

Versatile Polarization Platform for multiple lab purposes



Electronic **Paddles** to set & hold polarization



Very fast, robust & endless polarization **Tracker**



Spinner to generate precise dSOP/dt speeds



Depolarizer function to eliminate PDL



Stochastic Rayleigh SOP **Scrambler**



Randomizer to create ultrafast SOP impulse events



NRT's polarization control platform combines an integrated-optic Lithium Niobite waveguide polarization-controller device for super-fast polarization response driven by a customizable control platform for functional flexibility. Together they enable the NRT-2500 to provide a wide range of polarization operations in one product.



Polarization Control Platform

NRT-2500

Key specifications¹

Insertion Loss	< 3 dB
PDL	< 0.3 dB
Optical return Loss	> 50 dB
Optical Power Handling	< 20 dBm
Operating Wavelength	1.55 microns (C- and L-bands)
Optical Connectors	FC/UPC, FC/APC, SC
Scrambler mode SOP Speed	up to 3,400 rad/sec for $r_{mode} \equiv b^{0.5}$ of a Rayleigh distribution ²
Spinner mode rate	940,000 rad/sec on great circle orientation for 75 kHz drive
Randomizer mode SOP speed	up to 2,250,000 rad/sec ³
Depolarizer mode SOP speed	over 3,000,000 rad/sec ⁴
Tracker mode update time	~20 microseconds ⁵
Power Supply	12 VDC from 100-240 VAC, 50 – 60 Hz, AC-DC converter
Communication Interfaces	RS-232 ⁶
Dimensions	H=4.04" (102.6 mm), W=10.12" (257 mm), D=12.32" (313mm)

1. Subject to change at any time by New Ridge Technologies, LLC.

2. For a Rayleigh distribution: r_{mode} is the statistical mode of the distribution, $\langle r \rangle$ is the mean SOP change, and 99.9% of all SOP changes occur before $r_{max} = 3\langle r \rangle \sim 3.76r_{mode}$

3. Calculated assuming π radians on Poincaré sphere in 1.4 μ s.

4. Non-stochastic dSOP/dt distribution from 0 to >3 Mrad/sec completely covering Poincaré sphere.

5. This speed is the closed loop feedback/update algorithm loop time based on reading A/DCs and DSP speed and updating polarization controller voltages. The feedback signal detector response time and customization of the algorithm may slow system response.

6. RS-232-to-USB dongle provided with each NRT-2500.

For more information about the NRT-2500

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