JOSCOTEC Engineering Services Pvt. Ltd.
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JOSCOTEC Engineering Services Pvt. Ltd. is a start-up formed by a group of Engineers with years of Design, testing and Prototyping experience across SEMI, Consumer Electronics, and Automotive domanins. One of the focus areas we support is Opto-Mechanical Engineering.

Opto-Mechanical Engineering

Opto-Mechanical Design is an important aspect of any optical system performance. **JOSCOTEC** specializes in Engineering and CAD design of Opto-Mechanical equipment, Optical alignment tooling, kinematic mounting systems, fixtures and more. These systems usually have much higher design and manufacturing tolerances than most machinery. They also require submicron precision during design and manufacturing. Our Engineers have years of experience and knowledge in employing precision design techniques to create products which meet or exceed specifications.

Additional capabilities at **JOSCTOEC** include tolerance analysis, ray tracing, optical components selection, cable design & routing and more. We have gained expert knowledge by working alongside some of the world's best optical scientists to develop optical systems and metrology equipment used by cutting-edge lithography tools in the semi-conductor industry. If a project requires dedicated optical engineering, we can bring-in an expert Optical Engineer to support.

Capabilities

1. Opto-Mechanical Equipment Design
2. Optical Alignment tooling and Fixture Design
3. Ray Tracing
4. Selection of Optical Components and Opto-Mechanical Mounts
5. Design of Custom Mounts using Kinematic principles
6. 3D Model creation, expertise in Solidworks, Creo, UG, Inventor, Windchill, EPDM etc
7. Manufacturing Drawing creation and application of GD&T as per ASME Y14.5
8. Assembly Procedure and Operating Procedure documentation

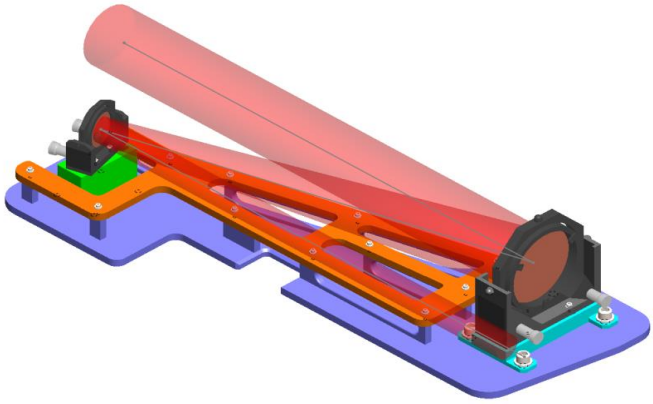
Our Expertise

1. Knowledge of sub-micron precision requirements and their impact during design, manufacturing and use.

2. Maximizing performance without excessively tight tolerances on dimensions.
3. Optimized number of mechanical adjustments built into design of the instruments.
4. Establish tolerance budgets after analyzing the sensitivities of aberrations to component positional errors.
5. Design structures for maximum possible stiffness within weight and packaging constraints.

<u>Our Engineers have worked on various sub-systems such as</u>

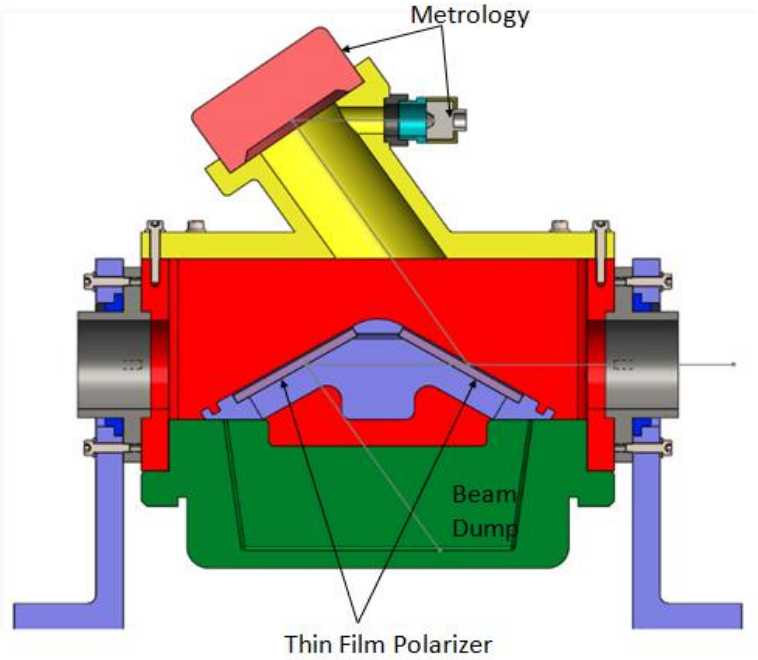
- **Beam Expander**



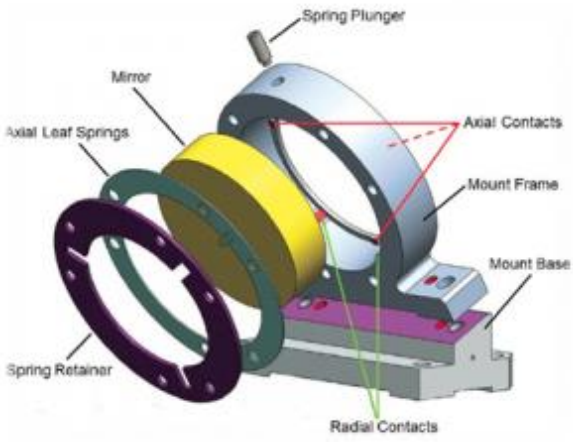
Requirement First Eigen Value > 100 Hz

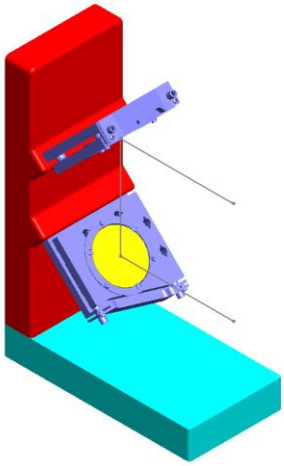
Mounting structure optimized to get 1st Mode of Vibration > 100 HZ

- **Optical Isolator using Thin Film Polarizer**

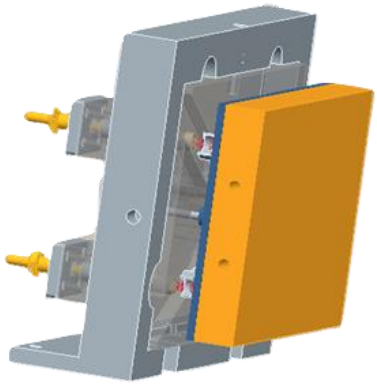


- **Power Measurement tool** for High Power Laser Beam
- **Layout and simple Kinematic Mounts** for a range of Optical components such as Optical Slicer (EOM), Bragg Protection AOMs, Beam Combiners, Beam splitters, Power Meters, Optical Isolators etc.





- **Custom Mirror Mounts:** Mirror mounts designed with precision Tip tilt adjustment possible.



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