

Optically Immersed 7.0  $\mu\text{m}$  optically pumped LED in heatsink optimized housing

OPLED70Sr/Su/Cy

TE cooled Optically Immersed 7.0  $\mu\text{m}$  LED

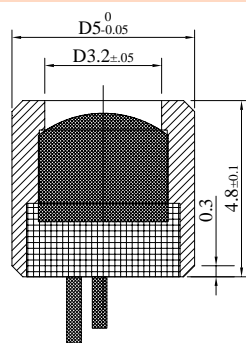
OPLED70TO8TEC

Peak wavelength	$\mu\text{m}$	6.5÷7.0	@22 °C
Pulse power	$\mu\text{W}$	Drive current 1 A, 0.02 duty cycle	8÷10
Quasi-CW power	$\mu\text{W}$	Drive current 0.15 A, 0.5 duty cycle	1.6÷2
CW power	$\mu\text{W}$	Drive current 0.1 A	1÷1.25
Cut-off frequency	MHz	50	<sup>1</sup>

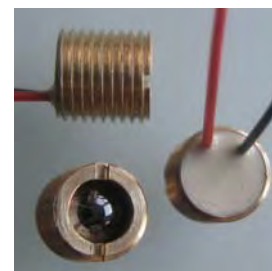
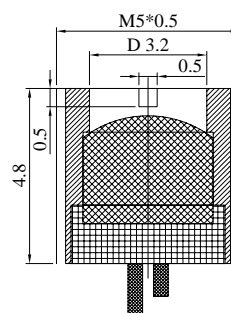
Code	Emission size, mm	Weight, g	Optical components	Far-field pattern FWHM, deg.	Optical axis deviation, deg.	Optical power deviation in lot, %	Operation conditions, °C	Lifetime, hrs
OPLED70Sr/Su/Cy	$\varnothing 3.2$	~0.4	Si lens	~15	≤5	±25	-60÷+60	>100 000
OPLED70TO8TEC		~10	Si lens and output sapphire window D=6mm				-60÷+60	

Product view

OPLED70Cy

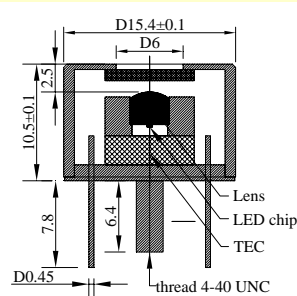
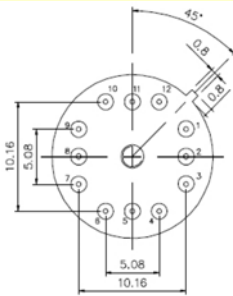


OPLED70Sr



Pin assignment: red wire or long wire and red point on house - positive

Pin assignment: red wire or long wire and red point on house - positive



Pin assignment  
OPLED70TO8TEC12

1 TEC negative;  
3 TEC positive;  
4 LED negative;  
6 LED positive;  
7, 9 thermosensor;  
11 ⊥ (House)

Features

- Optical pumping;
- Optical coupling through the use of chalcogenide glasses and Ge lenses with antireflection coating
- 3-fold increased LED output power;
- Beam collimation;
- Small on-off time (tenths of ns);
- Low power consumption ( $\leq 0.1\text{ W}$ )

Emission beam divergence is small and thus we recommend adjusting LED position regarding to the detector system before final evaluation/use of the devices. We recommend if possible using low duty cycle mode of operation with  $I < 0.5 \times I_{\text{max}}$  so that higher efficiency and long term stability of a LED are achieved. Data are valid for LED attached to a heatsink and thermostabilized at 22°C. Heatsink is essential for TEC operation!

Notes

<sup>1</sup> - according to estimation

Product specifications are subject to change without prior notice due to improvements or other reasons. Updated 03.12.14

