TG420-S

Features:
Optical power output: 50cmW
Peak wavelength: typically 420 nm @RT
TopGaN laser diode, 5.6 mm package

Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Ratings	Unit
Optical Output Power	P_0	100	[mW]
Allowable Reverse Current	I_R	1	[μA]
PD Reverse Voltage	V_R	5	[V]
Storage Temperature	$T_{storage}$	-10 $\sim$ 85	[°C]
Operating Case Temperature	T_C	0 $\sim$ 60	[°C]

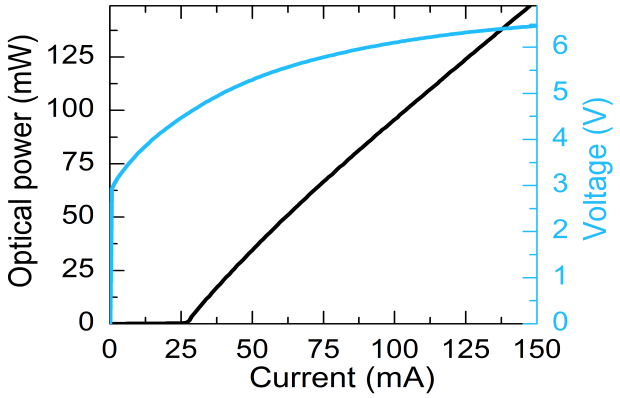
Electric/Optical Characteristics

Item	Condition	Symbol	Min.	Typ.	Max	Unit
Optical Output Power	CW	P_0		50	100	[mW]
Peak Wavelength	P_0=50mW	λ_P	418	421	424	[nm]
Threshold Current	CW	I_{th}	20	25	40	[mA]
Operating Current	P_0=50mW	I_{op}		65	100	[mA]
Slope Efficiency	CW	η	0.9	1.2	1.4	[W/A]
Operating Voltage	P_0=50mW	V_{op}		5.3	5.5	[V]
Beam divergence						
Fast axis				32		deg
Slow axis				7		deg

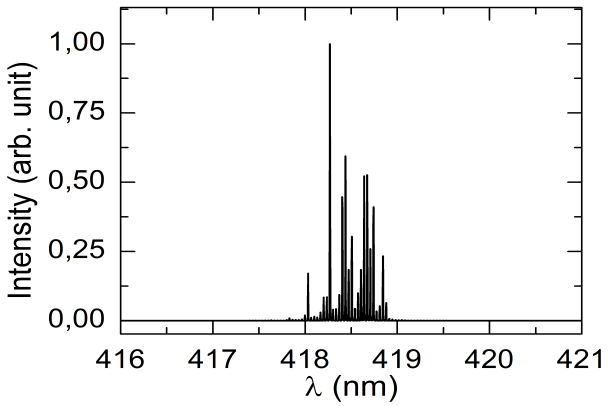
Please notice that the laser diode is designate to operate at room temperature (20 °C). The temperature increase leads to the shorter lifetime and lower output power.

