TIMING/DELAY MANAGEMENT MODULES

High-Speed Optical Path Length Scanner – PathScan™

The FST-002 is a PZT-driven high-speed optical path length scanner with a scanning range of up to 18 mm at a resonant frequency of around 2 kHz. Built with a patented fiber stretching technology, this device provides a large scan range with a relatively low drive voltage of around 90 volts. At frequencies below resonance, a total scan range of 4.0 mm can be achieved with a maximum drive voltage of 150 volts. This fiber stretcher is packaged in a specially designed enclosure to minimize audible noise generated by the PZT. This patented device can be driven with commercially available PZT drivers, such as General Photonics' PCD-001. The FST-002 enables applications from sensing to medical imaging, interferometry, position measurement, time domain optical coherence tomography (OCT), and spectrum analysis. The large delay range is especially attractive for OCT applications requiring large A-scan depth, where frequency domain OCT has limitations. At General Photonics, we stretch the fiber hard to make your work more relaxed.

Preliminary Specifications:

Peak Delay Range	16 mm (min.), 18 mm (typical) at resonance frequency
Voltage for Peak Delay	90 ± 10 volts
Low Frequency Delay Range	> 4.0 mm
Max. Voltage to PZT	150 volts
Resonant Frequency	2 ± 0.2 kHz
Load Capacitance	0.72 μF
Insertion Loss[1]	< 0.2 dB
Insertion Loss Variation	< 0.1 dB
Return Loss[1]	> 65 dB
PDL[1]	< 0.05 dB
Wavelength Range	1260 to 1650 nm
Maximum Optical Power	1000 mW min.
Operation Temperature	0 ~ 50 °C
Storage Temperature	-40 ~ 80 °C
Dimensions	160 (L) x 80 (W) x 60 (H) mm

Note:
1. Values are referenced without connectors.

Features:

- Large delay range
- High speed
- Low insertion loss
- Low loss variation
- Low audible noise

Applications:

- Time domain OCT
- Interferometers
- Medical imaging
- Spectrum analysis

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Typical Performance Data:

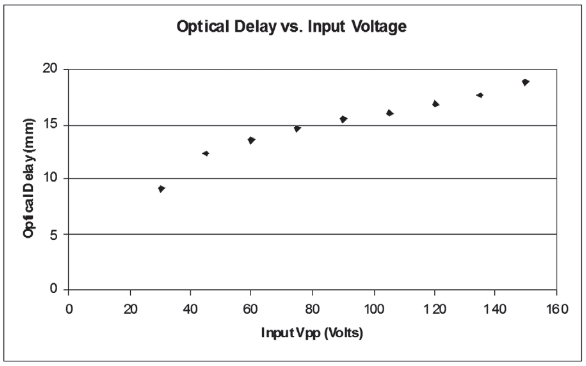

Figure 1. Optical delay vs. input voltage at resonance frequency

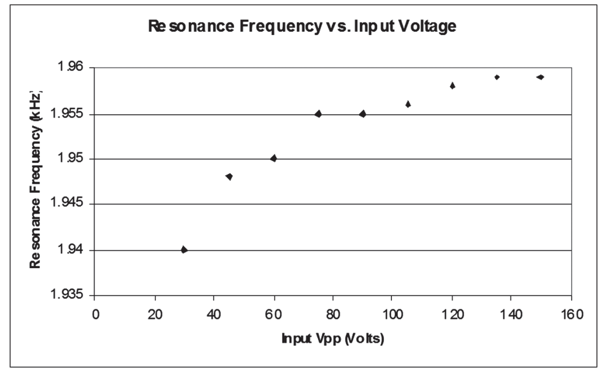

Figure 2. Resonance frequency vs. input voltage

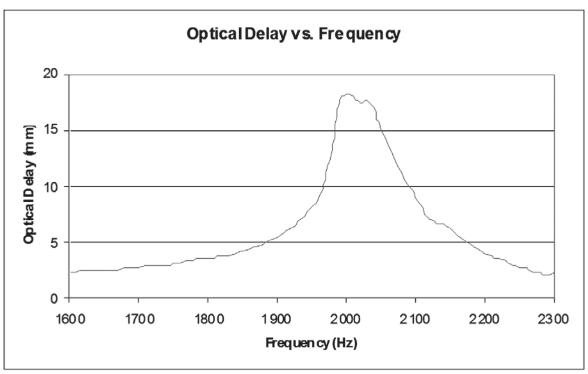

Figure 3. Optical delay vs. frequency at Vpp = 150V.

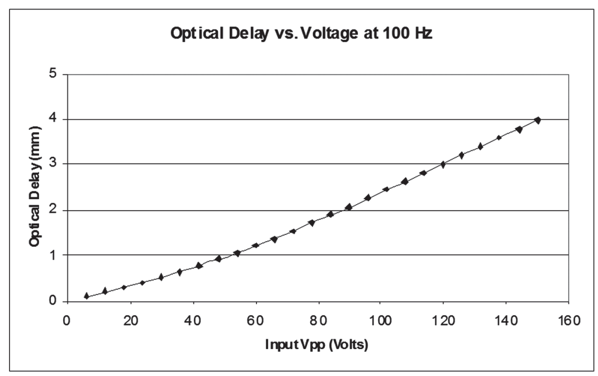

Figure 4. Optical delay vs. input voltage at low frequency (100 Hz).

Ordering Information:

FST — 002 — □ □ □

Connector Type:
FC/PC, FC/APC
Others specify