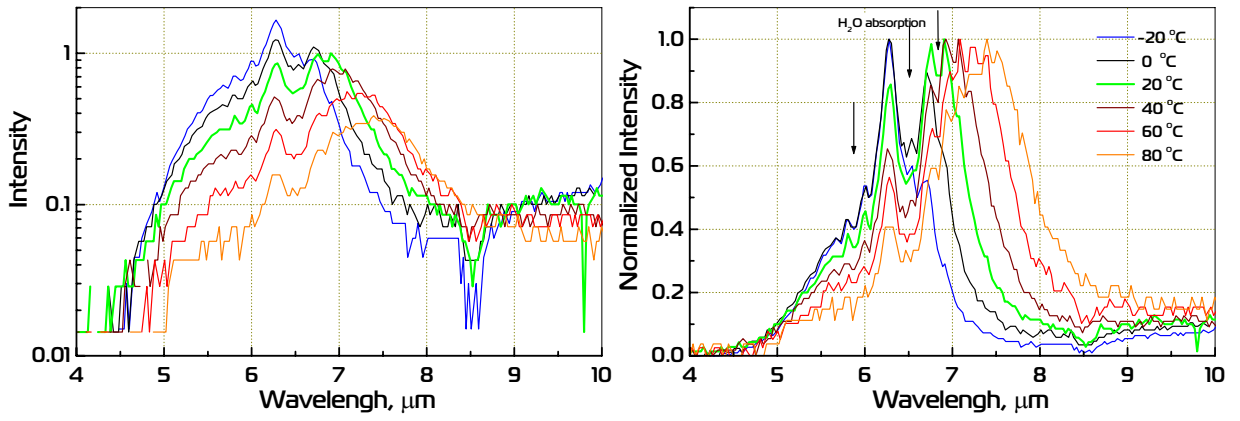


ООО «ИюффеЛЕД»  
ioffeLED, Ltd

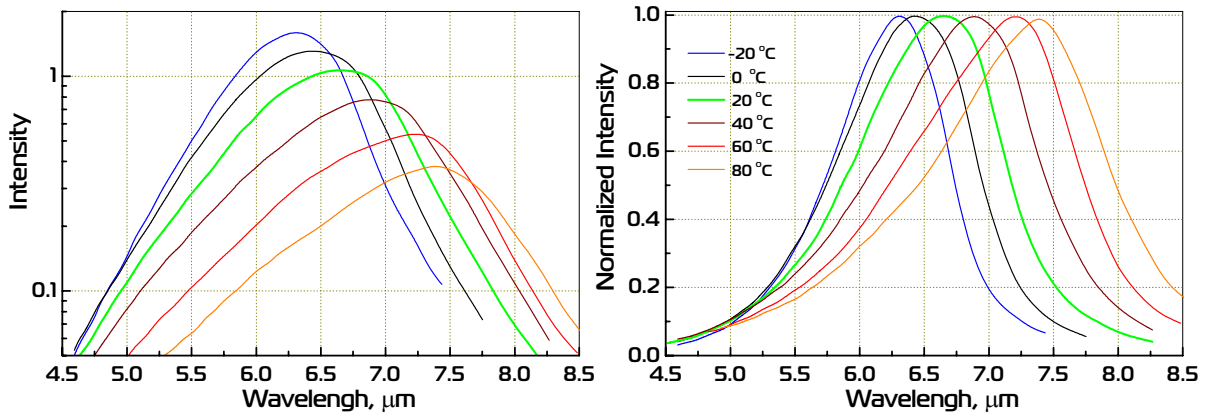
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St.Petersburg, 194021, RUSSIA

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<http://www.mirdog.spb.ru>; e-mail: bmat@iropt3.ioffe.ru

