

PRODUCT GUIDE



> Laser Marking Products



DATALOGIC
THE VISION IS YOURS

LASER MARKING PRODUCTS

COMPREHENSIVE PRODUCT RANGE COMBINED WITH EXCELLENT LASER MARKING MANUFACTURING EXPERTISE

Over 20 years experience in the production of industrial laser sources has enabled Datalogic Laser Marking to create the most comprehensive product portfolio in the marketplace by offering solutions throughout a wide range of applications..

Laser Marking products provide value added marking solutions for the Automotive, Aerospace, Electronics & Semiconductor, Plastic & Polymer Processing, Watches & Jewelry, Metal Tooling, Medical Device and Packaging industries.

Laser Marking products are offered in the three main laser technologies: Fiber, DPSS and CO2 and cover a wide range of applications on almost any material, fulfilling every customer need for permanent marking.

Powerful, best-in-class control software operates with any model configurations and laser technologies: a unique HMI control platform, easy to use and install, with enhanced customization capabilities.

LASER MARKING TECHNOLOGIES

DPSS LASER MARKER VL-SERIES & ULYXE

The long history of market leading DPSSL technologies has enabled Datalogic to create the most comprehensive product portfolio in the marketplace by offering solutions with a wide variety of applications in multiple wavelengths.

DLA product portfolio offers industrial grade solutions for Infrared Green and UV in a wide power range, and an innovative ultra-compact, all-in-one laser marker for level-entry application.

DPSSL key features:

- Best-in-class laser peak power
- Three different wavelengths for best result even on highly reflective or high stability materials
- Excellent beam quality and marking accuracy even on thermal sensitive materials

FIBER LASER MARKER AREX SERIES

Proprietary technology and design for the fastest growing laser technology in the segment of the laser marking

Robust and reliable, efficient and cost effective, fiber laser technology is the first choice for metal marking and engraving.

Long pulsewidth (100ns) ensure great thermal effect on metal materials, for high efficiency metal annealing and engraving.

Fiber Laser key features:

- Long lifetime: truly all-solid-state (don't go out of alignment, do not containing any free-space optics) efficient without any routing maintenance
- Compact marking head for easy integration and installation
- High process stability and repeatability
- Zero bleed-through power
- Excellent on metal and plastic surfaces

CO₂ LASER MARKER EOX SERIES

CO2 laser technology is still the best solution to provide permanent laser marking for industrial traceability and coding on paper, carton, organic materials, coated/painted materials and plastic.

Long wavelength (10.600nm) ensure good results even on glass, rubber, food, wood and many other materials.

CO2 Laser key features:

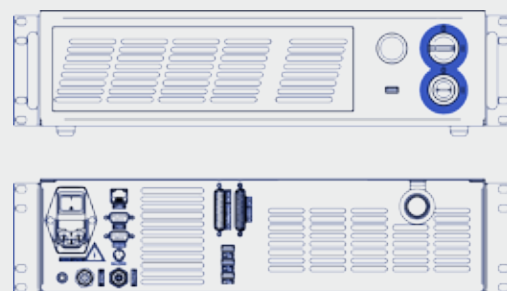
- Excellent on paper, cardboard, wood and plastics
- Marking on the fly compatible with variable speed and start-stop systems
- Suitable for coding from medium to high throughput production lines

ONE.RACK MARKING CONTROLLER

Laser marker setup and operation are made easy with the Embedded Marker Controller platform (EMC) and LIGHTER Suite.

One single rack, 19 inch, 2,5 U, offer standardized design and I/O connections to enable integrators to freely choose between DLA's three main laser technology (DPSSL, FIBER, CO2) without any connections or wiring hassle.

'ONE.RACK' design drastically simplifies laser integration machine design All you need for your marking application is now included: 100-240 VAC power supply, Embedded Laser controller with 4 independent axis controls (X,Y,Z, Rotating axis) to implement multi-layers and rotating marking, dedicated encoder input is applied for Marking On Fly (MOF) even in accelerated and variable speed conditions. All the units are equipped with Teamviewer host to ensure real time remote support.



