



HIGH-SPEED BENCHTOP POLARIZATION CONTROLLER-SCRAMBLER

PRELIMINARY

Features

- LCD touch screen operation
- Electric polarization controller and driver combined into one unit
- Fixed or random state generation
- User selectable frequencies up to 1 kHz
- User control of polarization state
- Rugged casing
- Quick setup

Applications

- Polarization scrambling
- Measuring polarization dependent loss (PDL)
- Manufacturing and quality control
- Studying effects of polarization; controlling polarization state



High-Speed Benchtop Polarization Controller-Scrambler

Product Description

The OZ Optics Ltd. High-Speed Benchtop Polarization Controller-Scrambler (HSPC-1000) is a bench-top device that can control and/or scramble the polarization state of light passing through a fiber optic system. The HSPC-1000 generates four independent waveforms, operating at user-selectable frequencies, to generate different polarization states. It can also provide user-adjustable steady state signals to generate a particular polarization state.

The HSPC-1000 contains four optical retardation elements that are used to produce any state of polarization. Each of these elements is controlled by an electrical signal generated by an internal piezoelectric element in the device driver. The driver produces the appropriate drive signals: four independent signals that can be directly controlled by the HSPC-1000 High-Speed Benchtop Polarization Controller-Scrambler.

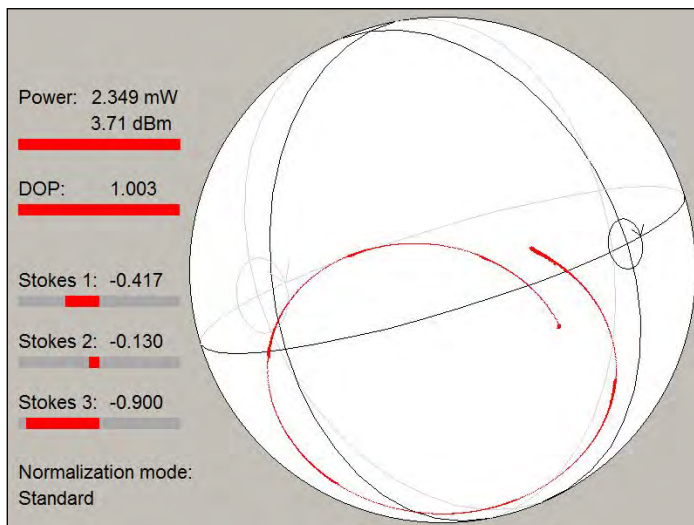


Fig 1. Controller Mode Measured Using An External Polarimeter.

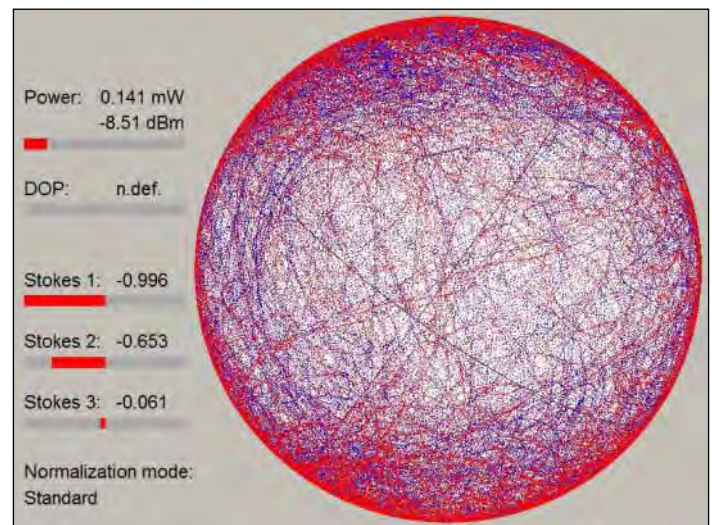


Fig 2. Scrambler Mode Using An External Polarimeter.

Standard Product Specifications

Parameter	Specification	
Model	HSPC-1000	
Number of Channels	4	
Retardation Range	2π minimum	
Insertion Loss Not Including Connectors ¹	0.05 dB	
Backreflection	>60 dB excluding connectors	
Wavelength Range	1260–1650 nm standard. Other wavelengths available on request.	
Activation Loss ²	± 0.05 dB	
Polarization Dependent Loss (PDL)	<0.06 dB	
Fiber Type	9/125 μ m singlemode fiber.	
Modes of Operation	Constant Voltage (DC). Sine or triangle waves at a user-selectable frequency and amplitude.	
Frequency Range (Sine Wave Output) ³	0 to 1 kHz @ 140 V	
Frequency Resolution	0.1 Hz	
Output Voltage Range ³	0 to +140 volts	
Voltage Resolution (AC and DC modes)	0.633 mV	
Power Supply	Input	120/240 VAC @ 50/60 Hz (Universal supply) 4 A
	Output	12 VDC, 15 A, 180 WATT (max.)
Communications Interface	USB 2.0 Cable Type A to Type B	
Dimensions (H x W x D)	110 x 280 x 300 mm (4.33 x 11.02 x 11.81 in.) not including handle	
Weight	5.5 kg (12.2 lb.)	
Temperature Range	Operating	Variable operating conditions, with all four channels in scrambling mode: -20 to 35 °C (-4 to 95 °F) at 140 V and 2 kHz -20 to 45 °C (-4 to 113 °F) at 140 V and 1 kHz
	Storage	-30 to 80 °C (-22 to 176 °F)
Humidity	<90% RH, non-condensing, at 0 to 45 °C (32 to 113 °F)	

¹ Typical insertion loss.

² With 0 to 140 V applied to each channel.

³ Maximum piezo voltage is 140 volts. Voltage higher than 140 V will shorten piezo life or can damage the piezo.

Ordering Example For Standard Parts

A customer wants a turnkey benchtop polarization scrambler system for PDL testing at 1550 nm, of passive optical devices terminated with FC/APC connectors.

Bar Code	Part Number	Description
67545	HSPC-1000-3A3A-1310/1550-9/125-S	High-Speed Benchtop Polarization Controller-Scrambler for 1310–1550 nm with an FC/APC interface.

Ordering Information For Custom Parts

OZ Optics provides custom designed products to meet your application needs. As with most manufacturers, customized products do take additional effort so please expect some differences in the pricing compared to our standard parts list. In particular, we will need additional time to prepare a comprehensive quotation, and lead times will be longer than normal. In most cases non-recurring engineering (NRE) charges, lot charges, and a one piece minimum order will be necessary. These points will be carefully explained in your quotation, so your decision will be as well-informed as possible. We strongly recommend buying our standard products.

DESCRIPTION

Controller And Scrambling Unit

PART NUMBER

HSPC-1000-XY-1310/1550-9/125-S

XY = Connector code:

3S = Super NTT-FC/PC

3U = Ultra NTT-FC/PC

3A = Angled NTT-FC/PC

SC = SC

SCU = Ultra SC

SCA = Angled SC

LC = LC/PC

See *Standard Tables* for other connectors.

https://www.ozoptics.com/ALLNEW_PDF/DTS0079.pdf

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