

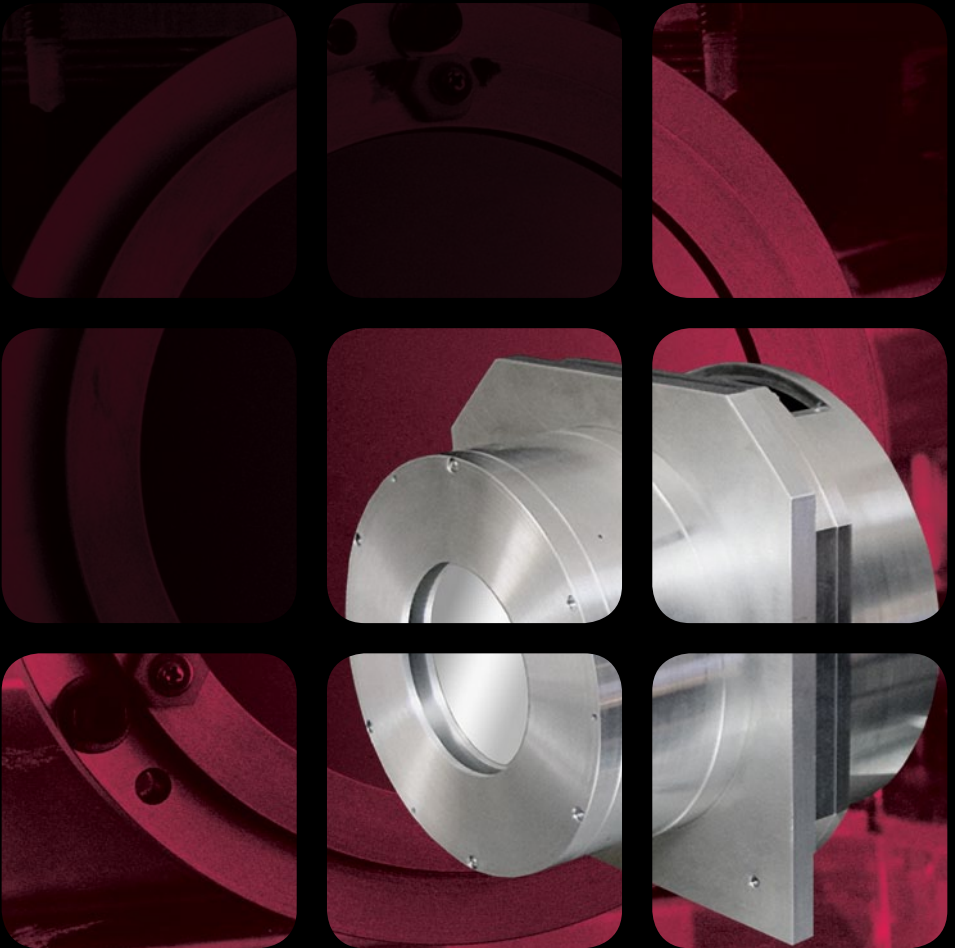
ILAO

Intense Laser Adaptive Optics



ILAO is a unique adaptive-optics solution designed to meet the stringent demands of intense laser users.

- Up to $\Phi 350$ mm
- No print through (<10 nm) for typical laser correction
- 99% linearity, no hysteresis and excellent stability over time
- Dielectric or metallic coatings available
- Replaceable reflective surface





