

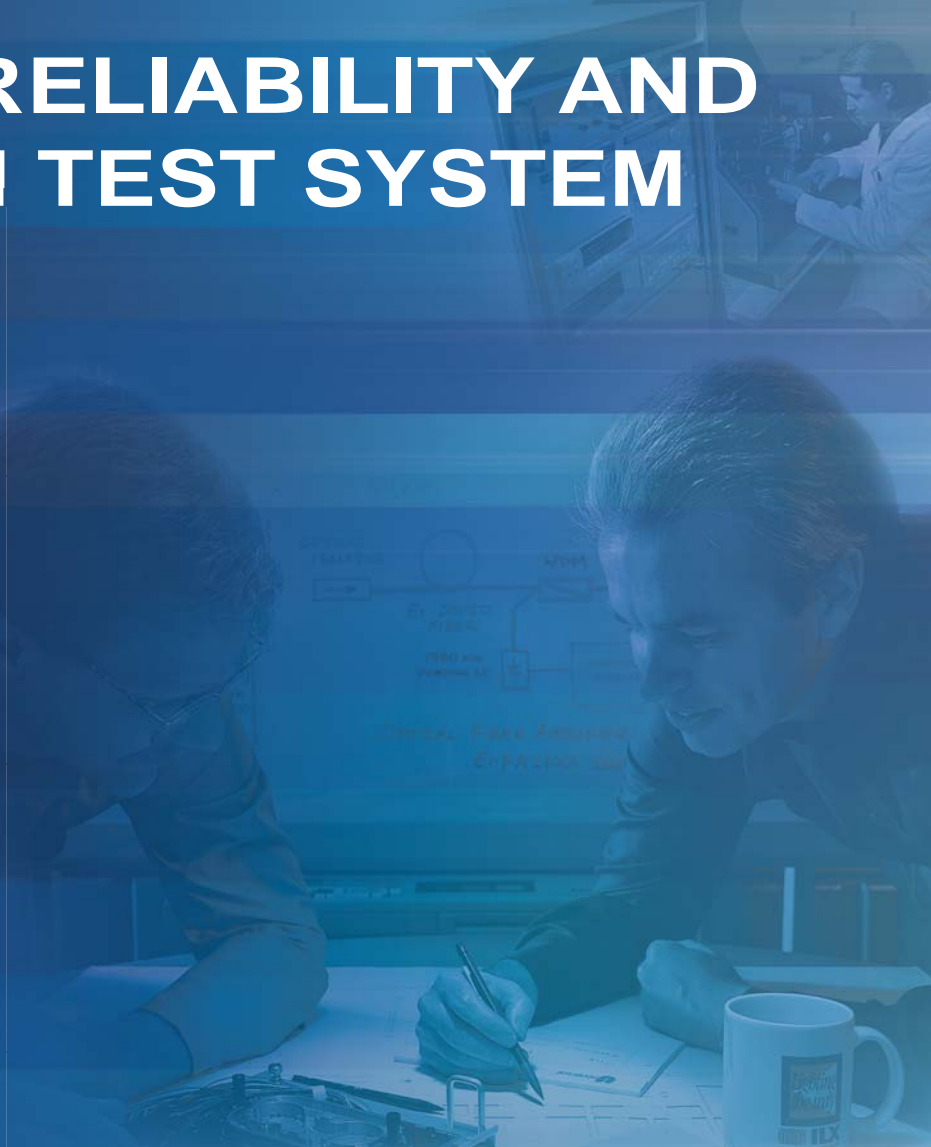
reliable

affordable

flexible

LRS-9424B

LASER RELIABILITY AND BURN-IN TEST SYSTEM



LRS-9424B

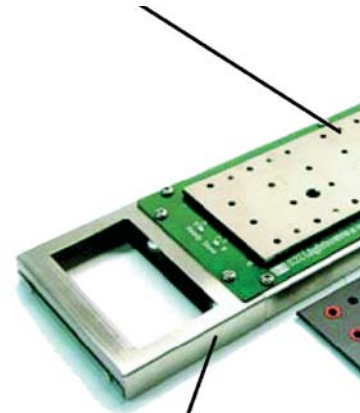
Laser Reliability and Burn-In Test System

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
with distributed heating elem



Pin guard

TO-Can

**Combine reliability, burn-in,
engineering evaluation in
effective platform with the**

Applications

Laser Diode

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.

