

Optronics precision optical capabilities

UNMATCHED
EXPERTISE FOR
FLAWLESS OPTICAL
SUBSYSTEMS

High-integrity solutions for airspace,
outer space or battlespace



Collins Aerospace



TOUGH OPTICAL CHALLENGES DESERVE BRIGHT OPTICAL MINDS

Maybe you need it all – expert collaboration and capabilities in optical assembly design to specification, custom tooling and manufacturing processes. Or, maybe you have the designs and you just need the capabilities to manufacture the system.

Collins Aerospace has them.

Not only do we have the capabilities, we also have a proud legacy of delivering to customers that demand virtually flawless performance in precision optical solutions. Our applications are designed to the highest integrity, with literally no room for error. You'll find our optical assemblies across such domains as air, ground and space.

THE COLLINS DIFFERENCE

- Innovative design concepts
- Customized tooling
- Prototype to high rate production
- Exportable manufacturing processes
- Applications for space, reconnaissance, navigation, targeting, piloting, aircraft or ground countermeasures, laser and and simulation/display applications
- U.S.-based design capability for ITAR and classified applications
- International manufacturing capability
- Full ISO and AS9100 qualified quality system
- Shared service support for engineering, analysis, material science and procurement
- Advanced product quality planning for technical, schedule and cost efficiencies

CORE COMPETENCIES

Optics and opto-mechanical engineering design and development

- ZEMAX® and LightTools®
- Visible, SWIR/MWIR/LWIR and multispectral
- Reflective and refractive configurations
- Athermalization
- ANSYS®
- Field-of-view change mechanisms
- Precision tooling and casting design
- Advanced materials (crystals, ceramics, composites)
- Rapid prototyping
- Precision alignment techniques

Manufacturing

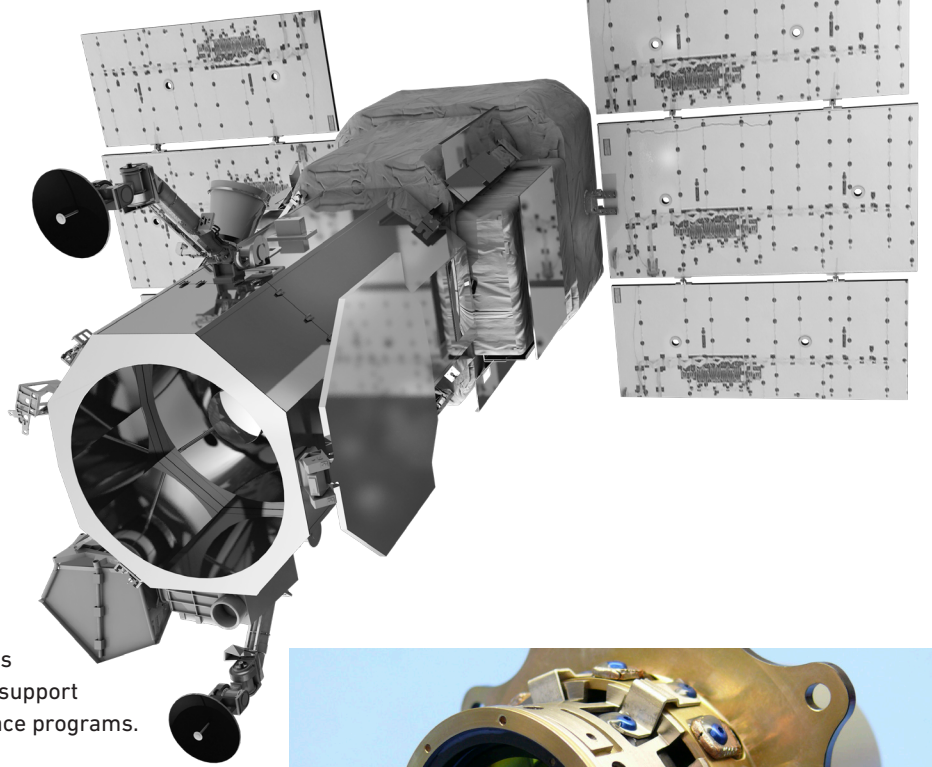
- CNC glass shaping – spherical and aspheric
- Precision optical components
- Visible through IR optical coatings
- Diamond turning

Assembly

- Precision optical/mechanical assembly
- Precision electro-optical assembly
- Complex optical alignment
- Clean room facilities
- Electronic assembly

Testing

- Visible/infrared interferometers
- MTF/automatic test equipment
- Profilometry
- Environmental
- Micro display calibration and test



Collins Aerospace designs and manufactures optical assemblies and subassemblies that support major commercial aviation, defense and space programs.

