

Multifiber IRL Meter



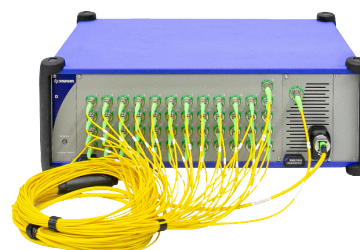
The Dimension Multi-fiber Insertion and Return Loss Tester utilizes a highly stable light source and a high-precision optical power meter to achieve tangle-free Return Loss testing and high-speed Insertion Loss testing. The single-wavelength loss measurement time is less than 0.6s, with a minimum detectable Return Loss of -80dB. The RLM series supports six test wavelengths for both single-mode and multi-mode fibers (Multi-mode: 850nm, 1300nm; Single-mode: 1310nm, 1490nm, 1550nm, 1625nm). Its optimally designed integrating sphere can measure the loss of both densely-channelled MTP/MPO connectors and duplex LC devices. The fast and accurate measurement capabilities of the RLM make it an effective tool for enhancing production efficiency and quality control.

Main Features

- Platform + modular design for easy application expansion
- Tangle-free RL testing; single-fiber dual-wavelength test speed under 0.6s
- Minimum detectable RL: -80dB (Single-mode)
- Minimum measuring fiber length 0.7m
- Optical power meter's minimum detectable power: -70dBm (without integrating sphere)
- A wide range of interchangeable, highly reliable detector adapter connectors
- Supports multiple control methods such as Ethernet and USB
- Software UI is simple and intuitive for easy user operation
- Automatically saves test data reports and supports remote control

Applications

- Patch Cord and Connector Performance Testing
- Optical Passive Device Performance Testing



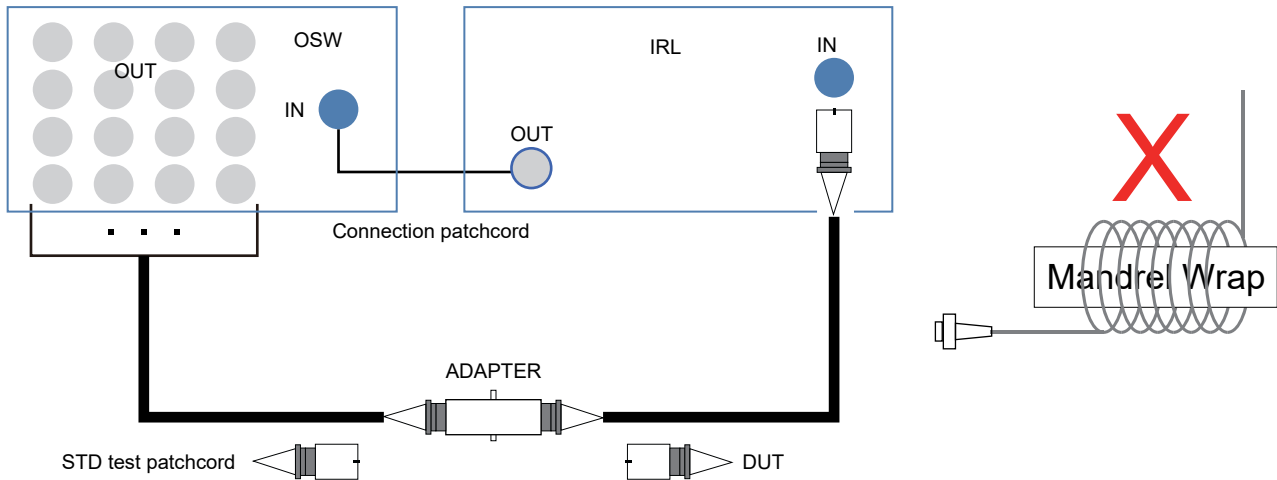
Platform + module design, high scalability

Dimension Technology's 11-slot OMEGA Universal Optical Test Platform is compatible with various functional test modules, including the RLM series insertion and return loss test modules. It offers significant advantages such as hot-swappability, programmability, high scalability, ease of maintenance and management, and low total cost of ownership.

Customers can configure the system within a single OMEGA chassis by selecting single-mode RLM modules, multi-mode RLM modules, and supporting optical switches (enabling up to 24-fiber single-mode and multi-mode RLM integration in one chassis). This provides a cost-effective integrated testing solution for both single-mode and multi-mode applications.

RL mandrel-free test, dual wavelength test speed less than 8s (MPO12)

Based on the Optical Time Domain Detection principle, it enables tangle-free Return Loss (RL) testing. The integrated design allows for simultaneous Insertion Loss (IL) and RL measurements. With high-speed sampling circuits and optimized algorithms, the dual-wavelength test speed is under 8 seconds (In fast measurement mode: MPO12 single-mode dual-wavelength testing under 7.2s; multi-mode dual-wavelength testing under 8s).



RL minimum detectable down to -80dB(single mode), Minimum measuring fiber length 0.7 m

Using the dimension self-developed high-sensitivity detection circuit and the optimized software algorithm, RL can achieve the detection of -80dB(single mode), which can meet the detection requirements of high-performance single mode patchcord (SM/APC).

Rich interchangeable, high reliability detector adapter

To meet the needs of customers, dimension has developed a series of interchangeable, high reliability detector adapter, that are flexible and convenient to use. Optimized integrating sphere, compatible with MPO/ duplex LC adapters, no need to repeatedly plug and plug in one test.



Software UI concise and clear, easy and useful

Based on years of customer feedback, the deeply optimized software UI is concise and clear, easy and useful. Users can customize the test report, can automatically save, upload test data and report to the server.

