

MAKE INVISIBLE TO **VISIBLE**





COMPLETE SOLUTIONS FOR

- Precision Optics
- Laser Optics
- Diamond Turned Optics
- IR Optics
- Opto Mechanical Mounts
- Electro Optical Systems and Assemblies
- Large Size Optical Systems & Assemblies



Optics and Allied Engineering Pvt. Ltd. is an award-winning company established in 1985, pioneering in Providing Precision Optics, Laser Optics, Diamond Turned IR Optics, Imaging Optics, Large sized mirrors, flats, off axis parabolic mirrors, Ultra-Precision optical windows, diffractive optics, High Precision Opto-mechanical Mounts, Ultrasonic Glass Machining, Large Size Complete Schlieren Systems, Precision Polymer Imaging Optics and Electro-optics Instruments.

We are an ISO 9001 -2015 Certified company

Optica works with each customer as a partner from the initial concept drawing to prototype sample to production and support technically. We take pride in giving a complete solution that meets customer requirements.



VISION

To be a leader in Electro Optics.



CORE VALUES

CARE : We strive to show concern & build a foundation of thrust.

INNOVATION : Our organization process encourages new ideas, methods, workflow, immediacy & velocity.

SPEED : A competitive advantage, a powerful metric, immediacy & velocity.

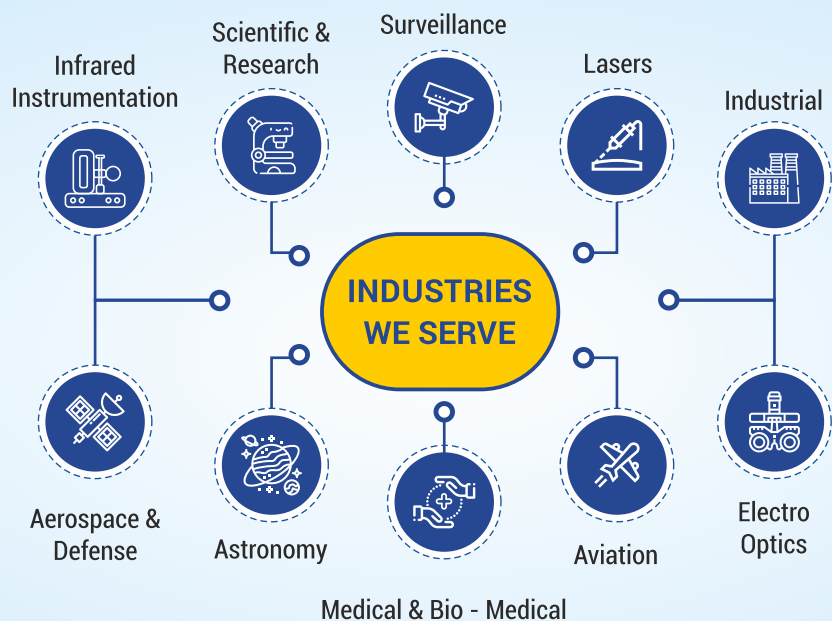
SUCCESS : Excellence in work we do drives us to deliver our vision to the world.

KNOWLEDGE SHARING : We foster collaboration thereby enhancing learning experience.



MISSION

To fulfil the global photonics demand from UV (Ultraviolet) to IR(Infrared).





MESSAGE FROM MD



D. Rajendra Kotaria
Managing Director

Thank you for looking at Optica for your Precision Optical Parts, Optical Assemblies, Optical Large Turn key Projects, Diamond Turned IR Optics, Precision Polymer Optics, Ultra Precision Mechanical Parts for Space, Optica has been in business since 1985 innovating and producing optical products for a broad range of market applications including Industrial, Aerospace, Medical, Defense Labs, R&D, Education, Surveillance etc.

