



- 1 3-Chip LCOS Projection:
Colour separation and unification.
- 2 OLED-Ocular.
- 3 Prototype of a three-chip sphere projector.

OPTICAL SYSTEMS WITH MICRODISPLAYS

Displays – especially microdisplays – need optics for their use in many applications. The optic can be directly placed on the display e.g. to enhance the efficiency of the display or to avoid unwanted reflections. Or optic is used to integrate the display in complex optical systems e.g. projection units. In all these areas the Fraunhofer IOF as an institute with a strong expertise in optics and optical design can help customers to find an optimal solution. In addition, we offer general advisory service and draw up drafts about microdisplay applications; we report on actual technical developments, and help to select the most suitable and available displays.

Optics for Microdisplays

- Classical lenses
- Illumination optics, e.g. with LED
- Colour splitting / unifying systems (3-panel design)
- Polarisation optic, skew ray analysis
- Precision and / or low-cost optics and mechanics
- Microoptics on-display
- Coatings on-display (micromirror)
- Analysis of scatter and stray light

Microdisplay based optical systems

- Customer specific projection, imaging and measurement systems (spectral range: UV-VIS-IR-THz)
- System concepts
 - System simulation
 - Optical and mechanical design
 - Prototype setup
 - System and component tests

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