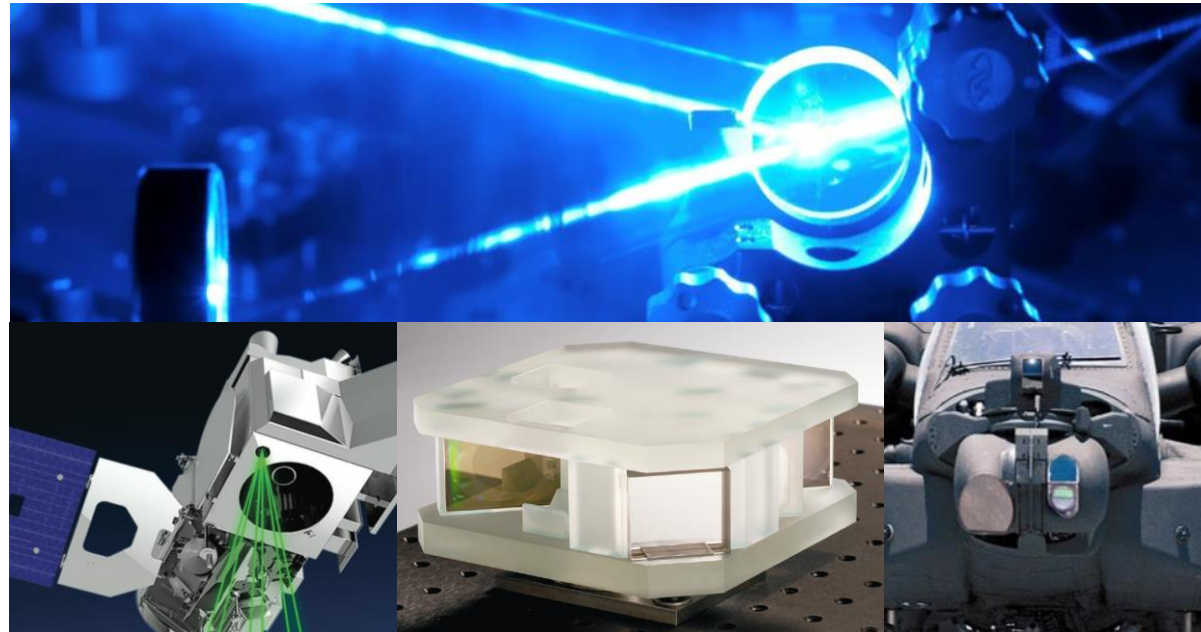




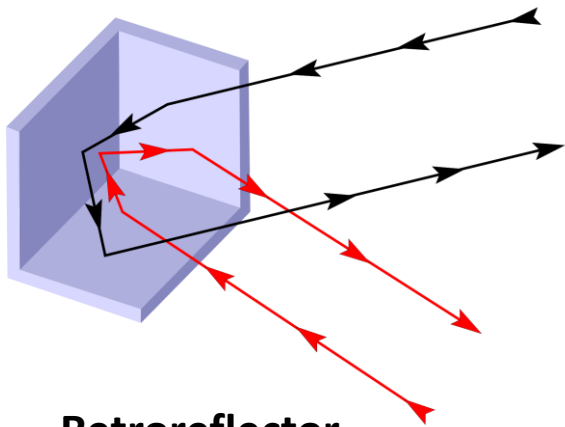
Transforming Optical Structure Technology Through Innovative System Integration.



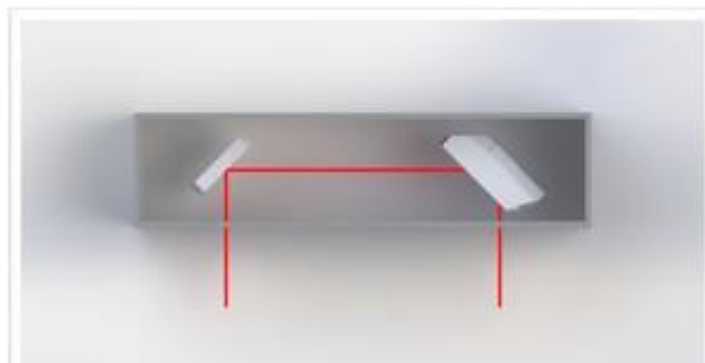
Michelle Hyers, Director of Engineering, PLX Inc.
40 W. Jefryn Blvd. Deer Park, NY 11729, USA



