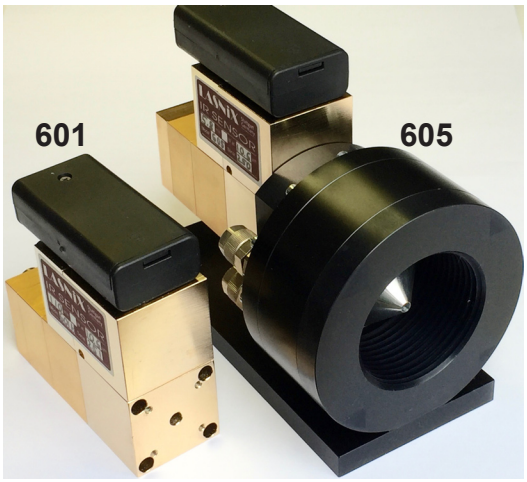
LASNIX

POLARIZATION SENSORS for CO_2 LASER BEAMS



The polarization sensors contain a rotating polarizer and a fast power sensor in a compact battery-operated package. The response time of 20 ms (40 ms in option H) is short enough to map out the polarization ellipse in 7 s. The robust small unit is easily portable for field service.

The basic sensor Mod. 601 accepts up to 30 W input. Heat sinking is necessary only for continued operation above 10 W. The extended Mod. 605 accepting 3 kW input is designed for direct polarization analysis of high-power industrial CO_2 laser beams. It contains a water-cooled beam dump with a 4 mm sampling aperture and an internal metal grid 10 db attenuator.

Applications:

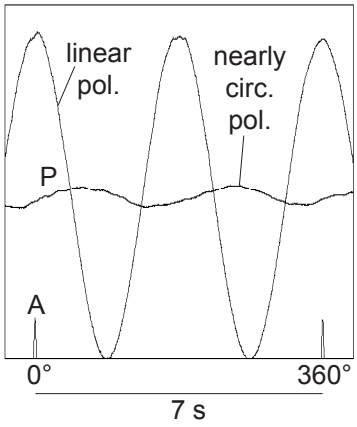
polarization analysis in seconds

beam quality assurance

- spectral range ..... 9 - 11 µm
- power range ..... 15 / 30 / 3000 W
- dynamic range..... > 50 db
- measurement cycle ..... 7 s
- polarization contrast..... > 1000 : 1
- power signal out (601) ..... 50 mV/W*
- power signal out (605)..... 5 mV/W*
- angle position signal..... 400 mV
- output connectors..... BNC
- diffuse reflectance ..... 7 %
- angular accuracy..... ± 1 °

**refers to power passing the sampling aperture*

The output power signal "P" is d.c. analog and reads directly into any scope or ADC card. The second analog signal "A" encodes the angular position of the polarizer. A full power modulation indicates an ideally linear polarization, with the maximum of P giving the field orientation. Circular polarization results in vanishing P modulation. We supply a chart to read polarization phase and azimuth, useful for retarder adjustments.



For fully portable polarization testing we recommend a small battery-operated scope. Mod. 601 has four M3 threads on 28.8 mm dia. pitch circle for mounting. The cooling water connection to Mod. 605 requires standard 6/8 mm tubing.

Model No.	Input Beam Aperture	Input Power Limit	Sampling Aperture	Sampled Power Limit	Length	Height	Width	Weight
	mm	W	mm	W	mm	mm	mm	g
601	5	30	4	30	89	89	35	400
605	50	3000	4	300	154	126	90	1400

Option H: double power signals at 50% reduced sampled power limit

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3/2017