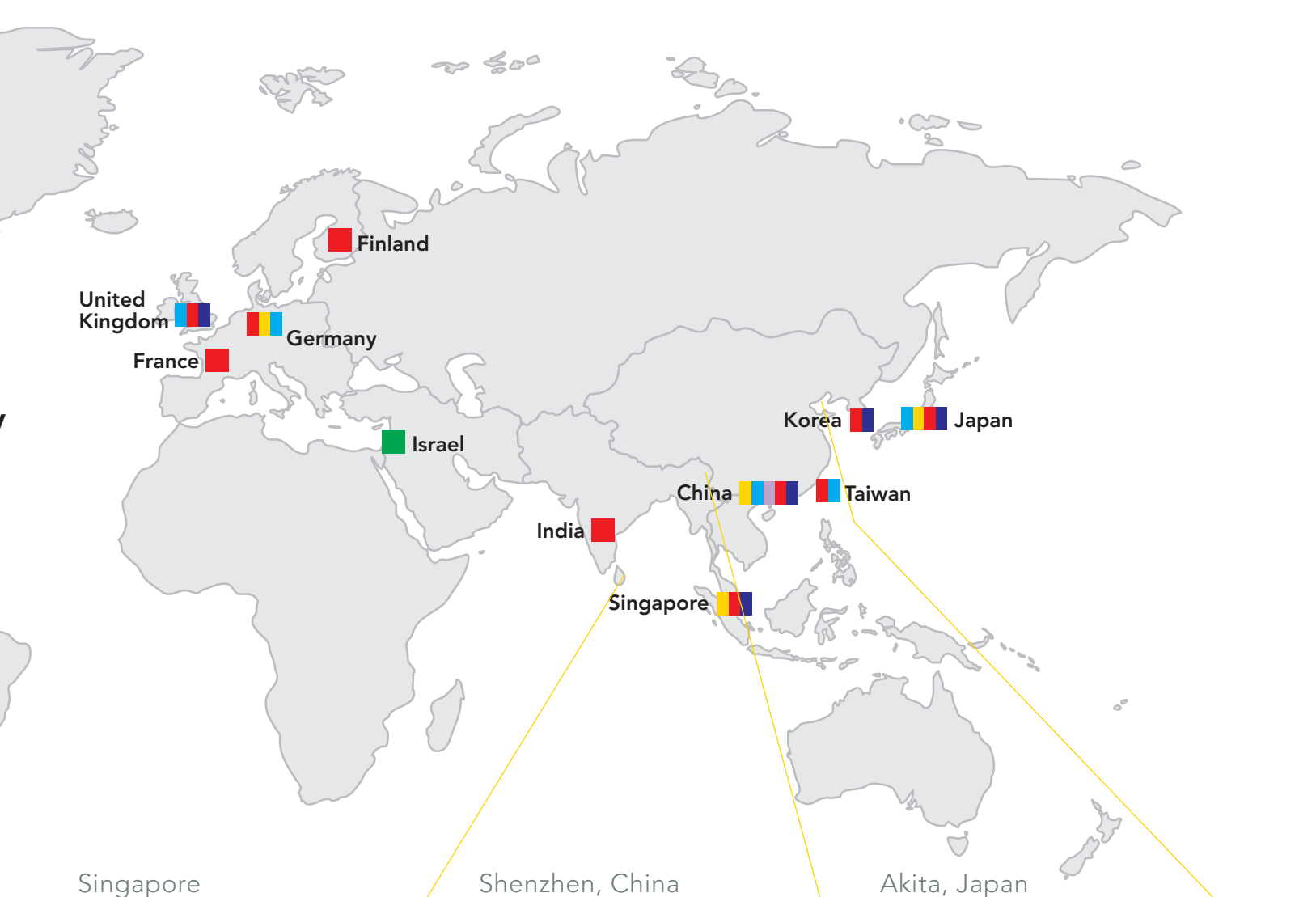


- **Tucson Design and Sales Center** specializing in customer focused applications engineering
- Coordinates with sales and manufacturing to ensure design solutions meet customer manufacturability, cost, and performance requirements
- Over 30 years design experience in the UV - LWIR wavebands
- Emphasis in optical design engineering techniques for imaging and sighting optics assemblies
- Product development of EO Designed and Manufactured TECHSPEC® components

