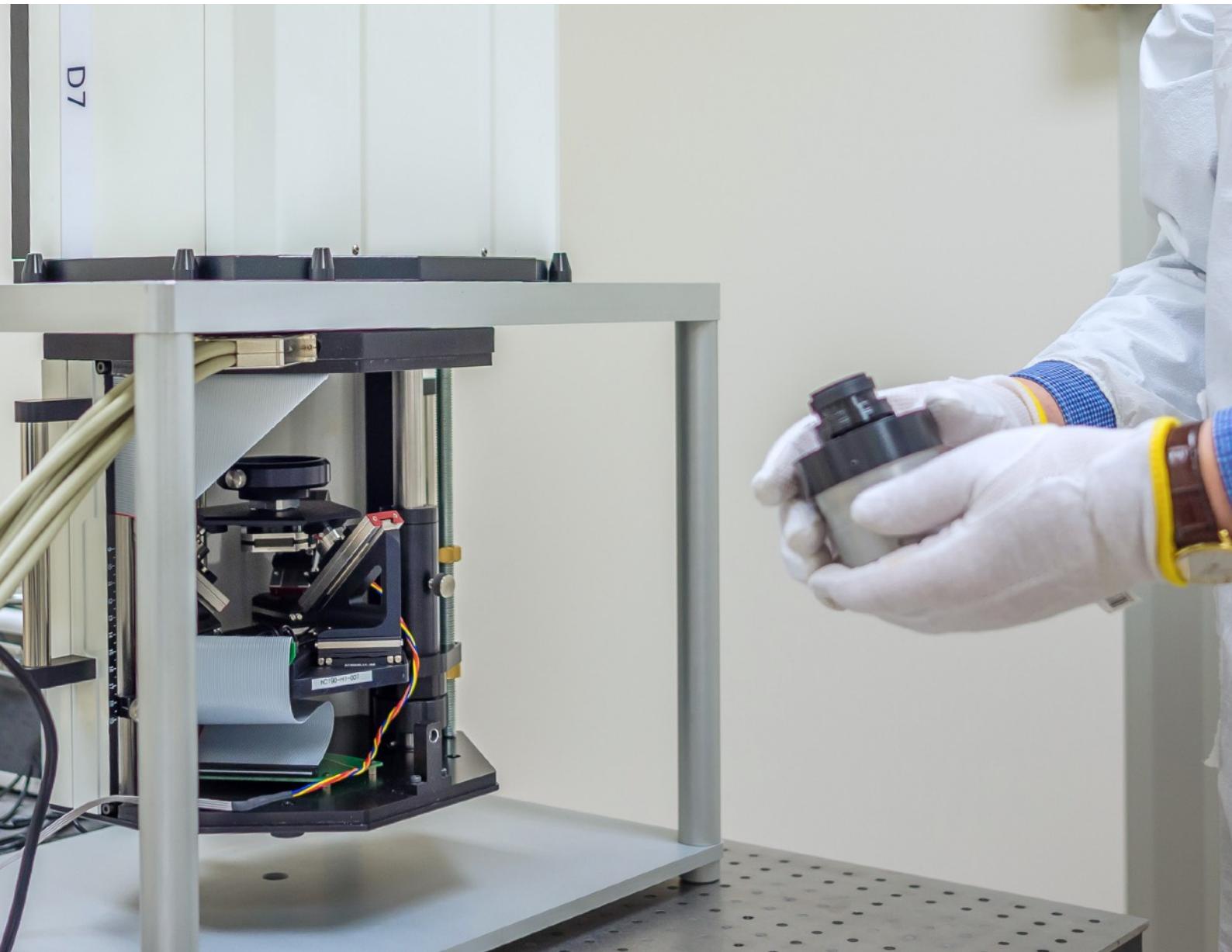
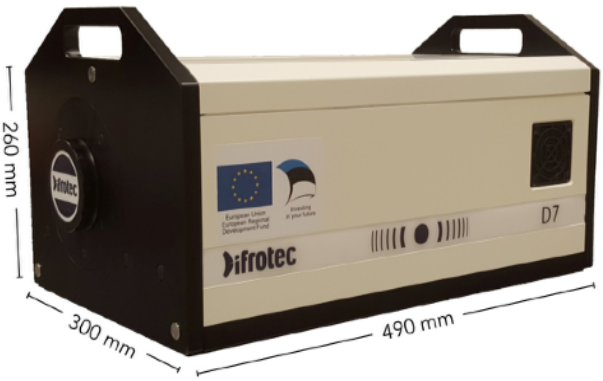
Ultra high accuracy interferometry

& custom optical solutions.



