



COHERENT®

Lasiris TMFL

Micro-Focus Laser That Projects Telecentric Laser Line Patterns



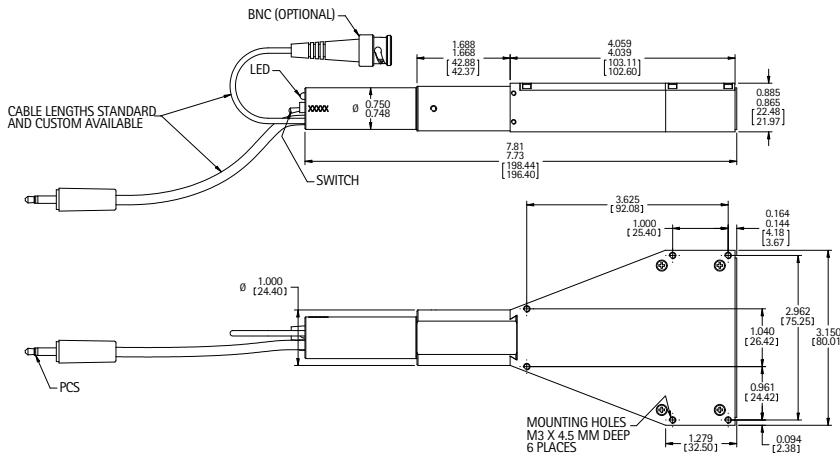
Features

- Constant line width along entire line length
- Extremely thin lines down to $9.0 \mu\text{m}$ at $1/e^2$
- Line length up to 60 mm
- Highly efficient optical system
- Uniform intensity distribution
- ESD, over-temperature, over-voltage, and reverse-polarity protection

Mechanical Specifications

TMFL 125

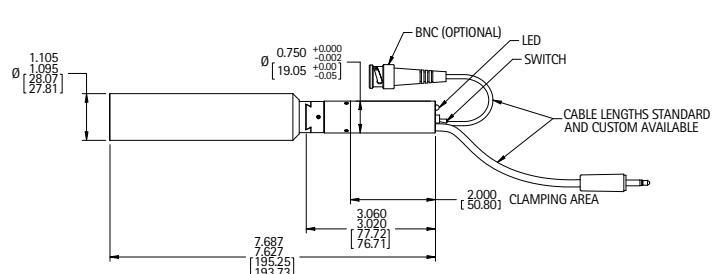
Side View



Top View

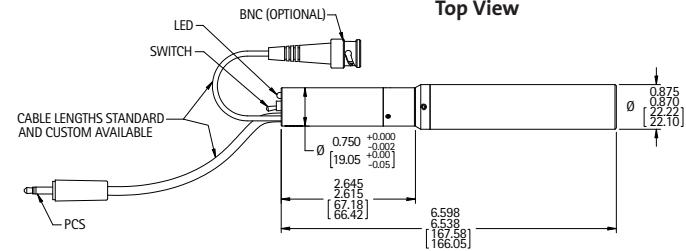
TMFL 120

Top View



TMFL 55

Top View



Superior Reliability & Performance

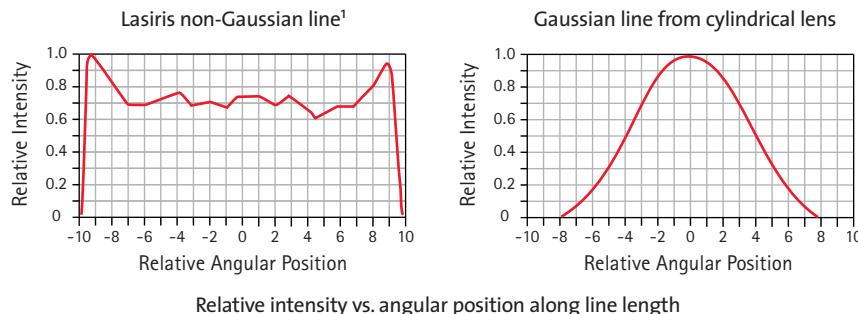
Lasiris™ TMFL

Micro-Focus Laser That Projects Telecentric Laser Line Patterns

Uniform Intensity

Conventional laser line patterns are often generated by cylindrical optics that produce a Gaussian line profile with a bright center and fading ends. Lasiris™ patented beam shaping optics spread the light into an evenly illuminated line. The result is a crisp, uniform line with sharp ends.

Line Intensity Profile Along Line Length



Relative intensity vs. angular position along line length

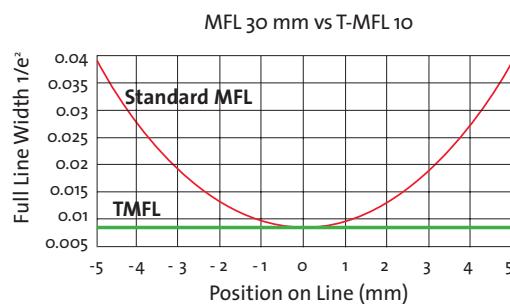
Line Thickness and Depth-of-Field

TMFL lasers feature factory-set focusing for specific working distances. The table below shows the typical thickness ($1/e^2$) and depth-of-field performance of a 660 nm wavelength TMFL. The depth-of-field is defined as twice the distance over which the thickness of the line has increased by a factor of $\sqrt{2}$.

