

A blue fighter jet, likely an F-16, is shown from a low-angle perspective, flying over a vast expanse of white clouds. The sky is a deep blue with soft, golden light from the setting or rising sun, creating a dramatic and high-tech atmosphere. The jet's canopy, wings, and various sensors are clearly visible.

CORNING

# Specialty Materials

Complete Optical Solutions for Aerospace & Defense

## Overview

Corning Advanced Optics is a premier supplier of custom electro-optical solutions, optomechanical assemblies, optical materials, and large monolithic mirror blanks for the aerospace and defense communities. We are recognized around the world as leaders in process innovation, material science, optomechanical design, diamond turning, optical grinding and polishing, ultra-precision machining, and thin film coatings. As your “one stop shop” specialty materials and optical solutions provider, managing your supply chain can be easier than ever.

## Product and Application Diversity

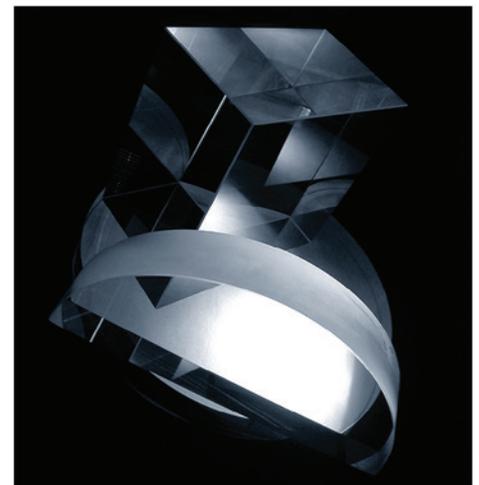
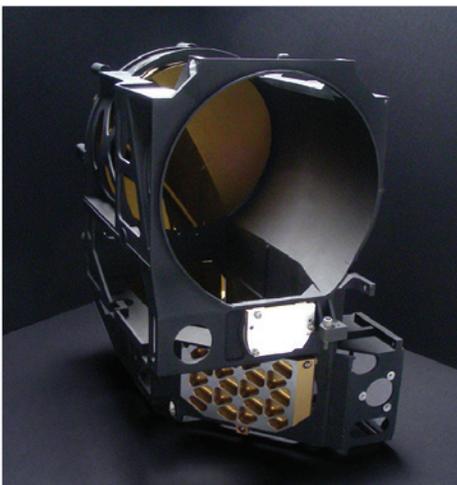
Corning Advanced Optics designs and manufactures components and systems for a wide range of optical sensing applications, from fixed and mobile ground-based platforms to those on board spacecrafts. Our reflective telescope assemblies are integral components of vehicle mounted imaging systems used for long range reconnaissance and infrared weapons targeting. Manufacturing large monolithic mirror blanks also plays a significant role in Corning heritage, with signature mirror blanks of up to 8 meters equipping such high-profile telescopes as the SOAR program, Discovery Channel Telescope, Subaru Telescope, Gemini North, and Gemini South. Our operations in aerospace can be recognized with the production of optical assemblies for solar coronagraphs used to study the effect of solar eruptions on our sun, and the telescope for the imager/spectrometer aboard the New Horizons’ spacecraft as it explored Pluto and the Kuiper belt.

## Program Management

From the first design through the final acceptance test of a product, rigorous program management is in place to ensure that everything comes together as planned and on budget. When you choose Corning, you are not just buying hardware, you are buying commitment, confidence, and customer satisfaction.

## Corning’s World-Class Materials and Finishes

For over 160 years, Corning Incorporated has been a world leader in innovation and materials science. Our ability to consistently produce materials with the highest purity in the sizes and quantities our customers require has been a key to our success. Our HPFS<sup>®</sup> silica material is perfect for a wide variety of test optics and high-energy laser applications. ULE<sup>®</sup> is a preferred material for large monolithic mirrors because of its extremely low expansion properties. Abrasive water jets and CNC grinding processes are used to produce open and closed back ultra-light structures.



## Diamond Turning

With one of the largest commercial diamond turning facilities in the world, our equipment and processes are state of the art, and our commitment to process excellence truly sets us apart. Electroless nickel plating and Corning's LEC diamond turning process produce a near diffraction-free surface finish, suitable for use in the visible and UV spectral ranges. Advances in ultra-precision machining technology allow us to produce lightweight, thermally stable, high-accuracy mirrors with integral mounting features that can be produced in volume with exceptional accuracy and consistency.

## Optical Fabrication – Grind and Polish

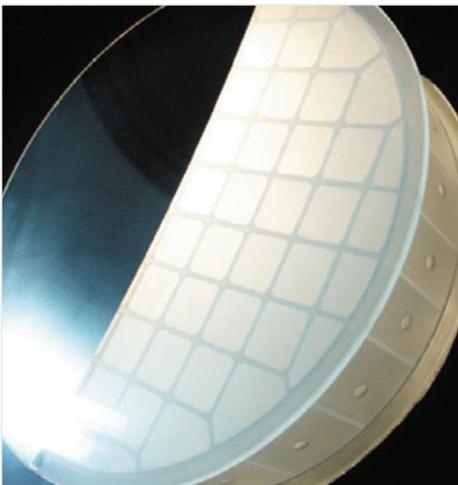
Corning has manufactured high-precision refractive optical systems for over half a century from its Tropel® Optics roots, and is recognized as a leader in precision and performance, having produced lens systems with some of the highest resolutions in the world today. This expertise is brought to the aerospace and defense marketplace, conceiving components and sensors for use in the DUV through the infrared, including high-laser-damage threshold systems. Conventional and CNC polishing technology is used in conjunction with custom thin film coating development, and the most advanced measurement equipment available to furnish spherical surfaces and aspheres in optical glasses and IR crystal materials.

## Market Segments

- Air-targeting electro-optics
- Ground-based electro-optics
- Intelligence, surveillance, and reconnaissance
- Missile electro-optics
- Naval electro-optics
- Space-based electro-optics

## Applications

- Electro-optical countermeasures
- Materials, custom components, and coatings for high-energy laser applications
- Hyperspectral imaging systems
- Multispectral imaging systems
- Night vision optics
- Reflective and refractive telescopes
- Space windows
- Specialty fiber for gyroscopes
- ULE® for large monolithic mirror substrates and ultra-light structures
- UV, VIS, and IR optical sensors





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