DIGITAL CURVE TRACER «ERBY-7109»
FOR TESTING SEMICONDUCTOR LASER DIODES AND MODULES

The device is intended for research and production testing of laser diodes and laser modules. The monitoring module can have: the laser diode, the built-in photodiode for the control of radiation (the feedback photodiode), the thermistor or the diode as a temperature sensor, the micro-refrigerator of the laser diode.

Under the control of the special computer program the device sets the parameters of the test and measures control parameters of the tested laser diode.

For example, the following parameters are set:

- the pump current (in the mode of constant pump current) or the radiating power (in the mode of constant radiating power);
- the temperature of the laser holder (the laser bulk);
- for the module with its own micro-refrigerator Pelletier – the temperature of the built-in laser module thermistor (diode).

After establishing of specified temperatures the following parameters are measured:

- the pump current and (or) the radiating power;
- the voltage on the laser diode;
- the photo-current of built-in laser module feedback photodiode;
- the current of the laser module micro-refrigerator.

The hardware-software complex measures the characteristics with the selected step of change of the current, the radiating power or the temperature. Characteristics can be stored in files, printed or transmitted to the data processing programs. There is a special computer program for the rapid assessment of the degree the degradation of laser diodes while monitoring a series of laser diodes in the course of thermo training.

The characteristics of the device:

- The accuracy of the measurement and the setting the tested parameters is 0,1% of the measured or specified value.
- The pump current is from 20 up to 500 mA (or another option).
- The temperature of the laser holder is in the range of –5 to +85 ^{0}C (or more, depending on the type of micro-refrigerator Pelletier and the configuration of the cooled object); the accuracy of the maintenance is 0,1 ^{0}C, the stability is 0.01 ^{0}C. The stability of maintenance of the temperature of the module thermistor is 0,005 ^{0}C. The rate of cooling and heating of the holder is 30 ^{0}C per minute, the stabilization time of the temperature is about 3,5 minutes from the moment of turning on the micro-refrigerator's Pelletier current.
- The supply current (of any polarity) of the micro-refrigerator Pelletier is from 0,5 to 3 A, the voltage on the micro-refrigerator is up to 15 Volts (of any polarity).
- Automatic graduation of the thermistor or the sensor-diode in the module.
- Modes of constant pump current and constant radiating power.
- The speed of receiving the volt-, watt- and luxury-ampere characteristics at 40 values of the pump current or radiating power is 40 seconds.
- Reliable protection of laser module from the current and voltage surges while unplugging the device, reducing or a sudden disconnection of the main voltage and in other emergency situations.

More information, photos, description: http://erbysar.com/7109.htm

MANUFACTURER: «ERBY» LLC
Address for mail: p.o. box 3300, Saratov, Russia, 410054
Tel. +7 (8452) 58-41-64; +79616477258
Site: http://erbysar.com/
E-mail: info@erbysar.com

The winner of the Laser association competition, Russia, 2008 (the diploma of the I degree)