

M.O.S.T.[™] TRANSFORMS COMPLICATED OPTICAL SET-UPS INTO COMPACT MONOLITHIC STRUCTURES



Developed by PLX, Monolithic Optical Structure Technology (M.O.S.T.[™]) is a unique optical innovation that combines all of the elements of a complex optical setup into a single monolithic unit.

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

M.O.S.T.[™] achieves superb optical stability, unsurpassed shock and vibration resistance and sub-arcsecond accuracy between optical elements.

This technology represents a significant improvement over existing systems that utilize traditional mirror 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.

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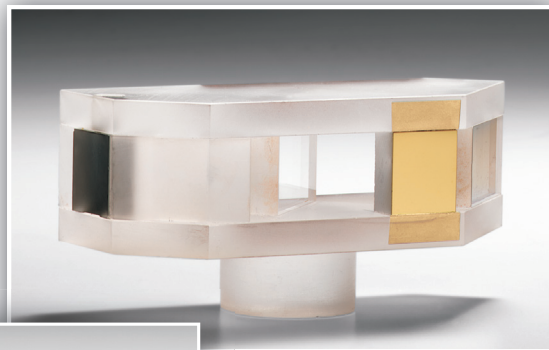
Incorporating M.O.S.T.™ into your design provides you with a wealth of benefits

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 developed M.O.S.T.™ based upon their mature, proprietary optical technology. This technology makes it possible to integrate different glass types and exotic materials, such as KBr, ZnSe, CaF₂ and Spinel, into a M.O.S.T.™ assembly. This is especially useful when the system has to perform in broadband light applications, such as FTIR. This integration results in a "sandwich structure," or solid box-like assembly that not only exhibits exceptional thermal and mechanical stability but also lasts indefinitely.

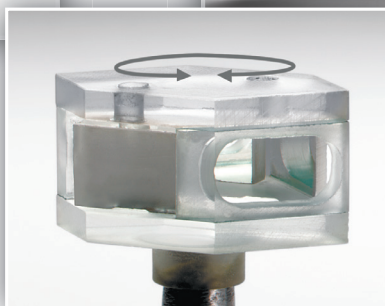


Beam separator: Separates one input beam with multiple wavelengths into 3 different outputs for metrology applications.



Near IR PLX Monolithic Interferometer: It combines all of the optical elements of a high-resolution Michelson Interferometer assembly into a single stable monolithic unit.

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 axis.



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. The majority of M.O.S.T.™ units utilize flat elements, but can also incorporate non-flat surfaces if output results are well defined. In fact, a M.O.S.T.™ structure can incorporate virtually any special feature or configuration you require.

Optical engineers typically use M.O.S.T.™ monolithic assemblies in applications such as interferometer configurations, laser cavities, beam dividers, beam delivery systems and boresighting. However, by using M.O.S.T.™ you can simplify and practically improve any lab setup you need to convert into an instrument.

For more information on how our unique technology can help you, call or write today.