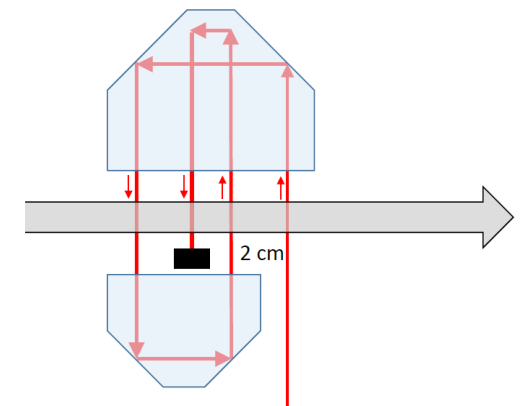
What We Do: Highly Precise Manipulation of Light



Retroreflector



**Lateral Transfer Hollow Retroreflector
And Periscope (LTHR & LTHP)**



Custom OEM Applications



PLX Business Model

OEM Solutions Provider

System Integration

Subsystem Integration

Optical Assemblies

PLX IP

Key Partners

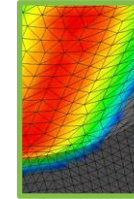
Product Development & Expertise

Business Development



Engineering Design

- Expert design engineers utilizing PLX 65-years of innovative patented technology



Analysis & Testing

- FEA Analysis of Performance
- Environmental Testing: Thermal, Vibration, Shock



Fabrication Shop

- Glass Fabrication & Grinding



Precision Optical Shop

- Polishing optics with better than $\lambda/20$ flatness.



Assembly Labs

- State-of-the-art precision stations for with Zygo interferometers.



QC/QA

- Performance & Environmental Testing, Zeiss CMM.
- Registered ISO 9001:2015



Coating Capabilities

- Metallic coatings, Anti-Reflective(AR) coatings, and dielectric mirror coatings for all types of optics.



Clean Room

- Class 100 Clean Room



Surface Structuring Laser Systems

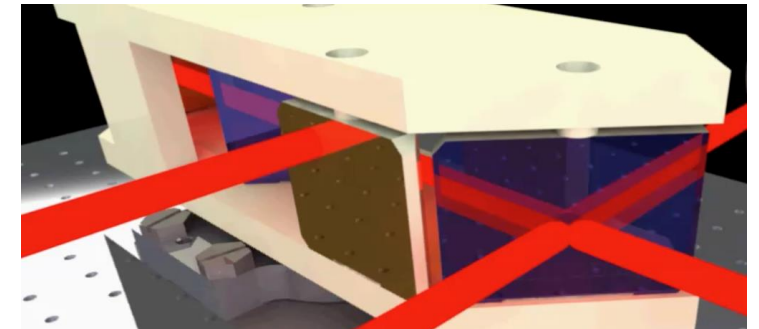
PLX can steer and direct multiple laser systems:

- Penta mirrors
- Lateral Transfer Hollow Retroreflectors (LTHR)
- Lateral Transfer Hollow Periscopes (LTHP)
- Monolithic assemblies M.O.S.T.[™] assemblies.



Benefits of PLX solutions:

- Switching of multiple laser sources
- Pre-aligned assemblies
- Invariant sub-arcsecond accuracies
- Stable in thermal & vibration environments