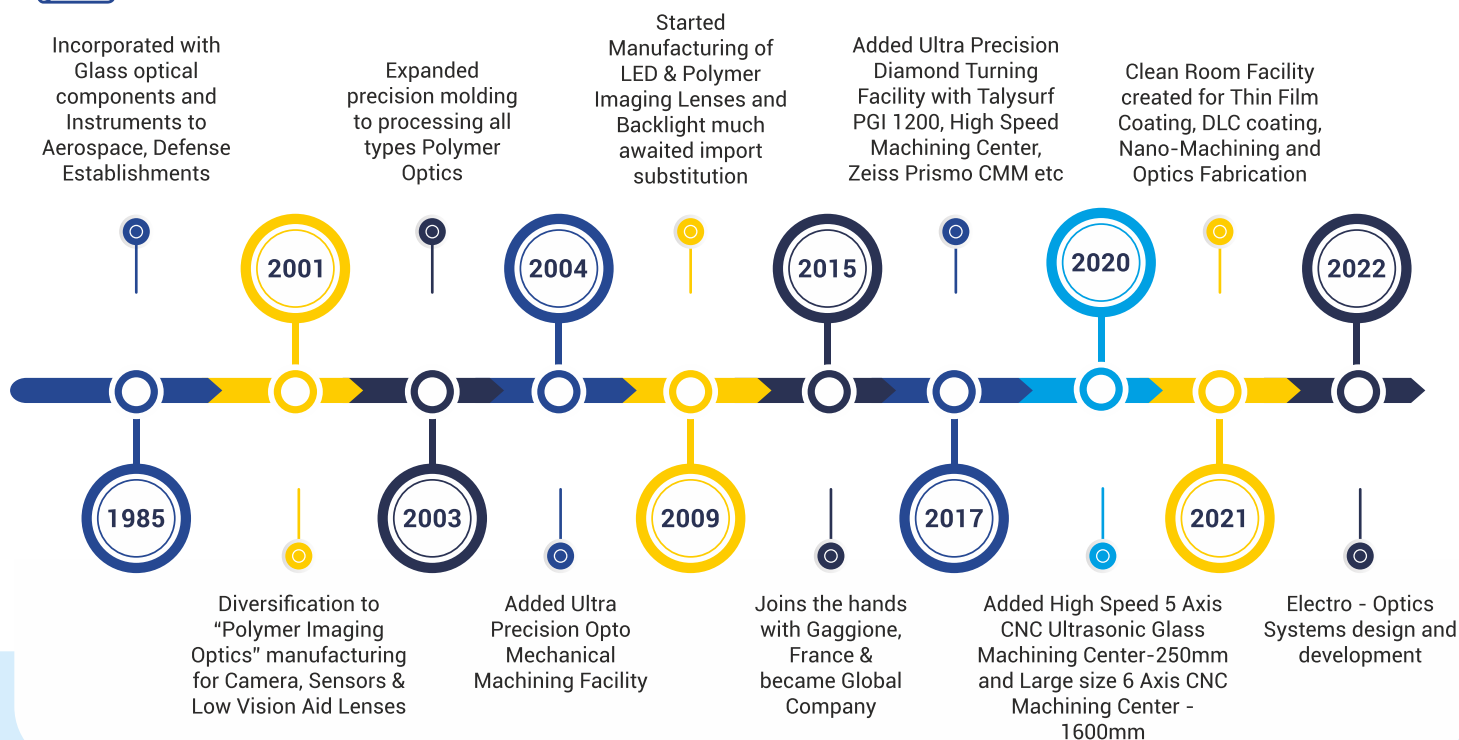
Headquartered in Bengaluru, India, we design, develop, manufacture, and distribute optical components and assemblies, utilizing the latest processes and advanced manufacturing technologies. Optica became a group of Gaggione S.A.S, France in 2015.

As one of the founder members for "Needy Heart Foundation" (Social and Charitable Trust with good doctors and industrialist), we support needy heart patient for surgical requirements as our CSR activity.

We pride ourselves on high performance, customer support, quality products, value added designs and cost effective volume manufacturing.



OUR JOURNEY



OUR ACHIEVEMENTS



Received "Defense Technology Spin off Award" from Hon'ble Prime Minister during Year - 2002 for Manufacturing Polymer Aspheric lense as Low VISION AIDS First of its kind in India.



Received "Appreciation Award" from Hon'ble Defense Minister during Year-2020 for Development & Installation of Schlieren System for Hypersonic Wind Tunnel DRDL-DRDO, Hyderabad, India.

