

## Frequently Asked Questions for Other Products

### Stabilizer

Q: What is the difference between the SM and PM output stabilizers?

A: The effect of the SM output stabilizer can be seen directly in the polarization state of the output beam. With stabilization disabled, the stabilizer passes the input light through unchanged; any polarization changes to the input will be seen at the output. With stabilization enabled, the output polarization state will remain constant, regardless of changes to the input polarization. The PM output stabilizer uses a polarizer to align the output to the slow axis of the output PM fiber. Therefore, the output polarization state is always constant (linear, aligned to the slow axis of the PM fiber), and any changes in polarization are translated into changes in output power. Therefore, the output power will fluctuate with changes in input polarization state while the stabilization is disabled, but will remain constant with stabilization enabled.

Q: Does the stabilizer affect the DOP of the input light?

A: The SM output stabilizer has a slight effect on the DOP because of the light tapped by the polarization monitor. For most purposes, it is not significant. However, because of its alignment polarizer, the PM output stabilizer's output is fully polarized.

### Depolarizer

Q: What is the principle of operation behind the depolarizer?

A: The depolarizer works by splitting the input beam into two equally powered beams of orthogonal polarization, delaying one beam with respect to the other, then using a polarization beam combiner to recombine them into a single output. As long as the relative delay between the orthogonally polarized beams is larger than the coherence length of the light beams, there is no fixed phase relationship between them when they are recombined. The resulting output is, therefore, depolarized.

Q: What kind of fiber can be used to connect to the depolarizer?

A: The input is typically PM fiber, and the output is typically SM fiber.

Q: Can the depolarizer be used with pulsed or modulated signals?

A: The depolarizer is designed for use with cw input light.

Q: Is the depolarizer bidirectional?

A: No. The standard depolarizer is a unidirectional device.

### PolaSwitch

Q: What is the difference between switching and latching current/voltage?

A: The PolaSwitch rotates the input polarization state to either of two states which are 45° or 90° apart, depending on the configuration ordered. The switching current and voltage

indicate the current and voltage that must be applied to switch the polarization state from one of these two states to the other, while the latching current and voltage are the current and voltage that must be applied to maintain the switch in its current state. Nominally, a voltage of 5V between the two pins corresponds to one state, and -5V to the other. For example, if the switching voltage is 3.5V, and the latching voltage is 2V, then if the switch is initially in the -5V state, applying a voltage between +3.5V and +5V will switch it to the other state. Once it is switched, the applied voltage must be maintained above 2V to maintain the new state.

Q: What happens when 0 volts is applied between the pins?

A: This is essentially an "off" state. The output polarization state can float, and the insertion loss will be higher than when the switch is in one of its two defined states.

### NoTail Components

Q: What is the fiber length inside a NoTail™ component?

A: It depends on the product. For a 2-port device like an isolator, fiber length is typically about 2cm on each side, while for a 3 or 4-port device, it is typically about 20cm on each side.

### PBC/S vs. PM Coupler

Q: What is the difference between a polarization beam combiner/splitter and a PM coupler?

A: The polarization beam combiner/splitter is used to combine or separate two signals of orthogonal polarization state. The power ratio of the split components depends on the ratio of the two orthogonal polarization components in the combined signal. The PM coupler is used to split a single-polarization signal (usually aligned to the slow axis of the fiber) into two or more paths with a specified power split ratio.

### Light Sources

Q: What are the main differences between the TLS - 101 and the WSL-1000?

A: The TLS-101 is a tunable laser source. Depending on the model, it can output wavelengths corresponding to either the C band or L band ITU grid channels. It can either output a static wavelength or scan from a particular start to a particular end wavelength.

The WSL-001 and WSL-1000 are swept wavelength sources. They are designed to provide an extremely uniform and repeatable sweep profile over the specified wavelength range at the specified frequency. The wavelength range and sweep frequency for a particular unit are fixed. Unlike a traditional tunable laser, the WSL-001 and WSL-1000 cannot be set to a particular static wavelength within the sweep range. The principal application for these sources is medical imaging.