

## Technical data sheet ML-50SM-650-30

Laser module with external modulation of very small beam divergence intended for wide range applications



Technical data	
Laser module is equipped with the controller providing stabilization of average optical output power, soft-start system, protection against damage due to reverse polarization of supply voltage and ESD safety system.	
Safety class	3B acc. to PN-EN 60825-1:2014
Wave length	$\lambda = 650 \text{ nm} \pm 10 \text{ nm}$
Optic power	30 mW $\pm$ 1.0 mW
Power supply	4.5 V – 5.5 V
Current consumption	< 70 mA
Laser output beam diameter	36 mm $\pm$ 0.5 mm
Beam divergence	< 0.1 mrad
Factory focusing length	Possible focusing at required distance, example of spot size at 200 m is ca. 1,5 cm
Housing and dimensions	Aluminium housing, black, $\phi$ 50 mm x 103 mm
Cable	TLWY 2 x 0.124, length: 0.2 m $\pm$ 0.01 m
Cable labeling	(+)red , (-) blue
Control: laser is activated by contacting control input with power supply minus or supplying low TTL level to control input or leaving unconnected input; laser is deactivated by supplying high TTL level.	
Laser activation delay with reference to control	$\sim 1 \mu\text{s}$
Laser deactivation delay with reference to control	$\sim 100 \text{ ns}$
Operating frequency	0 – 1 MHz
Filling	0 – 100%
Modulation depth	$\sim 100\%$
Control - a pair of cables	Green - mass connected to negative power supply pole White - control input
Acceptable modulation frequency and minimum time interval to next laser activation results solely from laser activation and deactivation times (see oscillogram, lower level control, upper laser	
Guarantee	2 years

**Note:**

No power supply pole can be connected to laser module housing (positive pole of laser diode is connected with laser housing).

Protect power supply against temporary surges exceeding 6 V. In case of power supply from mains power supplies, one should first turn on mains power supply and then laser module power supply. Proceed on the contrary upon laser deactivation.