PLX Technology for Surfacing Application

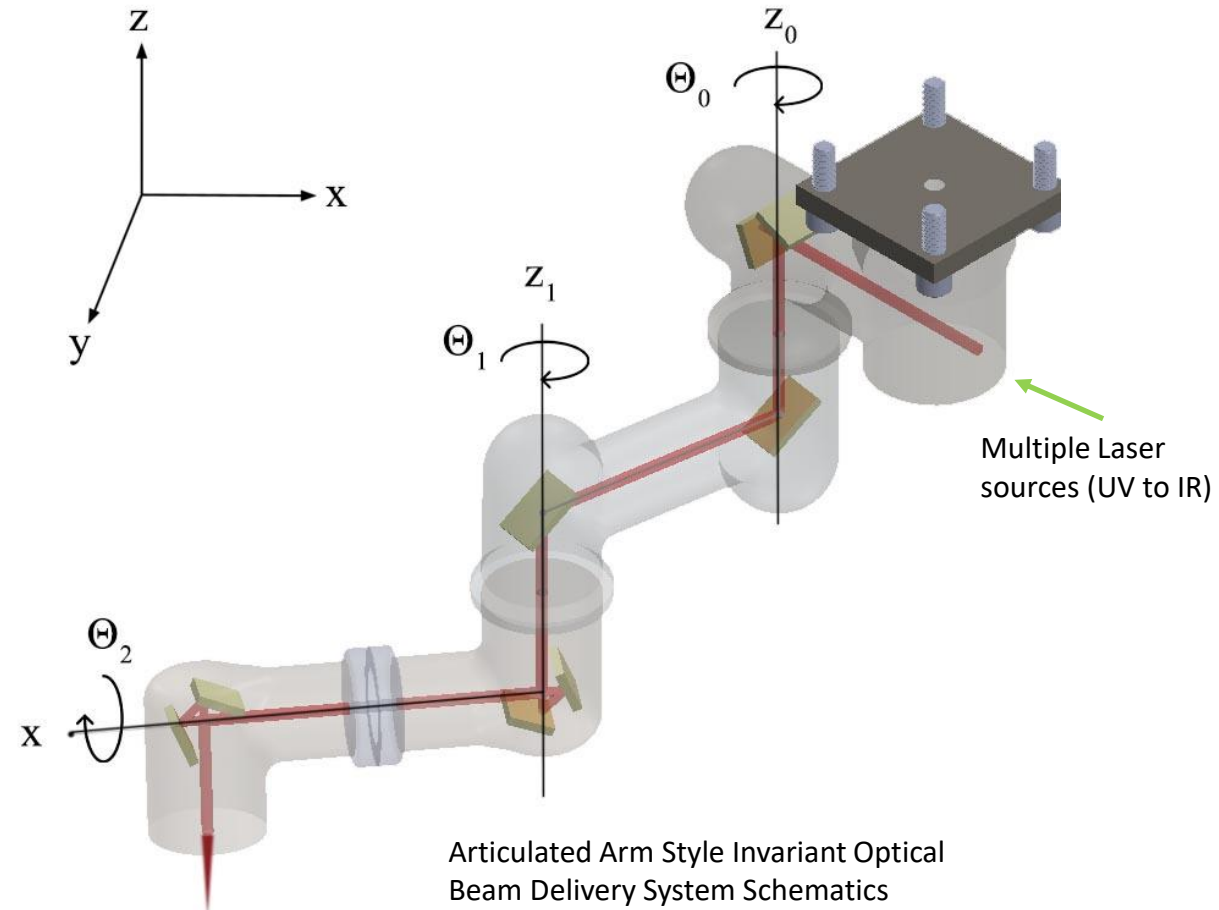
Articulated Arm Beam Delivery (AABM):

Benefits:

- **Multiple Beams in One Compact System:** Multiple DOFs
- **Superb Optical Accuracy:** Sub-arcsecond beam deviation
- **Invariant Optics:** No alignment / calibration issues
- **High Power Compatible:** Less limits on scan speeds
- **High Speed Ruggedness:** Invariant athermal design is not sensitive to high vibration, shock and temperature changes.