Main characteristic of the TMFL laser is its ability to maintain a constant line thickness along the entire line length when projected on a flat plane.

	TMFL 55	TMFL 120	TMFL 125
Depth-of-Field (mm)	0.2	1	1
Working Distance (mm)	55	120	125
Line Width (μm)	9	25	25
Line Length ² (mm)	5 to 10	10 to 30	30 to 60
Line Uniformity (%)	≤ 25	≤ 25	≤ 25

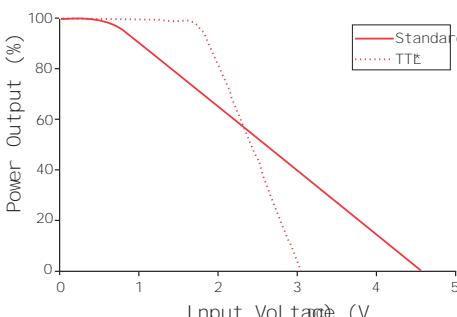
Line Thickness vs Position on Line



The "Thickness vs Position" graph shows how the line thickness of the MFL laser increases farther away from the center of the line. The TMFL is built with an optical system that creates a constant line thickness when the laser is projected on a flat plane.

Lasiris™ TMFL

Micro-Focus Laser That Projects Telecentric Laser Line Patterns

Optical Specifications	Wavelength (nm)	660
	Output Power (mW)	100
	Intensity Distribution	Uniform (non-Gaussian) for line
	Bore Sighting (mrad)	<3
Mechanical Specifications	Housing Material	Black anodized aluminum
Environmental Specifications	Operating Temperature (°C)	-10 to +48
	Wavelength Drift (nm/°C)	0.25 typical
	Thermal Stability	Less than 5% change in focus over multiple temperature cycling from 10°C to 30°C
	Over-Temperature Protection (°C)	Built-in: 48
Electrical Specifications	Power Supply Voltage (VDC)	5 to 6 Optional 9, 12, 24, 115/220 VAC
	Connector Type	Male phono-jack 3.5 mm Ø or custom
	Slow Start Time Delay (μsec)	10
	Reverse-Polarity Protection, Over-Voltage Protection	
Options	Power Options	
	Power Adjustment Potentiometer	Laser power can be easily changed by adjusting an optional built-in potentiometer with a small screwdriver. Code "P".
	Pulsing and Power Adjustment	The power can be modulated or pulsed using an external signal
		Standard Modulation S (synchro): 10KHz, FS ³ (fast synchro): 500KHz Input voltage = 0V → laser "ON" Input voltage = 5V → laser "OFF"
		TTL Modulation T ³ (TTL): 10KHz, FT ³ (fast TTL): 500KHz Input voltage = 0V → laser "ON" Input voltage = 5V → laser "OFF"
	Input Impedance (kΩ)	>1
	Rise/Fall Time (μs)	10 for 10KHz, 0.23 for 500KHz
	Separate Electronic Option	The electronics of the laser can be separated from the main unit. Code "SD".

Notes

¹ Typical profile

² Line length can be customized

³ Not available on all models

Lasiris™ TMFL

Micro-Focus Laser That Projects Telecentric Laser Line Patterns

Ordering Information

TMFL lasers 660 nm are covered under a 2-year warranty (parts & labor). To order, select from the specifications below. Code: TMFL - Wavelength - Diode Power - Electronics Option - Working Distance - Line Length. E.g., TMFL-660-100-P-55-10, TMFL-660-100-FT-125-30. Call us or visit our website for updates and other specifications.

Wavelength (nm)	660		
Diode Power (mW)	100 ¹		
Electronics Option	N/A, P, T, S, FS, FT		
Working Distance (mm)	55	120	125
Line Length (mm)	5, 7, 10	10, 20, 30	30, 45, 60

¹ Also available in 670 nm - 500 mW, 810 nm - 1W. Power can be adjusted down to 20 mW by potentiometer as a standard option

Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Lasiris lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.



Coherent, Inc., Portland

27650 SW 95th Avenue
Wilsonville, OR 97070
United States
phone (800) 343-4912
(408) 764-4042
fax (503) 454-5727
e-mail LMC.sales@Coherent.com

Benelux +31 (30) 280 6060

China +86 (10) 6280 0209

France +33 (0)1 6985 5145

Germany +49 (6071) 968 333

Italy +39 (02) 34 530 214

Japan +81 (3) 5635 8700

Korea +82 (2) 460 7900

UK +44 (1353) 658 833

