

# LRS-9424B

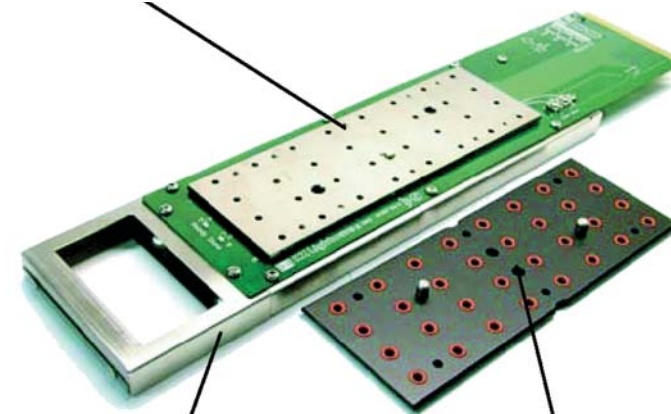
## Laser Reliability and Burn-In Test System

ILX Lightwave's LRS-9424B Laser Reliability and Burn-In Test System is the right choice for precision and flexibility at an affordable price. With up to 1024 devices in the 9424B's compact chamber, you'll be able to increase throughput and lower your overall cost of test. The modular design of the 9424B allows for low initial purchase price and gives opportunity for future expansion as your business grows.

Our proven laser control technology gives you the flexibility to process TO-can lasers, TOSA assemblies, and proprietary package styles in the same system. The 9424B supports APC, ACC, and LIV test modes and the powerful ReliaTest™ system control software allows customers to automate their tests by easily creating multiple test steps. In addition careful attention to data management and fault mode handling ensures data integrity even through power black outs.



Nickel plated aluminum heat sink with distributed heating element



Pin guard

Clamping plate

TO-Can Fixture

## Applications

### Independent fixture temperature control allows multiple tests to be configured in each system

The LRS-9424B is a sophisticated reliability and burn-in test system with precision in-situ monitoring and test capability making it well suited for engineering evaluation, life testing, and production burn-in screening of laser diodes and LEDs. The 9424B's long-term stability and reliability make it ideal for Telcordia qualification testing of laser diodes intended for telecommunication applications. The system's modular design allows it to be readily adapted to meet a wide range of package styles and test criteria for low power devices.

The 9424B offers high density with the capability of accommodating up to 32 fixtures and 1024 devices in each system. At the same time, the 9424B's unique thermal management system allows each fixture to be independently temperature controlled with an accuracy of  $\pm 1.0^{\circ}\text{C}$ . With this approach it is possible to run up to 32 independent test processes simultaneously.

Each test can be quickly configured using the ReliaTest™ system software and test scenarios can include multiple phases of ACC or APC mode burn-in combined with LIV tests. APC mode can be configured using either the internal photodiode or optional external photodiode array.

## Laser Diode Control

### High system stability and repeatability insures accurate life time and burn-in testing

Based on proven ILX Lightwave laser control and measurement technology, the LRS-9424B Control Measure Module (CMM) provides constant current (ACC) and constant power (APC) mode stability of 0.1% over 1000 hours combined with temperature accuracy of  $1.0^{\circ}\text{C}$ .

Multiple levels of laser diode protection including transient suppression circuitry, normally closed shorting relays to protect lasers during power startup and power shutdown, and current/voltage limits insure maximum protection for your laser diodes. The CMM includes on board memory for data backup to maintain smooth data recording for times when the computer is disconnected from the LRS-9424B. In addition the ReliaTest™ system software will log any system faults such as loss of AC power and loss of communication with the LRS-9424B chamber.

A temperature controlled external photodiode array is available for applications requiring external optical power monitoring. To ensure high system stability each external photodetector array is temperature controlled at approximately  $65^{\circ}\text{C}$  with a stability of better than  $\pm 2.0^{\circ}\text{C}$ . This provides guaranteed optical power measurement stability of 0.1% of full scale.

## Fixturing

### The modular design of the 9424B allows us to customize fixtures to your laser diode package and unique testing requirements

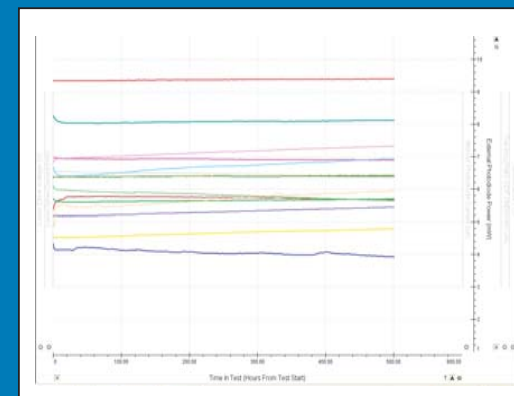
Fixtures are available to accommodate all pin configurations in TO-can, TOSA, and customer proprietary packages. Furthermore ILX has developed a coolerless butterfly, mini-DIL, and COC fixtures for the 9424B. Standard TO-can fixtures may be configured to hold 16 or 32 devices.

Careful attention to fixture material ensures low thermal contact resistance between the heat sink and the device. The nickel plated aluminum heat sinks provides temperature ranges from  $40^{\circ}\text{C}$  to  $120^{\circ}\text{C}$  ( $150^{\circ}\text{C}$  available on request) with uniformity better than  $\pm 1.0^{\circ}\text{C}$  for temperatures between  $25^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  and  $\pm 2.0^{\circ}\text{C}$  from  $100^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ . TEC based fixtures are available to support temperatures down to  $25^{\circ}\text{C}$ .