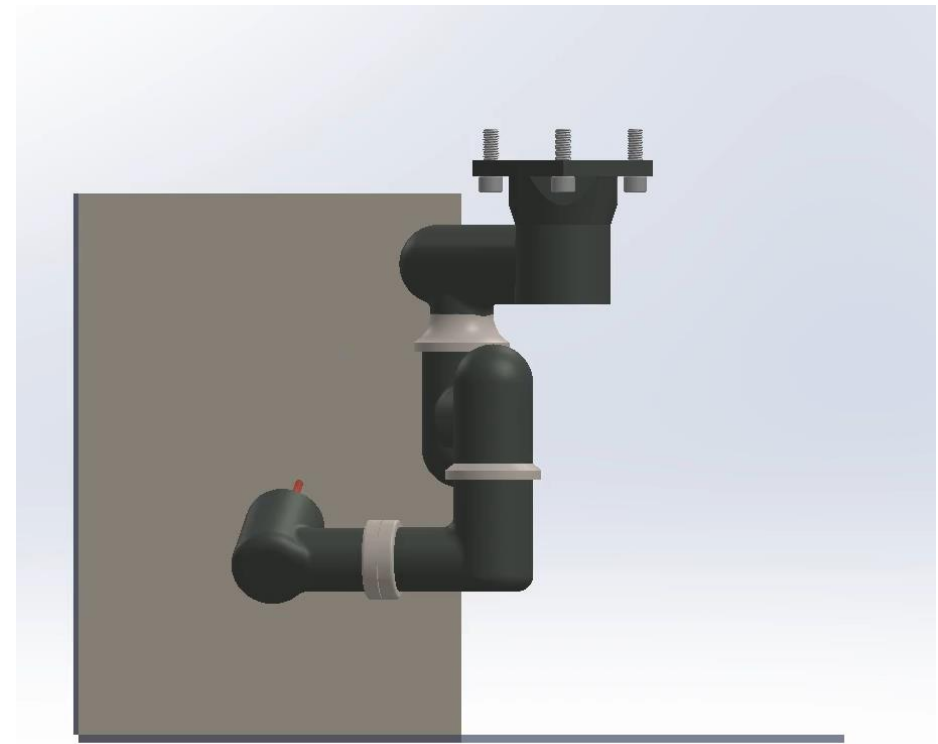
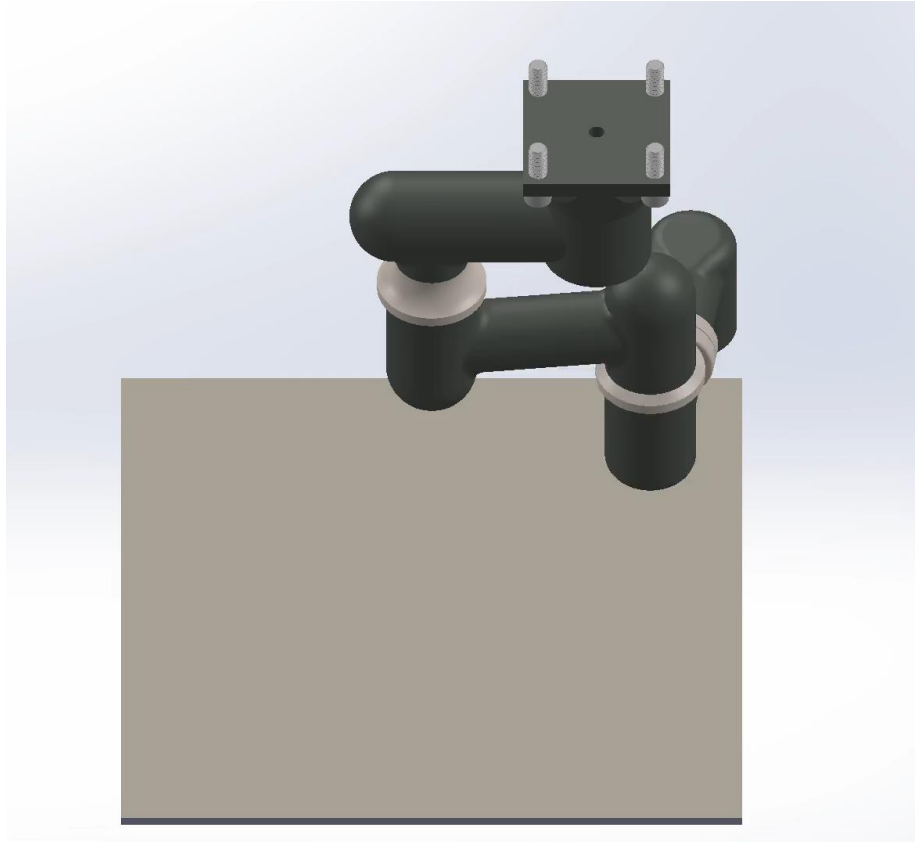
Applications:

- **Multiple Laser Beam Delivery**
- **Laser Beam Surfacing**
- **Laser Cutting or Scanning**
- **Laser Interferometric Surface Patterning**





