Optical Engineering Capabilities

Optical Engineering Capabilities

Performance - Our team has the skill set to design, tolerance, and analyze low to high resolution imagers, telescopes, multispectral and hyperspectral systems.

ZIN has related experience in the areas of imaging (intensified, high frame rate, color, ultraviolet, infrared), illumination (LED, laser based), and radiometric detection (CCD, thermopiles, photo-diodes, photo-multiplier tubes). ZIN has provided design, testing, verification and validation of optical components for spaceflight. ZIN has designed and delivered an interferometric microscopy payload to ISS. ZIN has also built prototype small optical mirror components based on additive manufacturing designs for demonstration.

TOOLS:

- ASAP, FRED
- APEX (SolidWorks Add-In by Breault Research)
- RayCAD, AutoCAD
- PCGrate, TFCalc
- 4Sight, Metropro,
- Matlab, Simulink, IDL, Mathematica
- MODTRAN, LBLRTM, SpectralCalc
- EOSyMEnd- to-end Optical System Modeling.
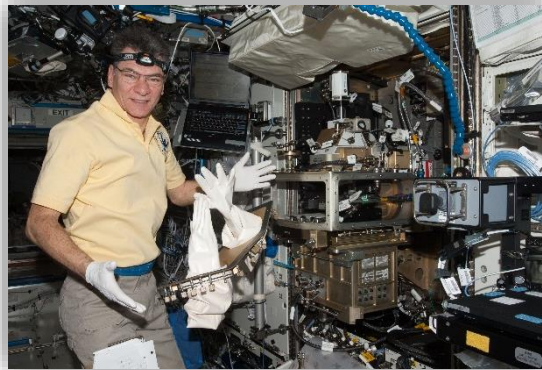
ZIN has extensive experience in optical design and layout, both at system and component levels. ZIN has expertise with Zemax Optical Design Software. These include design of an optical system for a Schleirin Supersonic Shock Front Sensing System, and research into the applications of RF Driven Optical Interferometric Sensing Systems.

ZIN has provided the design of fiber based sensors including seismometers, Pressure, Temperature, Magnetic and Acoustic.

ZIN has experience in the design of optical components (cameras, multi-element lenses, filter wheels, illumination sources) for space environments and designing custom solutions to assist in the adaptation of optical hardware to such environments. This includes design of the Light Microscopy Module (LMM) for the FCF within the ISS. ZIN also provided verification, validation, integration, and continues to provide on-orbit operations of LMM.

- ❑ **ZIN has provided the design of fiber-based sensors including seismometers, Pressure, Temperature, Magnetic and Acoustic.**
- ❑ **ZIN offers recognized optical engineering capability ready to support your projects.**
- ❑ **ZIN has the skill set to design, tolerance, and analyze low to high resolution imagers, telescopes, multispectral and hyperspectral systems.**
- ❑ **Additionally, expertise spans UV to LWIR, R&D to space and ambient to cryo. Stray light analysis excellence includes UV to LWIR performance including near field modeling for IR systems.**
- ❑ **We are also able to provide structural-thermal-optical-performance modeling (STOP) support.**

ZIN Technologies

VOYAGER SPACE