New Jersey, USA



- **Headquarters** 120,000 sq. ft. (11,148 m²); 20,000 sq. ft. (1,858 m²) of dedicated manufacturing space
- High precision optomechanical and imaging assemblies
- 7 Laminar flow assembly workstations
- MRF super finishing for prisms and aspheres
- On-site lab, including MTF, interferometry, spectrophotometry, profilometry, and environmental testing
- ISO 9001 certified and ITAR compliant



Singapore



- Expanded facility with 77,000 sq. ft. (7,150 m²) of manufacturing, coating, and assembly space
- Custom prism manufacturing with angle tolerances down to 1 arcsec
- State-of-the-art machined asphere cell
- 8 coating chambers for anti-reflection, mirror, beamsplitter, and filter coatings
- Double-sided flat polishing to $\frac{1}{20}\lambda$ for windows, mirrors, filters, and other coating substrates
- Highly vertically integrated for OEM production
- On-site assembly and testing, including interferometry and spectrophotometry
- ISO 9001 certified and ITAR compliant

Shenzhen, China



- 16,140 sq. ft. (1,500 m²) facility
- Class 10,000 clean room
- Class 100 Laminar flow booths
- Optical and mechanical design, prototyping, and testing capability
- High volume assembly of optomechanical and imaging assemblies
- On-site testing equipment, including MTF and interferometry
- On-site design services supporting assembly, manufacturing, and product development of EO Designed and Manufactured TECHSPEC® imaging lenses
- ISO 9001 certified

Akita, Japan



- 80,000 sq. ft. (7,432 m²) of manufacturing space
- High precision spherical optics from 5 - 100 mm diameter
- State-of-the-art coating chambers for multi-layer and dielectric thin film coatings
- Dedicated workstations for cementing spherical lens doublets and triplets
- Class 10,000 clean rooms and Class 100 Laminar flow booths
- On-site assembly and testing including interferometry and spectrophotometry
- Over 50 years of experience in spherical optics fabrication



Nikon® Autocollimator



Full On-site Inspection



Designs for Manufacturability

Global QUALITY PROGRAMS

- Commitment to Continuous Improvement
- Robust Global Compliance Systems
- Thorough Preventive and Corrective Action Procedures

Edmund Optics® maintains state-of-the-art quality control equipment and procedures to meet customer and regulatory requirements globally. Our tools, techniques, policies, and technology are continuously improved to meet a wide range of customer application requirements. EO's global compliance team ensures all procedures are reviewed and followed for maximum efficiency. We work to continually improve the effectiveness of the quality management system through the use of quality policy, quality objectives, audit results, analysis of data, corrective actions, preventive actions, and annual customer surveys.

QUALITY STANDARDS

- ISO 9001:2008
- ISO 14001
- ANSI / ASME Y14.5
- ISO 10110
- MIL-C-48497A
- MIL-STD-810
- MIL-PRF-13830B
- MIL-C-675C



Varian Spectrophotometer

State-of-the-Art METROLOGY

Edmund Optics® is fully equipped to measure specified optical and optomechanical parameters with state-of-the-art testing and metrology. We utilize industry proven methods for improvement and troubleshooting to ensure maximum quality throughout all aspects of the production cycle. Our staff of skilled manufacturing and test engineers design and implement systems used to ensure each product fully meets all performance requirements.

EO DESIGNED TESTING EQUIPMENT

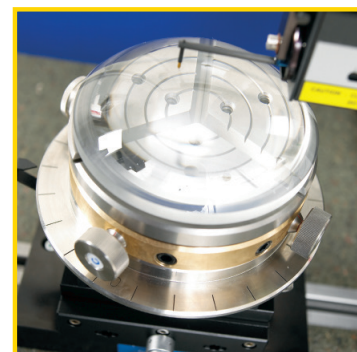
- MTF, CTF Test Beds
- Depth of Field
- Prism Geometry
- Contrast & Distortion
- Telecentricity
- Lateral Color Shift