LASER MARKING SOFTWARE

LIGHTER SUITE, THE LASER MARKING SOFTWARE FOR ALL DATALOGIC LASER MARKING PRODUCTS



LIGHTER Laser Marking Software Suite allows OEMs and Machine builders to develop a complete and cost effective Laser Marking Station, based on embedded hardware and software resources (**STAND ALONE mode**), or advanced Laser Marking solutions able to control a complete machine over a simple Ethernet connection with a supervisor computer (**MASTER-SLAVE mode**).

The **LIGHTER Suite** is the unique marking Software Suite for all DLA Laser Marking Products.

Due to the innovative software functionality and concepts, the **LIGHTER 6 Suite** is an important step ahead in the laser marking market segment and setting a new standard in terms of ease of integration and ease of use.

LIGHTER Suite combines advanced editing features with laser setup, laser controls and diagnostics resulting in a complete, flexible and easy to use laser marking control system.

▪ Advanced Editing and Formatting Function

*Advanced Editing Function

- Graphical Layout, to easily create and edit any kind of vectorial shapes, texts, labels, logos, text, with an extensive coding library for 1D and 2D codes.
- Contextual property browser for fast and easy setting of all parameters
- Bitmap and vector import and export formats (bmp, plt, dxf, ai, svg, ...)
- Filling and hatching of objects and pattern structures with various styles.
- Grid array capabilities for IC marking
- Gray tones marking

▪ Automation Capability

- 4 independent Mechanical Axis: X, Y, Z and R
- User controlled general purpose Inputs and Outputs
- Build-in-MOF with MOF Wizard for easy and fast set-up.
- Sequential programming through Sequence editor: different control objects to create automation jobs with few clicks.
- STAND-ALONE and MASTER-SLAVE mode

LIGHTER Suite allows OEMs and Machine builders to develop a complete, cost effective, Laser Marking Station, based on embedded hardware and software resources, (**STAND ALONE mode**) or to design an advanced Laser Marking solutions able to control a complete machinery over a simple Ethernet connection with supervisor computer (**MASTER-SLAVE mode**).

- Full control both in local and remote mode via Laser Editor GUI:
- Local/Remote laser configuration included MOF Wizard
- Local/Remote laser diagnostic
- Local/Remote I/O & axis control
- Local/Remote Automation Project control
- Local/Remote Active X

LIGHTER Suite support script capability, easily integrated with legacy systems through a wide range of combinations of transmission media, protocols and architectures, but also to create full automatic or customized marking process.

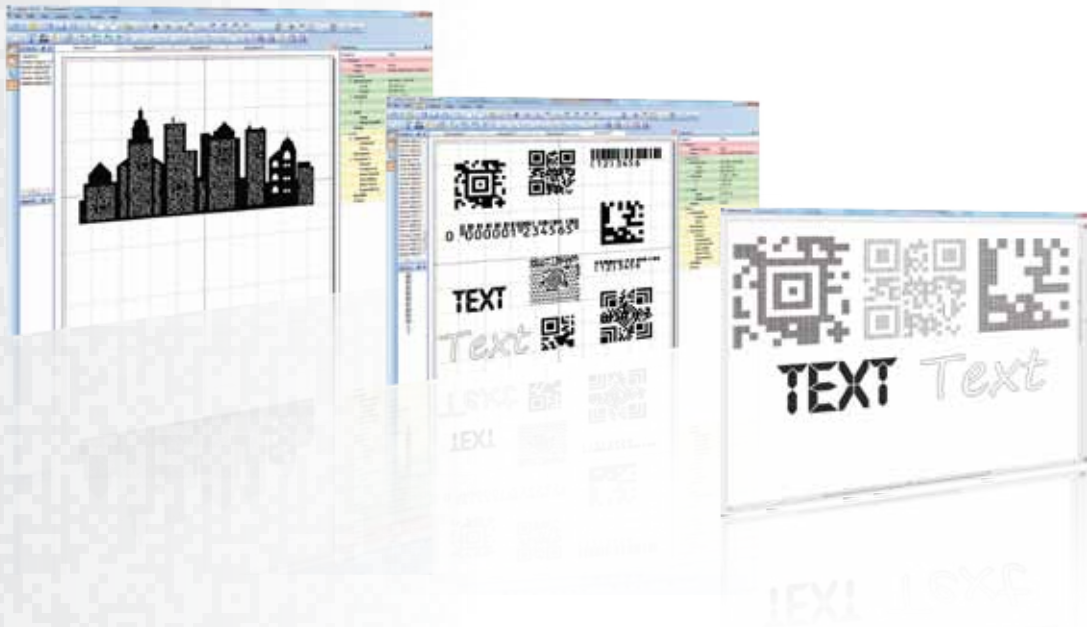
The built-in IDE (Integrated Development Environment) based on JavaScript provides users a full set of tools to be used for extremely flexible customization, for examples:

