

FREEFORM MIRRORS

Freeform mirrors are curved optics with no axial symmetry and offer many advantages over conventional optics.

Their single optical surface allows for compound compensation and a reduction in the number of optics in the system, reducing optical volume, easing alignment and improving throughput. They also provide additional aberration correction and allow for redistribution of tolerances.

Using state of the art replication processes, Spectrum Scientific offers a cost effective method for the volume manufacture of freeform mirrors at prices equivalent to standard high precision mirrors.



Single Surface
Allowing Compound
Compensation

Redistribution
of Tolerances

Fewer Optics
to Align

Additional Aberration
Correction

Reduction of
Optical Volume

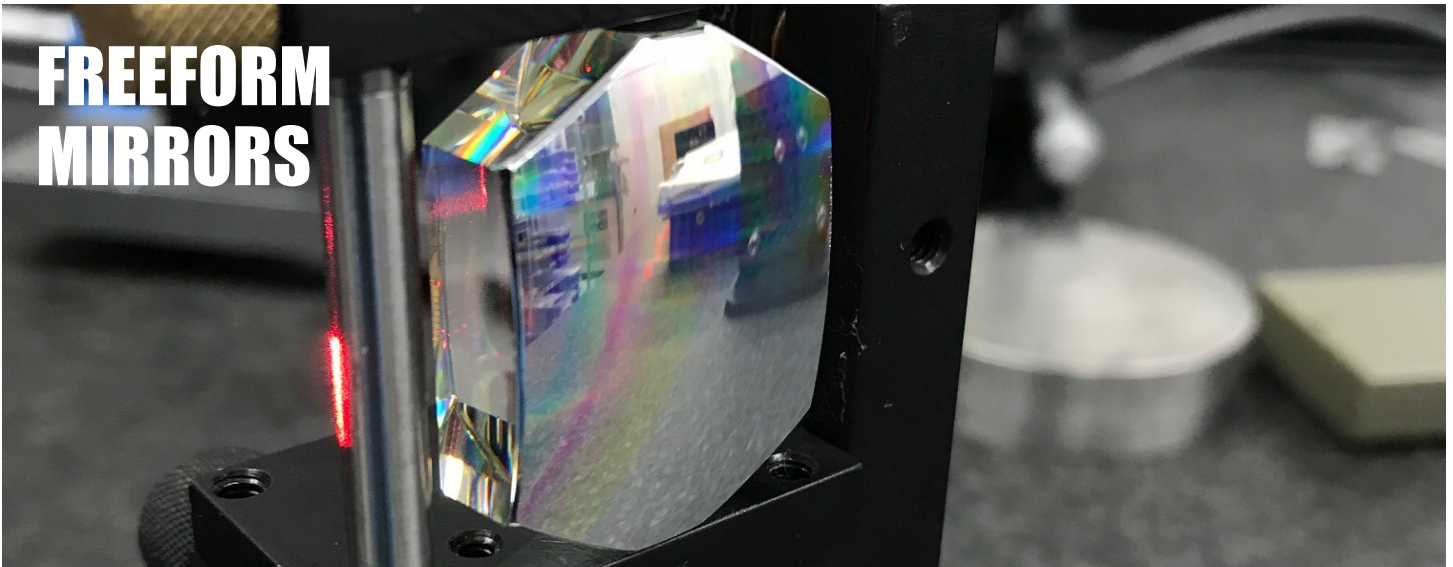
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FREEFORM MIRRORS



Advantages

- Improved performance
- Redistribution of tolerances in the system design
- Reduction of the number of optics
- Fewer optics to align
- Reduction of the optical system volume
- Additional aberration correction

Specification

- Aluminum or glass substrates
- Ellipse and Paraboloid profiles
- Size 0.5 inch to 6.0 inch diameter
- Typical surface figure down to $\lambda/10$ or better
- Surface roughness down to 3.5 Å
- Gold or Aluminum coating

History of Freeform Optics