ENVIRONMENTAL TESTING CAPABILITIES

- Temperature Cycling
- Salt Fog / Spray
- Shock
- Vibration
- Humidity
- Immersion



Zygo® NewView™



Taylor Hobson® Profilometer



TECHSPEC®

Certified Edmund Quality



Fully Integrated Spherical Manufacturing



Haruchika Polishing



ZYGO® Verifire™ AT

SPHERICAL Lenses

- 5.900+ Stock Spherical Lenses Ready for Purchase
- Available in Glass and Crystalline Materials with a Variety of Standard and Custom Coatings
- Stock or Custom, from Design to Prototype to Volume Production

Edmund Optics® designs and manufactures stock and custom spherical optics to suit any application. From singlet and doublet optical lenses to ball lenses and condenser lenses, we have spherical optics to meet your needs. Contact us today to speak with an expert!

SPHERICAL MANUFACTURING CAPABILITIES	Commercial	Precision	High Precision
Diameter	4 - 200 mm	4 - 200 mm	4 - 200 mm
Diameter Tolerance	+0/-0,100 mm	+0/-0,025 mm	+0/-0,010 mm
Thickness	±0,100 mm	±0,050 mm	±0,010 mm
Surface Sag	±0,050 mm	±0,025 mm	±0,010 mm
Clear Aperture	80%	90%	90%
Radius	±0,3%	±0,1%	Fix to Test Plate
Power (P - V)	3,0λ	1,5λ	λ/2
Irregularity (P - V)	1,0λ	λ/4	λ/20
Centering (Beam Deviation)	3 arcmin	1 arcmin	0,5 arcmin
Bevel (Face width @45 degrees)	<1,0 mm	<0,5 mm	<0,25 mm
Surface Quality	80-50	40-20	10-5

STOCK OPTICS

Customized in 2-3 Weeks

- 24 Hour Quote Response
- 19.400 Unique Optics
- From Design to Prototype to Volume Production – We make it easy!

For a **COMPLETE LISTING OF OUR SPHERICAL LENSES**,
visit www.edmundoptics.eu/lenses

“ In stock. No hassle. ”

-Optics Purchaser, Readex Research Survey

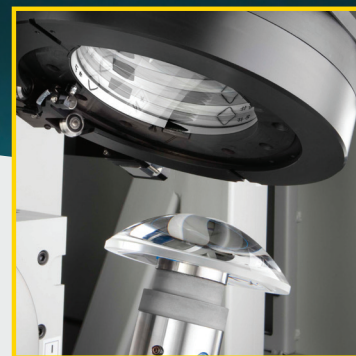


ASPHERIC Lenses

- 450+ Stock Aspheric Lenses Ready for Purchase
- Optical Glass, Plastic, Fused Silica, Germanium, Zinc Selenide, and Chalcogenide Substrates
- Stock or Custom, from Design to Prototype to Volume Production

Whether your need is for an aspheric lens in glass, plastic, or infrared crystalline material, with low-cost or high performance specifications, for either monochromatic or broadband illumination, Edmund Optics® has an aspheric lens to meet your needs. Explore our aspheric capabilities, state-of-the-art equipment, and most innovative aspheric product families. Whether you need just a few aspheric lenses for prototype, a few dozen for pre-production, or a large volume for full production, Edmund Optics® ensures your project is successful.

ASPHERE MANUFACTURING CAPABILITIES	Commercial	Precision	High Precision
Diameter	10 - 150 mm	10 - 150 mm	10 - 150 mm
Diameter Tolerance	+0/-0,100 mm	+0/-0,025	+0/-0,010
Asphere Figure Error (P - V)	5 µm	0,632 - 1,5 µm	<0,312 µm
Vertex Radius (Asphere)	±1%	±0,1%	±0,05%
Radius (Spherical)	±0,3%	±0,1%	±0,025%
Power (Spherical)	2λ	λ/2	λ/10
Irregularity (Spherical)	λ/2	λ/4	λ/20
Sag	25 mm max	25 mm max	25 mm max
Typical Slope Tolerance	1 µm/mm	0,35 µm/mm	0,15 µm/mm
Centering (Beam Deviation)	3 arcmin	1 arcmin	0,5 arcmin
Center Thickness Tolerance	±0,100 mm	±0,050 mm	±0,010 mm
Surface Quality (Scratch Dig)	80-50	40-20	10-5
Aspheric Surface Metrology	Profilometry	Profilometry	Profilometry