Specifications

Basic product model		RLM-HP-1412A-1FA-24	RLM-HP-5456A-1FA-24	RLM1412A-1FA-24	RLM5456A-1FA-24	RLM-L-1412A-1FA-24	RLM-L-5456A-1FA-24
Product series		High Performance	High Performance	Professional	Professional	Lite	Lite
light source	Fiber Type	SM 9/125	MM 50/125	SM 9/125	MM 50/125	SM 9/125	MM 50/125
	Wavelength	1310/1550nm	850/1300nm	1310/1550nm	850/1300nm	1310/1550nm	850/1300nm
	Source Type	Laser	LED/Laser	Laser	LED/Laser	Laser	LED/Laser
	Encircled Flux Standard	NA	IEC-61280-4-1	NA	IEC-61280-4-1	NA	IEC-61280-4-1
IL section	IL Stability*	168h, ±0.02db		±0.01dB(<0.5H); ±0.02dB(<8H)		±0.02dB(<0.5H); ±0.03dB(<8H)	
	IL Repeatability*	±0.02dB					
	IL Accuracy*	0~1dB: ±0.02dB 1~10dB: +0.1dB 10~15dB: +0.5dB	0~1dB: ±0.02dB 1~10dB: +0.1dB 10~15dB: +0.5dB	0~1dB: ±0.02dB 1~10dB: +0.1dB 10~15dB: +0.5dB	0~1dB: ±0.02dB 1~10dB: ±0.1dB 10~15dB: ±0.5dB	0~1dB: ±0.02dB 1~10dB: ±0.1dB 10~15dB: ±0.5dB	0~1dB: ±0.02dB 1~10dB: ±0.1dB
RL section	RL Range	-30~-80dB	-15~-60dB	-30~-80dB	-15~-60dB	-30~-72dB	-15~-55dB
	RL Accuracy	-30~-70dB: ±1.0dB -70~-75dB: ±2.0dB	-15~-50dB: ±1.0dB -50~-55dB: ±2.0dB	-30~-70dB: ±1.0dB -70~-75dB: ±2.0dB	-15~-50dB: ±1.0dB -50~-55dB: ±2.0dB	-30~-65dB: ±1.0dB -65~-70dB: ±2.0dB	-15~-50dB: ±1.0dB -50~-55dB: ±2.0dB
Others	Fiber length (Min)	DUT reflections (both ends)<-50dB: 0.7m; DUT reflections(both ends)>-50dB:1.5m					
	Once Testing Time	HP<1.0s per channel(<1.0s Per channel) Lite/Pro<1.1s per channel(<1.0s Per channel)					
	Display resolution	0.01dB					
Mainframe	Input power	AC90~260V/50HZ					
	Warming up time	30minutes (if the storage temperature is different from the service temperature, the preheating time is 90 minutes)					
	Working temperature	10°C~40°C					
	Storage temperature	-40°C~70°C					
	Size	ALPHA platform: 359mmx274mmx115mm, OMEGA platform: 462mmX374mmX171mm,					

*Default test conditions for related parameters: Equipment warm-up time of 30 minutes; Ambient temperature of $23\pm 1^\circ\text{C}$; FC/PC single-fiber patch cord. If multi-fiber cables are used for verification, an additional error variable of $\pm 0.03\text{dB}$ introduced by the optical switch must be accounted for in the parameters.

Detector Adaptors Selection Guide

Number	PN	Name	Description	Image
1	204810002	OPM FC adapter	Detection interface, suitable for FC connector	
2	204810003	OPM SC adapter	Detection interface, suitable for SC connector	

Number	PN	Name	Description	Image
3	204810004	OPM LC adapter	Detection interface, suitable for LC connector	
4	204810007	OPM 2.5 ferrule adapter	Detection interface, suitable for FC/SC/ST ... connector and 2.5mm ferrule	
5	204810006	OPM 1.25 ferrule adapter	Detection interface, suitable for LC/duplex LC /SN ... connector and 1.25mm ferrule	
6	204810014	OPM Integrating Sphere	Provide wide numerical aperture, can be used with MPO/ duplex LC adapters	
7	204810015	OPM MPO adapter	Detection interface, suitable for MPO12/MPO16 connector	
8	204810016	OPM duplex LC adapter	Detection interface, suitable for LC/duplex LC connector	
9	204810017	OPM Bare- fiber adaptor	Detection interface, suitable for bare-fiber power test application	

Ordering Information

RLM								
Series	Laser fiber type	Detector type	Laser wavelength	RL test	Laser output port	Laser connector type	Number of cores	
/ Professional	1 SM 9/125	4 Standard Integrating Sphere	1 1310-SM	A OTDR (Mandrel-Free) OMEGA Chassis	1 1CH	FA FC/APC	24 24CH	
-L Liter	5 MM 50/125	5 External Standard Integrating Sphere	2 1550-SM	C OTDR (Mandrel-Free) OMEGA Lite Chassis			48 48CH	
-HP High Performance	9 SM 9/125&MM 50/125 Dual Module	9 Dual PD & Standard Integrating Sphere	3 1490-SM				96 96CH	
		A External polarity integrating sphere- Dual	4 1625-SM					
		B External polarity integrating sphere- Triple	5 850-MM					
		C External polarity integrating sphere- Quad	6 1300-MM					

Eg: RLM1412A-1FA-24 24-core Mandrel-free OMEGA IRL test module Pro, 1310/1550, SM 9/125 InGaAs 2mm, (Fixed integrating sphere) , Laser output 1CH FC/APC

Note: RL test model A/C supports dual laser wavelength. Two-digit code represents two laser wavelengths. Customers can choose laser wavelength or customized laser wavelength in the list. RLM module can support 4 single-mode wavelengths (red light is not included in the four wavelengths), and the selection code can be followed by the same, such as selecting red light and 1310, 1550, 1625 as RLM-140124A-1FA.

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