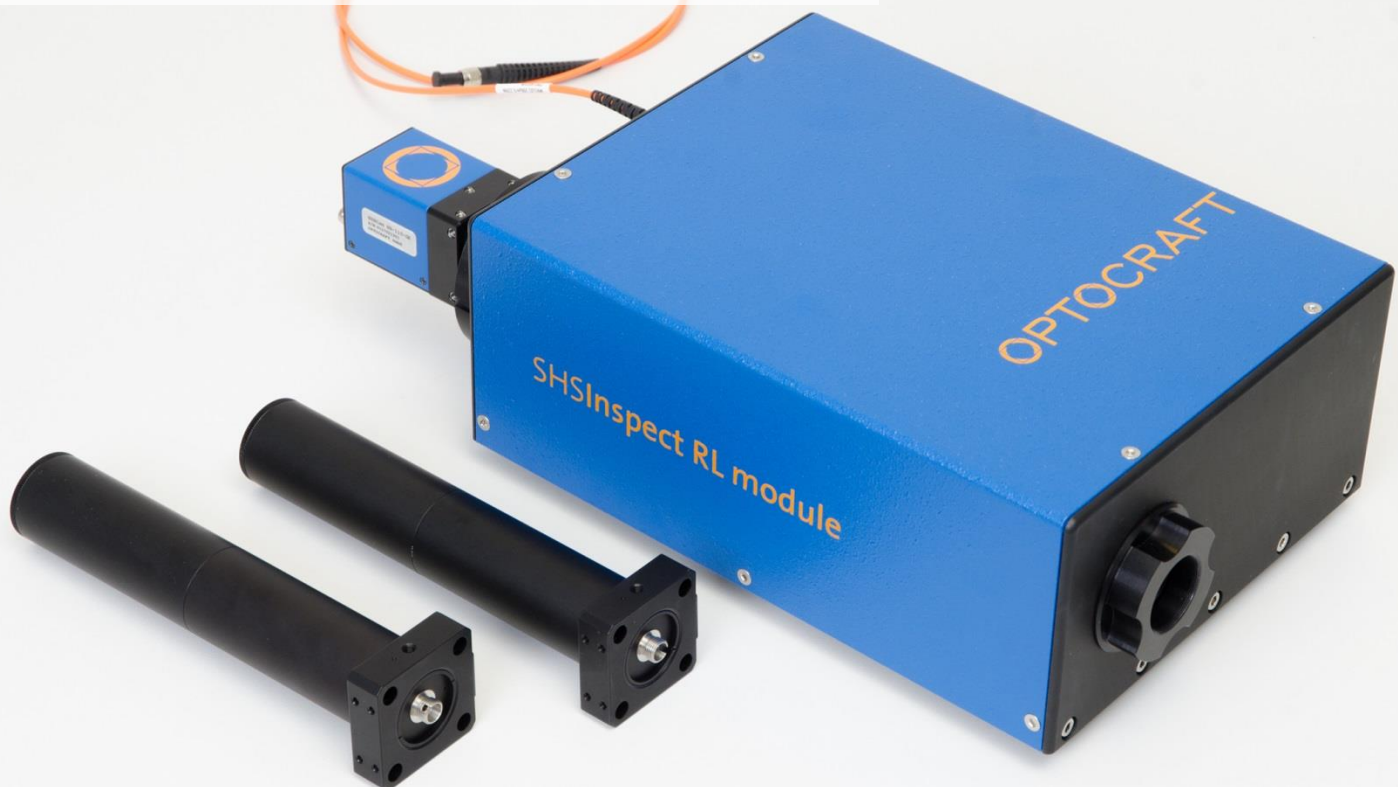


SHSInspect RL module



The SHSInspect RL module is a versatile wavefront measurement tool for functional testing of optics in double pass or for surface measurements. It unites SHSLab wavefront sensor, light source and imaging optics in a single, compact device and can be easily integrated into table top set-ups, testing platforms or production lines.

