

Innovation for the next generation



MLO4034

Optical Switch Box

Fully Automatable | Transceiver Testing Solution | Single-mode or Multi-mode | Integrated WDM, Power Meter & VOAs | Integrated Switch Matrix | LCD Touch Control Panel | Supports quad channel parallel and WDM transceiver testing

Summary

Optical transceivers play a key role in data center infrastructure, and their compliant, reliable performance is essential to a successful operation. However, without proper automation, transceiver testing can be both time-consuming and complex. To streamline the process, MultiLane has developed the ML7007 software, an automated platform that orchestrates the test process for transceivers up to 400G. When combined with the MLO4034 optical switch box, the ML7007 can fully characterize a device and generate a detailed report with no need for human intervention.

The MLO4034 is an optical switch box that facilitates the testing of optical transceivers. Instead of using separate components such as optical switches, wavelength demultiplexers, hand-held power monitors and VOAs, the MLO unit has all of them integrated in a single box. It is also part of the ML7007 series of automated transceiver test solutions which offers fully automated testing of 10G to 400G optical transceivers. The MLO4034 Optical Switch Box plays a pivotal role in the ML7007 series by enabling automatic switching between the fiber connections without user intervention with the help of its integrated optical switches, variable attenuators, power monitors and a WDM demultiplexer.

MLO4034

Optical Switch Box

Introduction

The MLO box enables users to test transceivers' optical transmitter characteristics and optical receiver sensitivity, supporting most form factors up to eight parallel fibers or eight wavelengths. The box includes the required optical switches and is also equipped with integrated power monitors, variable optical attenuators and a WDM demultiplexer.

Available variants are:

- MLO4034-CWDM4 (SM)
- MLO4034-LR4 (SM)
- MLO4034-PSM4 (SM)
- MLO4034-SR4 (MM)
- MLO4034-LR8 (SM)
- MLO4034-SR8 (MM)

The MLO box can be operated from its touch panel, Windows GUI, or from the ML7007 series of productivity automation software.

Key Features

- FC/APC connectors for reduced return loss
- Built-in programmable optical attenuator
- Built-in power monitor
- Cost-effective, small footprint, rugged instrument
- A complete set of APIs and a dozen of example code to speed up integration under Linux and Windows, using Python, LabView, MATLAB and C#