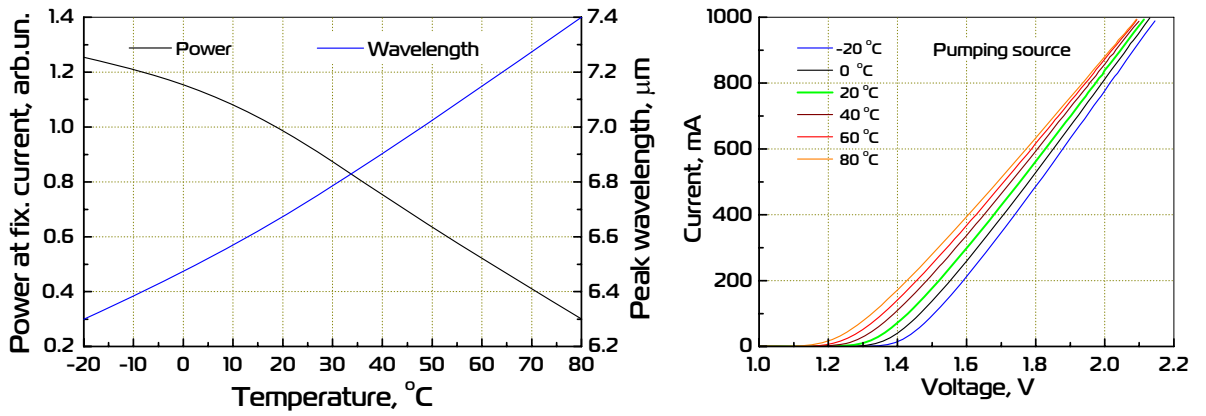
Measured emission spectra



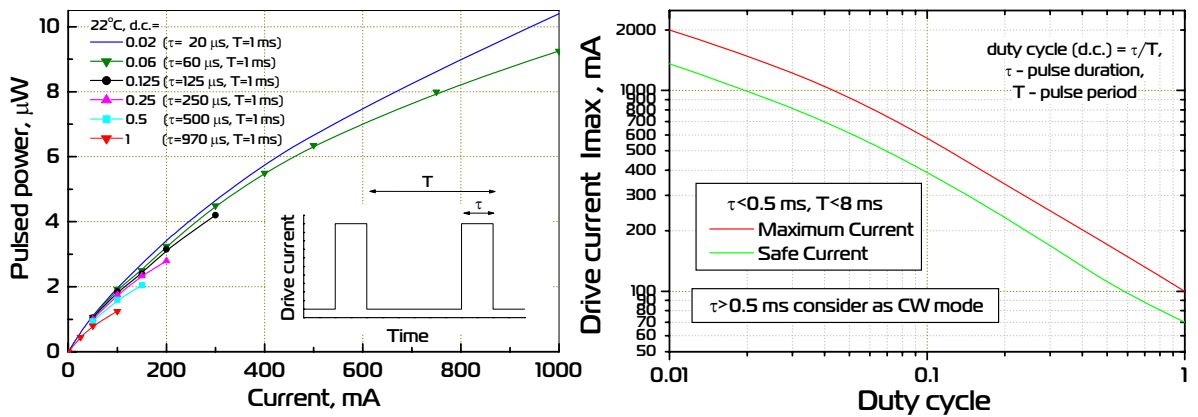
Corrected for H2O absorption emission spectra



Power and peak wavelength vs. temperature; I - V curve

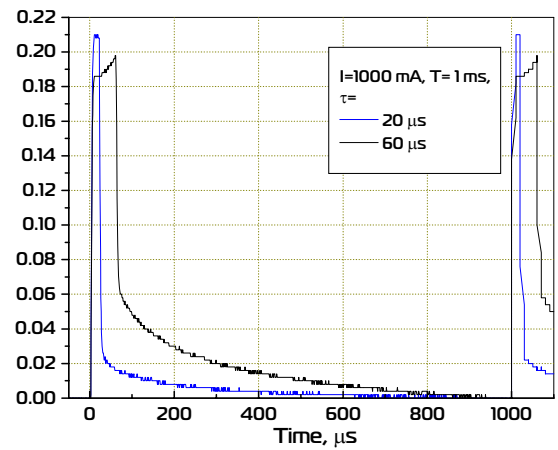
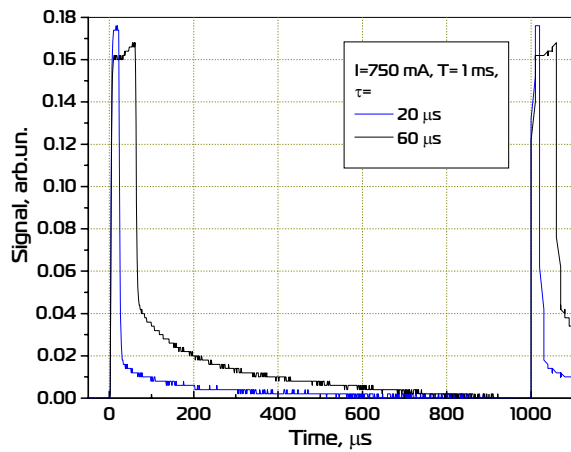