The highest accuracy in the global interferometry market

Difrotec's flagship interferometer **D7** measures absolute surface form and the wavefront quality with an unprecedented accuracy (**0.7 nm**). The patented design provides **excellent signal to noise ratio** & fringe contrast, which positions D7 as the new state-of-the-arts in the field of industrial interferometry.



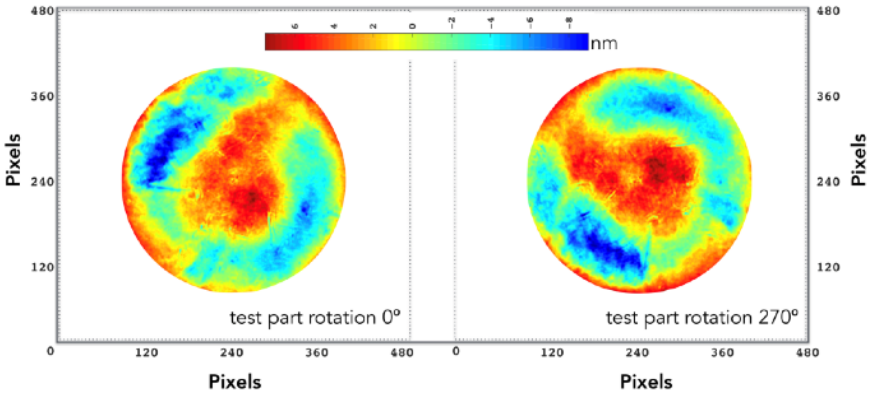
D7 is compact, adaptable, & easy to use

Seven values of D7

1. Optical testing with ultra high accuracy

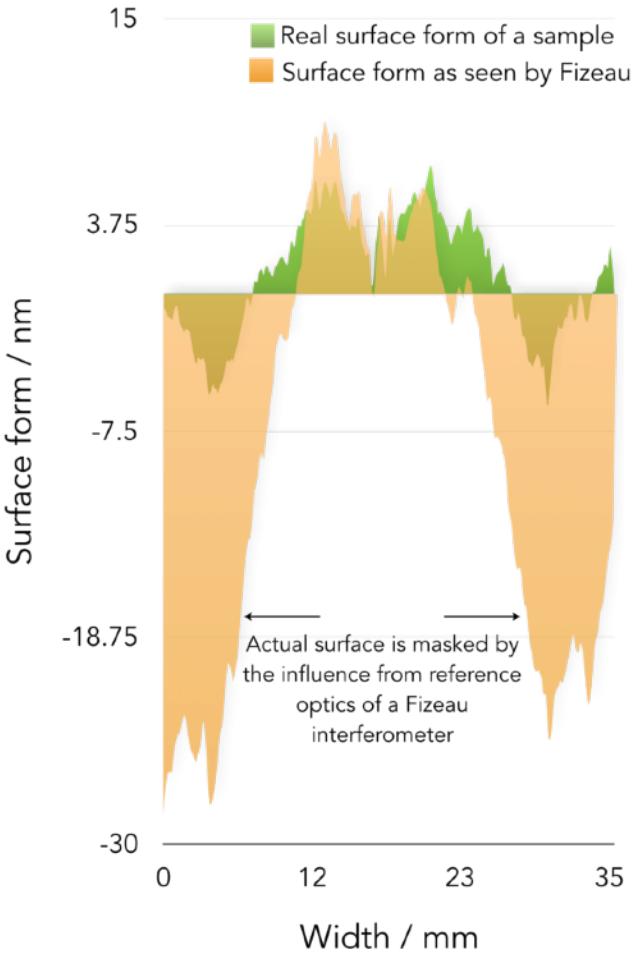
Peak-to-Valley absolute uncertainty	λ/900 (λ=632.8 nm)
Simple RMS Repeatability	0.05 nm 2σ
Wavefront RMS Repeatability	0.25 nm 2σ

90 times higher accuracy than common industrial interferometers.



