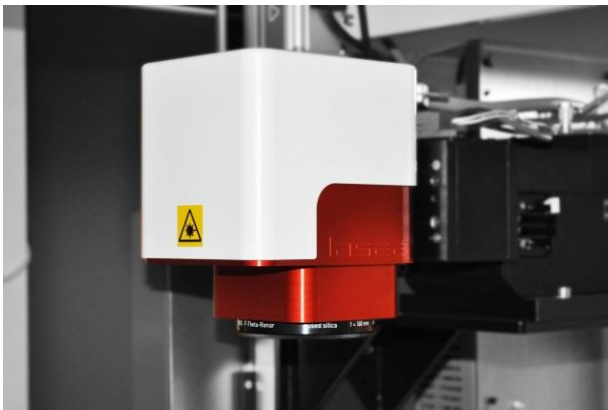


# LS-Scan



## High acceleration laser head

Dedicated to laser **micromachining** and **high accuracy marking**, the LS-Scan is LASEA's unique scan head.

While conventional marking applications require high scanning speeds with accuracies around 30µm, micromachining still requires **speed to prevent from heat accumulation**, but the accuracy is a lot more critical, and the drawings often feature a lot more details with constant **needs for accelerations**.

The LS-Scan's technology, based on **flat moving coil motors**, is different from conventional moving magnet technology.

Moving coils being **lighter than magnets** and having a **5 times less current consumption**, the LS-Scan reduces thermal drifts and offer acceleration ramps about **20% smaller** than the best traditional moving magnet scanners.

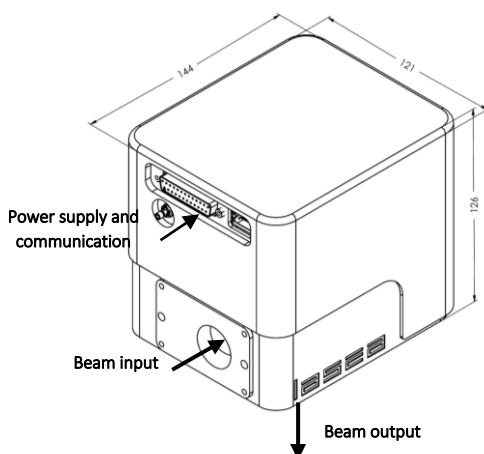
Thanks to these performances, **more laser power** can be used without degrading the machining accuracy and hence the cycle time can be reduced.

Directly connected to a computer through an ethernet interface, the LS-Scan is driven by our software KYLA™, a full **micromachining software** able to communicate with several stages, cameras, and lasers.

Alternatively, the standard XY2-100 protocol can be used with an external control card.

### Key features

- Highest dynamic performance on the market
- Low thermal drifts
- 3D available
- Easy interfacing with KYLA micromachining software
- XY2-100 protocol compatible



Base features	LS-Scan XY 10	LS-Scan XY 15	LS-Scan XY 20
Scanner aperture	10 mm	15 mm	20 mm
Tracking error	80 $\mu$ s	110 $\mu$ s	160 $\mu$ s
Available wavelengths	343 nm - 355 nm - 515/532 + 1.030/1.064 nm - 10.600 nm		
Maximum power	100 W		
Maximum allowed energy (@300fs-1030nm)	400 $\mu$ J		
Maximum allowed energy (@10ns-532nm)	1 mJ		
Transmission (with F-Theta)	> 90%		
Angular travel	640 mrad		
Maximum scanning speed	70 rad/s		
Static positioning resolution	10 $\mu$ rad		
Repeatability	+/- 10 $\mu$ rad		
Thermal drift (on 8 hours)	+/- 20 $\mu$ rad		
Size	126 x 121 x 144 mm <sup>3</sup>		

	Z-axis extension module
Mounting	Before LS-Scan XY
Input aperture	22 mm
Beam diameter modification	x 0,8
Spot size modification	x 1,25
Tracking error	4 ms
Size	109 x 70 x 80 mm <sup>3</sup>

	Options
SiC Mirrors	Improves scanning acceleration due to higher mirror stiffness
F-Theta lenses	Various F-Theta or telecentric F-Theta lenses available Supplied with the appropriate adapter ring to prevent from dangerous back reflections
Cutting nozzle	Offers the ability to switch to a gas assisted cutting / drilling process

	Objectives					
Focal length	50 mm	60 mm	80 mm	100 mm	160mm	255mm
Min spot size (M <sup>2</sup> = 1,1, 1.030 nm, LS-Scan 20)	10 $\mu$ m	12 $\mu$ m	14 $\mu$ m	16 $\mu$ m	22 $\mu$ m	35 $\mu$ m
Scanning Field	12 x 9 mm <sup>2</sup>	23 x 13 mm <sup>2</sup>	28 x 20 mm <sup>2</sup>	70 x 50 mm <sup>2</sup>	120 x 70 mm <sup>2</sup>	200 x 165 mm <sup>2</sup>
Z field (with Z module option)	0,8 mm	1 mm	2 mm	3 mm	7 mm	20 mm
Working distance	60 mm	66 mm	79 mm	126 mm	176 mm	317 mm

*These data can change according to laser beam quality, LS-Scan input aperture, telecentricity, or wavelength*

	Connections
Power supply	12 V – 1 A
Interfacing	GigE RJ45