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Optics and Precision Engineering IOF

Ultra-compact multi-modal camera

Miniaturized snapshot imaging to resolve wavelength and polarization

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Top: Complete system with exploded major components.

Cover: Measurement setup using the multi-modal camera.

Target

Miniaturized camera system for imaging extended scenes in different spectral bands of the visible spectrum simultaneously utilizing a polarization resolving detector.

Technology

- Wafer scale manufactured micro lens array as objective
- User defined bandpass filters to adjust spectral detection ranges
- Adjustable field of view and working distance by replaceable front lens
- Polarization sensitive image sensor

Specifications of current system

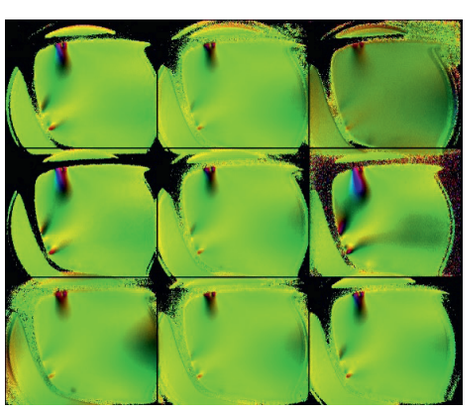
- Nine spectral channels in the 400 nm … 900 nm spectral range
- 45° field of view (full-diagonal)
- Adaptable working distance 4.5 … 100 cm using add-on lens
- 750 x 620 pixels per channel with 2x2 polarization subpixels
- F-number (f/#) 5
- Sized 90x40x24 mm³; 110 g

Applications

- Analytical imaging in
  - Industrial inspection and color control
  - Sorting applications
  - Biomedicine and agri-food
- Post-acquisition removal or enhancement of flares and scatters
- Asses birefringence of molded parts

Our offer

- Feasibility and design studies
- Adapt system specification to various application requirements
- Prototype preparation and testing



Polarized image data of an eyeglass lens for nine different spectral components.

Contact

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