



Laser Chip on Substrate / Carrier Burn in System

Product Information



Test Evolution Ltd's chip laser burn in systems have been developed to provide a highly versatile solution for the automated burn in and endurance testing of laser chip on substrate or chip on carrier devices.

A modular, tray based approach has been used on these systems. Lasers are held on a device carrier which would typically hold 16 devices. Each tray has a capacity for three device carriers giving a total system capacity for 432 devices when fully populated. As the system is modular, less trays can be fitted to provide smaller systems but providing for expansion at a later date.

Each device position has individual temperature control using peltier devices to achieve highly accurate thermal stability. Laser drive current of typically 1 amp is provided with independent drive and monitoring electronics for each position. A wide area optical detector for each device position is provided with an option for this to be temperature controlled if required, so that a highly stable measurement can be made of all the all the emitted light.

The system is controlled by versatile PC based software and integral touch screen LCD display. Measured data is displayed on the LCD and also logged to file with up to a 1 minute log period for all devices / parameters within the system.

Test Evolution has also developed this system so that it can be configured to carry out periodic LIV sweeps of devices on test. Using this feature LIV sweeps can be carried out on all positions within the system up to once an hour and analysis of the resulting data carried out (i.e. threshold, slope efficiency, etc).

These systems have proved to be so versatile that they have been used not only as burn in systems but also to run long term endurance tests and short term engineering trials, sometimes at the same time on the same system.



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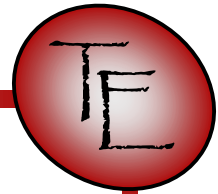
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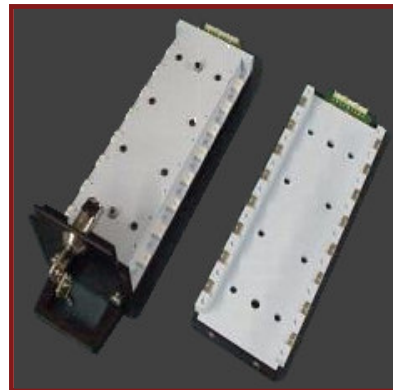
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The device carrier consists of two halves, the lid which contains spring probes to make electrical contact with the devices and the base which supports the individual peltier devices and miniature heated, temperature stabilised metal block. Attached to each metal block is a thin laser cut plate to provide device location. Different devices can then be easily catered for by using an alternate lid assembly and changing the device location plates, allowing the system to be used to test different devices simultaneously. Also the cost of catering for new device developments in the future is kept to a minimum.



The software which supports our burn in systems has also been developed to be versatile. Users can create their own tests by modifying duration, temperature, drive conditions and LIV test conditions at a device or carrier level. A library of LIV analysis tests is provided which can be called by user and test variables defined. This means that different tests can simultaneously be run on each device carrier within the system using different test conditions for every device. Data is saved to file and also a database, which can also be linked to an existing production database if required.

As a burn in test is generally a longer term test (days rather than hours), with large amounts of data being collated, Test Evolution has built an automatic recovery system into the software. This means that if the test is interrupted for any reason (i.e. power fail or user intervention) the test can be automatically re-started and will continue from the point it was interrupted. The user can also pause a test if devices need to be removed for an intermediate process.

Typical System Specification	
Laser Drive Current	Set Range : 0 – 1A Set Resolution : 0.25mA Measurement Resolution : 0.15mA
Laser Forward Voltage	Measurement Range : 0 – 4V Measurement Resolution : 0.1mV
Optical Power (front facet)	Measurement Range : 0 – 1W Measurement Resolution : 0.1mW Stability : typically 0.2% (wavelength & detector dependant)
Temperature	Set Range : 5°C – 100°C Control Stability : +/- 0.05°C Measurement Resolution : 0.01°C
Test Wavelength	Device specific

Note : The above specification is an example only. Please contact Test Evolution Ltd if a different system specification is required.

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