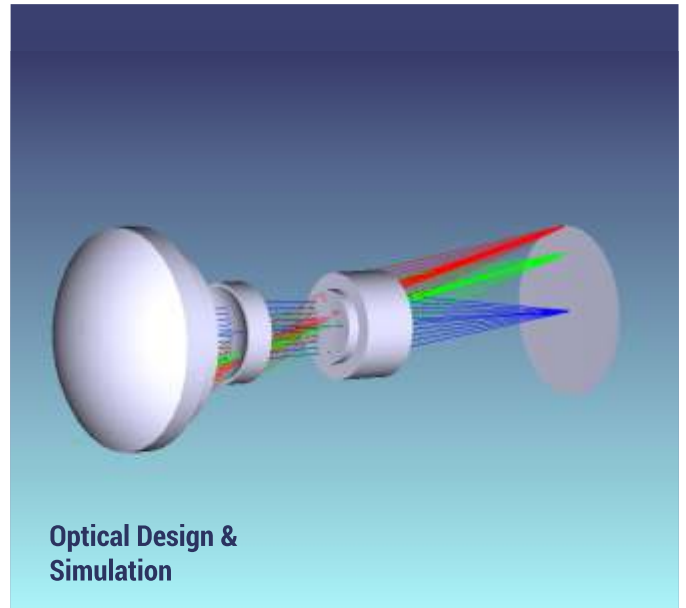


DESIGN & DEVELOPMENT

We strongly believe that, good designs followed by good engineering practices and effective document control are key for successful completion of projects on agreed time line. We have experienced engineers who will ensure designs to be robust and cost effective to meet customer specified performance and reliability expectations.

We have necessary software's to design optical component & optical systems. We can also receive 3D part files & other design input in STEP or IGES files.

We have Zemax, Oslo and Trace Pro Optical Software for lens and system designs. PRO-E, Solidworks for Opto-Mechanical designs and mold designs. We also use CREO Parametric 6, NX, Calypso Diffsys etc.



Optical Design & Simulation



PRECISION UV-VIS-IR OPTICS

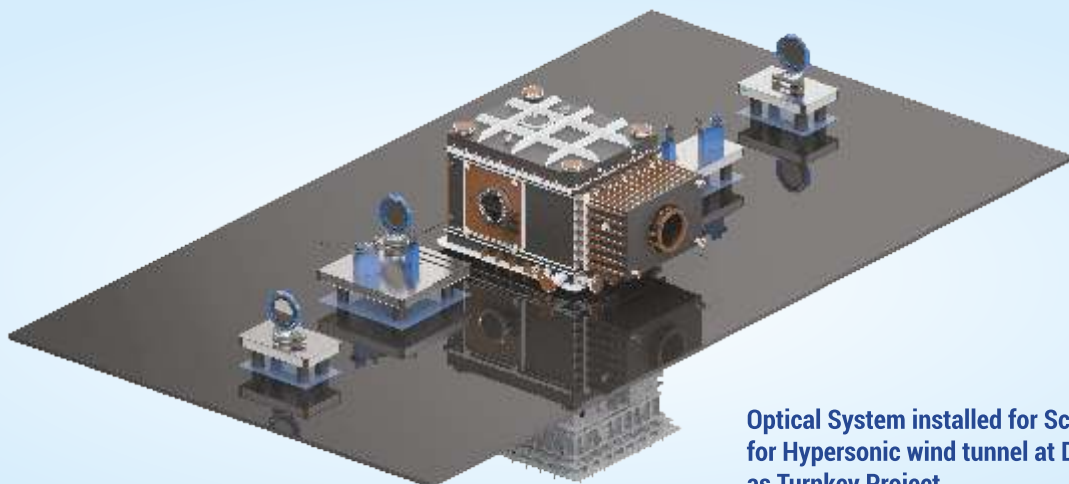
We Manufacture a wide range of optical components Viz: Lenses, Achromatic Doublets, Precision Windows, Optical Domes, Spherical & Parabolic Mirrors, Off Axis Parabolic Mirrors, Diamond Turned Metal Mirrors, Silicon & Germanium Aspheric Lenses, Diffractive Optics, Wedges, Axicons, Optical Flats up to accuracy $\lambda/20$. All types of Prisms, Laser Optics, HR Laser Mirrors, Interference & Color Glass Filters, Plate & Cube Beam Splitters, Spherical & Parabolic Mirrors up to Dia. 1200 mm, Machined Optical Glass Parts, Reticles, Optical Assemblies, Schlieren Systems and Turnkey Projects.

We produce Optics from Dia. 5mm to 1200mm with anti reflection coating like single layer, BBAR, Multilayer Coating, Metal Mirror Coating, Dichroic, Narrow and Broadband Filters, Beam Splitters, DLC Coating, etc. (wavelength from 0.185 micron to 14 microns).

