

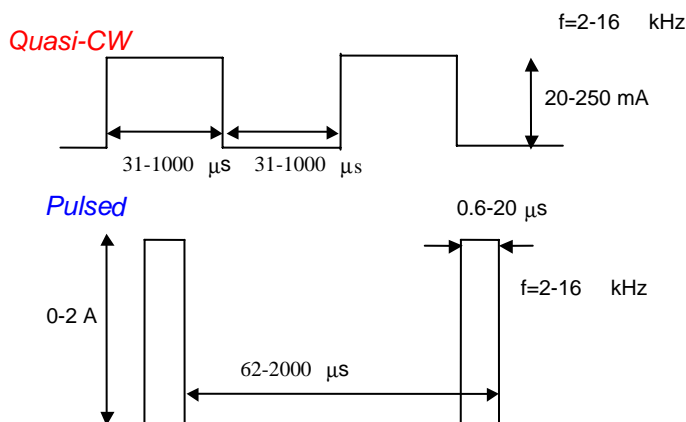
LED Driver and Temperature Controller Model DLT-37

• Driver **DLT-37** is designed for power supply of all models Mid-IR LED's manufactured by IBSG. Driver provides two modes of operation:

- Quasi Continuous Wave (quasi steady-state) mode. Such mode provides maximum average optical power from the LED. Current in this mode can be changed in the range 20-250 mA. One of four frequencies (2 kHz, 4 kHz, 8 kHz and 16 kHz) can be selected.

- Pulse mode. Such mode provides maximum peak optical power from the LED. In this mode besides changing of frequency, pulse duration can be also selected in the range 0.6-20 μs. Peak current in pulse mode can be changed in the range 0-2 A.

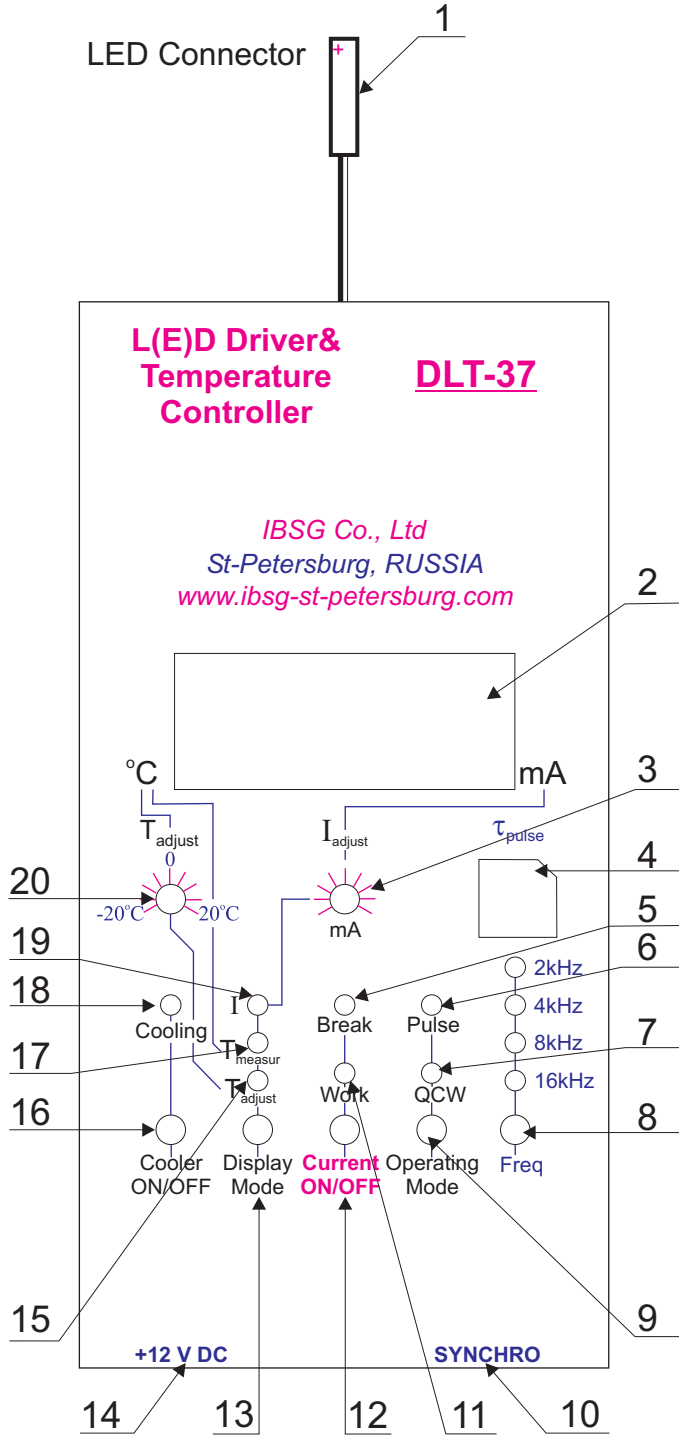
- Temperature controller that is built in DLT-37 provides selecting and stabilizing of the temperature on LED's chip in wide range. That gives possibility to tune wavelength or optical power.



Note!

Please, don't use combination of frequency and pulse duration that gives duty cycle >10%. We recommend using of 2 A pulse current only at pulse duration <1 μs.

Parameters	Pulse mode	Quasi-CW mode
Pulse duration	0.6-20 μs	31-1000 μs
Repetition rate	0.5-16 kHz	0.5-16 kHz
Current amplitude	0.1-2 A	20-250 mA
Temperature range	-10°C ÷ + 15 °C	
Dimensions, mm	145x70x30	
Weight	200 g	
Power requirement	stabilize +12 V DC±5%	



τ_{pulse} (4)

Pos	Pulse dur
0	- 0,6 μ s
1	- 0,8 μ s
2	- 1 μ s
3	- 1,2 μ s
4	- 2 μ s
5	- 4 μ s
6	- 8 μ s
7	- 10 μ s
8	- 15 μ s
9	- 20 μ s

5. Select operating mode - "QCW" or "Pulse" (switch "Operating mode" - 9). Green LED will indicate selected mode "Pulse" (6) or "QCW" (7)
6. Switch "Display Mode" (13) to the position " T_{adjust} " (15).
7. Select temperature of LED's operation by adjusting on Switch " T_{adjust} " (20). We recommend to begin with temperature +20C. You will see on the LC display (2) selected temperature.
8. Switch "Display Mode" (13) to the position " T_{measur} " (17). You will see on the LC display (2) real (measured) temperature on the LED chip.
9. Switch on thermocooler (16). Green LED (18) will indicate that cooling is working. You will see new measured temperature on the Laser Diode chip on LC display (2).
10. Switch "Display Mode" (13) to the position "I" (19).
11. Please select one of 10 positions on switch "Pulse duration" (4). Data table for pulse duration τ_{pulse} you can see in the SUPPLEMENT 1.
12. Set minimum current on Switch " I_{adjust} " (3).
13. Switch on driver (switch "Current On/Off" (12)). Green LED "Work"(11) will indicate that current is flowing. You will see on the LC display (5) drive current though the laser chip in miliAmps. If after switching on current is not flowing red LED "Break"(4) will indicate break of the circuit. That situation can take place if testing Infrared LD is damaged.
14. Select drive current that you need by Switch " I_{adjust} " (3).