QED ASI™ Aspheric
Stitching Interferometer



MRF Polishing



Designs for UV, Visible,
or Infrared

For a **COMPLETE LISTING OF OUR ASPHERES**,
visit www.edmundoptics.eu/aspheres

“ Best selection, fast delivery,
good technical support. ”

-Optics Purchaser, Readex Research Survey



Double-sided Polishing



Fully Integrated Prism
Manufacturing



Over 1.125 Windows In
Stock and Available Now

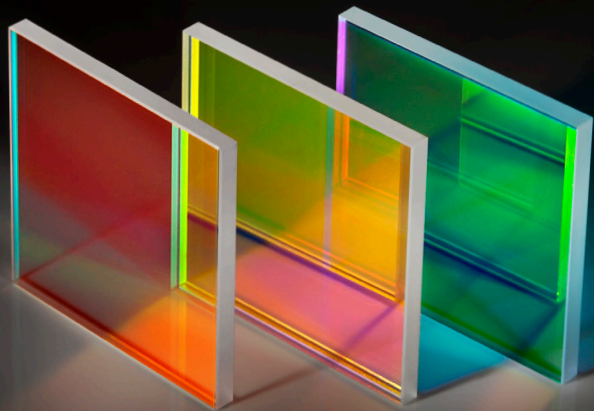
PRISMS & FLATWORK

- Prisms in Any Geometry
- Windows in All Optical Glass Types
- Stock or Custom, from Design to Prototype to Volume Production

Edmund Optics® designs and manufactures stock and custom optical prisms and windows to suit any application. Whether you need a prism for image displacement, laser beam steering, or dispersion, we have an optical component to meet your needs. Windows are available in sizes ranging from 3 - 500 mm and thickness starting at 0,2 mm. Our fully integrated optical manufacturing enables mid- and high-volume production. Need to speak with an expert? Interested in a free quote? Contact us today!

PRISM MANUFACTURING CAPABILITIES	Commercial	Precision	High Precision
Dimensions	2 - 200 mm	2 - 150 mm	2 - 75 mm
Dimensional Tolerance	+0/-0,1mm	+0/-0,025 mm	+0/-0,01 mm
V-Height	±0,25 mm	±0,1mm	±0,03 mm
Irregularity	1,0λ	λ/4	λ/20
Prism Physical Angle Tolerance	3 arcmin	±30 arcsec	45° & 90° ±0,5 arcsec
Penta Prism Deviation	5 arcmin	3 arcmin	0,5 arcsec
Bevel Tolerance (Face Width @ 45 degrees)	±0,2 mm	±0,1 mm	±0,05 mm
Surface Quality (Scratch Dig)	80-50	40-20	10-5
Bonded Prism Assembly Beam Deviation	5 arcmin	3 arcmin	0,5 arcmin

For a **COMPLETE LISTING OF OUR PRISMS**,
visit www.edmundoptics.eu/prisms



FILTERS & COATINGS

- Durable, Hard Coated, Single Substrate Filters
- High Transmission, Deep Blocking, Steep Slopes
- Custom Designs – UV; Visible; & Near, Mid-Wave, & Long-Wave IR

COATING TYPES

Laser Line Mirrors
Fluorescence Filters
Dichroic Filters
Narrow Bandpass Filters
Multi-Bandpass Filters
Notch Filters
Edge Filters (SWP and LWP)

Polarizing Beamsplitters
Non-Polarizing Beamsplitters
High Damage Threshold
Metal Mirror
Transparent Conductive ITO
Broadband or Laser Line AR

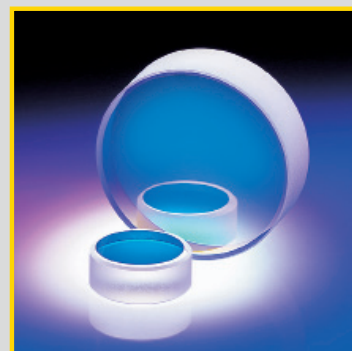
PROCESS CAPABILITY

Ion Assisted Deposition
Magnetron Sputtering
Hard Coatings to Meet Stringent Environmental and Durability Requirements

