

## THE MONOLITHIC OPTICAL STRUCTURE TECHNOLOGY™ (M.O.S.T.) ADVANTAGE

- M.O.S.T. combines all of the elements of a complex optical setup into a single monolithic unit.
- Superb optical stability, unsurpassed shock and vibration resistance.
- Sub-arc second accuracy between optical elements.
- Integrates different glass types and exotic materials such as KBr, ZnSe and CaF<sub>2</sub>, into one assembly.
- Especially useful when the system has to perform in broadband light applications, such as FTIR.
- Permanently aligned so you will never need to adjust it and also lasts indefinitely.
- Use in interferometer configurations, laser cavities, beam dividers, beam delivery systems, Boresighting and more.

## Getting the M.O.S.T. out of your OPTICAL APPLICATIONS

PLX provides solutions to problems of achieving and maintaining state-of-the-art optical accuracy and stability under severe environmental conditions.

PLX is a registered ISO 9001 company and is fully compliant with ISO requirements. We design and manufacture products that meet a variety of operating conditions, including demanding military applications.

Our extensive in-house manufacturing and environmental testing facilities, performance testing capabilities and state-of-the-art optical analysis equipment provide total quality management and accountability.

PLX products and systems are available in a wide variety of materials, mirror coatings, special metals, sizes, and configurations or can be customized to integrate and fit your specific requirements.



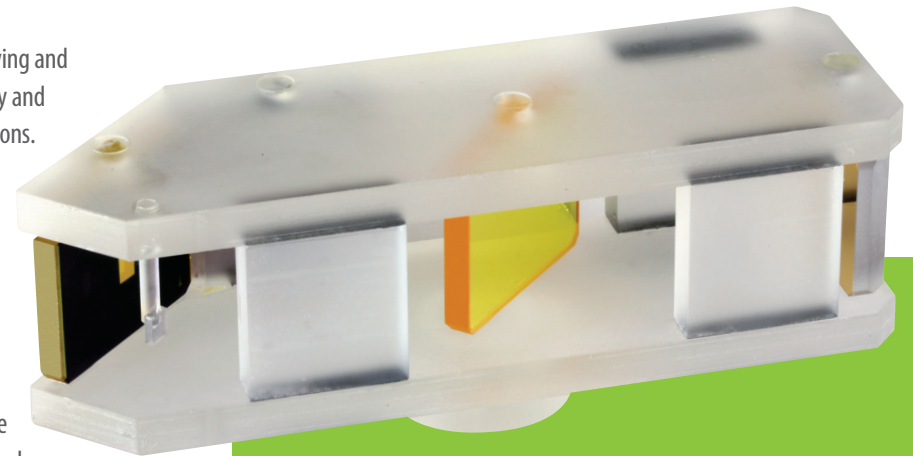
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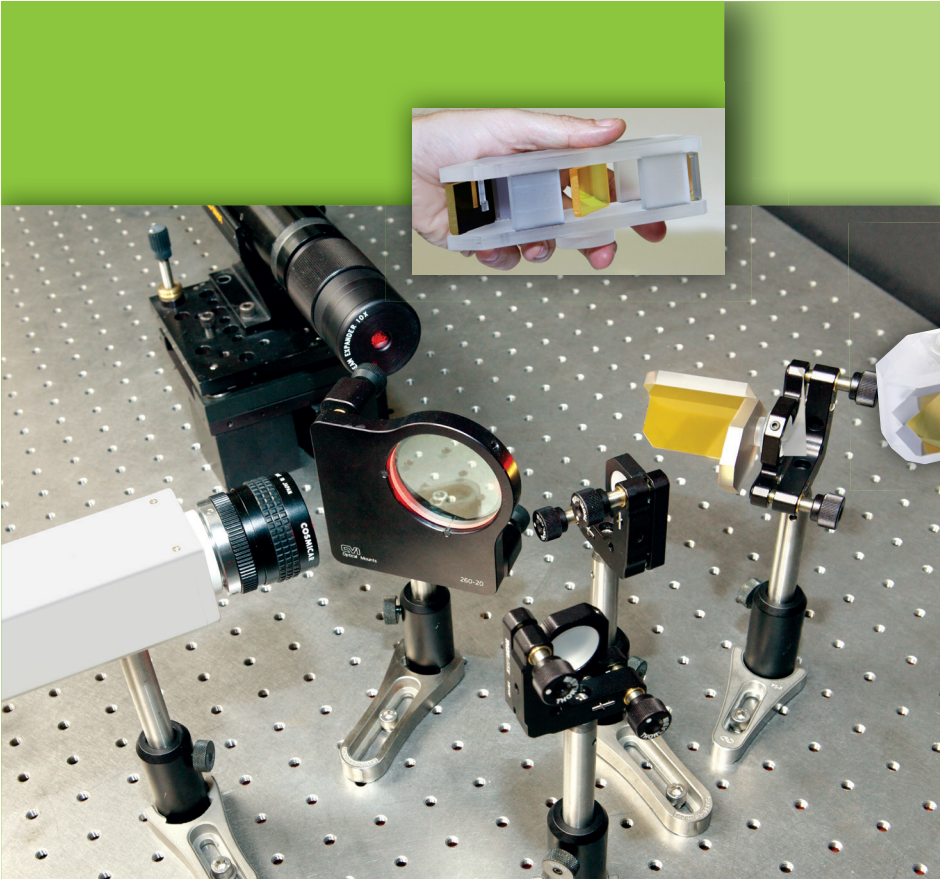
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## MONOLITHIC OPTICAL STRUCTURE TECHNOLOGY™ (M.O.S.T.)