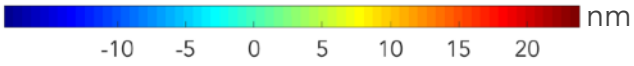
Wavefront maps obtained after rotating the test part is almost identical, which shows an excellent repeatability

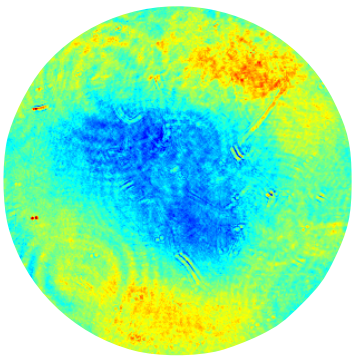
2. No reference optics



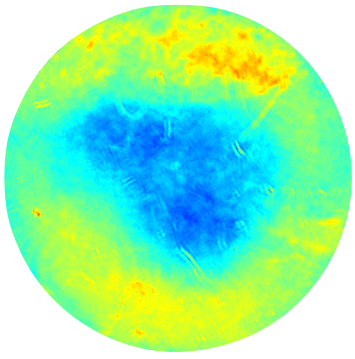
D7 is a point-diffraction interferometer that does not require reference optics, and therefore the errors originating from reference optics is completely abolished. Unlike, in Fizeau scheme the actual surface form is masked by errors in the reference optics.

3. Spurious fringes diminished on wavefront maps





SRE



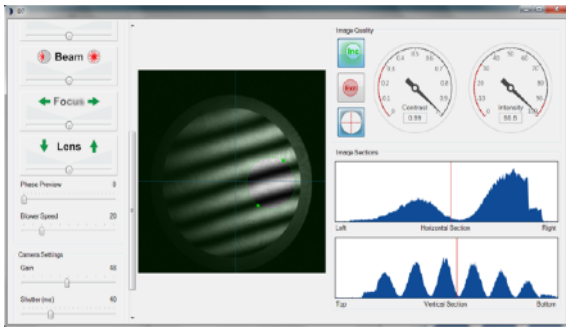
SRE suppressed

No digital filter used to suppress the effect of stray reflections (SRE)

4. High SNR in fringe patterns

D7's patented two-branch common-path (TBCP) scheme allows us to independently regulate the intensities of individual light beams. This means, we can 'on-demand' obtain **absolute contrast** in fringe patterns. This also means, optical components with different reflectivity can be easily tested.

No digital contrast enhancement



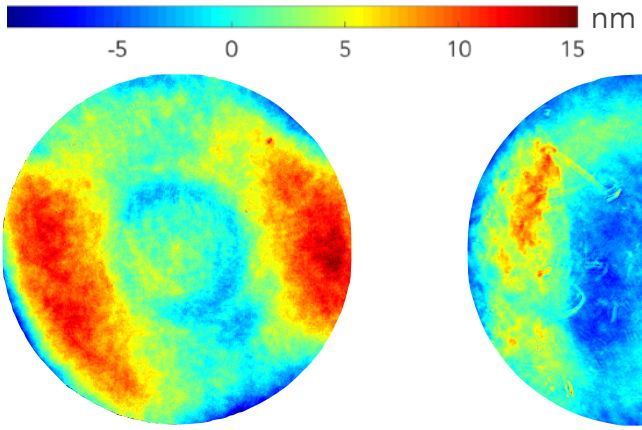
5. Wide angle of view and compact size

- Wide angle of view (numerical aperture 0.55 or f#0.91)
- Dimensions of the device: 490 mm× 300 mm × 260 mm.
- Can be arranged in vertical as well as horizontal orientation.
- Well suited for in-situ applications.

D7 & sample stage arranged in vertical position

D7 with a test part arranged in horizontal position

6. Unique visualisation of surface features



Surface shaped by diamond

Surface shaped by lapping

D7 combines angstrom scale accuracy with wide field of view

High accuracy and ability to measure absolute surface form allows D7 to identify shape forming technology, namely surface formed by diamond turning and lapping.

7. Highly adaptable for research & industry needs

Simplicity of D7 makes it easily adaptable to changing needs of research or an industry.

- **Standard model** of the D7 provides a one stop solution to map aspheres with absolute accuracy ± 7 Å (λ/900) with NA of 0.55 (f# 0.9)
- **Advanced model** of the D7 provides market leading accuracy solutions to map wide varieties of optical surfaces and wavefronts semi-automatically.
- **DifroMetric,** our fringe patterns processing software is included in each model.

Product & Services

Difrotec's D7 offers one stop solution for your ultra high accuracy interferometry needs. Difrotec also provide measurement services for s**pherical, flats, corner cubes, aspheres, freeforms,** and also **reference optics** for Fizeau interferometers. We also help characterising wavefronts emanating from optical systems, such as **photo lenses, photolithography projection lenses, microscopes, space telescopes**.

Company profile:

Difrotec specialises in building compact **ultra high accuracy interferometer** to characterise optical systems that can be used standalone on a factory floor and in research laboratories. Difrotec also offers **DifroMetric,** a semi-automatic **analysis software, measurement services** and custom **design** as well as **fabrication** of **precision optics**.

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