GREEN-LASE SERIES

The Green-Lase 4W and 10W laser sources and markers operate on the V-Lase platform and use Second Harmonic Generation (SHG) in an intracavity architecture, which maximizes LBO non-linear crystal conversion efficiency. The Green-Lase wavelength results in a lower “heat affected zone” compared with an infrared laser. This effective laser source thus offers significant advantages in marking applications with materials such as plastics that do not interact with the original infrared wavelength, as well as with semiconductors such as silicon (e.g. wafer marking). Superior absorption coefficient in semiconductor material used in solar cells makes this source ideal for photovoltaic applications (e.g.: thin film scribing)

V-LASE PLATFORM

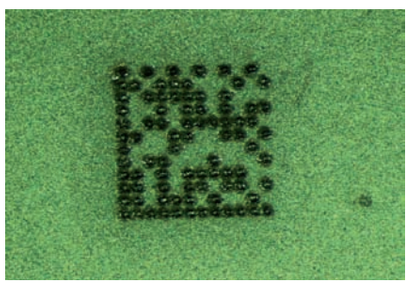
- The V-Lase platform derives from the long experience in the production of high performance and high quality DPSS laser sources. The Green-Lase@532nm use the state-of-the-art End Pumped Coupling Technology,which represents the leading-edge solution in the field of laser sources.
- The platform is characterized by a standard compact case, continuous and precise power control and low power consumption. Moreover, special attention has been dedicated to the safety aspects. The proprietary end-pumped architecture using a TE cooled diode laser pump with unmatched MTBF, assures the reliability and availability of the system.
- The V-Lase platform offers lasers with excellent beam quality, high peak power and short pulse width. The operator is able to precisely tune the power and pulse repetition rate. Very high brilliance in the laser spot, at longer focal lengths, makes the V-Lase platform ideal for marking a broad range of materials, even with large marking fields.
- Designed for very demanding 24/7 processes, the V-Lase platform offers unparalleled performance and represents the ideal solution for both direct part marking and label marking in every market segment including automotive, solar & electronics, packaging, as well as in medical surgical tools marking and other applications.
- The V-Lase platform significantly extends the possibility of connection between the laser source and the operating system. The communication with the system is enabled by RS232. In addition, the V-Lase platform also has an I/O for the connection of the TTL and analogue signals. Ethernet connection is available for monitoring.

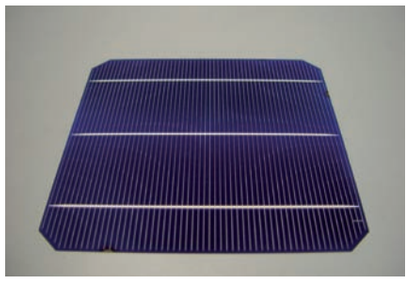
FEATURES & BENEFITS

- Easy integration and configuration
- High reliability
- Lower “heat affected zone”
- Ideal solution for PCB marking
- Excellent marking results on semiconductors and silicon and on materials such as non-doped plastics not interacting with IR
- State-of-the art marking kit including user friendly marking software

APPLICATIONS

This product series has been developed to satisfy to requirements of the following reference applications in automotive and electronics & solar, among the others.
- Marking of plastic (when not sensitive to IR) and thin film ablation
- Marking on silicon and semiconductors and others applications in the electronics Industry





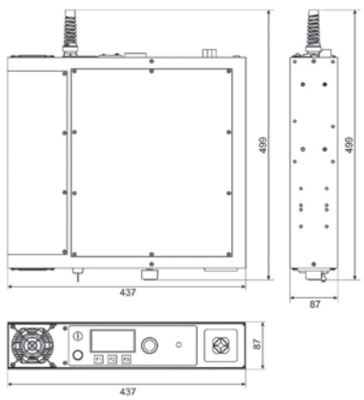
GREEN-LASE

	GREEN-LASE 4W	GREEN-LASE 10W
Wavelength	532nm	532nm
Average Output Power (typical)	4W±5%@50kHz	10W±5%@50kHz
Repetition Rate Range	15 -200kHz	20-100kHz*
Pulse Width	20ns@50kHz@100% Current Level	18ns@50kHz@100% Current Level
Max Pulse Energy (typical)	200uJ@20kHz	340uJ@20kHz
Aiming Beam	Class 2M Red Laser Diode; λ=635nm+/-5nm; 3mW	
Temperature Range	Operative 10°C to 35°C Storing 0 to 50 °C	
Cooling System	Air cooled	
Power Supply	DC 24V:28V+/- 5%	
Laser Power Consumption	typical 450 W maximum 600 W	
Connectivity	I/O signal; RS 232 & Ethernet for monitoring	
Optical Fiber Length	SI ST600F D80LKA, 3 m length, allowable bending radius 150 mm	
Resonator Dimension & Weight	mm 114 x 119 x 526 kg 7	
Rack Dimension & Weight	mm 499 x 437 x 87 kg 12	
EEC Rules compliance	2004/108/EEC: “Electromagnetic Compatibility” 2006/95/EEC: “Low Voltage”	
EU Standard compliance	EN 61000-6-4, EN 61000-6-2, EN60204-1, EN60825-1	
Standard Marking configuration	Basic → BEX 4X , MiniScan8_ 532nm, f-theta 160S Evo → BEX 4X , MiniScan8_ 532nm with f-theta 160S, with Mechanical Shutter & Power Meter	
Options	Beam Expander: 2X, 6X, 7.5X, 9X	

