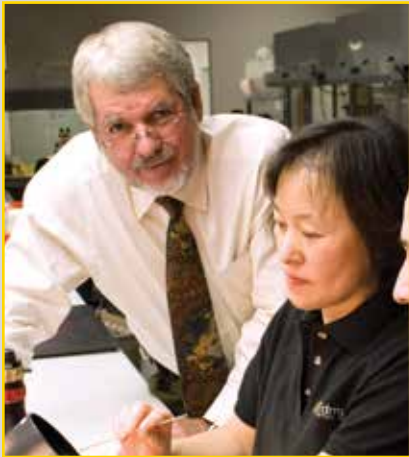


# CORPORATE PROFILE



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

OVER 700 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. **You know our catalog, which contains over 28,900 unique products**, 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 7 languages
- Over 28,900 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 193,000 sq. ft. (17,900 m<sup>2</sup>) 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  
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 m<sup>2</sup>); 20,000 sq. ft. (1,858 m<sup>2</sup>) 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 m<sup>2</sup>) 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 m<sup>2</sup>) 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 m<sup>2</sup>) of manufacturing space
- High precision spherical optics from 5 - 100mm 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
- Fully ITAR Compliant Factories



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 - 200mm	4 - 200mm	4 - 200mm
Diameter Tolerance	+0/-0.100mm	+0/-0.025mm	+0/-0.010mm
Thickness	±0.100mm	±0.050mm	±0.010mm
Surface Sag	±0.050mm	±0.025mm	±0.010mm
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)	<1.0mm	<0.5mm	<0.25mm
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.com.sg/lenses](http://www.edmundoptics.com.sg/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 - 150mm	10 - 150mm	10 - 150mm
Diameter Tolerance	+0/-0.100mm	+0/-0.025	+0/-0.010
Asphere Figure Error (P - V)	5µm	0.632 - 1.5µm	<0.312µm
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	25mm max	25mm max	25mm max
Typical Slope Tolerance	1µm/mm	0.35µm/mm	0.15µm/mm
Centering (Beam Deviation)	3 arcmin	1 arcmin	0.5 arcmin
Center Thickness Tolerance	±0.100mm	±0.050mm	±0.010mm
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.com.sg/aspheres](http://www.edmundoptics.com.sg/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

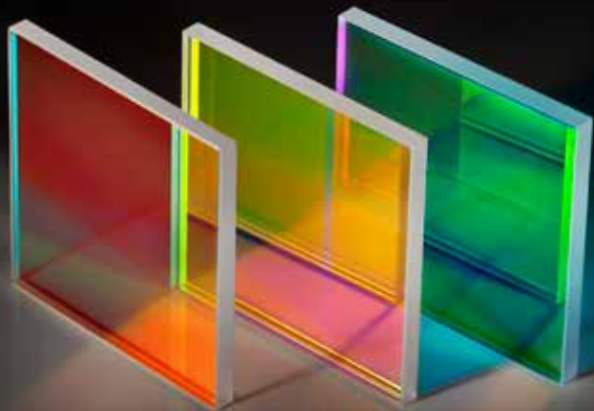
## PRISMS & FLATWORK

- 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 - 500mm and thickness starting at 0.2mm. 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 - 200mm	2 - 150mm	2 - 75mm
Dimensional Tolerance	+0/-0.1mm	+0/-0.025mm	+0/-0.01mm
V-Height	±0.25mm	±0.1mm	±0.03mm
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)	±0.2mm	±0.1mm	±0.05mm
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.com.sg/prisms](http://www.edmundoptics.com.sg/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 - 1000mm
Substrates	All Glass Types
Spectral Ranges	193nm - 14µm
Edge Steepness (T <sub>50%</sub> to OD>4)	<0.5%
Spectral Edge Tolerance	<1% Deviation, <0.2% Special Cases
Blocking	>OD 7, Measured
Neutral Density Tolerance	OD ±5%
CWL	±1nm
Bandwidth	1nm - Broadband
Transmission	>95%, Typical
Reflection	0.1 - 99.95%
Polarization (S:P)	10,000:1
Laser Damage Threshold	Up to 20 J/cm <sup>2</sup> @ 20ns 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

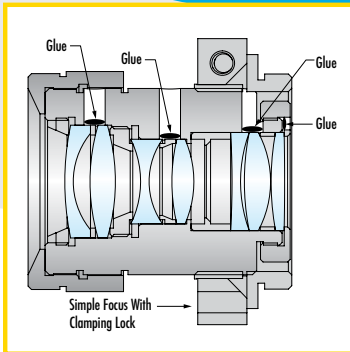
For a **COMPLETE LISTING OF OUR FILTERS**,  
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“Best choice and variety.”

-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 90mm
- 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.

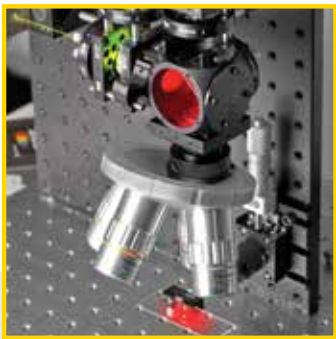
EO DESIGNED IMAGING LENSES	Fixed Focal Length Lenses	Telecentric Measuring Lenses	Fixed Magnification Lenses
<b>Sensor Sizes</b>	up to 43.3mm	up to 30mm	up to 90mm
<b>Resolution</b>	up to 29 Megapixel	up to 5 Megapixel	up to 12k Line Scan
<b>Lens Mounts</b>	C-Mount, F-Mount, S-Mount, M42	C-Mount, F-Mount, M42	C-Mount, F-Mount, M42, M72
<b>Number of Options</b>	110+	70+	65+
<b>Modifications Available</b>	Focal Length, Housing, f/#, Coating	Magnification, Housing, f/#, In-line Illumination, Working Distance	Magnification, Housing
<b>Custom Design Capabilities</b>	Yes	Yes	Yes

For a **COMPLETE LISTING OF OUR IMAGING LENSES**,  
visit [www.edmundoptics.com.sg/imaging](http://www.edmundoptics.com.sg/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.com.sg/vip](http://www.edmundoptics.com.sg/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 & DEFENSE  
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.com.sg/applications](http://www.edmundoptics.com.sg/applications)



# ENGINEERING SUPPORT...We Make Integration Easy!

## FREE TECHNICAL SUPPORT

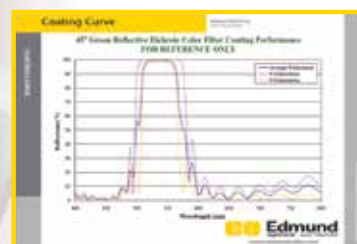
- 24 Hour Engineering Assistance
- Over 37,000 Data Sheets, Zemax Files, Autocad Files, Filter Curves, and More
- Extensive Technical Library Includes Online Videos, Application Notes, Product Selection Tools, and Calculators

“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

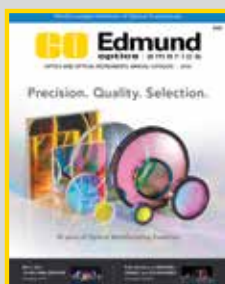
日本語

Français

Deutsch

한국어

中文



# SALES offices

## USA



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 101 East Gloucester Pike  
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 Fax: 1-856-573-6295  
 E-mail: sales@edmundoptics.com



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 Tucson, AZ 85715 USA  
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**Edmund**  
 optics | worldwide