Benefits:

- Large variety of measurement configurations
- Modular illumination unit for easy wavelength change
- Well established calibration procedures for high accuracy measurements
- Wavefront sensor can be used separately

SHSInspect RL module

Illumination System

Operation wavelength VIS (400nm-700nm) or NIR (700nm-1050nm)

Exit pupil diameter 4.2mm / 10mm (plane wavefront)

Mechanical Properties of RL module without SHSCam and additional optics

Dimensions (LxWxH) 275 x 180 x 90 mm³

Weight 4 kg

Included Accessories

Cat's eye module Tilt calibration unit

Plano mirror $\lambda/20$ PV on exit pupil diameter of RL module

SHSLab (quoted separately, see separate data sheets for further information)

Lateral resolution 85 x 53 / 116 x 116 microlenses (SHSCam HR2 ... SHSCam UHR2)

Evaluation rate (typ.) 18Hz / 4Hz

Measurement accuracy Typical $\lambda/20$ PV; depends on application and calibration method

Software SHSWorks Wavefront and Zernike analysis, PSF, MTF, Strehl ratio, etc.

Performance of the RL module with SHSLab

Measurement accuracy Typical $\lambda/20$ PV; depends on application and calibration method

Repeatability 1nm / 2nm rms¹

Optional Accessories

Null lenses Microscope objectives with different NA available (up to NA=0.8)

Beam expander For adaption of the diameter of the collimated out-put beam

Beam expander support Mechanical support to stabilize beam expander in front of the module

Light sources LEDs with quick-change collimation unit for easy change of light source

Calibration flats For optics with large diameter

Reference spheres For double pass measurement of optics and for calibration of objectives

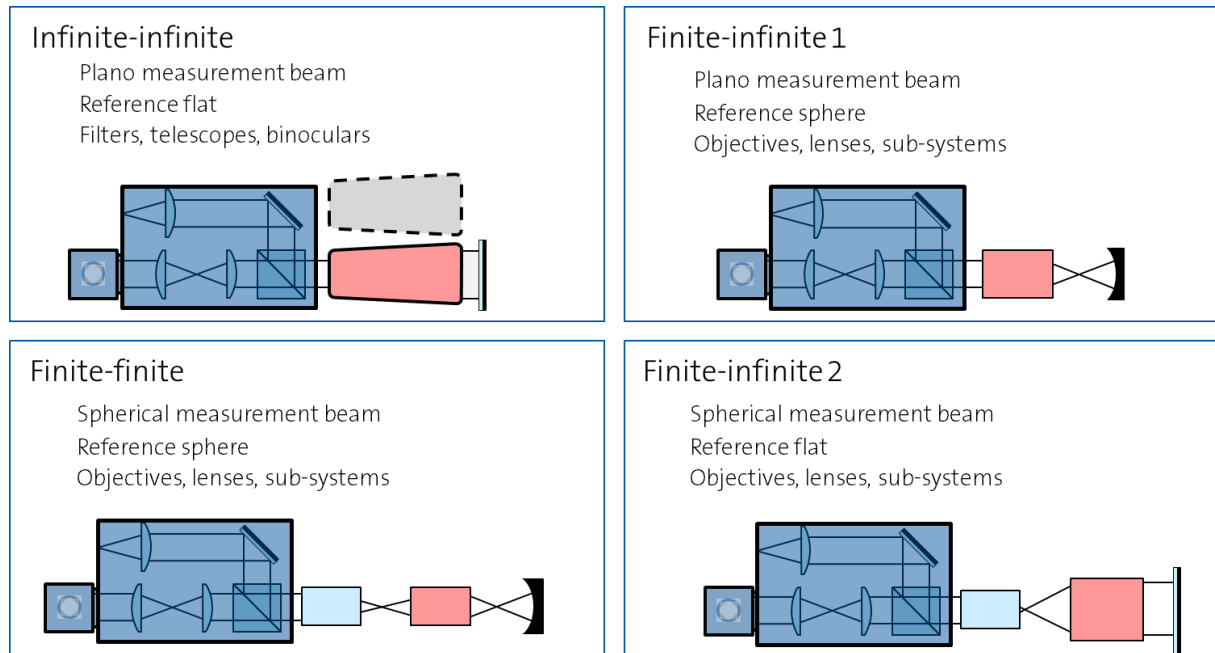
Workstation PC Notebook or desktop PC, pre-configured and tested

Customization of the RL module possible upon request:

- Other operation wavelength range (UV / SWIR)
- Other light sources (lasers, laser diodes)
- Other null lenses

¹ The repeatability is the difference between two successive wavefront measurements.