Typical Characteristics

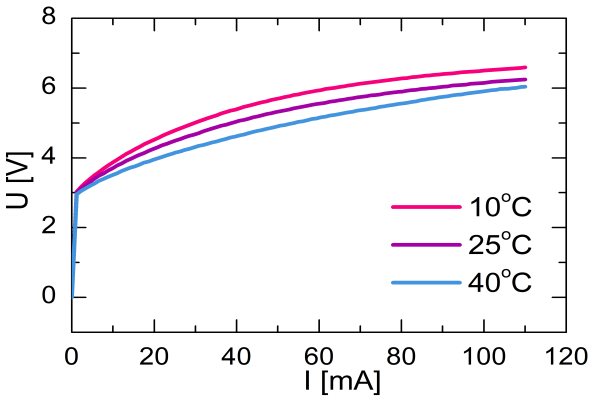
L-I and I-V



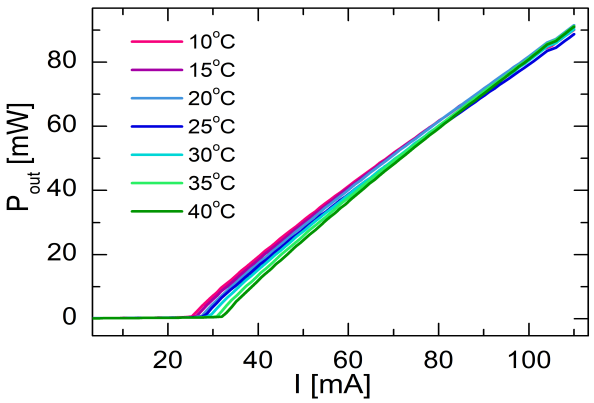
Emission spectrum



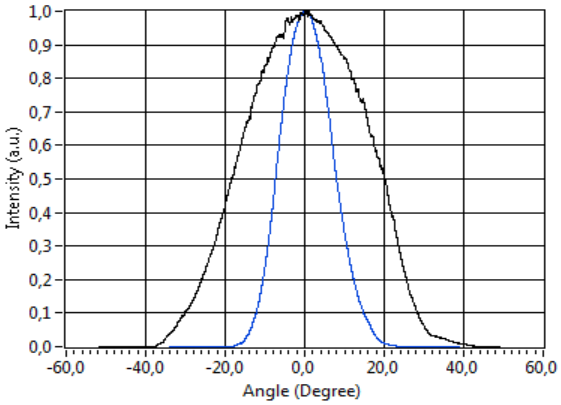
Temperature dependence of I-V



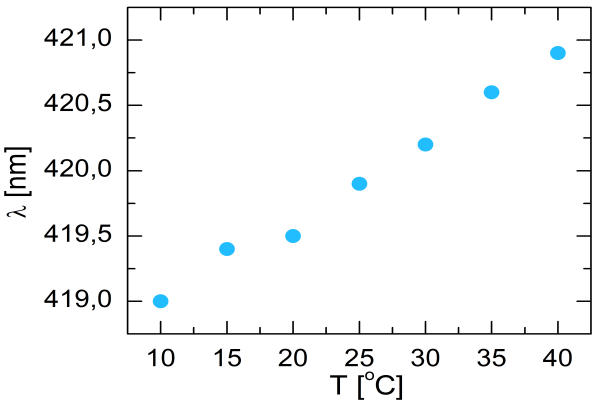
Temperature dependence of optical power



Beam profile

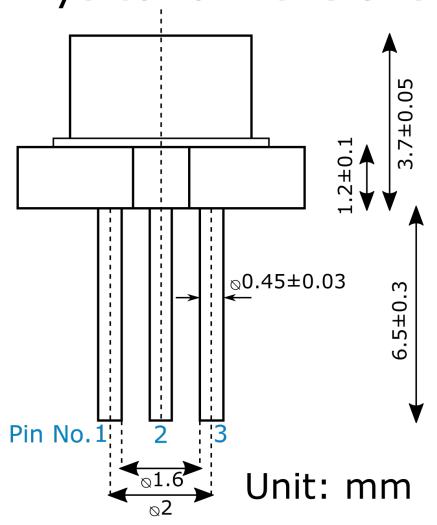


Temperature dependence of emission wavelength

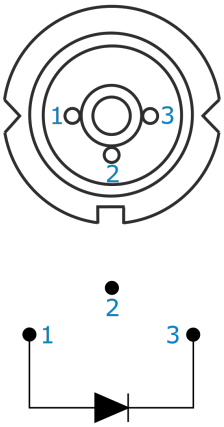


Physical dimensions and electrical connections

Physical dimensions



Electrical Connections



1- LD Anode (+)
2- Case
3- LD Cathode (-)

Laser is connected to isolated pins "1" and "3".
Pin "2" is connected with the case and not active.