

High Performance Line-Z for Machine Vision

This series of lasers are designed with high performance, high reliability, can be widely used in various 2D/ 3D vision applications and inspection systems.

Professional for the visual field applications, with fine stripes, uniform power distribution, clear edges, it can maximize the imaging resolution and accuracy of Machine visual applications.

To meet customers' demand, CNL can provide different wavelengths, different power line laser. Compact dimensions and high reliable structure will make it easy to combine with varies of vision systems.



◆ Specifications

Mechanical Structure Indicators

Model	Line-Z
Max. outline dimensions	Φ22×180 mm
Protection Class	IP67, dust and water proof
Connector plug	M12 plug, 4 pins
Thread	M20

Electronic Performance Indicators

Power supply	5-30V DC (with wrong connection protection)
Current	300mA (max)
Modulation function	TTL modulation and Analog input adjusting power
Max. modulation frequency	100 kHz (TTL)
Analog input signal	0-2.5V (from min to max)
Indicator	Green/ blue/ orange/ red

Optical Parameters

Ouput power	1-150mW (depends on wavelengths)
Laser power	Continuously adjustable
Wavelength	405 nm, 637 nm, 660 nm, 808 nm, 980 nm
Luminance uniformity	85%,
Straightness error	Less than 0.5%
85% peak power proportion in corss-section	85%,
Temperature & Power stability	Less than 0.5%,
Fan angle°	7°/10°/15°/30°/45°/60°/75°/90°
Working distance	50-2000mm (adjustable)

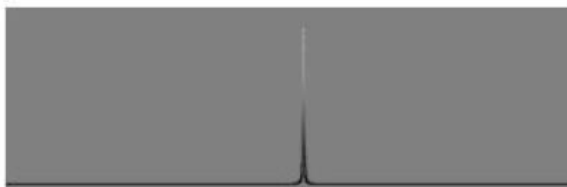
External Condition

Ambient temperature in operation	-10-50°C (depends on wavelength)
Ambient temperature in storage	-10-80°C
Ambient temperature in operation	Max 90%, no frosting

◆ Laser Performance



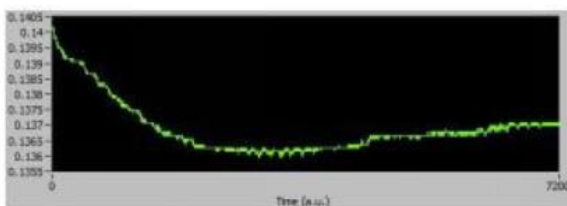
Good laser line power uniformity



High proportion of laser cross-section 85% peak power

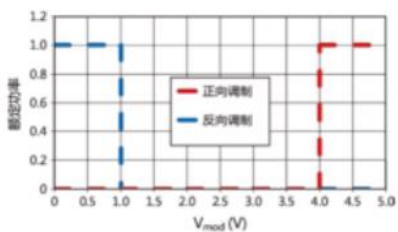


Small laser line straightness deviation

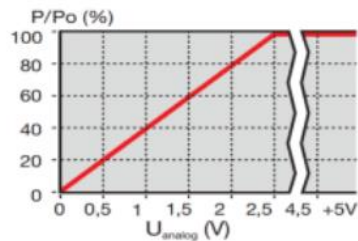


High laser power and temperature stability

◆ Signal Control

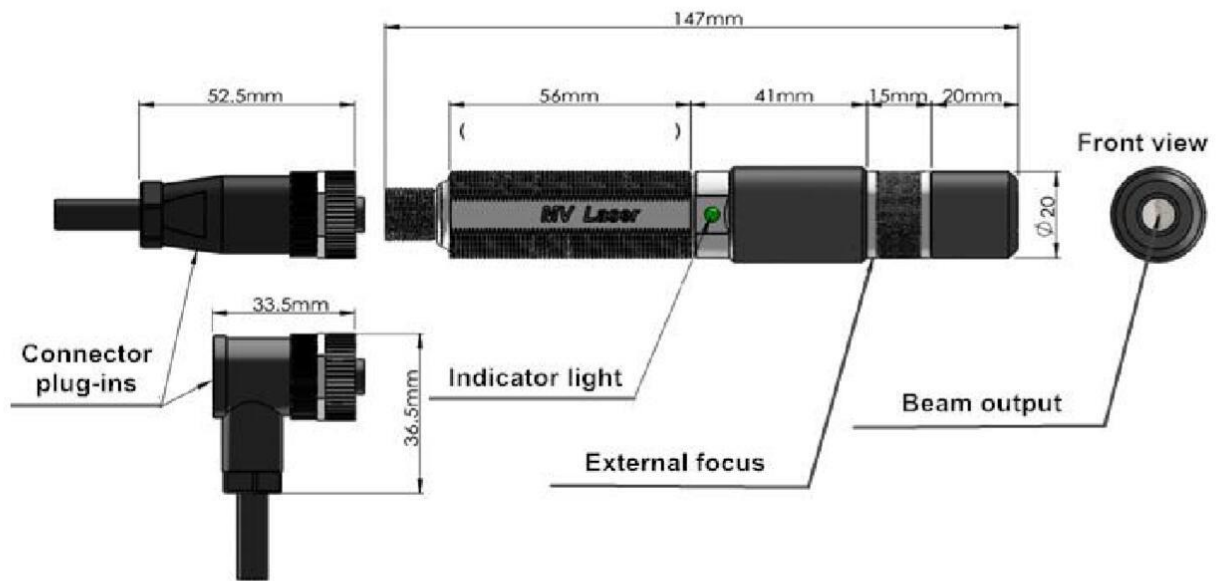


Power vs. Digital modulation



Power vs. Analog modulation

Working distance(cm)	Line thickness (um)
10	40
20	60
30	90
50	150
100	300
150	500



Dimensions of Line-Z

Indicator Status

Color	Status	Meaning
Green	Normally ON	Laser preheat indication, indicating that the laser is about to launch.
	Flash	—
Blue	Normally ON	Laser is emitting.
	Flash	Warning: Laser internal temperature exceeds 55 degrees Celsius. The laser remains emitting. Note: The flash will stop automatically when temperature will drop to 55 degrees Celsius.
Orange	Normally ON	Circuit fault, laser stops emitting.
	Flash	Warning: Laser internal temperature exceeds 85 degrees Celsius. The laser remains emitting. Note: The flash will stop automatically when temperature will drop to 55 degrees Celsius.
Red	Normally ON	Input voltage range overvoltage or undervoltage, laser stops emitting.
	Flash	—