PHASICS
The phase control company

SID4 V VACUUM COMPATIBLE

HIGH RESOLUTION WAVEFRONT SENSOR

PHASICS is innovating by proposing the first off-the-shelf vacuum compatible wavefront sensor on the market.
SID4 V is designed to perform wavefront measurements **under high vacuum**. The wavefront measurement is realized in-situ in the same conditions as the experiment. With PHASICS' unique strategy for **adaptive optics**(1) it is now possible to correct the aberrations of every single optical element up to the target location inside the vacuum chamber.
It is also used to characterize laser beams **after compression** inside the compressor vessel.
Finally, gas jet and plasma density(2) are now measured as close to the target as possible.

KEY FEATURES

- Large spectral range acceptance
- High resolution 160 x 120 phase pixels
- Diverging beam compatible
- Low outgassing
- Operating under vacuum & atmospheric pressure
- Compactness

Application notes: (1) After last focusing optics correction with Phasics Adaptive optics loop - (2) Wavefront-based plasma characterization

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ADVANTAGES

1. Invariant to thermal and mechanical vacuum constraints
2. Tolerates vacuum-cycles without any performance decrease
3. MTBF > 10 years

DESIGNED FOR VACUUM DOWN TO 10^{-6} mbar
NO CONTAMINATION IN THE VACUUM CHAMBER

SPECIFICATIONS

Vacuum compatibility	$>10^{-6}$ mbar
Wavelength range	400 - 1100 nm
Aperture dimensions	4.73 x 3.55 mm^2
Maximun NA*	0.2
Spatial resolution	29.6 µm
Phase and intensity Sampling	160 x 120
Accuracy	10 nm RMS
Resolution (Phase)	< 2 nm RMS
Frame rate	60 fps
Real-time processing frequency	10 Hz (full resolution)
Dimensions	54 x 46 x 75.3 mm^3
Weight	~250 g

** Optional software module necessary*

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