FILTER COATING CAPABILITIES	
Dimensions (Diameter or Square)	2 - 1000 mm
Substrates	All Glass Types
Spectral Ranges	193 nm - 14 μ m
Edge Steepness ($T_{50\%}$ to OD>4)	<0,5%
Spectral Edge Tolerance	<1% Deviation, <0,2% Special Cases
Blocking	>OD 7, Measured
Neutral Density Tolerance	OD \pm 5%
CWL	\pm 1 nm
Bandwidth	1 nm - Broadband
Transmission	>95%, Typical
Reflection	0,1 - 99,95%
Polarization (S:P)	10.000:1
Laser Damage Threshold	Up to 20 J/cm ² @ 20 ns Pulses
Durability	MIL-STD-810F, Section 507.4, MIL-C-48497A, Section 3.4.1
Parallelism	1 arcsec
Surface Quality	20-10



Durable, Hard Coatings



High Damage Thresholds



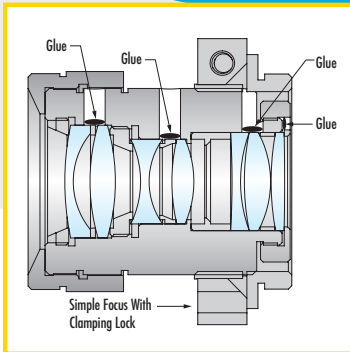
Custom Coating Design
and Development

For a **COMPLETE LISTING OF OUR FILTERS**,
visit www.edmundoptics.eu/filters



“Best choice and variety.”

-Optics Purchaser, Readex Research Survey



Optomechanical Designs
Optimized for Manufacturability



On-site Manufacturing
and Assembly



Designs for Visible, NIR, and
SWIR Wavelength Ranges

IMAGING Lenses

- Over 800 Imaging Lenses In Stock and Available Now
- Covering Sensors up to 90 mm
- Cost Effective Solutions for Prototype and Volume Production

Edmund Optics® prides itself on understanding how customers need to implement imaging technology in their applications. This knowledge allows us to quickly deploy the right option from our off-the-shelf products or a custom designed solution to meet your specific requirement. Our global network of engineers evaluates each design with knowledge of manufacturing, tolerancing, and integration. In addition to a team of dedicated imaging solution support engineers, EO Designed TECHSPEC® imaging lenses are fully supported by downloadable 3D models, datasheets, and drawings.

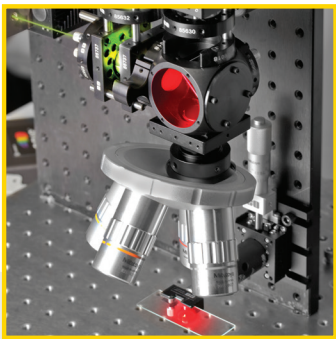
EO DESIGNED IMAGING LENSES	Fixed Focal Length Lenses	Telecentric Measuring Lenses	Fixed Magnification Lenses
Sensor Sizes	up to 43,3 mm	up to 30 mm	up to 90 mm
Resolution	up to 29 Megapixel	up to 5 Megapixel	up to 12 k Line Scan
Lens Mounts	C-Mount, F-Mount, S-Mount, M42	C-Mount, F-Mount, M42	C-Mount, F-Mount, M42, M72
Number of Options	110+	70+	65+
Modifications Available	Focal Length, Housing, f/#, Coating	Magnification, Housing, f/#, In-line Illumination, Working Distance	Magnification, Housing
Custom Design Capabilities	Yes	Yes	Yes

For a **COMPLETE LISTING OF OUR IMAGING LENSES**,
visit www.edmundoptics.eu/imaging

IMAGING Solutions

- Supporting Applications Across a Wide Variety of Markets
- Extensive Network of Vision Integration Partners (VIPs) for On-site Integration
- Complete Offering of Components to Develop Complex Imaging Systems

Supporting the semiconductor, electronics, automation, advanced medical diagnostics, assembly, and manufacturing markets across the globe, Edmund Optics' machine vision solutions have been used in a variety of applications including food, automotive, and pharmaceutical inspection. EO's vast offering of machine vision lenses, illumination sources, and cameras offer a dynamic choice of solutions for any application. For customers looking for on-site integration, EO offers a select network of Vision Integration Partners who facilitate system setup.



