General Dynamics designs and manufactures custom precision metal optical components and optical assemblies for commercial, defense and space-based applications.

We provide end-to-end design, fabrication and testing of beryllium and aluminum optics ranging from single- and multi-faceted scan mirrors to plano and aspheric mirrors to complex telescope assemblies.

General Dynamics designs and manufactures a full portfolio of high-performance electro-optical/infrared (EO/IR) systems and components that provide our customers the clarity, accuracy and reliability to successfully complete their mission.

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**Precision Metal Optics**

- Optical surface design to meet customer prescription requirements or manufacturing optimization
- Optical mechanical design
- Manufacturing process development for exotic materials, coatings and assembly
- Finite element and optical design analysis
- Fast Steering Mirrors
- Collimators
- Telescopes up to 1.5 meters
- Spectrometers
Manufacturing
- Substrate fabrication, including turning, milling and electrical discharge machining (EDM) for surface geometries and lightweighting
- Optical finish
- Single point computer numerically-controlled (CNC) diamond turning
- Machine lapping and grinding
- Conventional polish

Assembly
- Prototype development
- Laminar flow booth assembly stations
- NASA-qualified electronics chassis build-up

Quality Assurance and Metrology
- Interferometric and electronic testing
- Static and in-situ metrology

Product Specifications
- Scan Mirrors
  - Single- and multi-facet
  - Nickel (Ni) plated Beryllium (Be) and Aluminum (Al)
  - Dynamic distortion compensation
  - 1-2 arc second apex angle error
  - Low scatter polish

- Plano Mirrors
  - Up to 30” diameter
  - Rectangular, elliptical, circular
  - 1/12 wave irregularity
  - Low scatter polish
  - 15Å RMS
  - 20/10 scratch dig
  - Temperature testing capabilities

- Aspherics
  - Up to 24” diameter
  - Conics and generalized aspheres
  - 1/10 wave irregularity
  - 25Å RMS
  - 40/20 scratch dig

- Assemblies
  - Telescopes
  - Collimators
  - Roof – mirror assemblies
  - Spectrometers
  - Forward looking infrared systems
  - Fast Steering Mirrors

General Dynamics has proven capability to design, manufacture, polish and integrate optical components and assemblies up to 1.5 meters in diameter.

GENERAL DYNAMICS
Mission Systems

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