Semiconductor laser diode Reliability aging test system

LHX-302-COC Laser Reliability and aging test system

The LHX-302 is an air-cooled, electrically heated, rack-mounted aging system that supports high-density, high-reliability laser for life testing, burn-in testing, and performance testing.

Product Feature

The LHX-302 laser reliability and aging test system provides:

- Can test up to 1280 lasers at the same time
- Up to 2A laser drive current per channel
- Flexible and reliable hot swapping operation, simple capacity expansion
- Can replace aging drawers for aging lasers that are in different packages
- APC, ACC and LIV test modes
- Aging drawer supports measurement for external and/or internal photodiodes
- Integrated Reliability Sys Control Software
- Real-time monitoring channel status and test data
- Can export saved test data
- Intuitive graphical interface for checking system and test status
● Can still process saved data during power outages and power cuts
● The control measurement module automatically saves at least 5 hours of aging data (calculated in 5 minutes/time) in the accident of network failure

System capabilities and advantages

The system can support up to 1280 LD chips for life testing at the same time and can improve the single aging throughput and reduce the total test cost.

The modularized design provides customers with lower configuration costs at R&D stage and convenient scalability for mass production.

Aging fixtures support TO, butterfly, and COC customized packages. It can support COC probe’s spacing down to 300 μm.

LHX-302 integrates up to 40 independent, precise aging drawer fixtures which can control the temperature range from +40°C to +120°C.

Efficient and stable thermal management, high-precision control and measuring circuits, and multiple laser protection provide long-term stability for aging systems.

Even if the power is suddenly interrupted, the saved data can still be processed; in the accident of a network failure, the control and measurement module can still automatically save at least 5 hours of aging data (calculated at 5 minutes/time).

The standard control mode supports ACC and LIV tests (customizable APC) with current range up to 2A. LHX-302 provides Reliability Sys user interface monitoring software. The software is easy to use and can easily set up multiple types of devices and test scenarios, and the data management and failure modes ensures data integrity.

The LHX-302 is a sophisticated reliability and burn-in test system with excellent real-time monitoring and testing capabilities, making it ideal for engineering evaluation, life testing, and aging selection in production of laser diodes for telecommunications applications.

Our advantage
Semicin provides high reliability, cost-effective products and industry-leading technical support, including online consulting, engineering applications, on-site service and after-sales support.
**System**

System capacity: up to 1280  
Package Type: TO-Can, Butterfly, COC, Custom  
Per fixture station: up to 32

**Temperature control**

Temperature range: +40 - +120°C  
Temperature control unit: single drawer  
Temperature control accuracy: ± 1.0°C  
Temperature Control Stability: ± 1.0°C

**Laser control**

Output polarity: Independently parallel output, common cathode, customized drive current  
Output Range: 200mA (Typical), Customizable to 2000mA  
Setting accuracy: ± 1% of FS  
Output Stability: ± 1% of FS
Compliant voltage: 3.3V (typical); customizable high voltage

Control Mode: Constant Current, Constant Power (Custom), LIV Test

**Measurement function**
- Laser voltage
- Range: +3.3V (typical)
- Accuracy: ± 0.1V
- Built-in PD deflection voltage (custom): 0 - 8V
- Measuring range (custom): 20 - 5000 μA
- Stability (custom): ± 5 μA
- Front face PD (LIV function)
- Wavelength range: 400 - 1600nm
- Measurement Mode: Relative Change Value
- Ith calculation repeat accuracy: ≤ 3%

**General features**
- Dimension (HxWxD) cm: 200 x 130 x 84
- Power Requirements: 350-420 VAC, 50/60 Hz, 50A, Three Phase

**System control computer and monitoring software**
- Computer: Pentium 4 core processor, 4G RAM, 10G free disk space
- Display: 14 inches (resolution: 1024*768)
- UPS backup power: > 1h
- Operating System: Microsoft Windows®
- System Control Software: Reliability Sys
- Program code: executable program

**Explanation:**
- The stability measurement time is 48 hours.
Current output waveform

Model Number: LHX-302202-ACC
Oscilloscope: Tektronix DPO2024
Load: 10Ω/2W resistance

Operating current: 85mA
Working temperature: 90°C

Output current rising
Output current when turn off

Sudden power-cut during steady output
Suddenly open drawer during steady output
Temperature output stability

Model Number: LHX-302202-ACC
Setting temperature: 90°C
Aging time: 48h
Sampling frequency: 0.1h/time