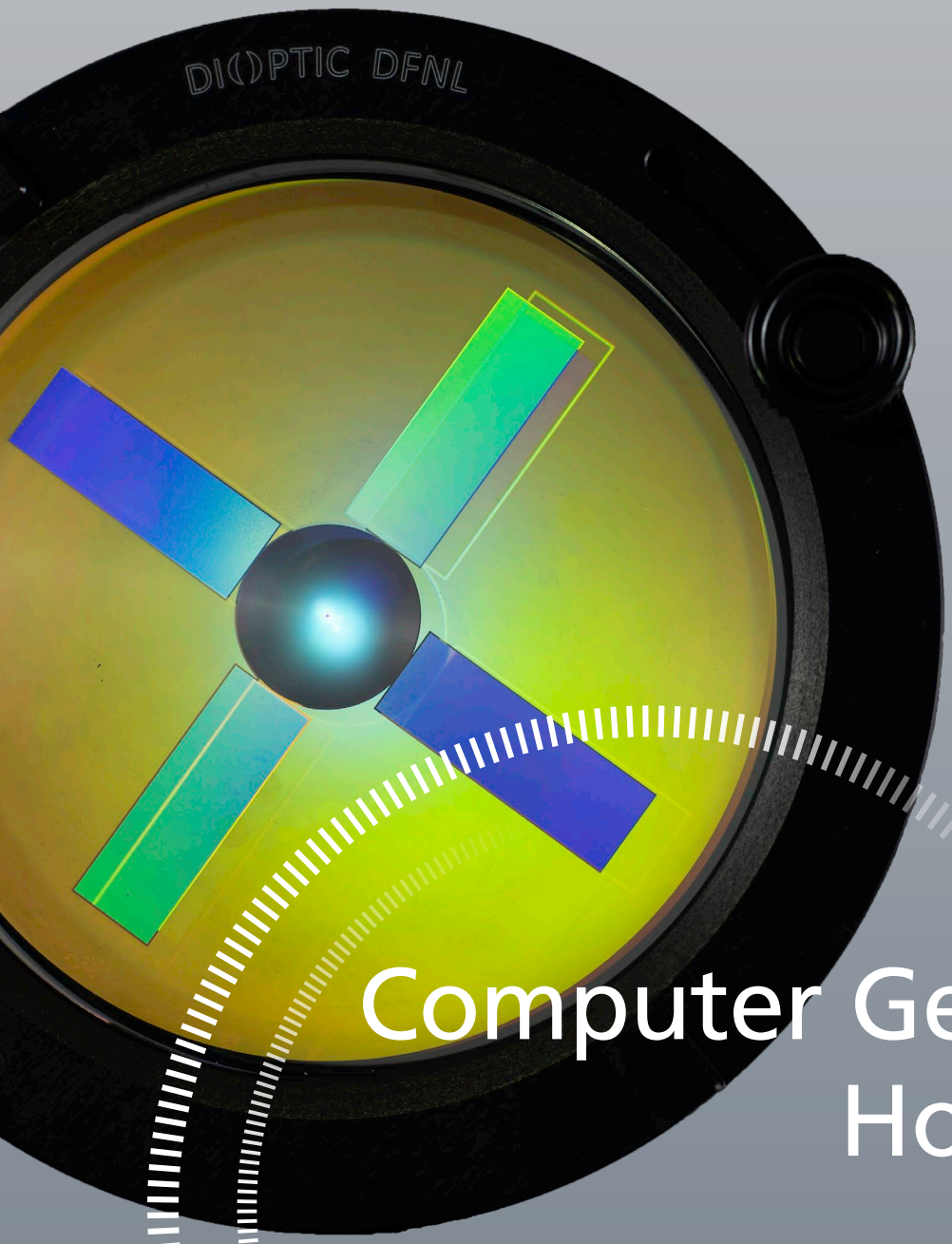
DIOPTIC
creating optical solutions



Computer Generated Holograms

INTERFEROMETRIC ASPHERE TESTING

PRECISION ALIGNMENT OF OPTICAL SYSTEMS

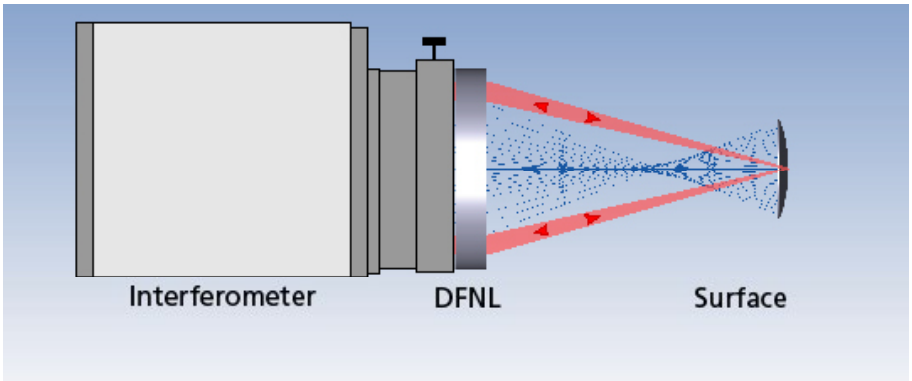
LASER BEAM SHAPING

Interferometric Asphere Testing

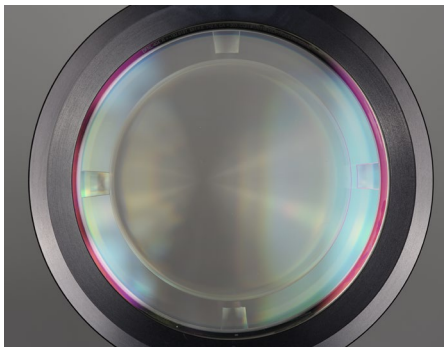
Customer testimonial

„Besides the remarkable performance we reach adopting Dioptic DFNL-type CGHs, very few companies can be so collaborative in the design phase and accurate on delivery dates“

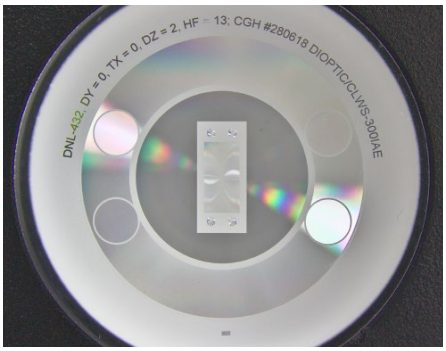
Massimiliano Rossi
(Media Lario S.r.l.)



Surface Testing with a DFNL



DFNL with adjustment hologram



CGH for free form testing

5-axis CGH Alignment System

DFNL: ASPHERIC TRANSMISSION SPHERE

- Our patented DFNLs (Diffractive Fizeau Null Lenses) are used in the same manner as standard transmission spheres. DFNLs allow the testing of a wide range of non-spherical surface forms
- The Fizeau principle guarantees that the set-up is free of any disturbances resulting from the hologram substrate
- Easy adjustment of the lens under test by means of the integrated adjustment hologram

YOUR ADVANTAGES

- Testing of:
  - large convex surfaces
  - surfaces with large radius
  - (Off-axis) aspheres
  - Cylinders