- Control the marking process
- Fully customize your layout,
- Interact with users and with dedicated and custom GUI
- Automate procedures and update the layout's contents at runtime

IP ActiveX support allows OEM integrators and end-users to create remote customized Applications and User Interfaces via Ethernet.

LIGHTER 6 Suite is included in the Standard Package of DLA Laser Marking products according to the following product families:

- AREX
- EOX
- VL-Series
- ULYXE



VL-SERIES

The new VL-Series combine the long production experience of high performance and quality DPSS laser sources with the flexibility and performances of EMC controller.

The VL-Series markers use the **state-of-the-art End Pumped Coupling Technology**, a cutting edge solution for diode pumped solid state laser sources

The new VL-series is now based on the 'one.rack" controller, and offers the same design, concept, I/O interface and features as ARES series, dramatically reducing integration complexity.

All you need is included: 100-240 VAC power supply, EMC controller, with Master-Slave and Stand-Alone capability.

The VL Series offers **lasers with excellent beam quality, high peak power and short pulse width** to ensure high marking quality results even in difficult application on high reflectivity or heat sensitive material, and in case of high stability plastic.

Designed for very demanding 24/7 processes, VL series offers unparalleled performance and represents the ideal solution for both direct part marking and label marking in every market segment including automotive, electronics, packaging, as well as in medical surgical tools marking and other applications

VL-IR

The VL-IR is a DPSS air-cooled laser marking source @1064nm, available in 10, 15 and 20W.

APPLICATIONS

- Excellent beam quality, necessary for marking a broad range of materials, is one of the leading characteristics of the VL-IR laser sources. Best results are obtained on steel, titanium, aluminum (bare, anodized or coated) as well as on plastics such as ABS, PP, PES, PET, PVC and many others.



VL-UV

The VL-UV source exploits the extensive experience and success of the DPSS family and is based on the optomechanical architecture of Third Harmonic Generation (THG). The extracavity technology allows high efficiency conversion of the LBO nonlinear crystal and compactness of the laser source.

APPLICATIONS

- The VL-UV wavelength produces less mechanical distortion and less heat affected zones (HAZ) in comparison with longer laser wavelengths. The extreme performance of this laser source makes it ideal for the demanding marking and material process applications, such as glass and non-doped plastics in automotive, healthcare, aeronautic, solar & electronics among many other applications.



VL-GREEN

The VL-GREEN 4W and 10W laser sources and markers operate on the VL-IR platform and use Second Harmonic Generation (SHG) in an intracavity architecture, which maximizes LBO nonlinear crystal conversion efficiency.

APPLICATIONS

- The VL-GREEN wavelength results in a lower heat affected zone (HAZ) compared with an infrared laser. This laser source offers significant advantages in marking applications with materials such as plastics that do not interact with infrared wavelengths, as well as with semi-conductor such as silicon (e.g. wafer marking). Superior absorption efficient in semi-conductor material used in solar cells makes this source ideal for photovoltaic applications (e.g.: thin film scribing).



