Call Us: +91 9422650076

Lensel Optics Pvt. Ltd.

ISO 9001:2008 Certified

Recent Projects

GLASS OPTICS

Material	All glasses from SCHOTT and CDGM Catalog, Fused Silica, Pyrex, Float Glass, Quartz etc.		
Size	Dia 4 mm to 300 mm		
Optical Surfaces	Spherical		
Specifications Achieved	**Specification**	**Commercial**	**High Precision**
	Surface Irregularity	Less than 0.5 λ	Less than λ/10
	Radius of Curvature	+/-0.5%	+/-0.2%
	Center Thickness	+/- 0.10 mm	+/-0.03 mm
	Centration Error	3 arc minutes	1 arc minute
	Diameter	+0.00, -0.02 mm	+0.00, -0.01 mm
	Focal Length	+/-1 %	+/- 0.5%
	Scratch / Dig	40/20	20/10

- We supply glass optics for small pilot and prototype runs as well as for large volume manufacture. We make our own test plates and tools.
- We can manufacture glass lenses using our high speed grinding/polishing machines which use diamond pellet tools and Poly-urethane pad polishers or the traditional lapping machines using emery powder and pitch polishers. Both lines have certain advantages and certain drawbacks. Based on your exact requirements, we can discuss the appropriate manufacturing option with you.
- We have supplied glass optics to the defence and medical industries in India, USA, UK, Canada, Belarus, Australia, Brazil etc.

EXAMPLES OF GLASS OPTICS MANUFACTURED AT LENSEL

SINGLETS

We make all types of singlets including plano-convex Lenses(glass convex lenses), plano-

DOUBLETS

We make doublets (Double-Concave Lenses) and triplets using Norland Optical Adhesive.

COATING FACILITIES

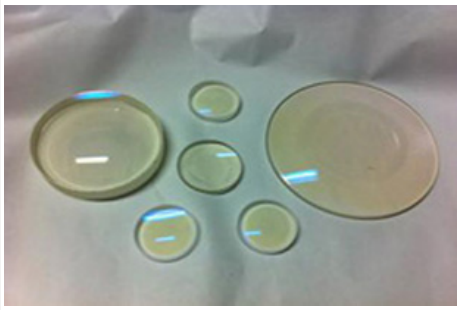
We have two coating chambers including a recently acquired Satisloh Sputter Coating

concave Lenses(glass concave lens), bi-convex, bi-cave, meniscus etc.

Our doublets and triplets are made on an optical centering device which allows us to achieve centering accuracies better than 1 arc minute. We can make bonded doublets from 6mm diameter up to 100 mm diameter. We also have our own range of 15mm and 20mm diameter Hastings Triplets.

chamber, the SP-100. The sputter coater is the latest optics coating technology and is particularly suited for giving very hard and highly durable AR coatings. We can do all types of BBAR coatings, dual wave coatings, notch and filter coatings etc. For more details visit our **Coatings**

NIGHT VISION OPTICS



We supply the lenses used for Night Vision binoculars to defense suppliers in India. These systems have been used by Indian defense and paramilitary forces. These lenses, made to the highest precision levels, contain a BBAR coating that conforms to MIL spec 48497A and has an average transmission above 98.5% over the 550 to 870 nm range needed for these low light conditions.

OPTICAL FLATS AND WINDOWS

We can make very high precision optical flats and windows with surface accuracies of λ/10 and parallelism within 3 arc seconds. We routinely supply windows in Quartz, Fused Silica, N-BK7, or any other optical glass to various Indian Government Organizations.

TEST FACILITIES

We have all the required test equipment to provide our customers with fully tested, high quality optics. We have a Fujinon F601 Spherical Surface Tester that allows us to measure the form irregularity of spherical surfaces and also measure the Radius of Curvature. We also have a Spectrophotometer for coating transmission measurements. We have a focometer with rotation stage for measuring BFD and Centration error. For more details, go to our **Test Facilities.**

LARGE OPTICS

We can make lenses up to 300 mm in size. The lens shown is a 290mm long, 160mm wide, 60mm thick plano convex lens used in the Pharmaceutical Industry as a magnifier.

GLASS LENS ASSEMBLIES

We have designed, prototyped and supplied various customized glass lens assemblies including all types of imaging systems, telephoto lenses, telecentric lenses, fiber optic couplers etc. We assist our customers in every step including specifying the optical requirements, lens design, mechanical design of housing, prototyping and pilot runs and finally bulk supply.

GLASS LENS ASSEMBLIES

Our optical designs are done by our Chief Optical Engineer, Mr. SidRege who is also one of our directors. Mr. Rege has a BS and MS in Optical engineering from the University of Arizona, Tucson, USA. He has worked as an optical research engineer in the US prior to joining Lensel and has 5 US patents in optical design.

TRADITIONAL MANUFACTURING LINE USING EMERY POWDER BASED GRINDING AND PITCH BASED POLISHING	NEW LINE OF HIGH SPEED, SPHERICAL CENTER FOLLOWING GRINDING AND POLISHING MACHINES USING DIAMOND TOOLS AND POLYURETHANE POLISHERS
'EMERY AND PITCH TOOLS'	'DIAMOND TOOLS'

	
Slow process with polishing times usually of 1 to 4 hours. Lenses polished in large blocks with multiple lenses. Ideally suited for flats, large lenses or low curvature optics.	Very fast process with polishing times of 1 to 5 minutes. Lenses polished individually. Ideally suited for highly curved, powerful lenses.
Flexible production method requiring very low initial cost of tooling.	In-flexible production method requiring larger initial investment in diamond pellet tools.
Poor repeatability. This requires continuous monitoring by highly skilled workers. Highly skill dependant.	Very good repeatability. Tool making and setting requires high skill but machine operation can be done by semi-skilled worker.
Ideally suited for very high quality, low curvature, low volume production	Ideally suited for high quality (irregularity, high curvature, high volume production
Process is prone to causing pits and scratches on lenses requiring very high level of care and skill during manufacture.	Diamond pellets and PU pad naturally give sleek-free and pit-free surfaces resulting in superior aesthetics

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