General Dynamics Mission Systems 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 Mission Systems 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.

**Applications**

- Collimators
- Telescopes up to 1.5 meters
- Spectrometers

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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
**Precision Metal Optics**

**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

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