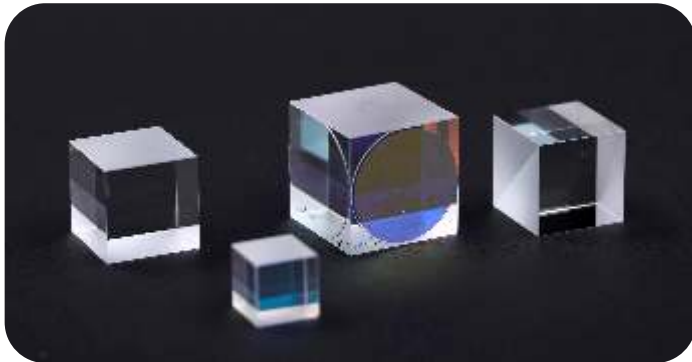
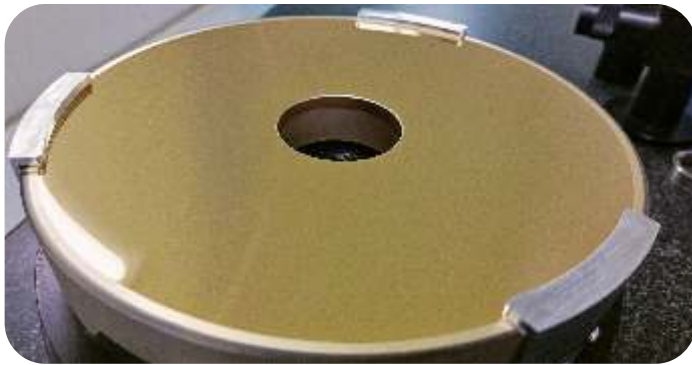


Company process UV, Visible and IR Materials & Metals.

Material Processed : N-BK-7, Silicon, Germanium, Chalcogenide, Zerodur, Astrosital, Clear Ceram, Fused Silica, Sapphire, Pyrex, CaF₂, MgF₂, ZnSe, ZnS, all Non Magnetic Metals like Al₂, Titanium, Nickel, Copper, PMMA, PC. Invar etc.



Optical System installed for Schlieren System for Hypersonic wind tunnel at DRDL HYD (1.2 M) as Turnkey Project.



COATING

Anti Reflection Coating

- UV (200-400 nm)
- Visible (400-700 nm)
- IR AR & DLC (3-5 & 8-12 micron)
- Multiband (450-700nm & 1500-1600nm & 3.6-4.9 micron)

Laser Optics

- High LIDT Reflective Mirror 1064 nm, 532 nm R>99.98%
- Optical Coupler 1064 nm, 532 nm
- Beam Bender 1064 nm, 532 nm
- Protection Window 1064 nm, 532 nm

Beam Splitter

- UV / Visible, Infrared for different ratios

Neutral Density Filter

DLC Coating

Interference Filter Coating

- Short Pass
- Long Pass
- Band Pass
- UV / Visible for different ratios

ITO Conductive Coatings

Metal Reflection Coatings

- Protective Aluminum
- Enhanced Aluminum.
- Protective Silver Coating
- Protective Gold

Hot & Cold Mirror

- For UV & Visible IR Wavelengths



OPTO-MECHANICAL PARTS, ASSEMBLIES & LENS MOULDS

We produce different types of Opto-Mechanical assemblies, vibration free tables, motorized stages and mounts. We develop high precision moulds for Polymer Optics, LED Lenses & Clear Parts.

Our Mechanical & Optical Engineers have expertise to work on Different high value challenging projects for large optical systems, Lidar Telescopes and Turnkey Optical Schlieren Systems used in Wind Tunnels.

- Opto-Mechanical Equipment Design
- Optical Alignment Tooling and Fixture
- Selection of Optical Components and Opto - Mechanical Mounts
- Design of Custom Mounts using Kinematic Principles
- 3D Model and 2D Drawings Creations
- Assembly Procedure and Operating Procedure Documentation



PRECISION POLYMER OPTICS



Polymer Imaging Lenses and LED Lenses get designed by our Optical Designers with relevant Software's as per Customer and Market Demand. We develop proto tools for initial trial production. Company produce Lenses & Reflectors of 3mm to 300mm sizes in Polymer. At our Company have best precision injection molding facility. We have Testing facility including Goniophotometer, Integrating Spheres, LM -3 (Luminance Meter), Spectro -Photo Colorimeter etc.

We supply imaging lens for all authentication devices and Lenses for industrial applications.