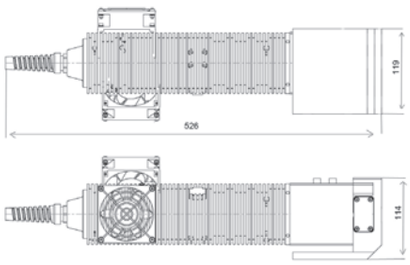
Objective F-Theta mm	63S	100S	160S	254S
Working distance (mm)	71	115	181	290
Working area (mm x mm)	35x35	50x50	100x100	140x140

S (small) > Ø = 47mm

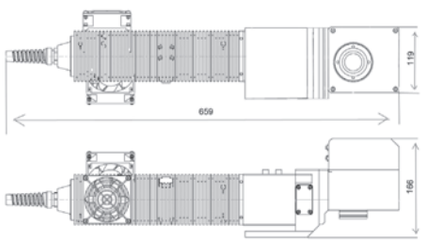
- Other focal lengths are available upon request



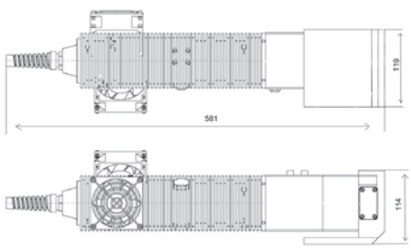
CONTROL UNIT (RACK)



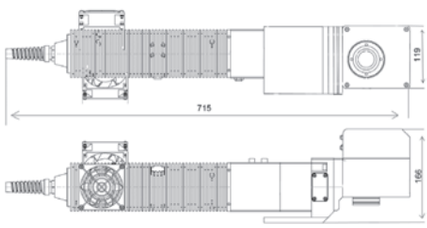
BASIC SOURCE RESONATOR



BASIC MARKER RESONATOR



EVO SOURCE RESONATOR



EVO MARKER RESONATOR

MARKING KIT

The marking kit allows system integrators to easily interact with the laser marking system. The kit consists of two components: a PCI electronic board (iMarkPCI) that provides control signals to the laser and a powerful software (Lighter) that provides a graphical user interface to create marking layouts and automate the laser marking process through integration with legacy systems. The Lighter graphical editor creates and edits text strings, shapes, barcodes (e.g.128, EAN/UPC, 2/5, 3/9, GS1-128, RSS) and matrix codes (Datamatrix, QR codes,micro QR codes). It can also import logos in vectorial and raster formats.

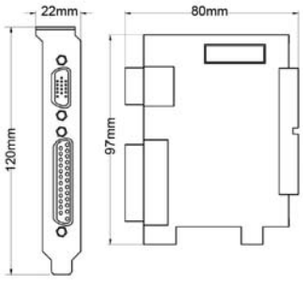
Lighter marking kit guarantees key advances in marking software functions and applications such as marking on fly, array marking, grey tones marking, mechanical axis control, rotating axis control and others. Lighter is scriptable: this means that it can be easily integrated with legacy systems through a wide range of combinations of transmission media, protocols and architectures (master/slave, client/server, ...). Lighter is extensible: its scripting features can be extended through custom-developed plug-ins to deal with specific integration-related issues (custom components or protocols, patent protected algorithms, etc.).

TECHNICAL SPECIFICATIONS IMARK MARKING KIT

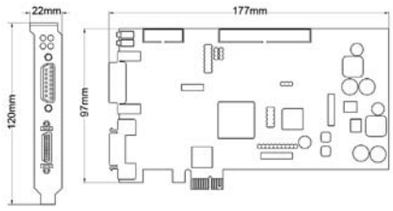
User interface	Languages	English, Italian, German, Spanish, French, Polish, Japanese, Traditional Chinese, Simplified Chinese, Korean
PC compatibility	Supported OS	Windows 7 / Vista / XP
	Board slot	PCI Express (1x)
Galvo performance	Repeatability	< 10um short term positioning accuracy
	Precision	< 50um galvo positioning precision
	Long term drift	< 100um long term positioning drift
	Speed	Up to 10.000 mm/s
Character type	Font	Original single line, True Type, Open Type, Type1, Type42
	Languages	European, Asian, Arabic, Cyrillic and Hindi languages supported
	Text type	Fixed text, date and time, serial number, batch code, fully customizable code
Code type	Barcode	2to5, Code39, Code128, UPC, EAN (GS1 ready)
	Stacked	PDF417, Code16K, RSS Family
	Matrixcode	Datamatrix, QRcode, microQR
Logo image	Types	HPGL, PLT, DXF, DWG, BMP, JPG, TIF, GIF, PNG
Integration	Marking capabilities	Standing, Rotary axis, On the fly (marking in motion)
	Mechanical Axis	Up to 4 mechanical axis driving capabilities (stepper motor)
	I/O	Up to 16 digital inputs and 16 digital output fully programmable
	Encoder	Dual line high resolution encoder input (on the fly option)

GREEN-LASE ACCESSORIES

The following accessories are available to simplify installation and optimize product performances:
- Power Supply
- Support for fitting to standard19” rack
- Ethernet interface module for monitoring
- Lens adapters
- F-Thetas



iMark board



PCI Express board

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