Animation of Beam Delivery System



Articulated Arm Style Invariant Optical Beam Delivery System Animations



The PLX Advantage

Wavelength Independence

- Front Surface Mirrors
- Quick Switch Amongst Lasers

Beam Diameter

- Power Density
- Low Divergence

Structural Design

- Complete Enclosed
- No Alignment

High Accuracy

- Sub-arcsecond beam deviation
- Invariant and monolithic optics

Configurable

- Combining invariant systems
- Precision integration of multiple assemblies

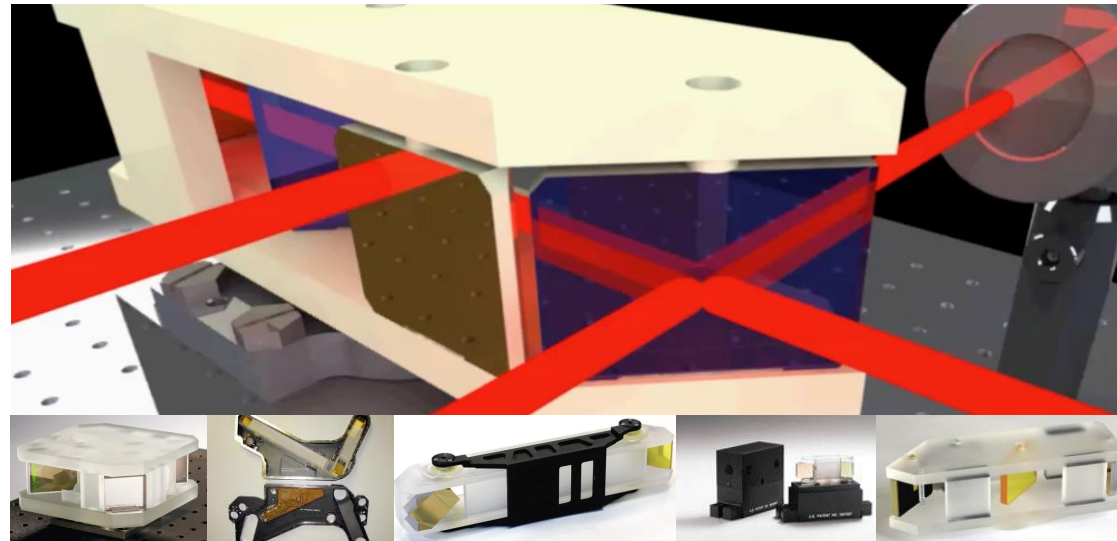
Stability

- Thermal Excursion
- Vibration or Shock Concerns



INTRODUCING M.O.S.T™

Monolithic Optical Structure Technology



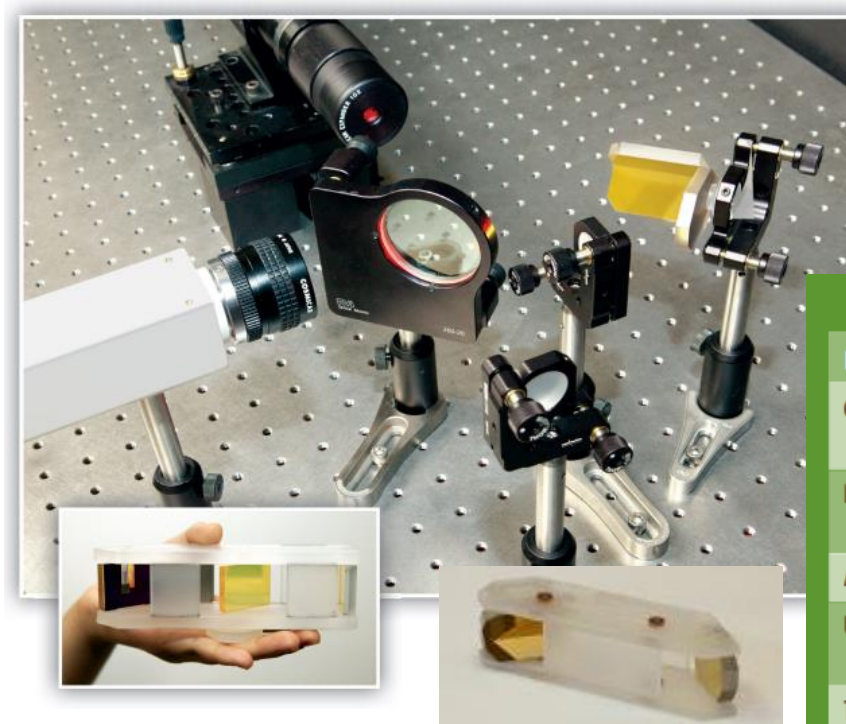
US PAT. 10393994, 9013814 and Additional Patents Pending Internationally



M.O.S.T.[™] Monolithic Optical Structure Technology

Advantages with M.O.S.T Technology

- ✦ Combines all of the elements of a complex optical setup into single rugged monolithic unit.
- ✦ Single Compact & Rugged
- ✦ Superb optical stability, unsurpassed shock and vibration resistance.
- ✦ Sub-arc second accuracy between optical elements.
- ✦ Permanently aligned so you will never need to adjust it and also lasts indefinitely.

