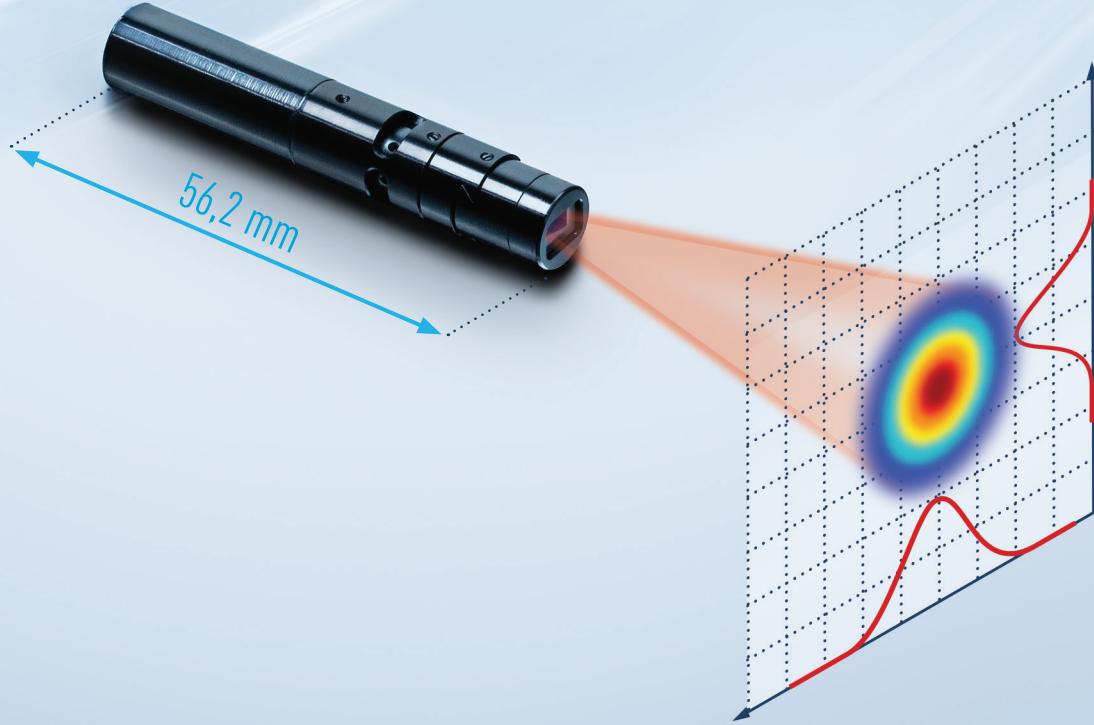




STRUCTURED LIGHT AND
LASER BEAM SHAPING SOLUTIONS

TRUE GAUSSIAN LASER

Free space circularized laser beam projector with True Gaussian performance over long working range



FEATURES

- Fiber-like beam quality
- High gaussian fit > 95%
- No secondary lobes
- Circular beam & high polarization ratio
- Externally focusable

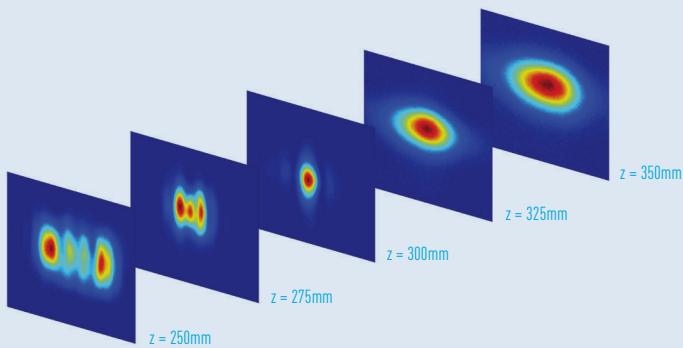
APPLICATIONS

- Life Sciences
- Instrumentation
- Positioning

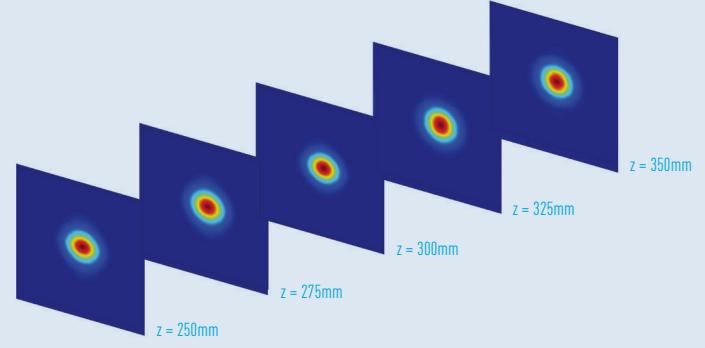
TRUE GAUSSIAN PERFORMANCE

Osela's True Gaussian Laser (TGL) uses unique optical technology to produce a fiber-like diffraction limited beam in a compact standalone free space module. The technology allows for maintaining of a high Gaussian fit (> 95%) over a long working range with no secondary lobes that are typically found with direct diode lasers. An example can be seen below of the TGL solution vs a standard diode laser.