Output power and drive current vs operation conditions

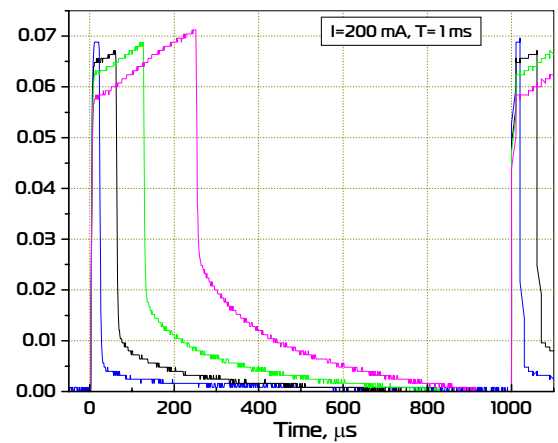
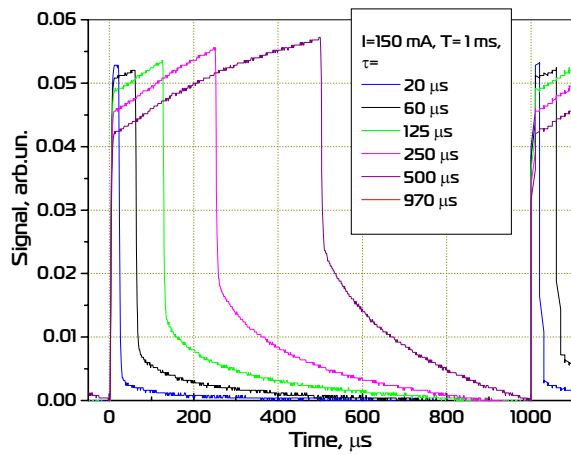


## Time dependence of the output power for several values of d.c. and currents (LED attached to a heatsink at room temperature).

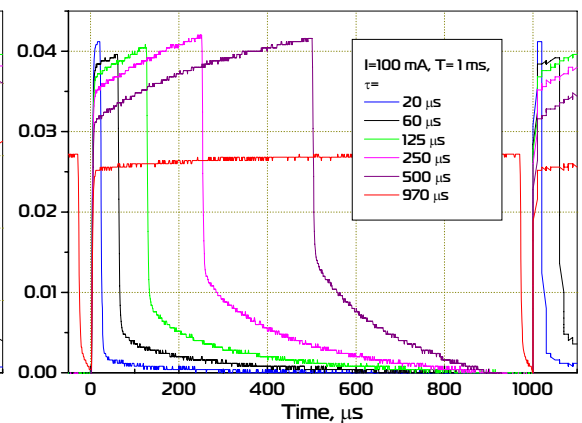
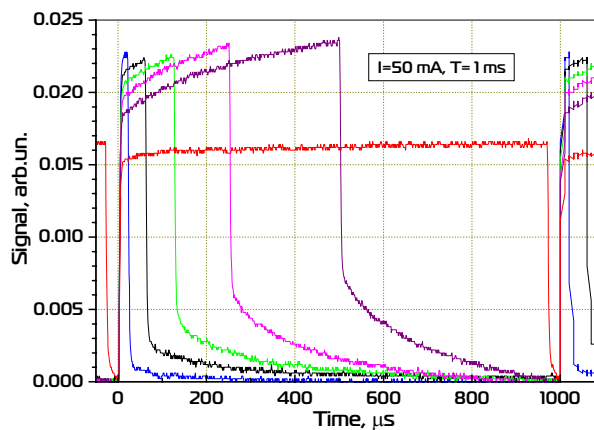
Pulse operation (d.c.=0.06)



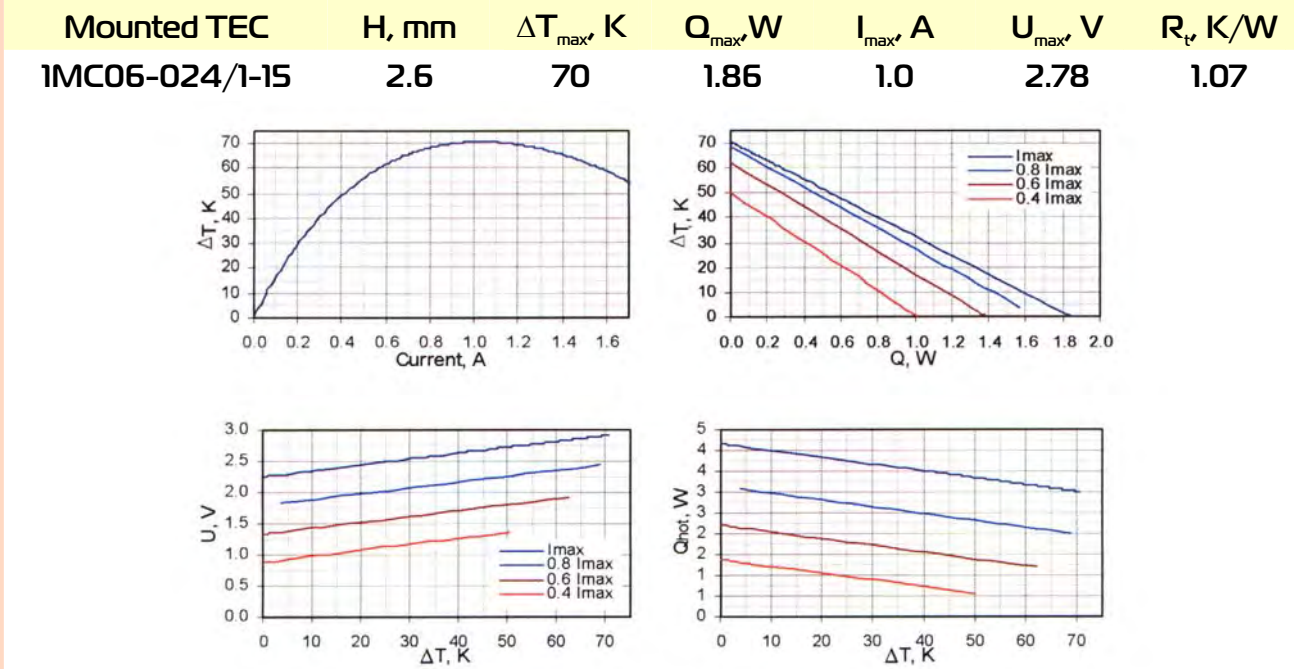
Quasi CW mode (d.c.=0.5)