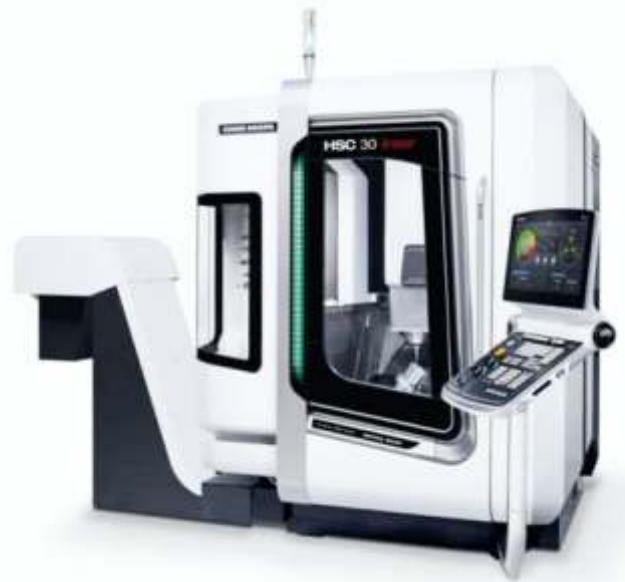
Applications : Imaging Lens, Aspheric Lens, Parabolic Lens, Camera Lens.





GLASS MACHINING

At Optica, we use high precision 5 axis CNC ultrasonic technology for machining of optics with complex geometries. Ultrasonic machining is the state of the art technology to machine glass with very minimal sub surface damage and chipping at edges. We have the capability to machine materials like optical glass, ceramics and very recently, we have been successful in machining softer materials like Zinc Sulphide.



Our glass machining team has the expertise to do the following

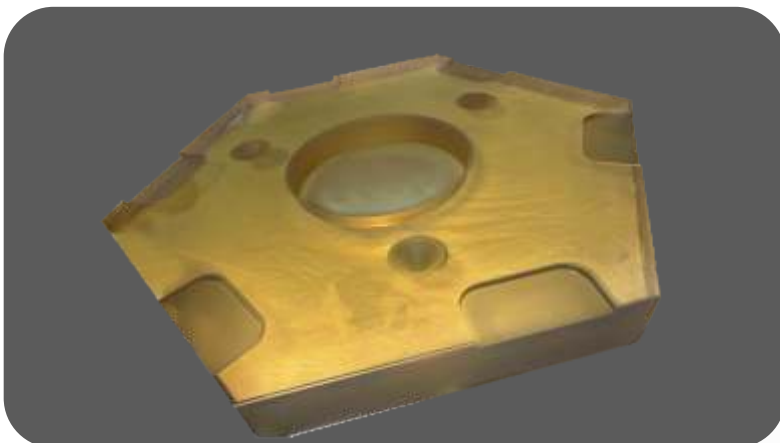
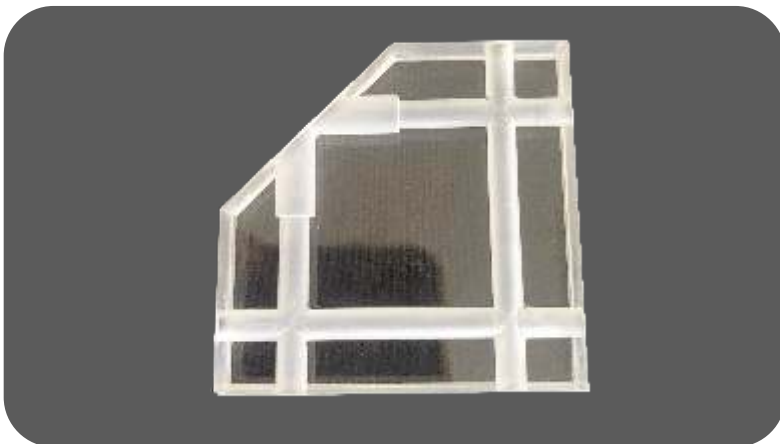
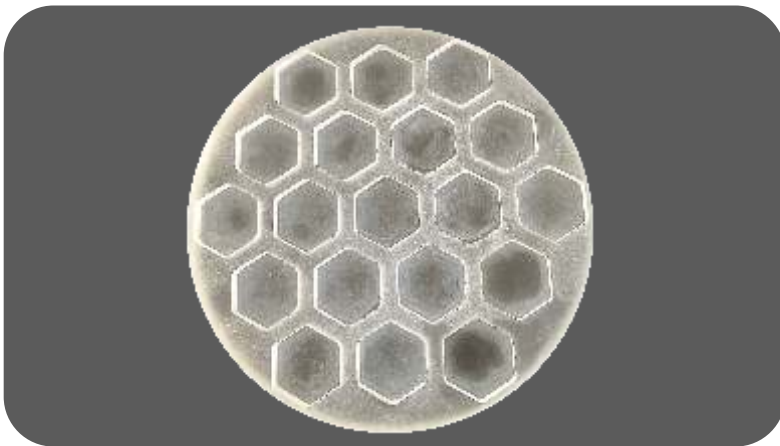