STANDARD DIODE LASER

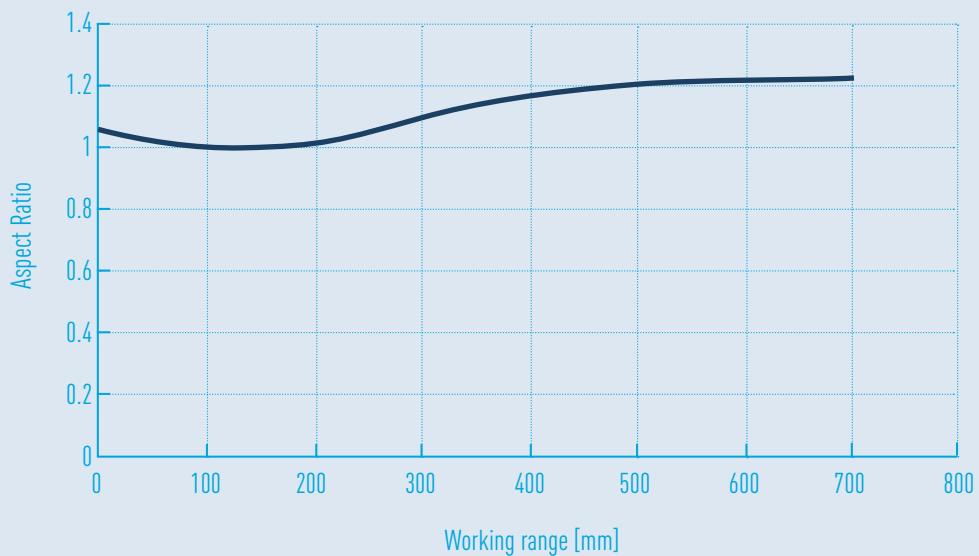


TRUE GAUSSIAN LASER

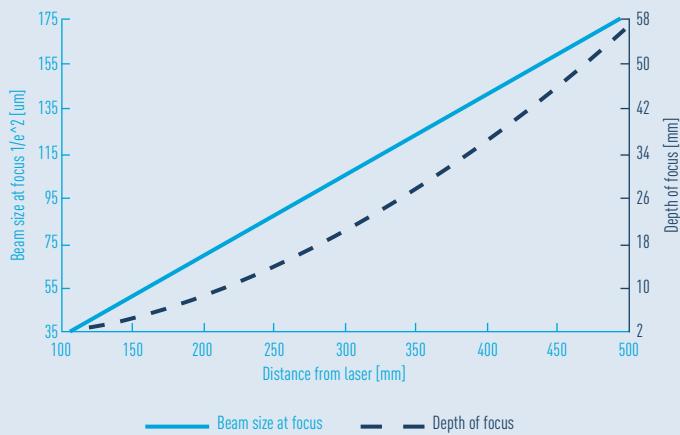


Another advantage of the TGL is its ability to project circularized laser beams from direct laser diodes while maintaining its true Gaussian performance. While many other current market solutions offer circularization, it does so at the expense of beam quality. A typical TGL beam aspect ratio vs working range can be seen in the graph below.