TECHNICAL DATA

	VL-IR 10	VL-IR 15	VL-IR 20	VL-UV 3	VL-GREEN 4	VL-GREEN 10
Wavelength	1064nm	1064nm	1064nm	355nm	532nm	532nm
Nominal power	10W	15W	20W	3W	4W	10W
Repetition Rate range	10 – 200 kHz	10-200 kHz	20 -200 kHz	20 – 80 kHz	15 – 200 kHz	20 – 100 kHz
Pulse Width	15ns@10kHz	10ns@10kHz	8ns@20kHz	8ns@30kHz	20ns@50kHz	18ns@50kHz
Max Pulse Energy	550µJ@10kHz	700µJ@10kHz	650µJ@20kHz	100 uJ @ 30kHz	200µJ@20kHz	340µJ@20kHz
Aiming Beam	Red Laser Diode 635 nm					
Power Supply	100/240 VAC - 50/60 Hz - 600W (MAX)					
Cooling System	Air cooled					
Temperature Range	Operative 10°C to 35°C - 0° to 50 °C					
Resonator dimensions	165x125x502 mm	165x125x587 mm	165x125x502 mm	165x165x676 mm	165x125x659 mm	165x125x659 mm
Rack dimensions	106x430x370mm					

ULYXE SERIES

Ulyxe lasers, with 6W@1064nm, are classified as DPSS Active Q-Switched Lasers. This family is extremely compact (only 42cm, 16.5") but offers all of the most advanced technological concepts. **The Ulyxe family provides the best price to performance ratio in the laser marking world.** As a result of its cost-effectiveness and competitive positioning, the Ulyxe family is the first choice in marking solutions even when compared with traditional marking techniques. With its extreme compactness, this laser family represents the ideal laser marking solution both in standalone configurations as well as OEM applications.

The air cooled laser sources offer an ultra-compact design and includes the scanning head, digital control and monitoring functions. The outside cover on the units are equipped with a specifically designed high-tech case, available in different materials (polyurethane and metal) depending on different application requirements. The operator can easily interact and monitor important laser statuses and functions with a user-friendly LCD touch screen control display.

The Ulyxe compact laser family is available in two different control configurations (USB embedded controller and iMARK control kit) and in **two case styles , bicolours thermoplastic or stainless steel case.**

USB EMBEDDED CONTROLLER

With an embedded DPS controller, the Ulyxe combines compact dimensions with user-friendly interface (LIGHTER Suite) installation and set-up. Laser marking has never been easier. This configuration is available for both polycarbonate or metal cases.



IMARK CONTROL KIT

Ulyxe now supports iMark PCIe control platform controller, enabling advanced Lighter features and up to 4 axis controls (X,Y,Z and rotative axis) to implement multi-layers and rotating marking. Ulyxe with iMark is available only with metal cover

APPLICATIONS

- Plastic and metal marking in automotive, electronics and healthcare industries
- Label Marking
- DPM (Direct Part Marking)
- Tool Marking
- Marking on surgical tools/devices

TECHNICAL DATA

	USB EMBEDDED CONTROLLER	IMARK CONTROL KIT
Wavelength	1064nm	
Nominal power	6W	
Repetition Rate range	15-200 kHz	
Pulse Width	20-25 ns@20kHz	
Max Pulse Energy	300µJ@15 kHz	
Aiming Beam	Red Laser Diode 635 nm	
Focus Beam	Red Laser Diode 635 nm	
Connectivity	USB	PCIe slot
Power Supply	24VDC/13A	
Cooling System	Air cooled	
Temperature Range	Operative 15°C to 35°C -5 to +55 °C	
Dimensions	426x154x170 mm	410x145x123 mm

AREX SERIES

AREX series represents the ultimate Fiber Laser marking system in unmatched compactness.

AREX is the **ultra-compact pulsed fiber laser system** ideal for Direct Part Marking in the automotive and electronics industry as well as label marking on metal parts, plastic parts and components.

Available in **10W, 20W, 30W and 50W** fiber laser sources, improved scan head, compact controller rack design and advanced LIGHTER Software features, the AREX increases performance in term of power, reliability, quick installation and setup, flexible programming and control. Higher output power increases marking performance in term of speed marking and deep engraving. With **IP54 protection class scan head and 50°C (120°F) operating temperature***, AREX series guarantees higher reliability even in harsh environments.

AREX drastically simplifies system design and machine integration, all you need for your marking application is inside and included.