CAPABILITIES

- Mirror substrate light weighting
- Ultra precision profile machining
- Complex beveling and chamfering
- Precision hole boring with zero sub surface damage
- Machining for monolithic optical components.
- Contour machining
- Drilling and Slotting
- Pocketing
- Surfacing

Materials

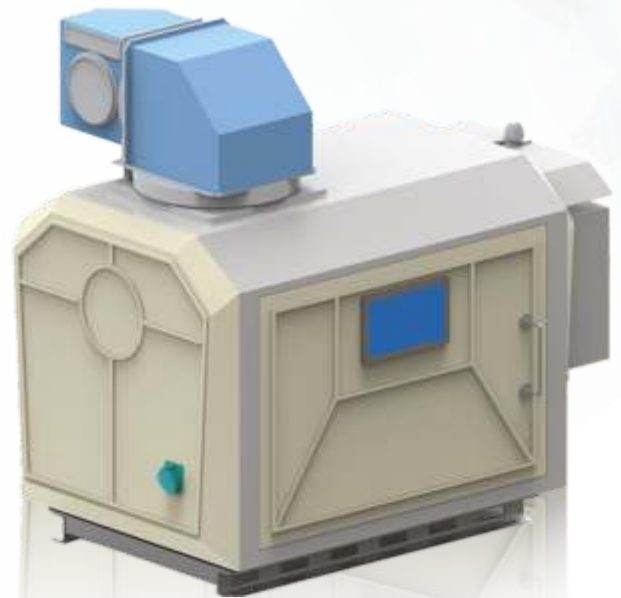
- Bk7
- B270
- Fused silica
- Zerodur or Clearceram
- Zinc Sulphide
- Silicon Carbide





ELECTRO-OPTICAL SYSTEMS

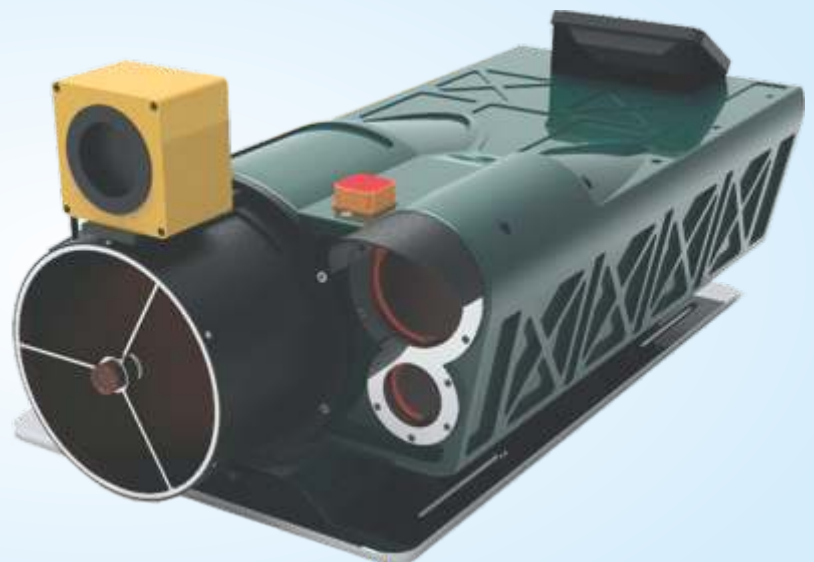
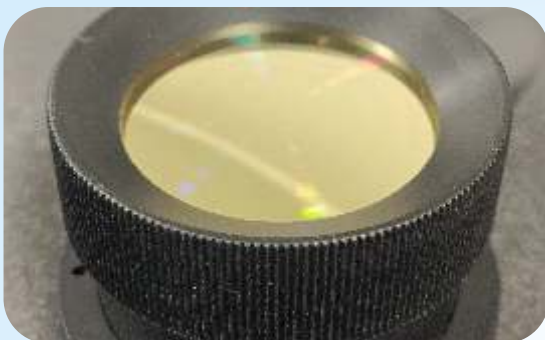
Optica has world class precision optics manufacturing, assembling and testing facilities with electronics to deliver quality electro optical modules. We are highly capable of providing solutions to the requirements of Defence, Surveillance and Aerospace. From Visible to Far Infrared, Refractive to Reflective based systems, our goal is to provide the best possible solutions to our customers. Our recent experiences in fabricating and assembling optics for high power laser applications has given us the confidence to face ever increasing challenges in the delivery of high precision optical systems. We have also ventured into scanning based optical systems, where we are currently working on a 2 axis periscopic gimbal system for a ground based LIDAR application.



