



## IDCA Packaging Design and Production

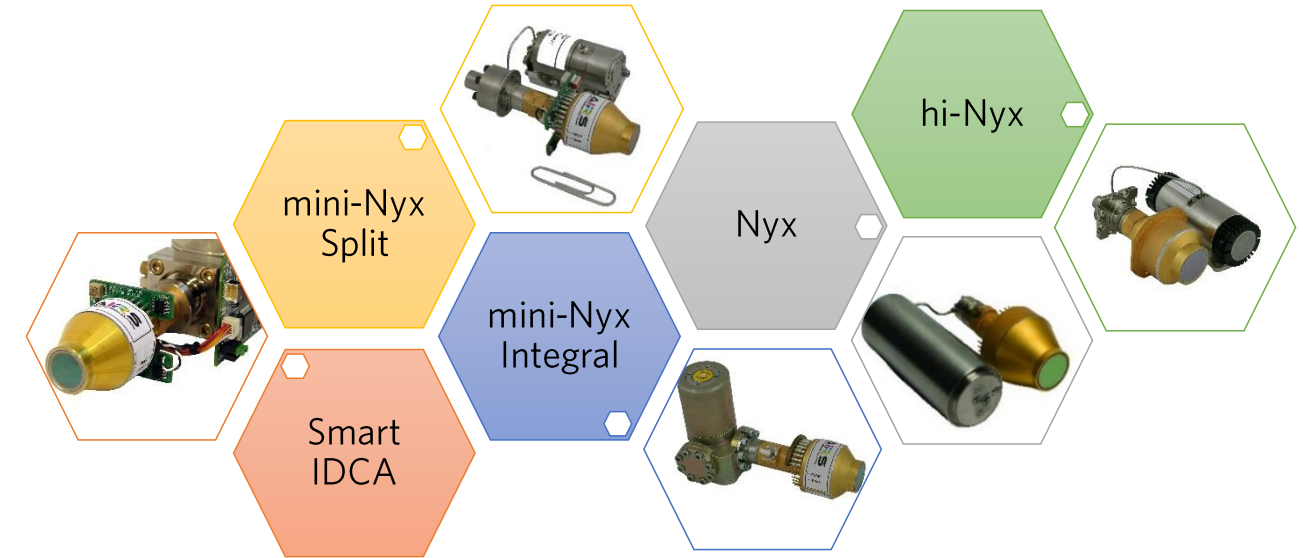
### Integrated Dewar Cooler Assemblies

- AIRS' IRFPA packaging expertise and facility is a unique industry resource
- Proven, deep expertise in IDCA design, production, test, fielding and support
- High performance, high reliability solutions - low cost of ownership
- Long life and low heat load vacuum processes and designs
- Depot capability to refurbish and repair third party IDCAs
- Merchant supplier committed to your specific requirements and mission

## The AIRS Advantage

AIRS has developed advanced IDCAs based on flexible, reconfigurable platform dewar designs. We routinely integrate the highest performance IRFPAs and coolers to meet your OEM needs. Our high reliability designs are complemented by the careful selection of high reliability IRFPA and coolers including HOT IRFPAs operating at higher temperatures coupled to long life split Sterling and rotary coolers.

AIRS uniquely configures the optical interface of its IDCAs to meet your exacting performance and system design requirements. We deliver IDCAs with custom internal optical designs (e.g. hyperspectral filters, etc.) that integrate seamlessly with your sensor system or instrument.



### Dewar Design Flexibility

AIRS dewars are designed for high performance and long life.

- IRFPA and cooler agnostic – best in breed selected specific to your need
- Latest metal and ceramic dewar technologies
- HD IRFPA designs
- High IO for specialized IRFPA
- Custom optical interface design e.g. hyperspectral
- Smart IDCA™ electronics

### IRFPA integration

AIRS supplies a wide range of IRFPAs, including proven high performance MCT and T2SLS technologies as well as customer furnished IRFPA from leading foundries spanning the infrared imaging spectrum (SWIR, MWIR and LWIR). HOT IRFPA technology combined with our long life IDCAs result in reliable robust sensor solutions for your most demanding system needs.

### Optical Interface

AIRS customizes the optical interface to your system requirements including cold shields, filters, baffles and windows. For hyperspectral systems we mount your order blocking filters in the IRFPA cold space which provides design and performance advantages. Customized optical interfaces also allows ease of IDCA retrofit into existing systems.

### Cooler Integration

AIRS integrates split and integral coolers from leading worldwide suppliers. We have cooler integration, test and purge & charge facilities.



### IDCA Platform Products

Highly Customizable and Reconfigurable

- **mini-Nyx** – low size, weight and power (low-SWaP)
- **hi-Nyx** – high output for more complex or HD IRFPA
- **Nyx** – HD and other large format IRFPA

**Custom OEM IDCA** – designed to meet your specific requirement

**Smart IDCA™ Electronics** – optional Camera Link or Gig-E output available on all IDCA

## AIRS IDCA PROCESS



### Dewar Assembly

- Body
- Cold finger
- Header

### IRFPA

- Substrate
- Mounting
- Wire Bond

### Optics & Cap Assembly

- Filters
- Cold shield
- Windows

### Dewar Processing

- Purge, Pump & Bake
- Leak checking

### Cooler Integration

- Rotary
- Split
- Manufacturer agnostic

### Final IDCA Integration & Test

- Electrical test
- Optical test
- Performance

# IDCA Manufacturing Processes & Facilities

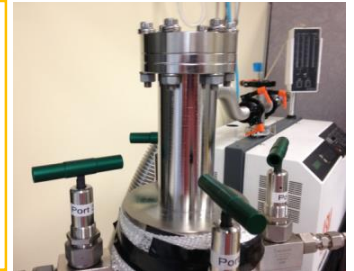
AIRS believes our high standards can only be accomplished within a vertically integrated business model. AIRS business and operational facility offers a modern completely tooled work space. From the start AIRS has invested in resources and staff with advanced capabilities.

IDCA development and manufacturing including the design of cold fingers, pedestals and substrates, ceramic/metal seals, optical window seals, cooler integration, RF and laser welding, multiple high-temperature ultra-high vacuum systems, variable bake cycles, hydraulic pinch off, precise optical alignment, wire welding and bonding.

## Facilities & Capabilities

- High temperature/ultra-high vacuum pumps
- Digital heating bake out control
- Helium leak checking
- RF soldering/laser welding
- Optical Alignment
- Class 1000 clean room
- Wire bonding and welding
- Cooler purge and charge
- Final test and qualification

AIRS' high vacuum processing and designs result in higher reliability, longer life IDCA.



## About AIRS

Innovative and Flexible - AIRS is an innovative company whose staff has a deep technical and business understanding of infrared imaging applications and technologies. AIRS was founded upon the principles of focused development of state of the art high performance IDCAs, sensors and cameras that utilize leading edge IRFPAs. The team came together from industry based on our collective passion for innovation and challenging, unique solutions for complex, high performance sensor systems.

Vast experience - The AIRS team has a deep understanding and experience in complex IDCA sensor and systems design and manufacturing. The breadth of experience allows the AIRS team to recognize appropriate applications of design, technology and processes to best meet your needs.

Collaborative partner - AIRS' business model is to be a committed merchant supplier to integrators and designers of EO/IR systems. Our primary focus is on OEM relationships where AIRS can closely collaborate with its customers to help them meet their mission or application requirements.



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