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LTBiS Life Test and Burn In System



The LTBiS is a multi-channel laser diode drive system, that can be controlled through a digital electronic interface. The system design is modular, so that up to 10 laser diodes can be controlled independently within one 19"-instrument. Several instruments operated by one PC can be combined in a rack. A rack with the half width that fits with 4 plug-in units is available as an option.

Applications for the LTBiS are laser diode burn-in and laser diode life test. The LTBiS consists of two hardware parts: The 19" mainframe (master) and up to 10 plug-in units (or a 9.5" wide master and up to 4 plug-in units). The master can be easily controlled by commands through the serial interface. Command structure, such as:

```
set ch1 pow xxx  
get ch1 vol L
```

The external forward testing photodiode is intergrated with the plug-in units and can be connected to the laser by an external fiber loop. Both, photodiode and laser, have a front plate access that is terminated by FC/APC.



Master

control interface:

size:

power supply:

RS-232 (USB optional)

19 inch rack (84 TE), 4 HE

air flow for cooling of plug-in units:

9.5 inch rack (42 TE), 4 HE

backplane:

2 power supplies (redundant) IEC-320 plug

110-230 V AC

I_{op} :

bottom front side in, back side out

environmental conditions:

84 TE accepts up to 10 plug-in units

42 TE accepts up to 4 plug-in units

features (interface, commands)

max 2 A (LD), max. 3 A (TEC)

non-condensing, T_{op} +5°C ... 50°C

automatic recognition of plug-in units (read)

separate control of each laser (plug-in unit)

operation of LD in ACC, APC mode, PVI-test

TEC setpoint -20° ... 60°C (set LD TEC)

Max Current Setpoint

set: LD power by I_{P-out} or current by I_{op} (ACC, APC)

current increments and max I_{op} (PVI-test)

temperature by thermistor value

read: LD operational current (I_{op})

LD monitor current (I_{MPD})

power out by external PD current (I_{P-out})

heatsink temperature by thermistor value (T_{MF})

LD temperature by thermistor value (T_{LD})

compliance voltage (V_{LD})

Plug-in Unit 2A

fixture accepts:

butterfly-package laserdiodes („pump LD pinout“)

maximum compliance voltage:

2.9 V

setpoint resolution:

0.5°K (LD TEC), 0.5 mA (I_{op}), ~1 mW (I_{P-out} or I_{MPD})

0.5 mA min. current increment (PVI-test)

temperature stability (TEC setpoint):

0.1°K (@constant T_{MF} after 1 hour warm-up)

current stability (I_{op}):

2 mA (@constant T_{MF} after 1 hour warm-up)

modulation:

20 Hz minimum, rise/fall time max. 1 μ s

power stability (I_{P-out} or I_{MPD}):*

4 mW (@constant T_{MF} after 1 hour warm-up)

compliance voltage (V_{LD}):

10 mV (@constant T_{MF} after 1 hour warm-up)

wavelength range:

750 nm – 1650 nm for power out test by external

PD (I_{P-out})

fiber termination:

FC/APC for power out test by external PD (I_{P-out})