CW mode (d.c.=1)

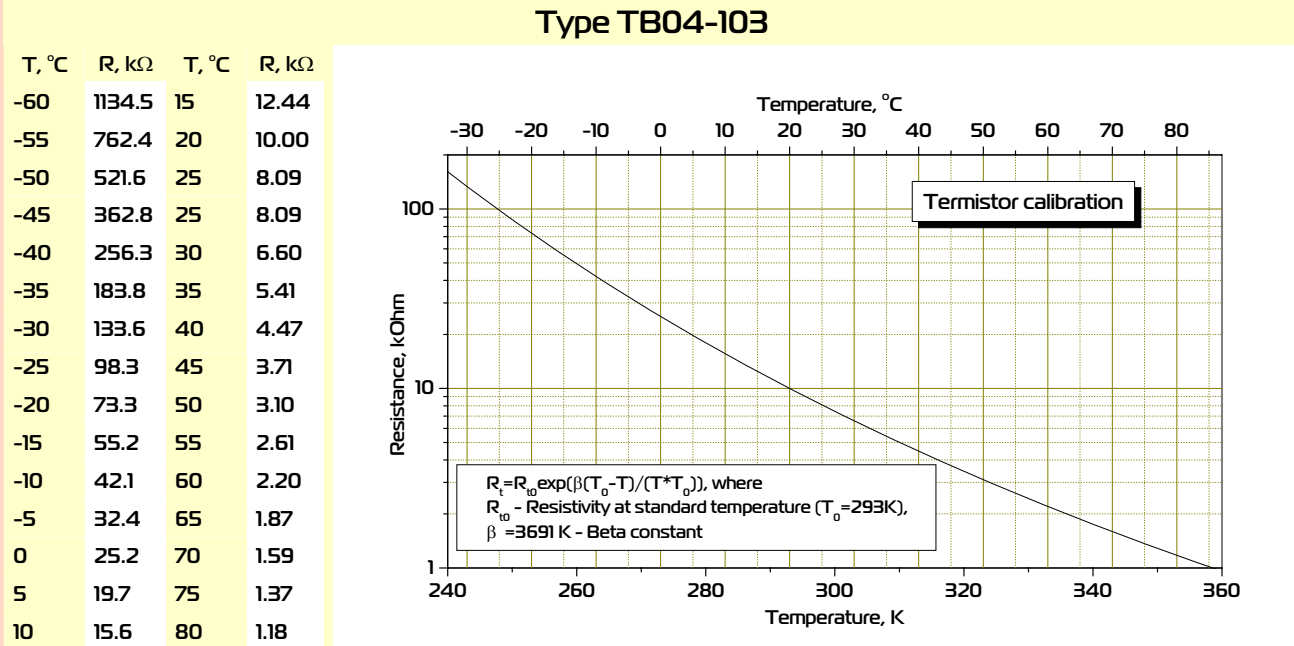


Thermoelectric cooling module datasheet



Data for  $T_{hot}=300$  K, from [www.tec-microsystems.com](http://www.tec-microsystems.com); [www.rmtitd.ru](http://www.rmtitd.ru)

Thermistor specification



Possible TEC heatsink view