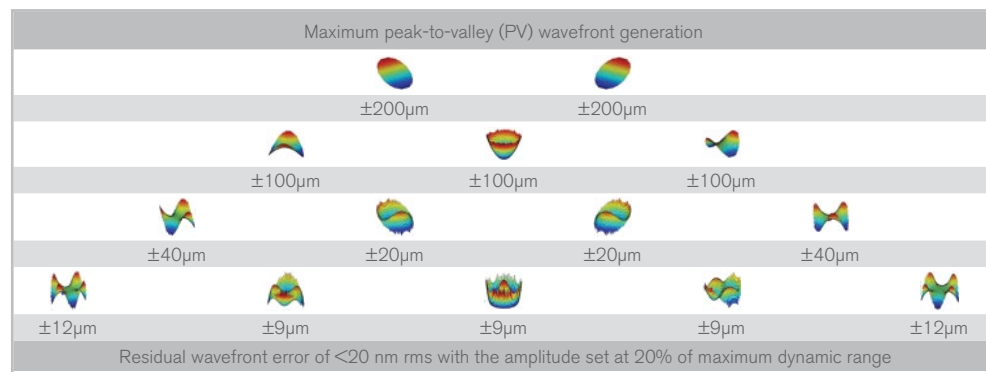
Intense Laser Adaptive Optics

A unique deformable mirror

ILAO™ (Intense Laser Adaptive Optics) is the most advanced deformable mirror available that is specifically designed for wide-ranging intense laser applications. Based on patented technology developed by ISP System, ILAO operates using mechanical actuators with astatic floating heads that perform wavefront shaping with nanometric precision. Depending on the type of laser, users can choose from replaceable dielectric or metallic reflective surfaces up to 350 mm in diameter.



What's more, once the optimal mirror shape has been achieved, power is no longer necessary to maintain ILAO's form. The fact that the mirror no longer dissipates any energy or heat from its interior ensures that its high optical quality surface (<10 nm rms) maintains a perfectly stable form over time and minimizes the risk of unwanted hotspots.



Number of actuators	52
Maximum stroke per actuator (PV)	±20 to ±100 µm depending on actuator position*
Maximum generated wavefront (PV)	>100 µm*
Surface quality (rms active flat)	<10 nm rms*
Spatial frequency correction	Zernike orders up to 6*
Correction diameters	70 to 280 mm **
Pupil diameters	up to 350 mm**
Linearity	99% for full actuator dynamic range*
Hysteresis	no hysteresis*
Coatings	dielectric or metallic
Replaceable optical surface	yes
Vacuum compatible	yes

* Values obtained using Imagine Optic's HASO3 wavefront sensor and CASAO software.
** Larger diameter are available upon request.

A dedicated solution for intense lasers

ILAO is the wavefront correction element of the full-featured adaptive-optics solutions that Imagine Optic provides for intense lasers. When combined with a HASO3 wavefront sensor and our CASAO command & control software, you have a turnkey solution, where each element has been developed to work together seamlessly and to be driven via one ergonomic interface.

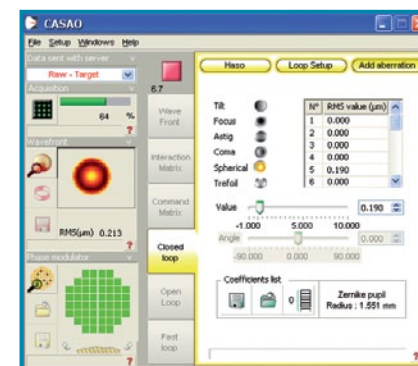
HASO3



With their simultaneous, yet independent, measurement of both phase and intensity, HASO wavefront sensors provide up to $\lambda/100$ accuracy with resolutions ranging from 32 x 40 to 128 x 128 true absolute measurement points. With HASO3, users don't have to compromise dynamic range for accuracy thanks to HASO3's patented microlens technology. Even more, certain models connect via Giga-Ethernet, enabling them to be placed at large distances from the control room.

CASAO

CASAO adaptive-optics command & control software provides a unique and ergonomic interface that allows you to acquire detailed wavefront measurements for analysis, precisely control your wavefront correction device, and perform instrument diagnostics. As an added benefit for intense lasers, CASAO has built in, user definable, security protocols that enable you to set your system to automatically shut down in the case of a suspicious, potentially damaging, situation.



Get started

Imagine Optic's renowned expertise in wavefront analysis and correction for high-intensity lasers is the fruit of 15 years of successful collaboration with many of the world's leading laser scientists. With hundreds of HASO wavefront sensors being used in dozens of adaptive-optics loops at intense laser installations, Imagine Optic provides the products and services that allow you to keep your beam at its best.

For more information, and to find the Imagine Optic office or distributor nearest you, visit imagine-optic.com/find.

Imagine OpticTM

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