

PolarCam™ SDK

4D Technology

Software Development Kit

PolarCam™ snapshot micropolarizer cameras capture images of multiple polarized angles from each video frame, enabling a range of image enhancement techniques and polarimetric measurements. Small, fast and field-proven, these unique cameras suppress or boost data content without image blur, for applications in image enhancement, medical imaging, remote sensing and more.

This Software Development Kit (SDK) is intended to assist you in accessing information from PolarCam cameras for analysis and further manipulation.

The SDK gives you access to common camera controls such as start/stop acquisition, setting exposure and gain, and adjusting the bit depth. You can access and output the raw image frame as well as the parsed polarization states. You can also calculate and output the polarization parameters for the array, including the linear Stokes Parameters, Degree of Linear Polarization (DoLP), Angle of Linear Polarization (AoLP), Birefringence, and Retardance.

The SDK includes:

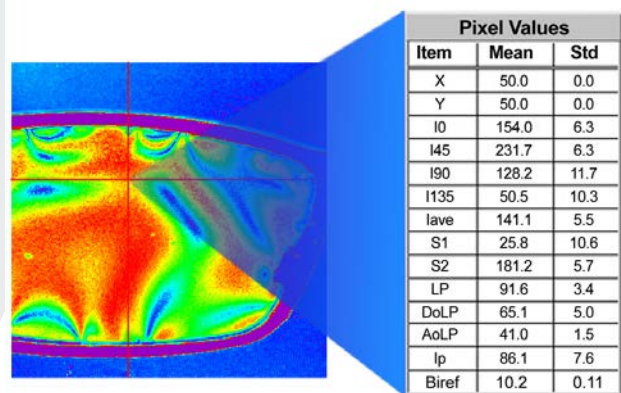
- a DLL for your C application
- a library of VIs for your LabVIEW application
- source code with examples
- PolarCam and Camera SDK documentation

The PolarCam SDK gives you access to many of the functions found in 4D's PolarView control and analysis software package. Purchase the SDK with a PolarCam camera to integrate it into custom setups or data systems. You can also purchase the SDK individually to let you control a previously purchased PolarCam product.

The PolarCam SDK maximizes your control over the camera and data so that you can get the most from your camera investment.



PolarCam CCD and CMOS Cameras



Use the PolarCam SDK to calculate the Mean and Standard Deviation (Std) of parameters including DoLP, AoLP, Birefringence and the Enhanced Polarization Image (lp).

DoLP

The Degree of Linear Polarization (DoLP) is, given by LP/Iave. Values are 0 to 100%. DOLP calculates the Degree Of Linear Polarization of rawFrame returned as results.

Calculate_DOLP_Parsed(float* rawFrame, int width, int height, float* results);

AoLP

The Angle of Linear Polarization (AoLP) is given by ATAN(S2/S1). AOLP calculates the Degree Of Angular Polarization of rawFrame returned as results.

Calculate_AOLP_Parsed(float* rawFrame, int width, int height, float* results);

Birefringence

The amount of Birefringence in the material is reported in nanometers. ...

Birefringence calculation is based on the assumptions that the light source is monochromatic and circularly polarized. If either of these is not the case calculation will not provide correct absolute values though Birefringence...

The PolarCam SDK gives you control over camera functions and calculations. Thorough documentation makes it easy to get the most from your PolarCam camera.

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