

## 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  $\mu\text{m}$ .

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.

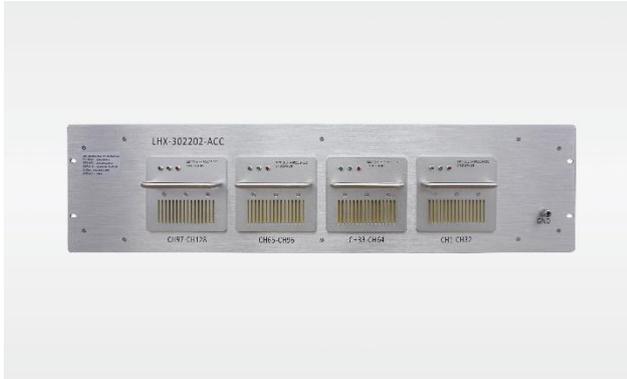
Even if the power is suddenly interrupted, the saved data can still be processed; in the accident of a network failure, the control and measurement module can still automatically save at least 5 hours of aging data (calculated at 5 minutes/time).

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

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



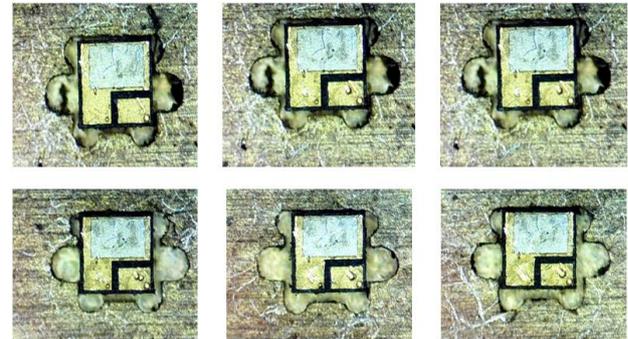
Aging power supply



LIV test system



32-channel COC fixture



300µm pitch probe repeatability test

## 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:  $\pm 1.0^\circ\text{C}$

Temperature Control Stability:  $\pm 1.0^\circ\text{C}$

## Laser control

Output polarity: Independently parallel output, common cathode, customized drive current

Output Range: 200mA (Typical), Customizable to 2000mA

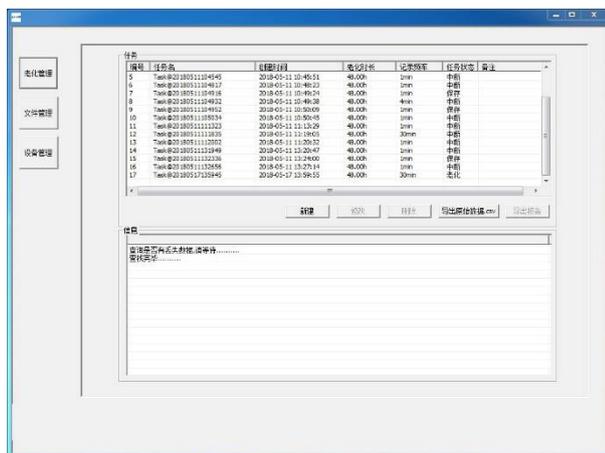
Setting accuracy:  $\pm 1\%$  of FS

Output Stability:  $\pm 1\%$  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:  $\pm 0.1V$   
 Built-in PD deflection voltage (custom): 0 - 8V  
 Measuring range (custom): 20 - 5000  $\mu A$   
 Stability (custom):  $\pm 5 \mu A$   
 Front face PD (LIV function)  
 Wavelength range: 400 - 1600nm  
 Measurement Mode: Relative Change Value  
 Ith calculation repeat accuracy:  $\leq 3\%$