  - Free form surfaces
- Compatible with all common interferometers
- Fast-track manufacturing within 3 weeks possible

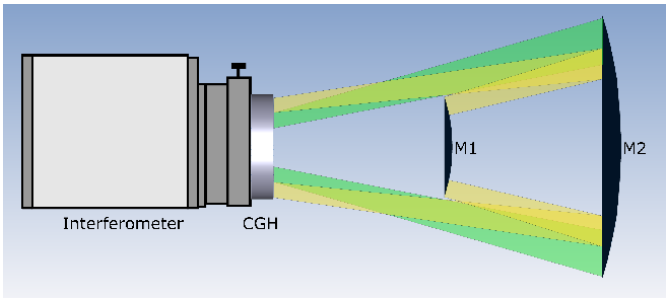
CGH: INTERFEROMETRIC TESTING OF STRONGLY CURVED SURFACES

- For strongly curved surfaces computer generated holograms (CGHs) are combined with a spherical transmission sphere
- Various alignment aid holograms for alignment of the CGH and the test element are integrated on the CGH substrate
- 5-axis CGH alignment system available

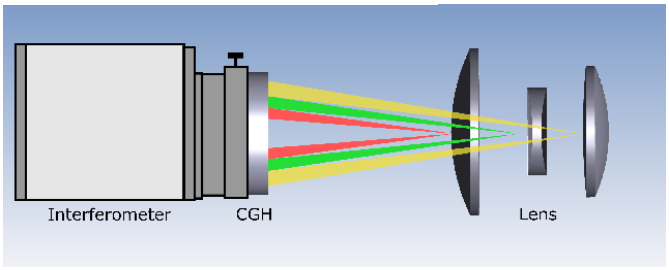
Parameter	Value
Surface type	Convex & Concave
Maximum test diameter	220 mm (Convex) 8 m (Concave)
f/#	± 1.0 - ∞ (DFNL) ± 0.7 - ∞ (CGH)
Measurement accuracy	λ/20 (λ/40 with calibration)

Precision Alignment of Optical Systems

8 zone CGH for the alignment of the Euclid space telescope



Alignment principle of a mirror telescope



Alignment principle of a lens system

LENS ALIGNMENT

- Ultra precise alignment of several lenses with a relative accuracy down to 1µm
- Simultaneous alignment of the lens position and tilt possible

ALIGNMENT OF MIRROR TELESCOPES

- Alignment of mirrors in a telescope with micrometer precision
- The relative postion and tilt of the mirrors can be tested using several sub-holograms on a single substrate