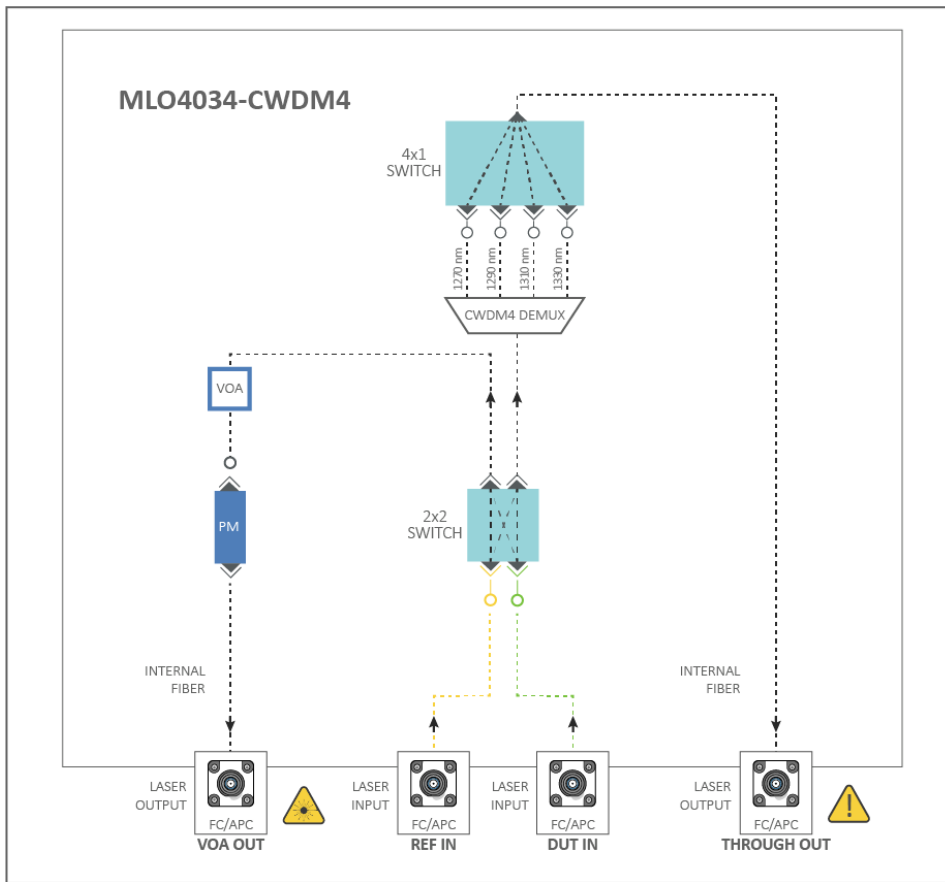
Typical Applications

- Production testing of 10G to 400G transceivers
- Optical transceiver test
- Transceiver manufacturing test
- Transceiver evaluation and validation
- Sensitivity testing of optical receivers

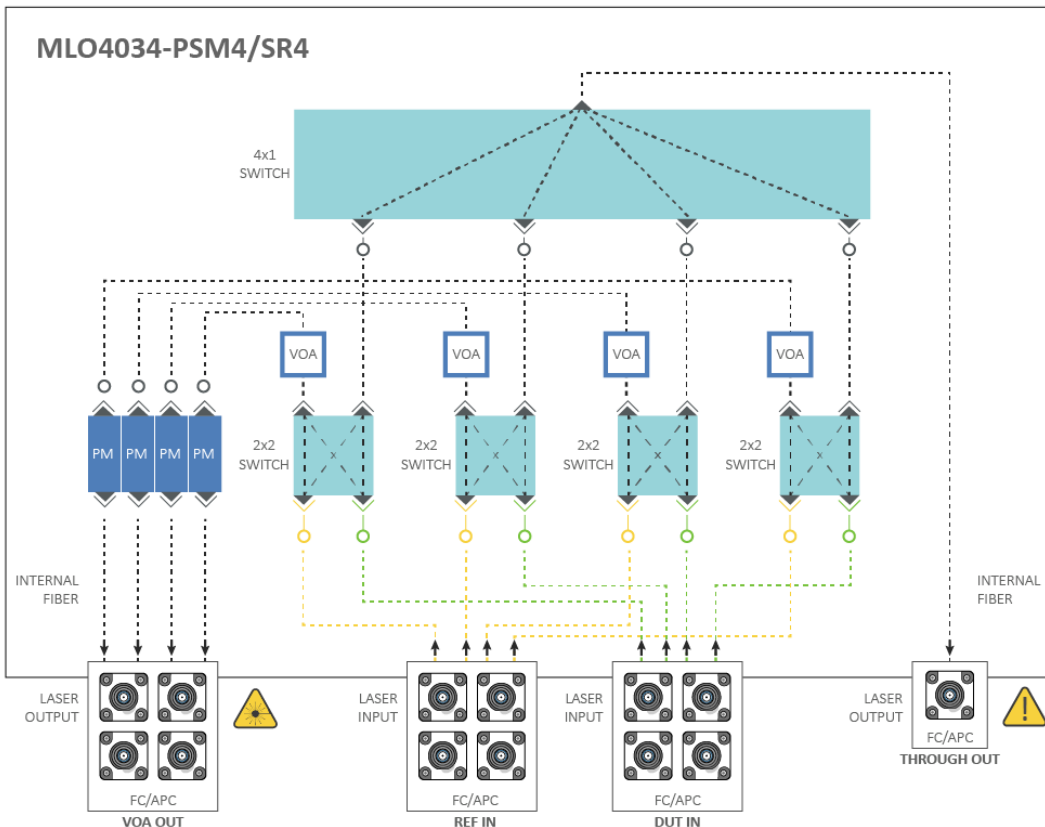
Specifications (Typical)

Parameter	Specifications
SM Wavelengths	1260 – 1620 nm
MM Wavelengths	780 – 860 nm
IL on VOA path	3 dB typical
IL on Through CWDM	3 dB typical
IL on Through PSM	2 dB typical
Max Optical Power Rating	50 mW
Switch Type	MEMS non-latching
VOA & Switching Time	500 ms
Optical Fiber Input SM	9 / 125 μm
Optical Fiber Input MM	50-62.5 / 125 μm
Connector Type	FC/APC
Temperature Range	0 - 45 °C
Line Power	100 ~ 240 V ac, 50/60 Hz
Weight	~ 1.5 kg