APPLICATIONS

Factory Automation
Gauging & Metrology
OCR & OCV
Web Inspection
In-line Inspection
Bar Code & Data Matrix
Color Measurement & Sorting
Quality Control Analysis

PRODUCT EXPERTISE

Imaging Optics
Illumination
Cameras
Hardware & Software
Filters
Mounting & Fixturing

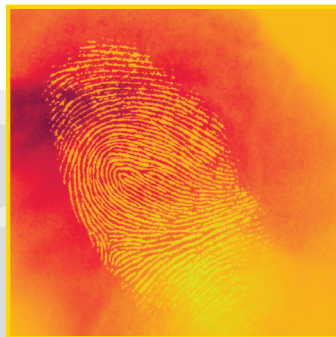
To **LEARN MORE** ABOUT OUR IMAGING SOLUTIONS,
visit www.edmundoptics.eu/vip



APPLICATION Diversity

Edmund Optics® manufactures products for a variety of markets. This diversity allows for innovation across markets with regards to design, development, and testing. Our team of global engineers is uniquely qualified to offer a number of application-oriented services and provide optimum solutions to any optical challenge.

ADVANCED DIAGNOSTICS & LIFE SCIENCES
IMAGING, INSPECTION, & MACHINE VISION
RESEARCH & DEVELOPMENT
AEROSPACE & SAFETY
SEMICONDUCTOR / INSPECTION EQUIPMENT



IMAGING AND MACHINE VISION

- Advanced Diagnostics
- Machine Vision & Inspection
- Industrial Metrology
- Barcode Scanning
- Pharmaceutical Imaging
- Security & Surveillance

ADVANCED DIAGNOSTICS

- Brain, Blood, Eye, and More
- Bio-Imaging & Microscopy
- Genomics
- Spectroscopy
- Ophthalmology
- Medical Lasers

To **LEARN MORE** ABOUT THE MARKETS WE SERVE,
visit www.edmundoptics.eu/applications

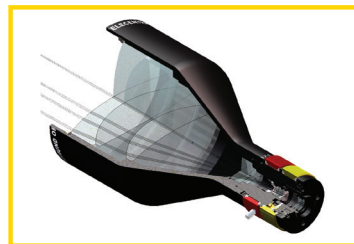
ENGINEERING SUPPORT...We Make Integration Easy!

FREE TECHNICAL SUPPORT

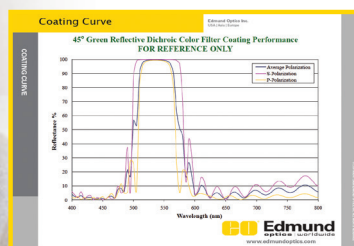
- 24 Hour Engineering Assistance
- Over 41.000 Data Sheets, Zemax Files, Autocad Files, Filter Curves, and More
- Extensive Technical Library Includes Online Videos, Application Notes, Product Selection Tools, and Calculators

“EO's website is one of the easiest websites to use! Makes my job easier.”

-Procurement Manager (Knoxville, TN)



3D Models



Filter Curves



Imaging Lab Videos

We Speak YOUR LANGUAGE

English

Español

日本語

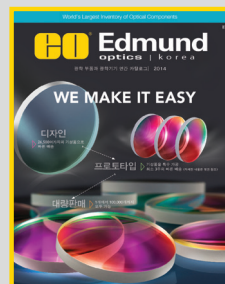
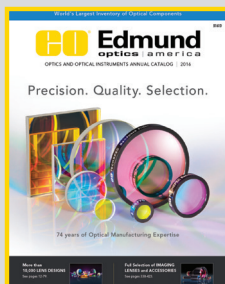
Italiano

Français

Deutsch

한국어

中文



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Edmund
optics | worldwide