### General features

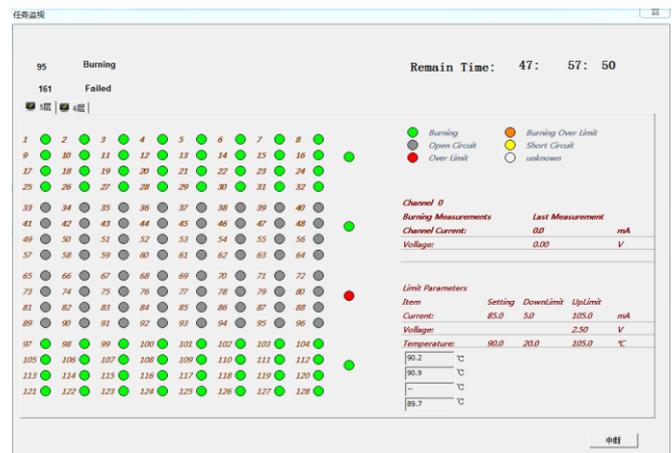
Dimension (HxWxD) cm: 200 x 130 x 84  
 Power Requirements: 350-420 VAC, 50/60 Hz,  
 50A, Three Phase

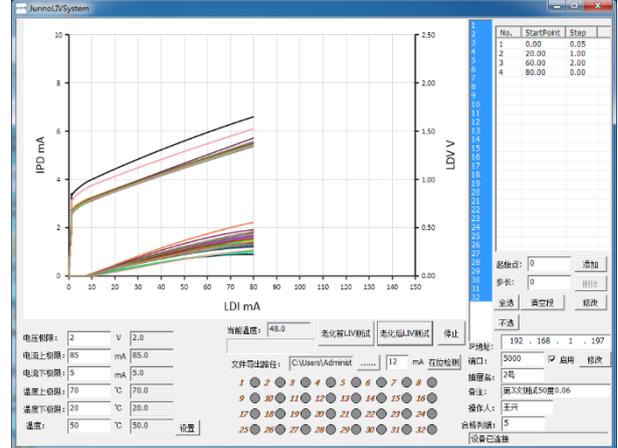
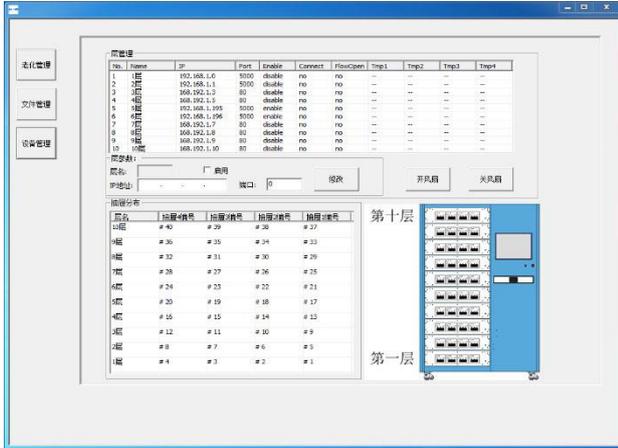
### System control computer and monitoring software

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.

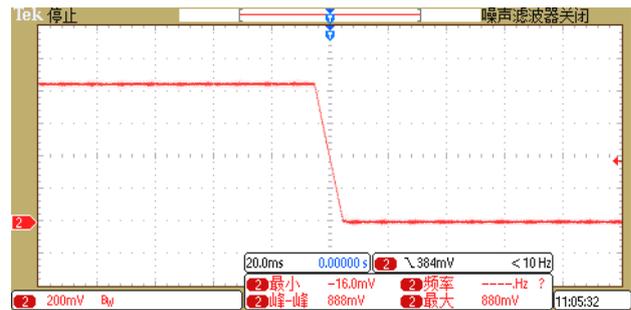
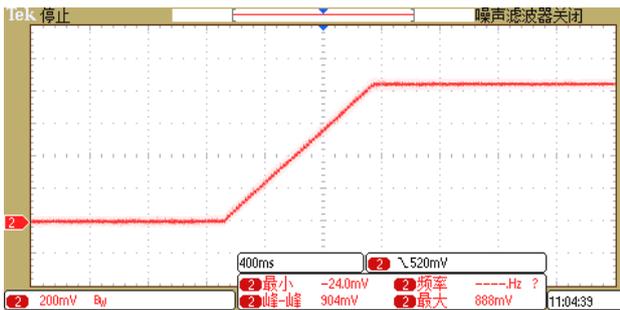