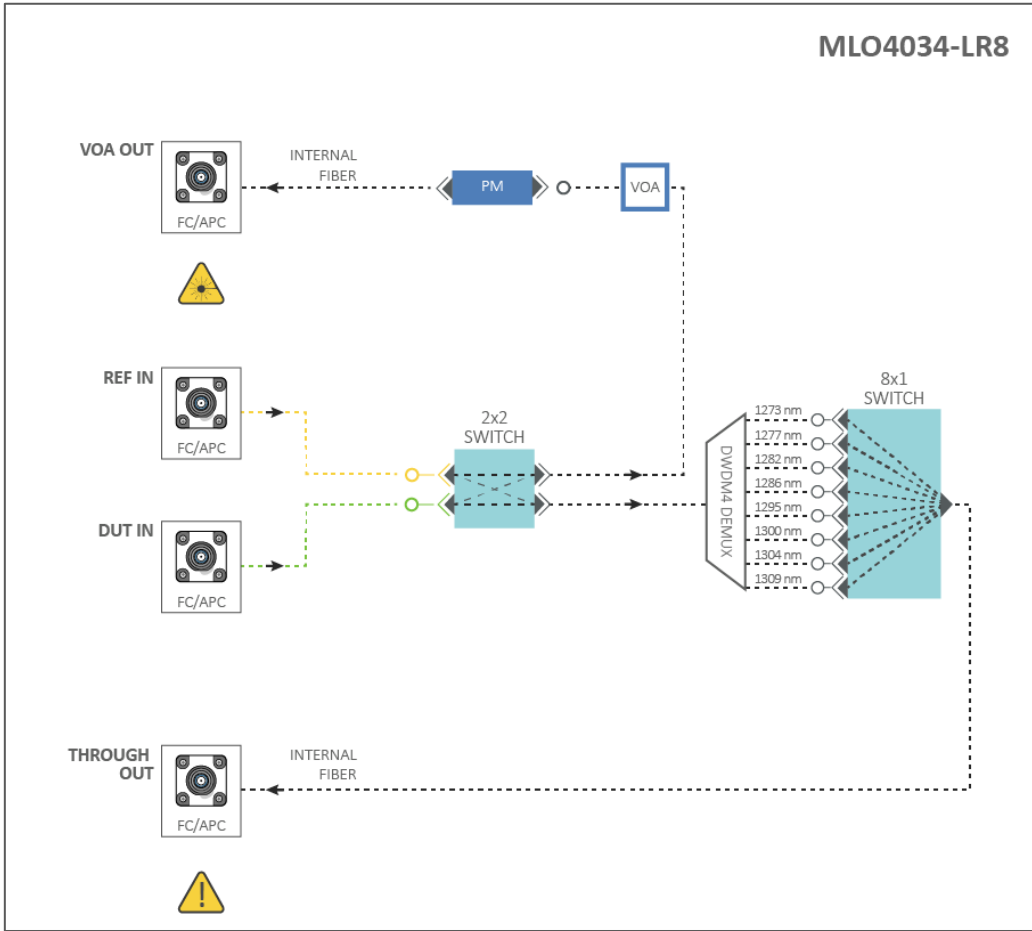
MLO4034-CWDM4/LR4 Block Diagram



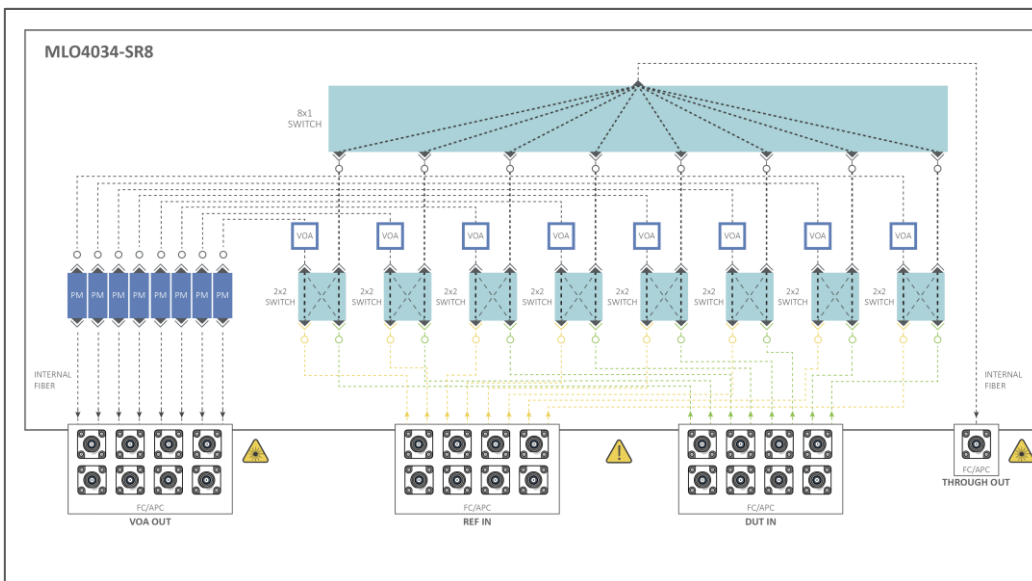
MLO4034-PSM4/SR4 Block Diagram



MLO4034-LR8 Block Diagram

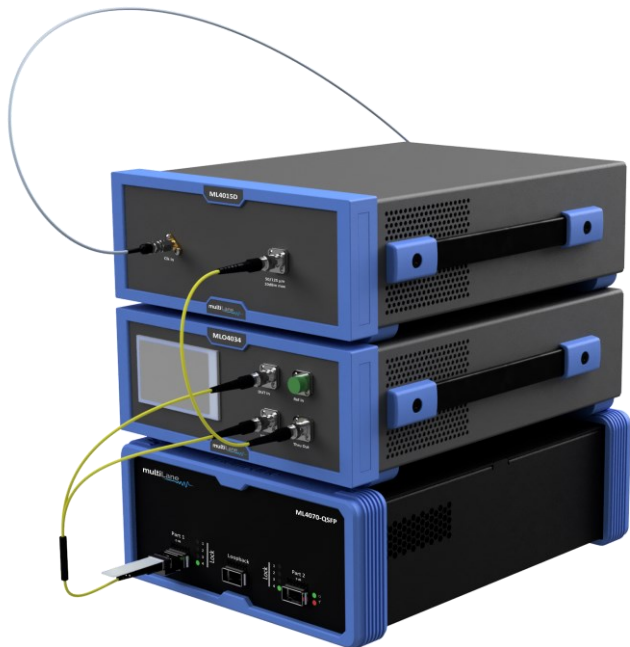


MLO4034-SR8 Block Diagram

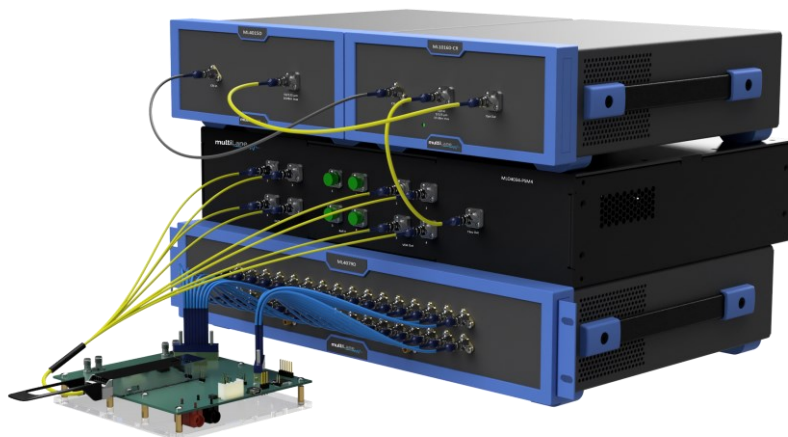


Typical Test Configuration

ML7007-100G setup



ML7007-400G setup



Mechanical Dimensions

The MLO4034 is a benchtop instrument that also fits in a 19 inch 2U rack. The CWDM4 and LR4 variants are half-rack size, while the PSM4, SR4, LR8 and SR8 are 19 inch wide. MultiLane can supply the needed brackets upon request.



Complementary Products

- ML4015D Optical DSO (SM or MM, 40 GHz or 25 GHz)
- ML1016D-CR Optical Clock Recovery
- ML7007 Series automation software
- ML4070-QSFP/SFP host emulator, margin tester BERT
- ML4039D/4079D 200/400G BERT
- ML4062-TR/ML4064-TR MCB

Ordering Information

<i>Part Number</i>	<i>Schematic</i>
MLO4034-PSM4	4 parallel single-mode fiber variant
MLO4034-SR4	4 parallel multi-mode fiber variant
MLO4034-CWDM4	4 channel single-mode fiber, WDM variant on CWDM wavelength grid
MLO4034-LR4	4 channel single-mode fiber, WDM variant on DWDM wavelength grid
MLO4034-SR8	8 parallel multi-mode fiber variant
MLO4034-LR8	8 channel single-mode fiber, WDM variant on DWDM wavelength grid
3YW	3-year warranty
CAL	Cleaning and checking all parts with single calibration
3YWC	Total 3-year warranty with 3 annual calibrations

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