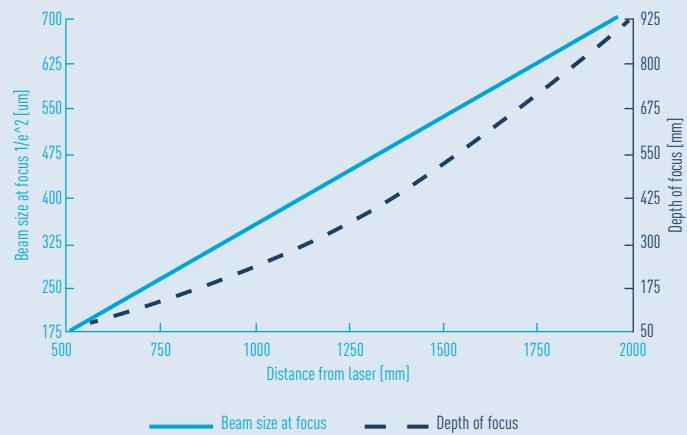
BEAM ASPECT RATIO OVER WORKING RANGE



SHORT RANGE



LONG RANGE



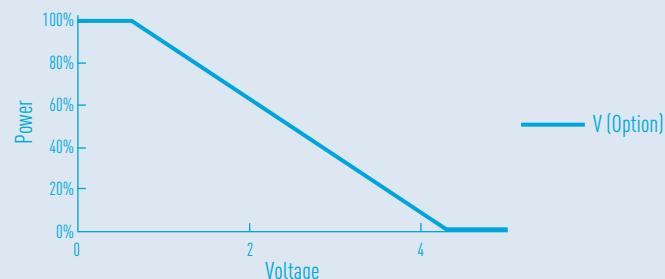
WAVELENGTH BAND (nm)	OUTPUT POWER (MW)	TYPE J		TYPE E		TYPE B		TYPE G		TYPE F	
		K_{FOCUS}	K_{DOF}								
405	15, 35	3.04	16.13	2.39	10.00	1.65	4.74	1.19	2.46	0.67	0.79
450	35	3.60	20.42	2.83	12.65	1.95	6.00	1.41	3.11	1.10	1.90
488	20	4.19	25.45	3.30	15.77	2.27	7.48	1.63	3.88	1.28	2.37
520	20	4.46	27.12	3.51	16.80	2.42	7.97	1.74	4.13	1.36	2.52
640	15	3.83	16.74	3.01	10.05	2.08	4.77	1.49	2.47	1.17	1.51
660	50	3.95	16.74	3.11	10.37	2.14	4.92	1.54	2.55	0.88	0.82
785	50	4.56	18.75	3.59	11.61	2.47	5.51	1.78	2.86	1.01	0.92
830	100	5.85	29.25	4.61	18.12	3.17	8.60	2.29	4.46	1.30	1.44

MODULATION

The Compact laser can be modulated by an external 0 to 5V TTL signal via the white wire. The "T" type modulation is the default input for the Compact laser module.

MODULATION	CODE	ON	OFF
TTL (default)	T	0 to 0.5V	0.7 to 5V
Reverse TTL	RT	0.7 to 5V	0 to 0.5V

Optional: Linear power adjustment on fourth wire, option "V".

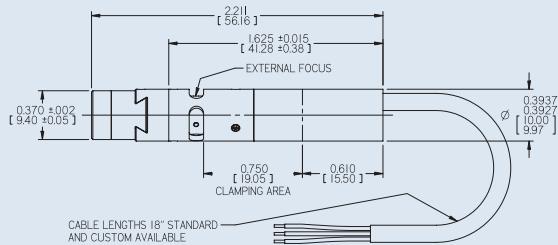


SPECIFICATIONS

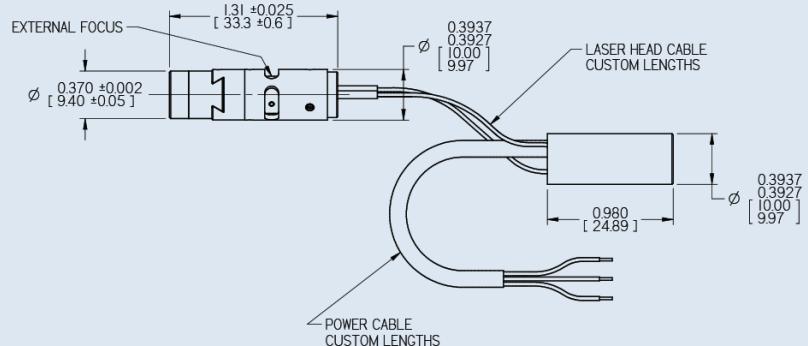
Bore sight (mrad)	< 3 mrad
Wavelength Drift	$\approx 0.25 \text{ nm/ degC}$
Pointing Stability	< 6 $\mu\text{rad/}^\circ\text{C}$
Rise/Fall time	< 5 $\mu\text{ sec}$, 100% modulation depth (10 Kohm impedance)
Protections (Built in)	ESD, Over voltage (up to 30 VDC), Over-temp Shutoff (> 45 deg C)
Long term Power stability (8 hours)	< 3 %, 2 minute warm up time
Operating Voltage	5 \pm 0.5VDC (5 to 24 optional)
Working Temp Range	-10 to +45 $^\circ\text{C}$ (housing)
Weight	< 20 g
Power Supply Cable	18 inches 3 conductors with flying leads
Polarization	100:1 typical

MECHANICAL SPECIFICATIONS

STANDARD



SEPARATE DRIVER (SD)



ORDERING CODE

TGCL	XXX	XXX	X	X	XXXX
	Wavelength	Output Power	Electronic	Focusing Option	Option
*TGS available	see table	see table	T	J	SD
19mm OD,			RT	E	24V
Streamline Platform			TV	B	
			RTV	G	
				F	

Last reviewed: 19-05-2020