Typical double pass configurations



Overview of Options

Thread:
SM1 (1.035"-40) or C-Mount

Pupil diameter (plane wavefront):
4.2mm or 10mm

Exit pupil up to 45mm

Mechanical support for horizontal setup

Lambda/20 Plano mirror, mounted in tip/tilt mount:
 Diameter: 6"
 Diameter: 5"
 Diameter: 4"
 Diameter: 3"
 Diameter: 2"

Reference Sphere:
NA up to 0.95

1050nm	970 nm	850nm	740nm	660nm	62.5nm	565nm	530nm	505nm	470nm	455nm	405nm
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On 4.2 mm pupil	On 10 mm pupil
NA 0.8	NA 0.5
NA 0.64	NA 0.28
NA 0.42	NA 0.19
NA 0.21	NA 0.1
NA 0.105	

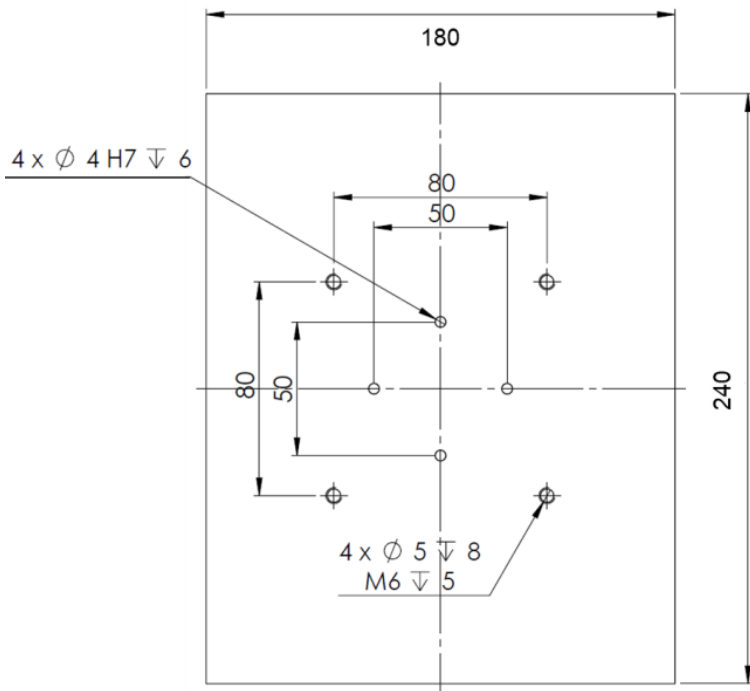
SHSLab UHR
SHSLab HR

Notebook
Tower PC

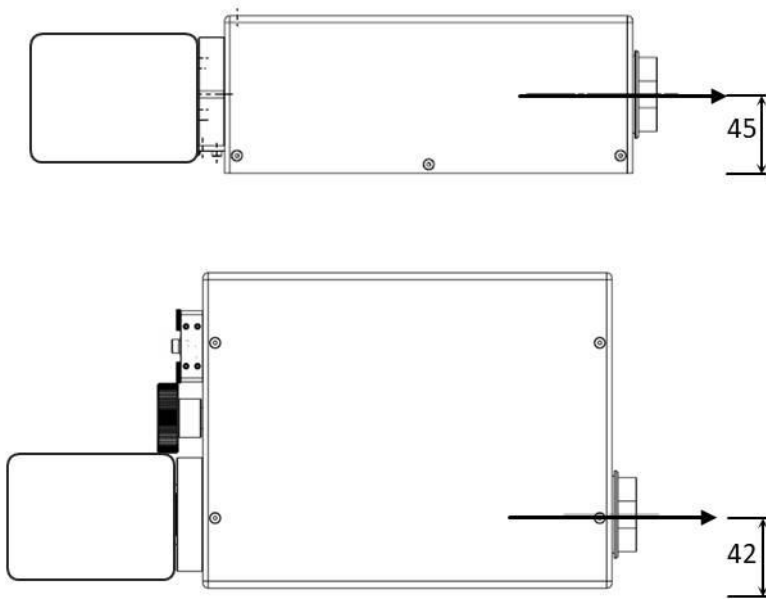
Light Sources: Different fiber-coupled LEDs available in combination with quick-change collimator tubes. When coupled to the RL module, all light sources will yield an output beam with a top hat like intensity profile and a plane wave-front profile.

Microscope Objectives: The objectives listed above are optimized for the VIS wavelength range. Further objectives for NIR range are available.

Schematic drawings



Base plate of the module and position of threaded holes.



Side- and top-view of the SHSInspect RL module, optical axis is indicated (SHSCam shown only schematically)