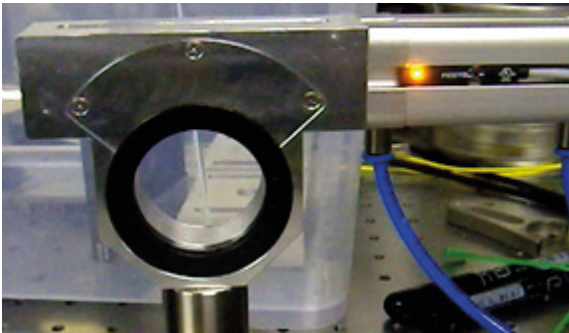
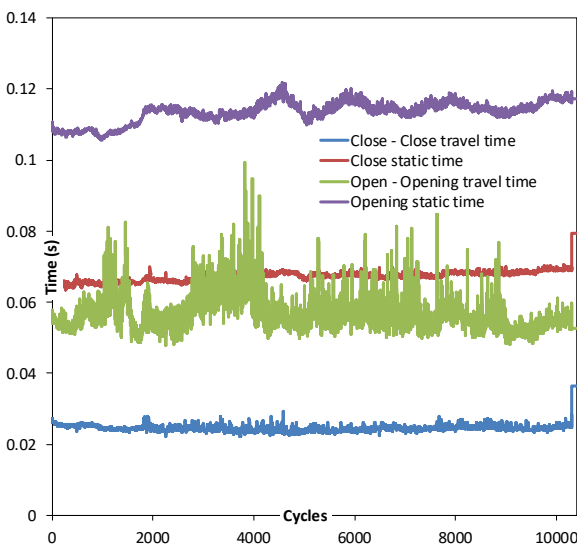


Vacuum shutter for kW, J-class lasers. SIL3 rated.



Pneumatically actuated iris with machine safety features.



Lifetime test of vacuum shutter.

Pneumatically Actuated Laser Shutter

ELI Beamlines is an international user facility that is involved in development and application of advanced laser systems, in particular the unique combination of world-class peak powers at high repetition rates.

Supporting advanced lasers has necessitated the in-house development of proprietary systems, particularly where high repetition rates, larger beam diameters and stringent safety requirements preclude an off-the-shelf solution. Pneumatically-actuated laser safety shutters are one such area of development.

These shutters are used to block or divert a laser beam in order to protect equipment or personnel from damage. We have developed a range of pneumatic shutters tailored to the specific needs of our lasers.

TECHNICAL DATA

Pneumatically actuated for high reliability and zero local heating.

Various vacuum compatible versions demonstrated.

Designed to achieve Safety Integrity Level (SIL) 3 according to IEC-61508.

Highly scalable to large beam diameters (>20 cm demonstrated), PW-class beams, and high average powers (kW).

Versions available for rapid opening and closing, even when loaded with large diverting mirror mass – suitable for next generation high rep-rate lasers.

Safe and rapid closing using compressed air – no need to resort to gravity closure to meet safety requirements on loss of power or pressure.

BENEFITS

- Suitable for incorporation into large systems.
- Already tested and in use at ELI Beamlines, Czech Republic.
- High actuation repeatability and stability for beam diverting mirrors.

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