

LightForge™ Rapid Manufacturing

Overview:

LightForge™ is a low-cost rapid fabrication service giving optical designers the ability to create innovative new freeform surfaces, test new ideas and verify designs for production without incurring expensive upfront engineering charges and lengthy prototyping lead times.

Uploading a design to the LightForge™ web site could not be simpler. The optical surface must be specified on a 10um grid for x, y and z. After submitting the design, the LightForge™ web site runs a design rule check and if accepted, your optic will be ready in as little as 2 weeks.

LightForge™ can be used to create a wide range of refractive optical elements, from beam transformers and microlens arrays, to unique components such as diode laser smile correctors and wavefront compensator phaseplates, to completely custom surface shapes.

The LightForge™ fabrication service can be used for rapid prototyping as a precursor to volume production, or for one-off designs. The clear aperture can be used to test multiple variants of a single design or multiple separate designs.

The PowerPhotonic effect:

65µm

Maximum Sag

15x15mm

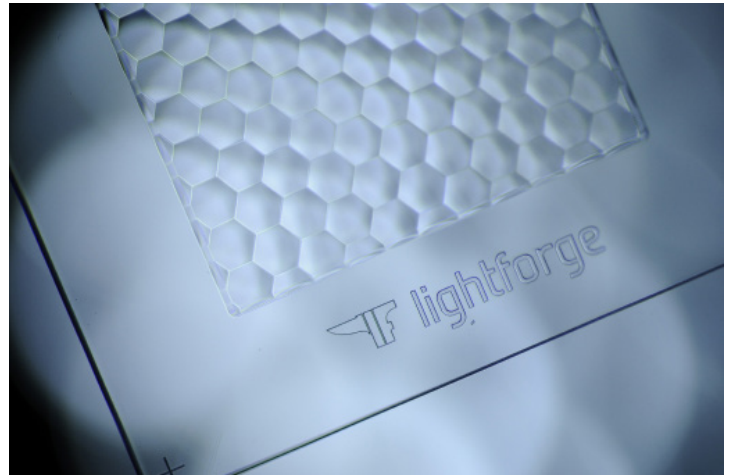
Clear Aperture

2 weeks

Turnaround Time

How it works:

Uploading an optic design to the LightForge™ web site is simplicity itself. Register on the LightForge™ web site, and upload your design. We'll do a simple rule check to ensure that your design fits within the LightForge design rules. Choose how many pieces you want, a payment option and your new optic will be on your doorstep in as little as 2 weeks.



Key Features

- Rapid prototyping
- Upload via web
- Fixed design rules
- Zemax to LightForge macro
- AR coatings available

Target Applications

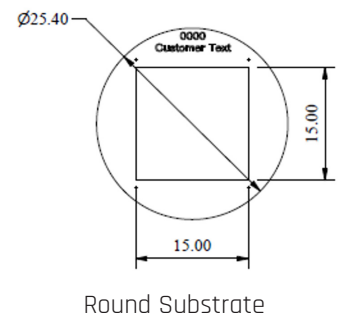
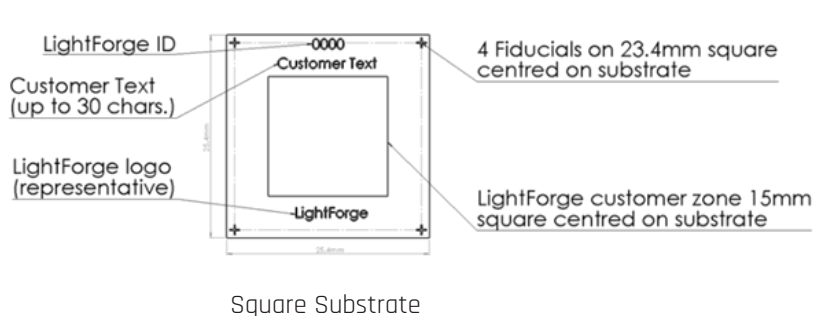
- Laser Additive Manufacturing
- Remote Welding
- Remote Cutting
- Scribing
- Drilling



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LightForge™ Design Rules

Material Properties		Nominal Specification		
Material	UV fused silica			
Specific Type	Corning 7980			
Transmission	= 92% uncoated, >99% coated			
Refractive Index	1.453 @ 808nm			
Mechanical Characteristics		Dimensions and Tolerance		Units
Diameter (D)	25.4 +0/-0.1		mm	
Width (W) Length (L)	25.4 +/-0.05		mm	
Thickness	1.0 +/- 0.05		mm	
Optical Characteristics		Dimension		Units
Clear Aperture (X)	15.0		mm	
Clear Aperture (Y)	15.0		mm	
Process Parameters		Range		Units
Sag	0 - 65		µm	
Slope (form error RMS < 500nm)	0 - 8		degrees	
Slope	0 - 45		degrees	
Feature Size	200 - 15000		µm	
Custom Options Available		Notes		
AR Coating	Choice of none; AR-GREEN 532 ± 30nm AR-IR Broad 780-1020nm; AR-IR-V 1064 nm; AR-TELECOM 1260 - 1620nm;			
Customer Marking	0 - 30 characters, centered above clear aperture			
Mounting Options	2" round interface plate for square substrate			



Sales and Technical Support

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