Laser marker setup and operation are made easy with the Embedded Marker Controller platform (EMC) and LIGHTER Suite.

Embedded Red Laser Spot for focus position allows fast focusing of the laser beam during setup.

With the user friendly HMI, the operator can define any kind of label, logo, text, datamatrix, and bar codes for laser labeling and traceability applications.

AREX is equipped with **4 independent axis** controls (X,Y,Z, Rotating axis) to implement multi-layers and rotating marking.

Dedicated encoder input is applied for **Marking On Fly (MOF)** even in accelerated and variable speed conditions. Advanced software functions support a variety of conditions including operator attended working station and fully automated marking centers.

**Only on AREX10 and AREX20*



APPLICATIONS

- Plastic and metal marking in automotive, electronics and healthcare industries
- 2D codes marking on automotive parts
- Laser Annealing on precision metal components and medical equipment
- Deep engraving marking

TECHNICAL DATA

	AREX 10	AREX 20	AREX 30	AREX 50
Nominal power	10W	20W	30W	50 W
Pulse energy (max)	0.5mJ	1,0mJ	1,0 mJ	1,0mJ
Peak power (max)	5 kW	10 kW	10 kW	10 kW
Modulation	20 kHz ÷ 100 kHz		30 kHz ÷ 100 kHz 20 kHz ÷ 100 kHz	
Laser source	Pulsed Fiber Laser			
Pulsewidth (Typ)	100 ns			
Aiming & Focus Beam	Red Laser Diode 635 nm			
Protection degree	Head: IP54 Controller: IP 21			
Cooling	Air cooled			
Power Supply	100/240 VAC – 50/60 Hz – 400 W (MAX)			
Resonator Dimension	90x112x298 mm3			
Rack Dimension	106x430x370 mm3			

EOX SERIES

EOX is the **CO2 Laser family for laser coding and marking** applications. The EOX family offers high quality permanent marking on a wide range of materials including cardboard, ceramic, wood, plastics and painted or anodized metal. Combining excellent laser beam quality and advanced control unit, the EOX family is suitable for accurate industrial traceability as well as high productivity coding applications.

CO2 laser family is available in 2 power levels, **10W and 30W**, with the same marking platform but with different mechanical configurations. 10W versions are offered in an **ALL-IN-ONE case** with very compact dimensions. 30W versions combine of a **compact marking head** with a control rack equipped with power supply and control unit.

Both 10W and 30W versions provide **axis control and an encoder port for Marking On the Fly (MOF)**, which is typically required for coding applications. Advanced MOF features offers complete

synchronization between marking head and object movement even in accelerated or start-s top movement conditions. **MOF increases production lines throughput with linear speeds up to 75mt/min and 12.000 pcs/hour**. A CO2 marking system is very attractive for low cost of operation coding applications, due to no maintenance and no requirement for expensive consumables.

The EOX meets flexibility requirements with extended marking area up to 140x140mm (focal lens dependent). Reliable and safe, the EOX family provides a clean technology with short return of investment and minimal maintenance.



APPLICATIONS

- Coding and marking applications in food, pharmaceutical, and electronics industries



TECHNICAL DATA		
	EOX 10	EOX 30
Wavelength	10,6 µm	10,6 µm
Nominal power	10W	30W
Repetition Rate Range	10-25000 Hz	
Aiming Beam	Class Red Laser Diode 635 nm	
Focus Beam	Class Red Laser Diode 635 nm	
Power Supply	100/240 VAC - 50/60 Hz	
Cooling System	Air cooled	
Temperature Range	Operative 15°C to 35°C -10 to +60 °C	
Head dimensions	180x185x634 mm	180x185x634 mm
Rack dimensions	-	437x94x333 mm

HEADQUARTERS

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All laser sources described in this product guide are Class 4 laser sources. Laser interaction with organic or inorganic material can cause TOXIC FUMES/PARTICLES. The OEM laser components described in this product guide is for sale solely to qualified manufacturers, who shall provide interlocks, indicators and other appropriate safety features in full compliance with applicable national and local regulations.



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