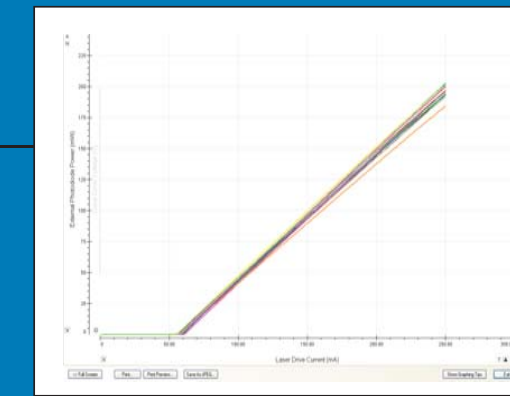
Due to the 9424B's unique fixture temperature control system it is possible to open and close the system's chamber door without appreciably affecting other tests in progress. The overall design of the LRS-9424B guarantees you reliability and stability for your life-test, burn-in, and engineering evaluation needs for your TO-can laser diodes.

## Save, view, and graph data with our powerful ReliaTest™ software

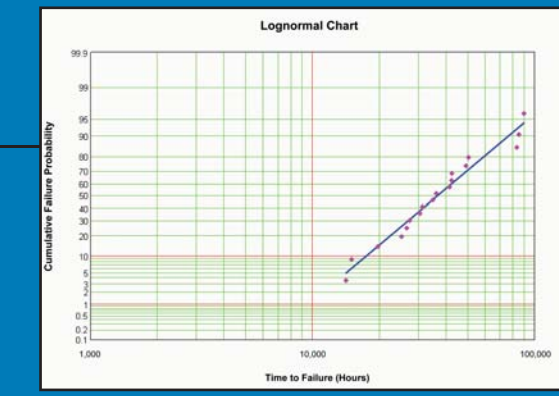
Combine reliability, burn-in, and engineering evaluation into one cost effective platform with the LRS-9424B



Long Term Aging Trend



In Situ LIV



Cumulative Failure Probability

reliable

affordable

flexible

## Why Choose ILX Lightwave?

### Experience.

For twenty five years, ILX Lightwave has been a pioneer in laser diode instrumentation and test systems, starting with the industry's first precision laser diode current source in 1986. Since then, we have continued to grow and evolve with the expanding photonic industry, building a tradition of innovation, quality, and customer service.

### Quality.

ILX Lightwave has maintained ISO 9000 certification since 2001. Strong internal systems for problem identification and resolution have resulted in continuous improvement of our products and services. We believe that quality is not just something you build into a product; it's something you build into everything you do.

### Commitment.

ILX Lightwave's mission is to be the world leader in laser diode instrumentation and test systems.

### After Sales Support.

ILX understands the need for fast, technically accurate responses to all support requests. In addition to customer service engineers, our test system customers have direct access to ILX Lightwave application and design engineers to ensure the highest level of technical support.

## LRS-9424B Specifications

### System

System Capacity	1024 devices
Device Types Supported	TO-Can, TOSA, Custom
Devices per Fixture	Up to 32

### Temperature Control

Temperature Range	°C	40 - 120 (150 upon request)
With 25°C Option	°C	25 - 100
Multiple Temp Control		Yes
Temperature Accuracy		
25°C to 100°C	°C	±1.0
100°C to 150°C	°C	±2.0
Maximum ΔT		
Between Fixtures	°C	60

### Laser Control

Output Polarity	Bipolar, User Selectable	
Drive Current		
Range	mA	200 400
Setpoint Accuracy	mA	±0.1 ±0.1
Stability <sup>1</sup>	% of FS	±0.1 ±0.1
Compliance Voltage	V	3.0V Typical, 2.8V minimum
Control Modes	ACC, APC, LIV	

### Measurement Functions

Laser Voltage		
Range	V	0 - 5
Accuracy	V	±0.01
Internal Monitor Photodiode		
Reverse Bias Range	V	0 - 8
Measurement Range	μA	0 - 2000
Accuracy	μA	±2
Stability <sup>1</sup>	% of FS	±0.1
Front-Facet Photodetector		
Detector Types	Si, InGaAs	
Measurement Range	User-Specified	
Stability <sup>1</sup>	±0.1% of Full Scale	
Measurement Mode	Relative or Absolute	

### Laser Test Fixtures

Pin Configuration	User-Specified
Dimensions:	
Single Wide (HxWxD)	cm ~2.5 x 9.5 x 43.5
Materials	FR406 and Stainless Steel
Maximum Temperature	°C 170

### System Control Computer and Supervisory Software

Computer	Dell® Optiplex, > 2.7 GHz Pentium® Dual Core processor, 2.0 GB ram, 160 GB hard drive, CD-ROM, Ethernet interface,
Display	17" Dell® Ultrasharp flat panel
Power Requirements, Computer	115/230VAC, 50/60 Hz, single phase, 6/3A autosensing > 5 minutes
Battery Backup Operating System	Microsoft Windows XP Pro®
System Control Software Source Code	ReliaTest™ C# source code provided with system

### General

Size (HxWxD)	cm	168 x 92 x 102
Weight	kg	365
Power Requirements	180 - 264 VAC, 50/60 Hz, single phase, 30A	

### Notes

1. Stability measured over 1000 hours

In keeping with our commitment of continuing product improvement, ILX Lightwave reserves the right to change specifications without notice and without liability for such changes.

# LRS-9424B

## LASER RELIABILITY AND BURN-IN TEST SYSTEM



**ILX Lightwave**  
A Newport Company

www.newport.com/ilxlightwave  
800-459-9459 • 406-556-2481 • sales@ilxlightwave.com  
31950 East Frontage Road • Bozeman, MT 59715

Rev 04\_082914

**ILX Lightwave**  
A Newport Company