



# SL-Sys™ LIQUID

The complete solution for liquid lens testing to ensure quality and optimize production lines.

- Measure optical power and hysteresis of the power curve independently depending on applied voltage
- Assess the optical quality, prism and centering errors individually compared to optical power
- Determine temporal transient response dynamic including optical power and aberration evolution while applying voltage
- Gage applied voltage at the lens' outer edge, overall consumed current and the ratio of applied versus consumed voltage

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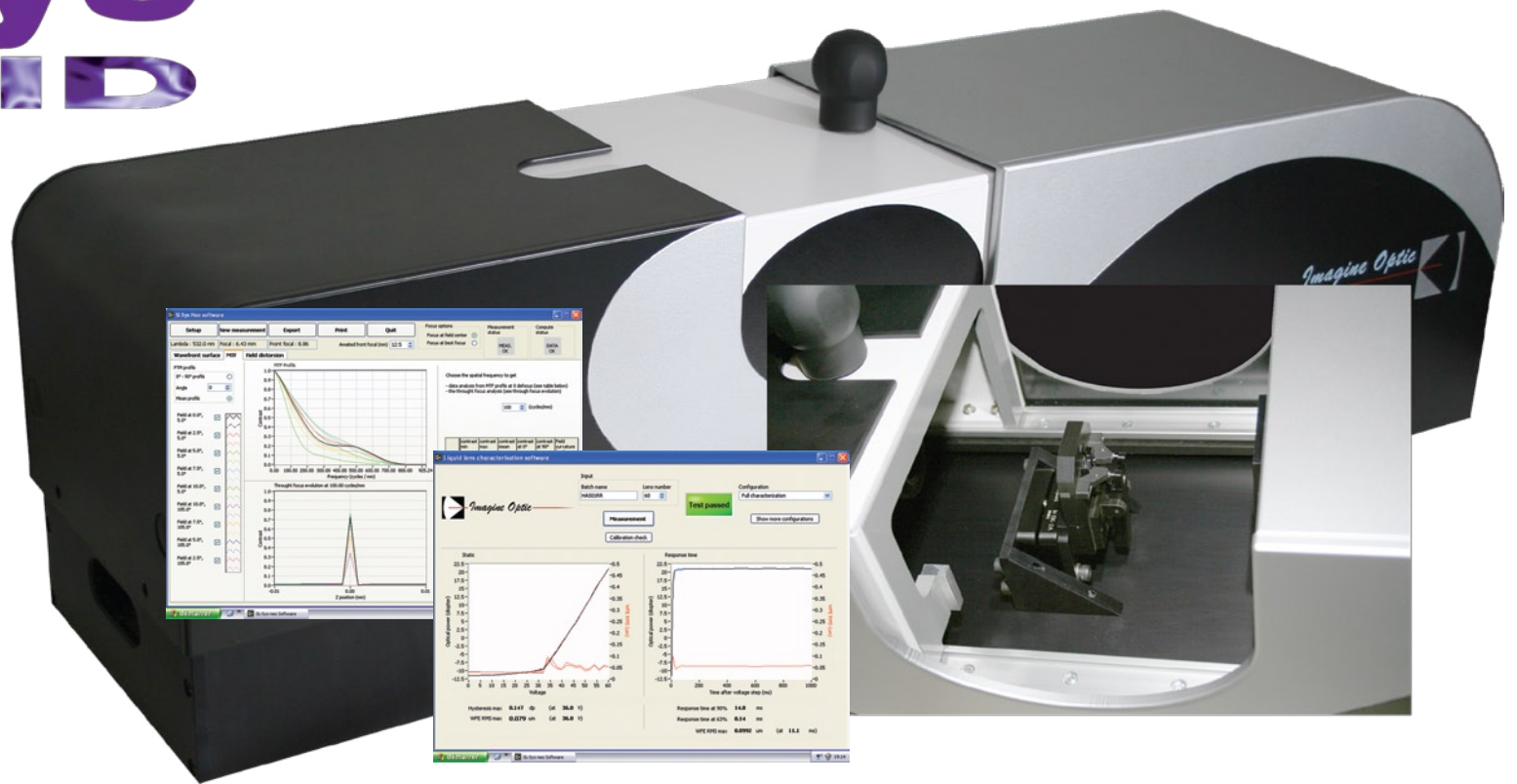
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# SL-Sys<sup>TM</sup> LIQUID



Welcome to the future of liquid lens testing. The SL-Sys is a turnkey solution that provides industrial liquid lens manufacturers with an unparalleled quality control platform. It enables you to go beyond current testing methods that rely solely on focal length and MTF measurements by ensuring the overall lens quality as a function of true optical quality, directly on the production line.

Inside the system's sleek outer casing is a technology treasure chest that includes a fully-calibrated, solid-state<sup>(1)</sup> optical bench that ensures perfect optical conjugation between the lens and the testing plane.

Quality control is fast, simple and reliable via an ergonomic PC software interface. Each unit contains perfectly collimated light source functioning at 630nm, an AC generator that provides  $\pm 10V$  of power with 16 bit resolution, a 20x charge amplifier, and a system that synchronizes the wavefront sensor with the generator. As an added security feature, electric current to the lens is cut as soon as the access panel is opened.

The SL-Sys goes beyond simply indicating if a lens is optically sound or not. The system's advanced features enable you to limit waste by detecting problems earlier in the manufacturing process than other products, as well as by helping to understand their origin and to correct for irregularities using the provided data. Even more, the SL-Sys lets you compare the lens' measured attributes versus its best theoretical optical performance, allowing you to set your own proper quality/cost standards.

For more information, please call +33 1 64 86 15 60 or visit [imagine-optic.com](http://imagine-optic.com).

## 100% customizable measurement

Intuitive configuration interface

- Define the measurement diameter for either all or part of the lens
- Choose between measurement modes – static (wavefront error, power, hysteresis), dynamic (temporal behavior), or both simultaneously
- Enter precise command voltage values to determine the lens' optical power/voltage ratio and its hysteresis
- Select the temporal resolution and analysis range, as well as the acceptable values for:
  - maximum allowable aberration RMS and hysteresis
  - minimum and maximum optical power limits
  - power range at zero commanded
  - maximum allowable lens-induced tilt on both the X and Y axis
  - maximum allowable centering error value on both the X and Y axis

Maximum pupil diameter	4 mm
Spatial resolution (N° microlenses)	32 x 40
Dynamic (power range)	-20 to +40 D
Power accuracy	0.1 D for power < 20 D, 0.2 D for power > 20 D
Wavefront accuracy	Better than 0.03 $\lambda$ rms
Wavelength	630 nm
Temporal resolution for dynamic measurement	1 ms
Command voltage range	$\pm 150$ V, Max frequency 500kHz
Voltage accuracy measurement	< $\pm 80$ mV @ 40 V; < $\pm 105$ mV @ 100 V
Current accuracy measurement	10 $\mu$ A
Size	1038 x 270 x 231 mm <sup>3</sup>



[imagine-optic.com](http://imagine-optic.com)

(1) In manual loading configuration. Automatic loading available but requires moving parts. (2) Using dynamic measurement in transient mode.