Optical assemblies for aircraft countermeasures

Program experience

- Missile warning sensors
- Fixed-wing countermeasures
- Rotary-wing countermeasures

Optical subsystems for head-up displays (HUDs), reconnaissance, navigation and targeting

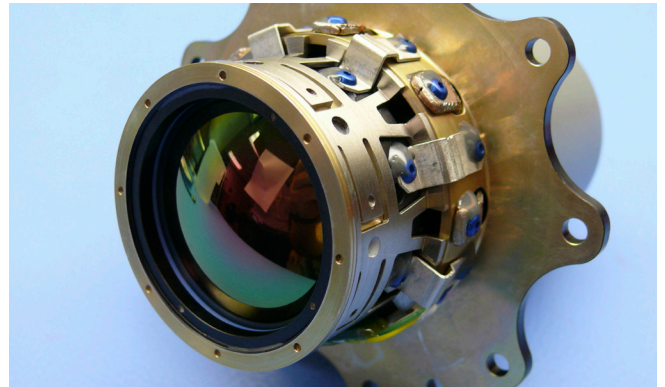
Program experience

- Military qualified relay lens assemblies – F-18, Cobra, JAS-39
- Commercial qualified relay lens assemblies – 787, 737 MAX, 777X
- F-35 Distributed Aperture System (DAS) optical assemblies

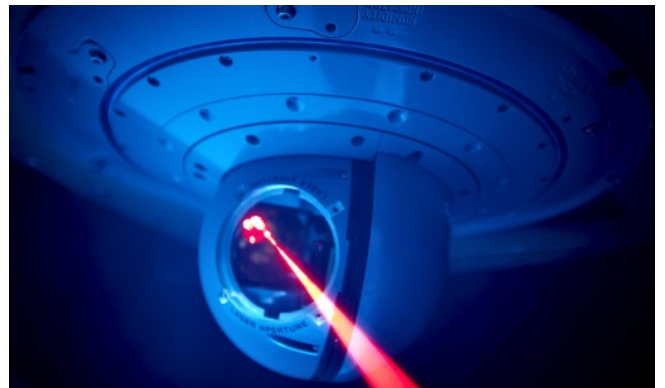
Optical assemblies for space applications

Program experience

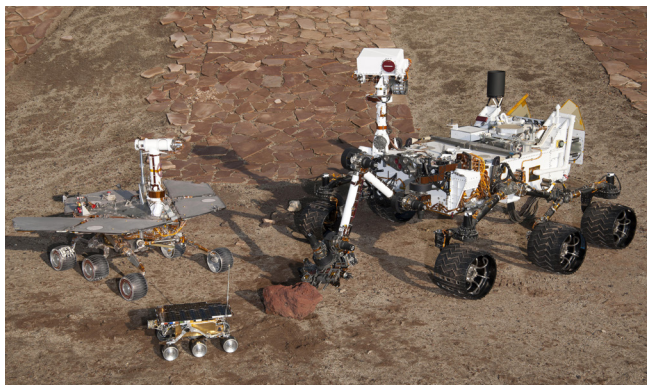
- Camera lenses for Mars exploration rovers
- Juno mission to Jupiter – wide-angle lens for spacecraft's Junocam
- Star tracker lenses
- Numerous proprietary customer programs



From design through production, Collins has delivered precision optical assemblies for distributed aperture sensors on the F-35 program. The sensors provide a range of capabilities, including enabling pilots to "see through" their aircraft for 360-degree, spherical situational awareness, as well as missile detection and tracking.



Collins Aerospace designs, develops and produces the critical optical assemblies for the Miniature Pointer Tracker used in the Large Aircraft Infrared Countermeasures (LAIRCM) system.



Mars rovers rely on the clarity and durability of our lens assemblies. The rover Curiosity features them as the "eyes" on all six of its hazard-detecting and navigation cameras. The lens assemblies are one of the few rover features that haven't undergone major design changes from one mission to the next.

To learn more, go to
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