

Fibotec Fiberoptics GmbH
Herpfer Str. 40
98617 Meiningen / Germany

www.fibotec.com
info@fibotec.com
+49 3693 8813 200



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:

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set ch1 pow xxx  
get ch1 vol L
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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.

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Master

control interface:	RS-232 (USB optional)
size:	19 inch rack (84 TE), 4 HE 9.5 inch rack (42 TE), 4 HE
power supply:	2 power supplies (redundant) IEC-320 plug 110-230 V AC
air flow for cooling of plug-in units: backplane:	bottom front side in, back side out 84 TE accepts up to 10 plug-in units 42 TE accepts up to 4 plug-in units
I_{op} :	max 2 A (LD), max. 3 A (TEC)
environmental conditions:	non-condensing, T_{op} +5°C ... 50°C
features (interface, commands)	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})