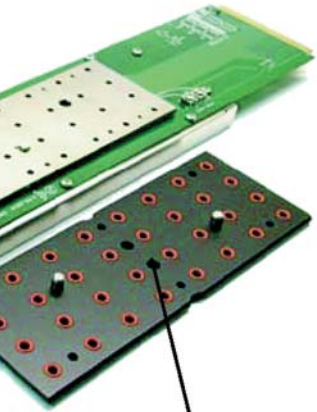
High system stability insures accurate

Based on proven ILX Light Technology, the LRS-9424B provides constant current (ACC) and accuracy of 0.1% over 1000 hours con

Multiple levels of laser diode circuitry, normally closed startup and power shutdown protection for your laser diode for data backup to maintain the computer is disconnected. ReliaTest™ system software AC power and loss of com

A temperature controlled applications requiring extreme high system stability each controlled at approximately This provides guaranteed of full scale.

sink
ent

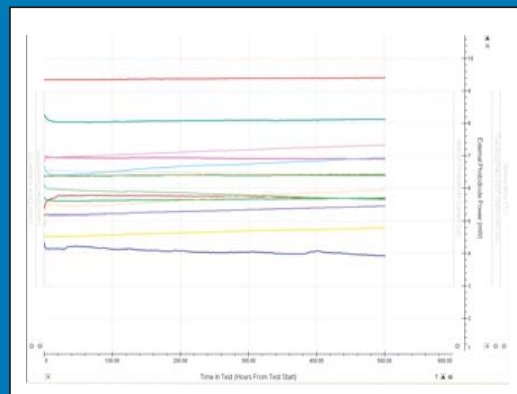


Clamping plate

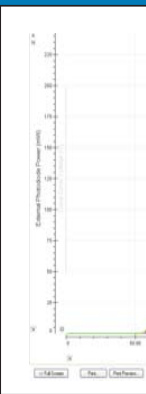
n Fixture

Save, view, and graph data w

-in, and
nto one cost
e LRS-9424B



Long Term Aging Trend



Control

Stability and repeatability Life time and burn-in testing

Software laser control and measurement

The LRS-9424B Control Measure Module (CMM) provides constant power (APC) mode stability of better than $\pm 0.1\%$ and combined with temperature accuracy of 1.0°C .

The CMM provides safety protection including transient suppression and shorting relays to protect lasers during power down, and current/voltage limits insure maximum device life. The CMM includes on board memory for up to 1000 data points in smooth data recording for times when the laser is not being tested from the LRS-9424B. In addition the CMM will log any system faults such as loss of communication with the LRS-9424B chamber.

An external photodiode array is available for external optical power monitoring. To ensure accuracy an external photodetector array is temperature compensated to $\pm 0.1^\circ\text{C}$ with a stability of better than $\pm 2.0^\circ\text{C}$. The external photodiode array provides optical power measurement stability of 0.1% .

Fixturing

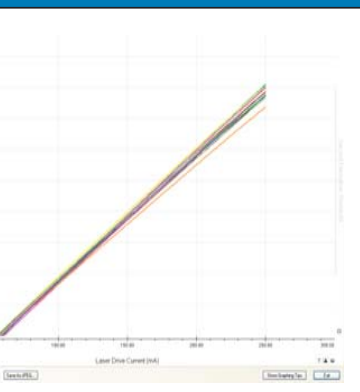
The modular design of the 9424B allows us to customize fixtures to your laser diode package and unique testing requirements

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 LRS-9424B. Standard TO-can fixtures may be configured to hold 16 or 32 devices.

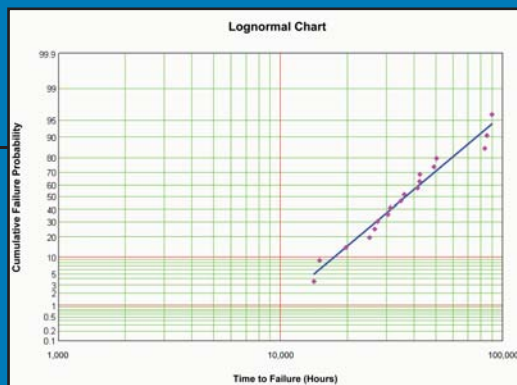
Careful attention to fixture material ensures low thermal contact resistance between the heat sink and the device. The nickel plated aluminum heat sinks provides temperature ranges from 40°C to 150°C with uniformity better than $\pm 1.0^\circ\text{C}$ for temperatures between 25°C to 100°C and $\pm 2.0^\circ\text{C}$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

with our powerful ReliaTest™ software



In Situ LIV



Cumulative Failure Probability

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. The company's Laser Diode Test Systems group is led by the President to ensure high focus.

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 - 150 |
| 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 ¹ | % 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 ¹ | % of FS | ±0.1 |
| Front-Facet Photodetector | | |
| Detector Types | | Si, InGaAs |
| Measurement Range | | User-Specified |
| Stability ¹ | | ±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 | > 5 minutes |
| Operating System | Microsoft Windows XP Pro® |
| System Control Software | ReliaTest™ |
| Source Code | 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.