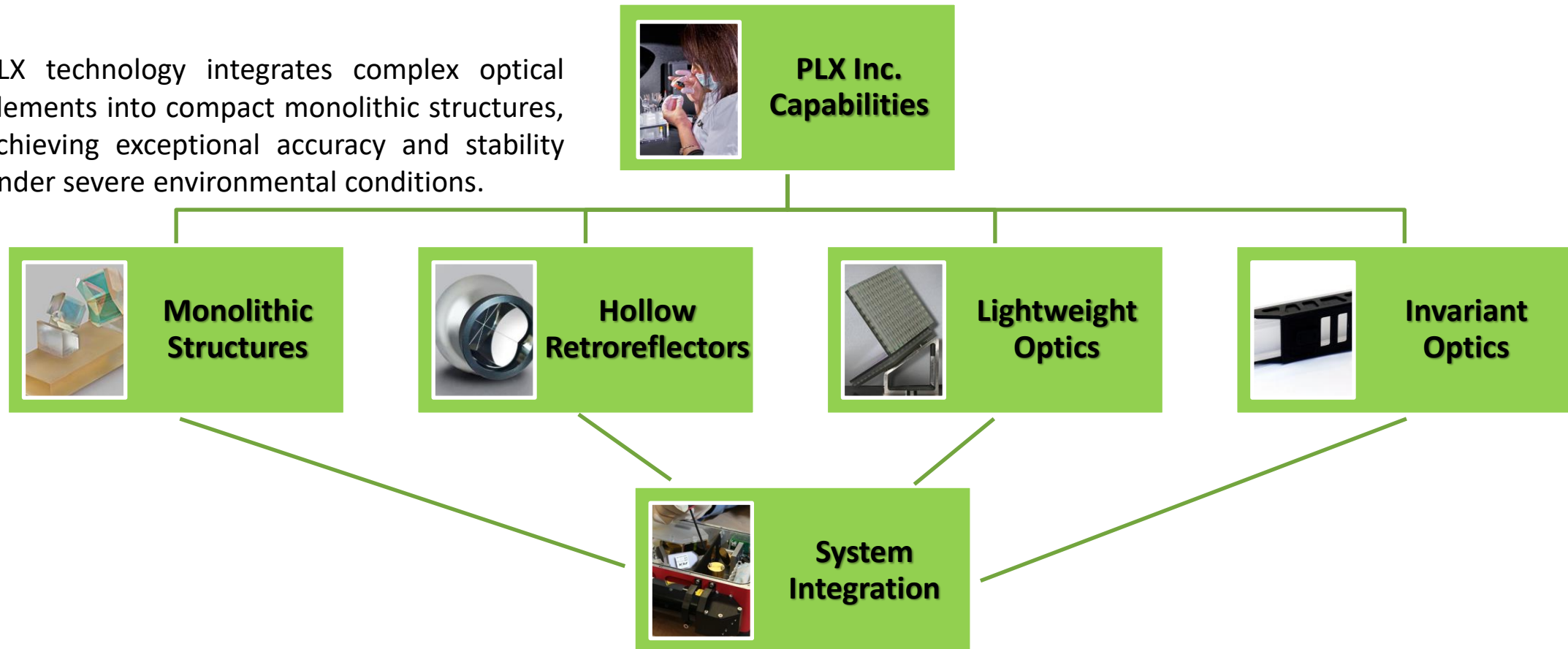


M.O.S.T. PROPERTIES	
FEATURES	SPECIFICATIONS
Glass Types Used	Typically fused Silica (SiO ₂), low-expansion Borosilicate, ULE 7971, BK7 and ceramics
Lightweight Structure	Average glass density is 2.2 g/cm ³ (lighter than Aluminum)
Average Specific Stiffness	3.3x10 ⁴ N m/g (higher than Aluminum)
Uniform CTE	Coefficient of Thermal Expansion using fused Silica is 0.55 ppm/° K
Thermal Dependency	≥ 0.15% per degree
Oscillation Capability	≥ 1 KHz dependent upon the design and requirements