**A unique optical innovation  
that can simplify and reduce the  
size of your optical assemblies  
and systems while increasing  
robustness and reliability.**



# M.O.S.T. transforms complicated optical set-ups into COMPACT MONOLITHIC STRUCTURES.

Incorporating M.O.S.T. into your design provides a wealth of benefits. Engineers save significant time initially when integrating M.O.S.T. into a system, since it is a solid pre-aligned block. In addition, the long-term maintenance savings are enormous. Because we've permanently aligned this extremely stable assembly, you will never need to adjust it!

PLX has used M.O.S.T. to manufacture optical structures incorporating from 2 to 5 optical elements, with typical clear apertures of 0.5" to 5" diameter. Larger or smaller clear apertures are also possible.

PLX manufactures the majority of its M.O.S.T. units utilizing flat elements, but can also incorporate non-flat surfaces if output results are well defined. In fact, PLX can customize a M.O.S.T. structure to incorporate virtually any special feature or configuration you require and can improve practically any lab setup you need to convert to an instrument.

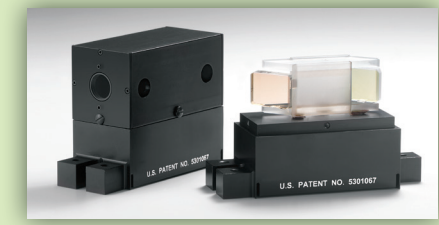
All products can be modified to operate under unique and severe environmental conditions.

M.O.S.T. PROPERTIES	
FEATURES	SPECIFICATIONS
Glass Types Used	Typically fused Silica (SiO <sub>2</sub> ), low-expansion Borosilicate, ULE 7971, BK7 and ceramics
Lightweight Structure	Average glass density is 2.2 g/cm <sup>3</sup> (lighter than Aluminum)
Average Specific Stiffness	3.3x10 <sup>4</sup> 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

## SUPERIOR to MECHANICAL MOUNTS

Traditional mechanical mounts are inherently unstable and require constant adjustment – a true disadvantage in critical applications requiring the permanent and stable fixed positioning of optical elements.

### SOME SAMPLE APPLICATIONS:



**Beam Separator.** Separates one input beam with multiple wavelengths into 3 different outputs for metrology applications.



**Monolithic scanning device.** Designed to oscillate at a rate higher than 1KHz, while maintaining its stability and accuracy, this lightweight structure is balanced to reduce the moment of inertia about the pin axes.



**PLX Interferometer.** Based on our M.O.S.T. proprietary technology, it is especially useful when the system has to perform in broadband light applications, such as FTIR. This sandwich like structure assembly exhibits exceptional thermal and mechanical stability and lasts indefinitely.