

FULL Stokes Polarization Camera



PERFORMS:

Live full Stokes polarization imaging in the visible in passive or active configuration
Live computation of any derived polarization parameter: DOP, DOLP, DOCP, AOP, Ellipticity.
Passive and Active polarization imaging

ENABLES:

Retardance mapping / Stress measurement
Stokes/Mueller imagery
Contrast enhancement
Target detection/identification

Aunion Tech Co.,Ltd

Floor 3, F Building, No. 86 Caobao road, Shanghai 200235 P.R. China

Tel: +86-21-51083793

Fax: +86-21-34241962

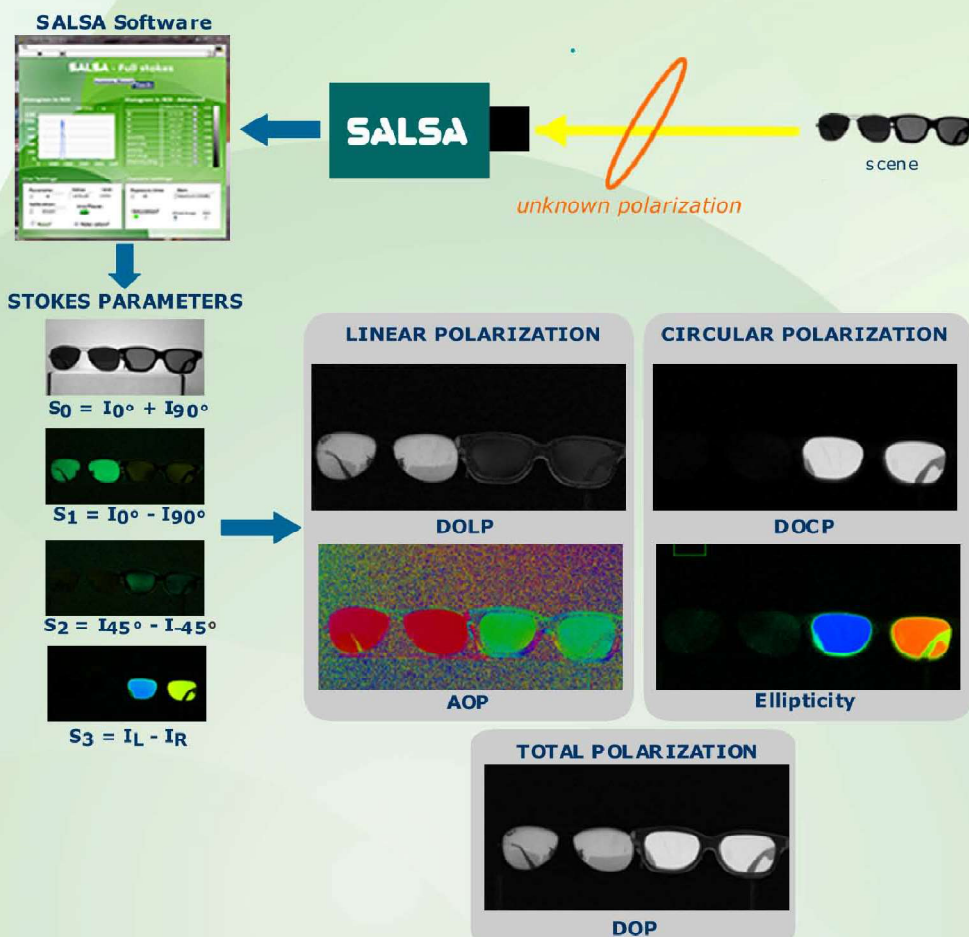
E-Mail: info@auniontech.com

Website: www.auniontech.com

OVERVIEW

Along with the intensity and the spectrum, the polarization of light carries abundant information. The Stokes formalism allows for complete description of any partial or total polarization state. While most of the available polarization imaging cameras perform only linear Stokes polarization imaging (only the linear polarization can be quantified), SALSA performs live measurement of the full Stokes vector for each pixel of the image at a video frame rate. Many polarization-related parameters can be visualized in real time such as the Stokes parameters (S_0, S_1, S_2, S_3), the Degree Of Polarization (Linear or Circular), the Angle Of Polarization, the Ellipticity angle, etc.

PRINCIPLE



This example shows two pairs of glasses.
Left ones are linearly polarized sunglasses;
right ones are circularly polarized 3D-movies glasses.

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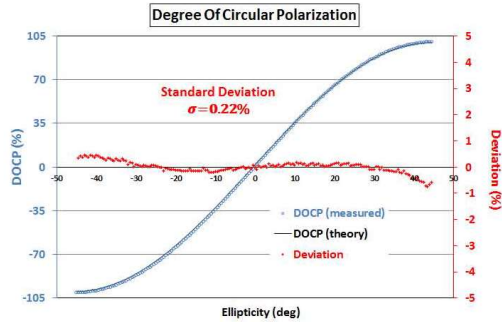
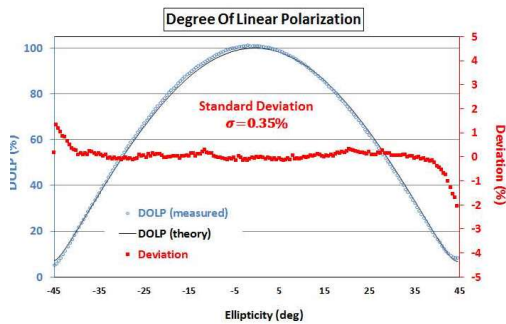
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GENERAL SPECIFICATIONS

Camera Size	3.2"x3.2"x4" (80mmx80mmx100mm)
Video Format	Digital GigE
Resolution (pixels)	1,040x1,040
Frame Rate at maximum resolution	12 fps (12bits) 20 fps (8 bits)
Digitalization	8/12 bits
Sync. Interface	USB
Spectral Bandwidth	520nm-550 nm - Custom upon request
Calibration	Factory calibrated
Lens Mount	C-mount (25mm lens included)
Software	SALSA 2.3
Computer	Standard PC with windows 7 + monitor

The SALSA camera is calibrated in the factory for a specific bandwidth. The typical precisions for Degree Of Linear Polarization is 3% (P-V), 0.35% STDV, and for Degree Of Circular Polarization: 2% (P-V), 0.75% STDV.



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