



## Polarization Analyzer



- **Product Description**

Idealphotonics' has designed a high-precision polarization analyzer for characterizing the polarization state of continuous-wave lasers. The analyzer is based on a rotating achromatic wave plate and a polarizer. The waveplate is rotated by a motor, while a photodiode (PD) collects one cycle of the signal. From this measurement, the four Stokes parameters ( $S_0$ ,  $S_1$ ,



S2, S3) of the input light can be determined, enabling calculation of the polarization azimuth, ellipticity, and other related polarization parameters.

- **Product features**

Compact Design and Stability ; Full Software Support ; High Accuracy ;  
Excellent Compatibility

- **Part Number**

MP-IP-PAX-VIS/NIR/IR

- **Application area**

Research and Development and Fundamental Research | Industry and  
Quality Control | National Defense and Remote Sensing

- **Core parameters**

Wavelength Range
VIS: 400~700nm / NIR: 650~1100nm / IR: 900~1700nm

- **General Parameters**

Features

Wavelength Coverage: The series offers three models – VIS, NIR, and IR –

covering a wavelength range from 400 nm to 1700 nm, allowing users to select the appropriate model according to their needs.

**Compact Design and Stability:** Features a compact design for easy integration and reliable operation.

**Full Software Support:** Includes control software that displays Stokes parameters, the Poincaré sphere, and other polarization-related information.

**Supports Degree of Polarization (DOP) measurement and Extinction Ratio (ER) testing.**

**High Accuracy:** Provides precise measurement of polarization azimuth and ellipticity.

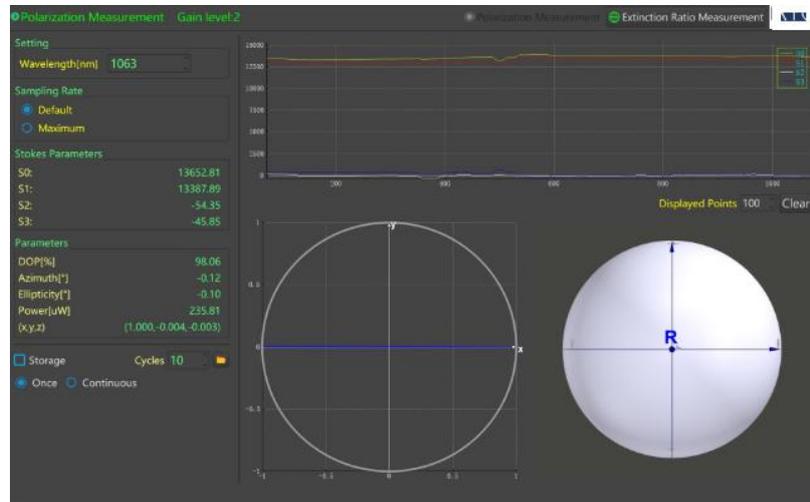
**Excellent Compatibility:** Dual-threaded structure (external SM1, internal SM05) enables both cage/mount integration and direct free-space light input.

## Technical Specifications and Test Data

Performance Parameters	Typical Values	Unit
Housing (L×W×H)	79.5×65×75	mm
Power Supply	DC 12V/2A	/
Wavelength Range	VIS: 400~700	nm
	NIR: 650~1100	nm
	IR: 900~1700	nm

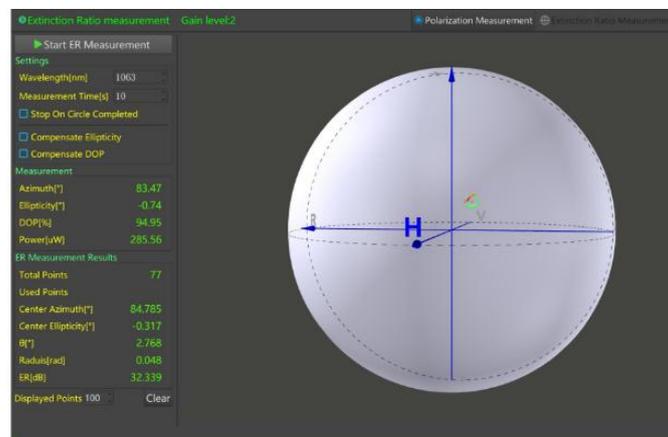
<b>Optical Power Input Range</b>	<b>10 <math>\mu</math>W~10 mW</b>	<b>/</b>
<b>Free-Space Input Beam Diameter</b>	<b><math>\Phi</math>3 (<math>\Phi</math>2 for IR)</b>	<b>mm</b>
<b>Default Sampling Rate</b>	<b>15 Hz (FFT=2048/cycle)</b>	<b>/</b>
<b>Maximum Sampling Rate</b>	<b>30 Hz (FFT=2048/cycle)</b>	<b>/</b>
<b>Measurable State of Polarization (SOP)</b>	<b>Entire Poincaré Sphere</b>	<b>/</b>
<b>Azimuth Angle Accuracy</b>	<b><math>\pm</math>0.5</b>	<b><math>^{\circ}</math></b>
<b>Ellipticity Accuracy</b>	<b><math>\pm</math>0.5</b>	<b><math>^{\circ}</math></b>
<b>Degree of Polarization (DOP) Accuracy</b>	<b><math>\pm</math>5%</b>	<b>/</b>
<b>Bottom Thread</b>	<b>M4 thread</b>	<b>/</b>
<b>Front Thread</b>	<b>External SM1, Internal SM05</b>	<b>/</b>
<b>Temperature range</b>	<b>5~30</b>	<b><math>^{\circ}</math>C</b>
<b>Operating Humidity</b>	<b>&lt;90% (non-condensing)</b>	<b>/</b>
<p><b>Notes:</b></p> <p>a) FFT=2048 cycle can be configured to 1024, 512, etc.</p> <p>b) One sampling per quarter-wave rotation; hardware supports half-circle sampling once (further settings can be updated via software).</p>		

## Test result



The polarization measurement software interface (using a 1063 nm laser) shows that the polarization ellipse appears as linear polarization, with an ellipticity of

0.1°.



The extinction ratio measurement software interface (using a 1063 nm laser) shows an extinction ratio of ER = 32.339 dB, and it can also be used for polarization adjustment in scenarios such as polarization-maintaining (PM) light.