



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:
Bonding:	PLX utilizes a proprietary frit bonding technology that is similar in technique to welding.
Glass Types Used:	Typically fused Silica (SiO ₂), low-expansion Borosilicate, ULE 7971, 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.

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 for PLX to integrate different glass types and exotic materials, such as KBr, ZnSe and CaF₂, 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.



▶ **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.



▲ **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.

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.

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 improve practically 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.



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