UAV & Drone Optics

Solutions for compact airborne sensing systems

Andover Corporation

UAV and drone-based sensing systems rely on optical components that fit within tight payload constraints.

From ISR and reconnaissance platforms to multispectral imaging and target detection systems, these applications depend on filters, coatings, and optical assemblies suited to flight.

UAV optical applications include:

- **Airborne ISR and reconnaissance**
- **Compact EO/IR payloads and gimbals**
- **Border and perimeter surveillance**
- **Target detection and tracking**
- **Navigation and situational awareness**
- **Multispectral sensing systems**

Lightweight Filters and Coatings

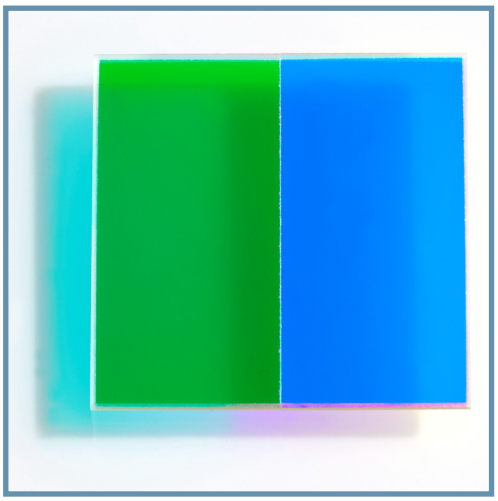
Optical filters and coatings for airborne payloads, stabilized gimbals, and compact sensing systems that must balance spectral performance with tight size and weight constraints.

- Excellent spectral control across visible, SWIR, and MWIR applications
- Helps optimize payload efficiency
- Built for temperature variation, vibration, and flight conditions

Compact Optical Assemblies and Payload Integration

For sensing systems that integrate multiple components into tightly packaged architectures, our optical solutions include:

- Mosaics for wide-field imaging and sensing
- Beamsplitter assemblies
- Multi-element sub-assemblies optimized for lower weight, reduced distortion, and component protection



Assemblies such as mosaics can combine multiple optical functions within a compact, lightweight package, at optimal size, weight, and performance.

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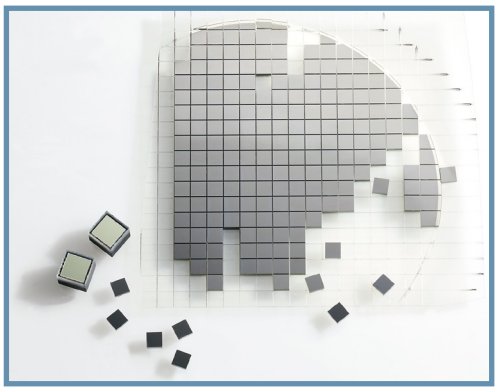
SWaP-Conscious Design

Unmanned airborne systems often place strict limits on size, weight, and payload complexity. Andover supports these constraints with in-house fabrication capabilities ranging from 2 mm to 350 mm, including optical filter dicing down to 1.0 mm squares.

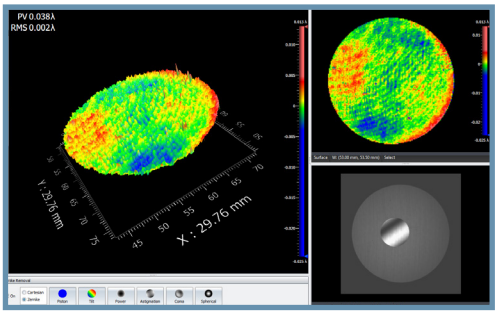
- Solutions for size- and weight-sensitive payload designs
- Ideal for limited payload envelopes
- Tailored for compact airborne system integration



Airborne Optical Performance

UAV and drone payloads must maintain image quality under vibration, motion, and changing environmental conditions. Andover's polishing and fabrication capabilities include transmitted wavefront errors down to 1/10 wave and parallelism within a few seconds of arc, supporting compact airborne sensing systems.

- Helps maintain alignment and image quality in flight
- Supports compact payload architectures
- Applicable to aerospace and defense systems



Interferometer surface map showing a reflected wavefront with peak-to-valley (PV) of 0.038λ and RMS of 0.002λ

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www.andovercorp.com
4 Commercial Drive • Salem, NH 03079 • 603 893 6888