### Current output waveform

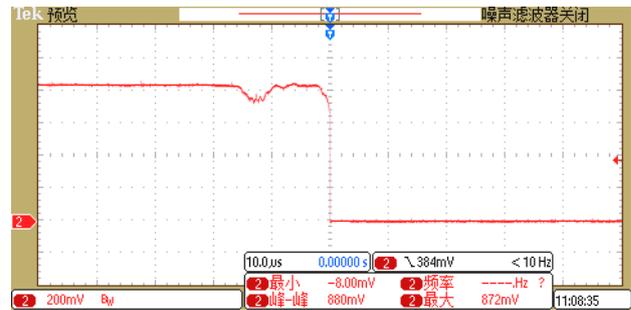
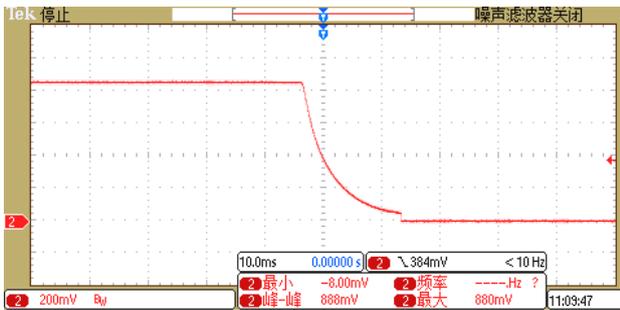
Model Number:LHX-302202-ACC  
 Oscilloscope: Tektronix DPO2024  
 Load: 10Ω/2W resistance

Operating current: 85mA  
 Working temperature: 90°C



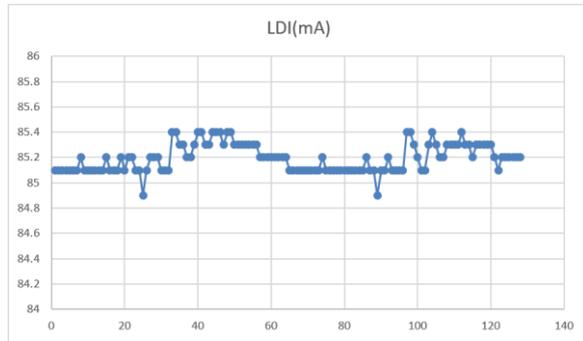
Output current rising

Output current when turn off

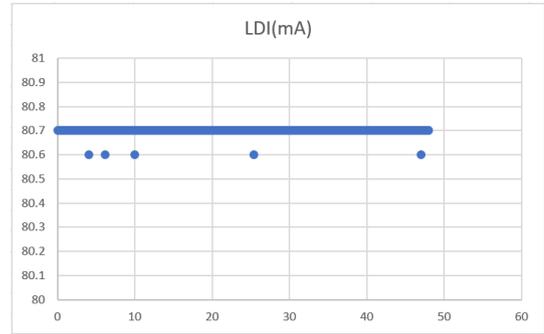


Sudden power-cut during steady output

Suddenly open drawer during steady output



Output current difference between channels in the same drawer



Current output stability (48h, 80mA @ 90°C, 0.1h/time)

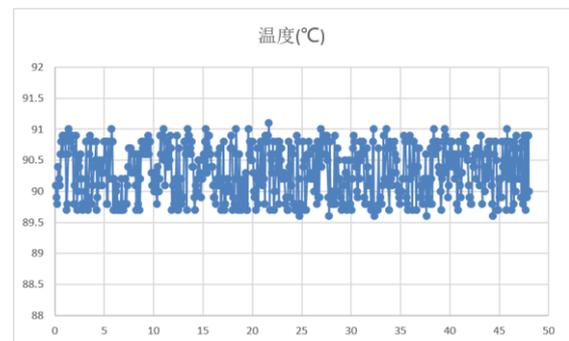
### Temperature output stability

Model Number:LHX-302202-ACC

Setting temperature: 90°C

Aging time: 48h

Sampling frequency: 0.1h/time



Long-term output stability