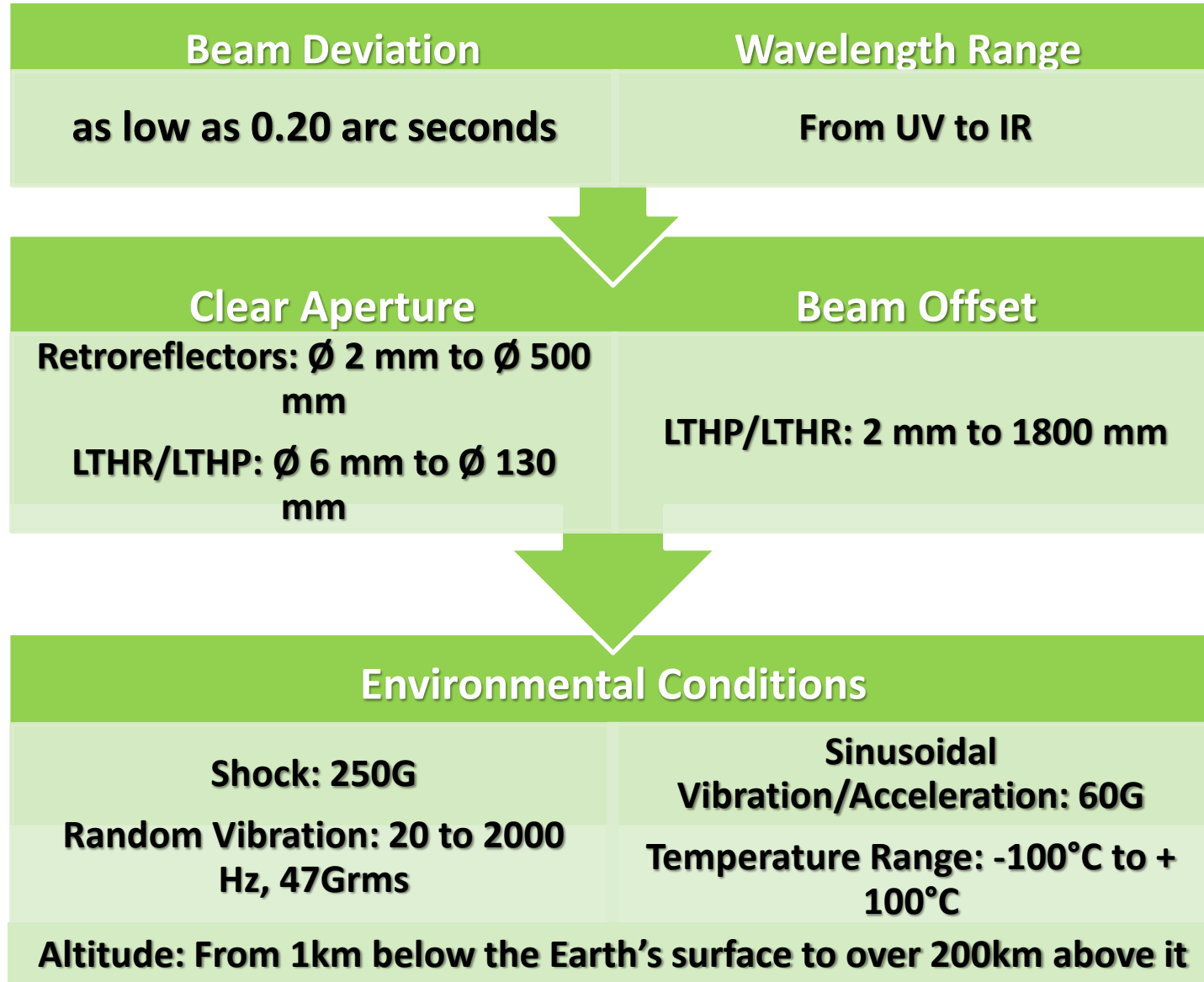
Getting the M.O.S.T.[™] out of optical systems.

PLX technology integrates complex optical elements into compact monolithic structures, achieving exceptional accuracy and stability under severe environmental conditions.