We are capable of delivering the following systems

- Laser Range Finder
- Infrared Illuminators
- Thermal camera
- Ceilometer
- LIDAR System
- Passive FTIR System

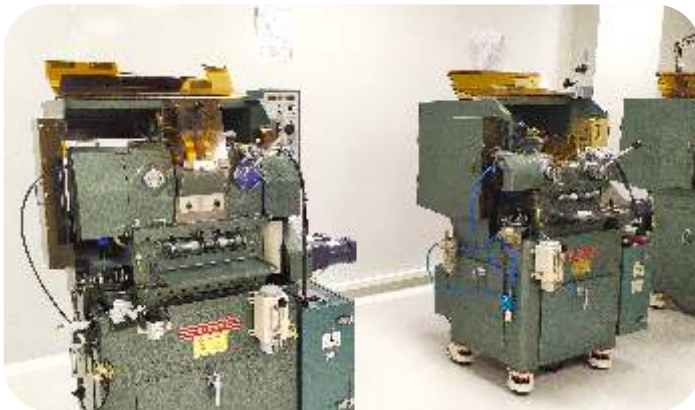
We can design, fabricate and validate any optical systems to customer requirements.





MANUFACTURING FACILITY

- Diamond Turning Machines Nanoform X up to Dia. 420mm
- 5 Axis High Speed Ultrasonic Glass CNC Machining Center
- 6 Axis High Speed Large Size CNC Machining Center 1600mm
- Optical Grinding and Polishing Machines
- Curve Generators and Centering and Edging Machines
- Thin Film Coating Plants for Optics & Polymer Optics
- High Speed Lens Polishing Machines
- Large Optics Grinding Polishing Machine 1200mm
- CNC Turning Center & other conventional Machines like Milling, EDM, High Precision Surface Grinding M/C
- Ultraprecision Lens Moulding M/C 30T - 350T
- Laminar Flow Assembly and Inspection Tables





TESTING FACILITY

- Taly Surf PGI 1200 (Taylor - Hobson Make) for measuring Aspheric Form-Figure-Finish
- CMM Prismo (Zeiss-Make) having 0.8 Micron least count size 900mm
- Phase shift Interferometer (Zygo-Make) with Intellwave software
- Vertical Laser Interferometers 2 No
- Optical Test Station from OEG Germany (MTF, FL, BFL, Centering Error, Radius etc)
- Spectrophotometer UV-VIS -NIR, & FTIR etc.
- Flat Laser Interferometer
- Auto Collimators Nikon
- Leica Centering Microscope
- CT Measurement up to 1 Micron
- Video Measuring Systems
- Goniophotometer & Integrating Sphere
- Spectrophoto Colorimeter
- Luminance meter





CAPABILITIES

- Dimension $\pm 0.005\text{mm}$, Radius : $\pm 0.1\%$
- Form Error $\lambda / 20$ & Angle Accuracy : ± 5 Sec
- S/D: up to 20:10
- Optical Windows / Mirrors: 3mm to 1200mm
- Spherical and Parabolic Mirrors up to 800mm
- Offaxis Parabolic Mirrors : 50mm to 600mm
- Lenses 2.00mm to 300mm & Domes : 40mm- 150mm
- Flat Optics : 6.00mm to 900mm
- HR Mirrors : 99.95%, IR HEAR Coating : 98% Transmission
- BBAR: Reflection less than 1%
- DLC Coating
- High Power Laser Coating
- Ultrasonic Glass machining up to 1500mm





Optica ✓
Excellent In Optics

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We are an ISO 9001-2015 Certified Company