

Motorized Variable Optical Delay Line at 1310 or 1550 nm with a Driver

Model #: MDLD

Description: Motorized Variable Optical Delay Line provides precision optical path length adjustment of up to 1000 & 1200ps. Driven by a stepping motor and a driver has been integrated inside following the RS-232 standard, the MDLD has a delay resolution of about 1.52 μm (5.0 fs). In addition, its advanced motion design guarantees longevity for long-term continuous operation. Low insertion loss and high reliability make this device ideal for integration in optical coherence tomography (OCT) systems, network equipment and test instruments for precision optical path length control or timing alignment.

Application: Test equipment, OCT, precision optical path length matching or timing alignment

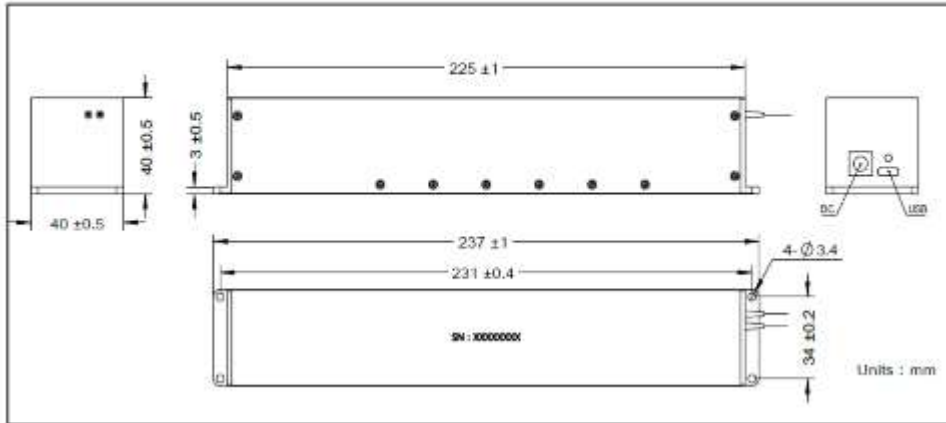
Specifications:

Parameter	Unit	Specifications
Central Wavelength (λ_c)	nm	1310, 1550
Operating Wavelength	nm	$\lambda_c \pm 50$
Optical Delay Range	ps	0 – 1000 or 1 – 1200 continuous
Zero Point Delay Offset ¹	ps	~ 600
Readout Scale Resolution		1.52 μm or 5.0 fs per encoder count
Repeatability ²	μm	5
Max. Move Rate	mm/s	8
Max. Insertion Loss	dB	2.0
Max. Insertion Loss Variation	dB	0.8
Max. Temperature Dependent Loss (design guarantee)	dB	0.25
Max. Wavelength Dependent Loss (design guarantee)	dB	± 0.3
Max. Polarization Dependent Loss (for non PM version)	dB	0.1
Min. Extinction Ratio (for PM version)	dB	20
Min. Return Loss	dB	50
Max. Optical Power (CW)	mW	300
Electrical Interface		DC 5V 3A USB
Operating Temperature	$^{\circ}\text{C}$	0 to +40
Storage Temperature	$^{\circ}\text{C}$	-40 to + 60
Dimension	mm	40 x 225 x 40
Fiber Type		Single mode or Panda fiber

Note: ¹Each connector may contribute an extra 0.5 dB IL, 5 dB lower RL, and 2dB lower polarization extinction ratio, measured at central wavelength.

² Absolute delay at 0ps setting measured to the edge of the enclosure (excluding caps, boots, and pigtails).

³ Delay resolution & repeatability based on angular resolution of stepper motor and pitch of lead-screw. Measured at 1/4 -full-step (micro stepping technology)

Package Dimensions

Ordering Information:
Single Stage: MDLD-AAAA-BBBB-C-D-E-F-G

AAAA: wavelength	BBBB: delay range	C - attenuator	D: connector type	E: fiber jacket	F: fiber length	G: fiber type
1310 – 1310 nm	1000 – 1000 ps	N - none	1 - FC/UPC	B - 250µm Panda fiber	1 – 1.0 m	M – SM fiber
1550 – 1550 nm	1200 – 1200 ps		2 - FC/APC	L - 900 µm loss tube	X - other	P – PM fiber
X - other	X - other		3 - SC/UPC			
			4 - SC/APC			
			N - none			
			X - other			