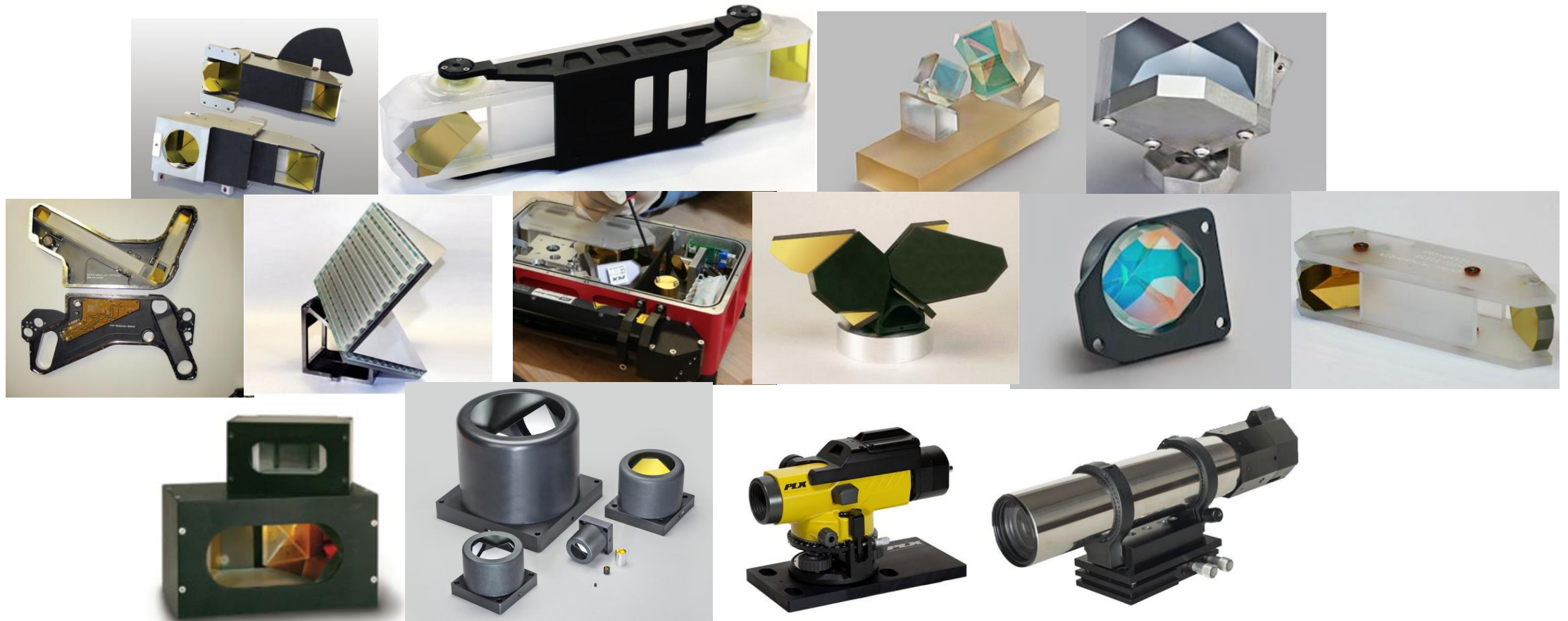


PLX has delivered assemblies meeting the following performance:



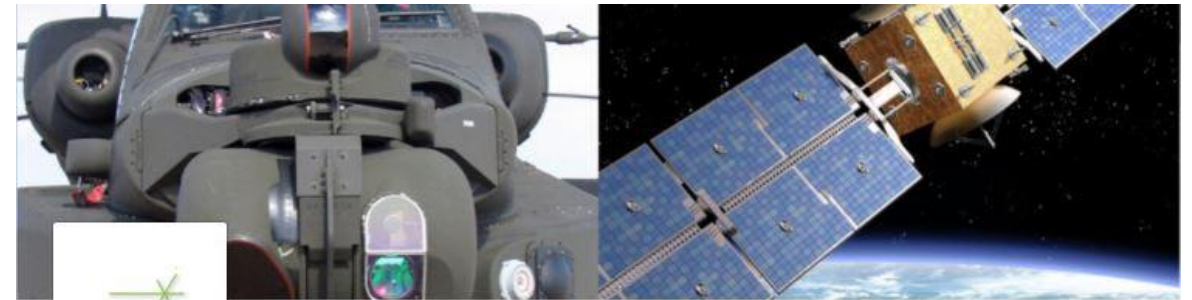


An infinite amount of applications





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PLX Inc.

Defense & Space · Deer Park, NY

A leader and innovator in monolithic optics and optical system integration for the #Military#Space#CommercialIndustries.

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