YOUR ADVANTAGES

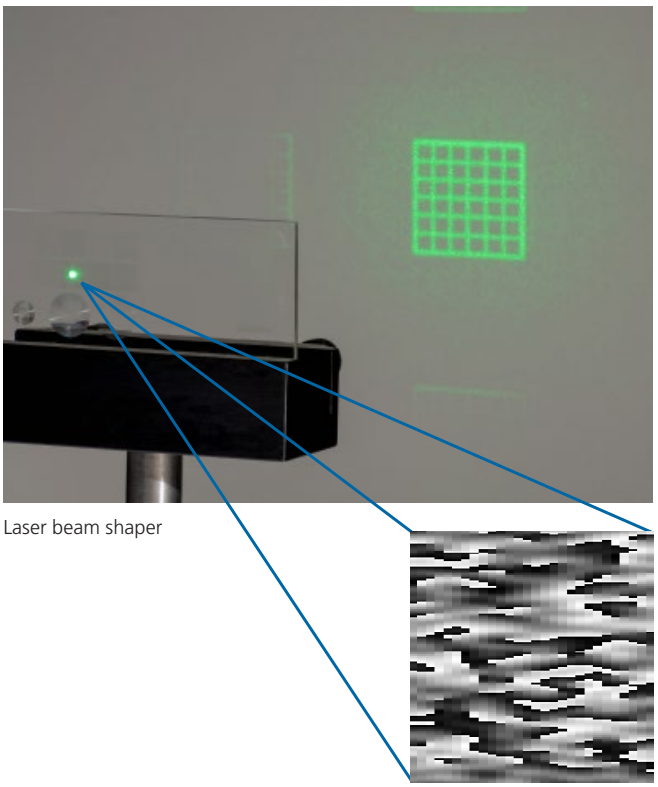
- Alignment of systems with extremely small alignment tolerances
- Alignment of systems with a detection spectrum far from the visible range (e.g. mirror telescopes)
- Alignment of systems operating in conditions that cannot be reproduced during the manufacturing process (e.g. temperature for space telescopes)

Customer testimonial

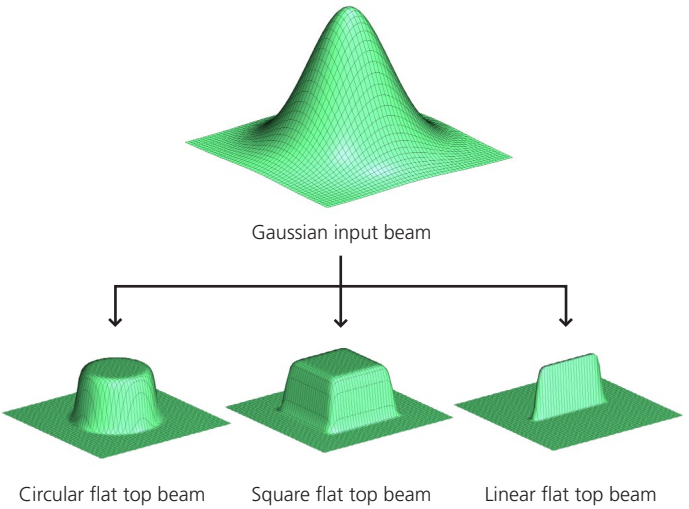
„Up to 8 lenses plus a reference beam literally „happening" on one single glass surface ... that's optics designers dream world."

Dr. Frank Grupp (Observatory Max-Planck-Institute for extraterrestrial Physics)

Laser Beam Shaping



Laser beam shaper



COMPUTER GENERATED HOLOGRAMS FOR LASER BEAM SHAPING

- Generation of various intensity distributions from a laser beam:
  - Laser beam homogenization
  - Structured illumination
  - Beam splitter
  - Diffusers
  - Pattern projection
- Application in medical technology, automotive sector, 3D measurement, product marking, counterfeiting protection and consumer products

Customer testimonial

„Our longtime partner DIOPTIC supports us reliably and with high-quality holograms for the beam path of the SCHWIND AMARIS excimer laser family. These ensure a very reproducible beam profile and a trouble-free optical beam path. The result is a Super Gaussian beam profile, which contributes to the particularly smooth and tissue-saving removal by AMARIS in laser eye surgeries."

Thomas Hollerbach, Project manager R&D (SCHWIND eye-tech-solutions GmbH)

YOUR ADVANTAGES

- Customer specific design, manufacturing and testing from a single source
- Production of individual pieces and series production possible
- Low energy loss: Up to 95% diffraction efficiency

Quality management

- DIN ISO 9001:2015 certified
- Complete documentation
- Transparent results

Industry experience

- Compliance of industry standards
- Extensive network
- Fast project launch time

Better together

Advantages with DIOPTIC

Flexibility

- Quick reaction time
- Personal support

Know-how of our expert team

- Solutions on a high scientific level
- Patentable results
- Efficient and professional project handling

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