

# 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 CO<sub>2</sub> 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

### CO<sub>2</sub> LASER MARKER EOX SERIES

CO<sub>2</sub> 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.

#### CO<sub>2</sub> Laser key features:

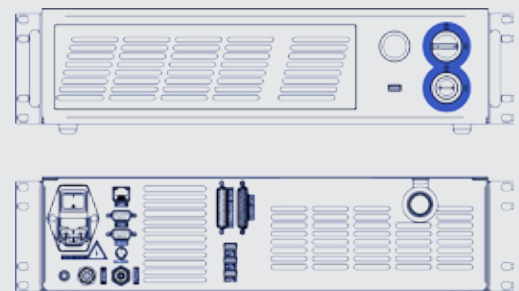
- Excellent on paper, cardboard, wood and plastics
- Marking on the fly compatible with variable speed and start-stop systems
- Suitable for coding from medium to high throughput production lines

## 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, CO<sub>2</sub>) 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 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 solution 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** supports 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.

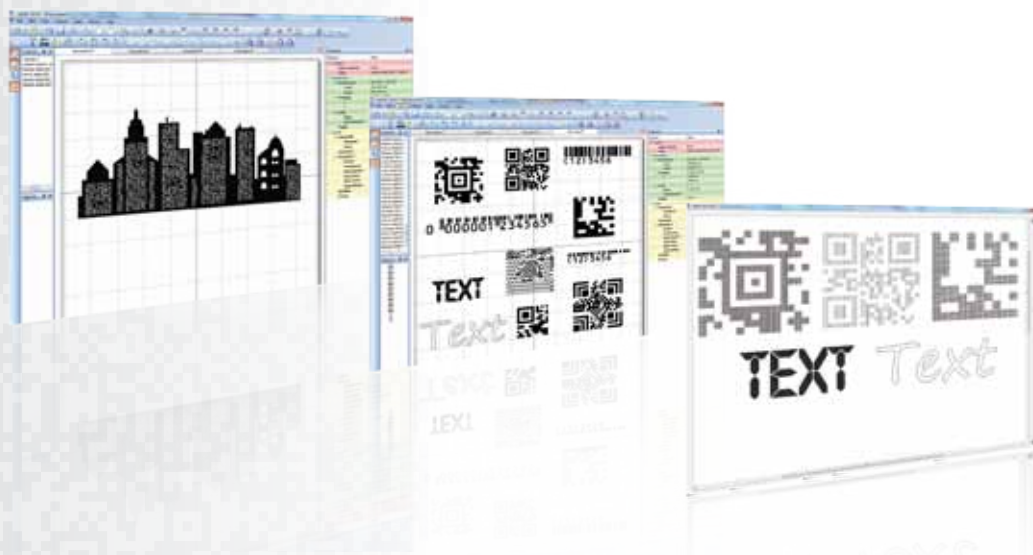
The built-in IDE (Integrated Development Environment) based on JavaScript provides users a full set of tools to be used for extremely flexible customization, for examples:

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

- AREX
- EOX
- VL-Series
- ULYXE



# VLASE SERIES

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

The VLASE 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 VLASE Series is now based on the 'one.rack" controller, and offers the same design, concept, I/O interface and features as AREX 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 VLASE 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**, VLASE 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-GR 4	VL-GR 10	VL-UV 3
Wavelength [nm]	1064	1064	1064	532	532	355
Nominal Power [W]	10	15	20	4	10	3
Repetition Rate Range [KHz]	10 ÷ 100	15 ÷ 100	20 ÷ 100	20 ÷ 100	20 ÷ 100	20 ÷ 80
Pulse Width [ns]	15@10KHz	12@15KHz	8@20KHz	14@25KHz	10@25KHz	8@25KHz
Max Pulse Energy [mJ]	0.48@10KHz	0.65@15KHz	0.55@20KHz	0.18@20KHz	0.31@20KHz	0.12@25KHz
Peak power [kW]	32@10KHz	55@15KHz	65@20KHz	13@25KHz	28@20KHz	14@25KHz
Marking capabilities	Standing, Rotary axis, On the fly (marking in motion)					
integration	Up to 4 mechanical axis driving capabilities (stepper motor) Up to 10 digital inputs and 10 digital output fully programmable dedicated connectors Encoder and Photocell					
Interface	Ethernet, RS 232, USB					
Optical Fiber	Detachable – 3 meters standard- 5 meters OPZ					
Aiming Beam	Semiconductor Laser - 630 – 670 nm					
Power Supply	100- 240 VAC 50/60Hz – 600 W max					
Cooling System	Air cooled					
Temperature Range	5°C to 40°C (41°F to 104°F)					

# UniQ™ & ULYXE SERIES

## UniQ™ - Compact , Powerful, integrated: unique!

UniQ™ laser marker is a revolutionary and innovative approach to fiber laser marking:

**For the first time on the market**, no external controller or power supply is needed, no fiber delivery constrains, no fiber length or bending radius limitations.

An advanced mechanical design and high-quality components provide an **IP54 degree of protection** for harsh environment and industrial application.

UniQ™ laser marker works seamless with Datalogic's Lighter Suite, providing a user-friendly, powerful interface and complete software tools, and is fully compatible with other DLA's laser control interface.

UniQ™ marker provided an extremely compact and flexible solution for manufacturing industries where the ease of use, dimensions and price/power ratio are the most important buying criteria.

Great €/W ration, long service intervals, ease of maintenance and improved safety features keep overall operating and installation costs lower than any other laser marking system.

## APPLICATIONS

- DPM ( Direct part marking ) on Plastic and metal materials in automotive, electronics and healthcare industries
- Laser Annealing on high precision metal components



**Ulyxe family** is the most compact and versatile Solid State Laser Marker on the market (only 42cm, 16,5").

Thanks to its advanced technology **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.

## 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

	UNIQ	ULYXE
Wavelength	1060-1070nm	1064nm
Nominal power	15W	6W
Repetition Rate range	15-100 kHz	15-200 kHz
Pulse Width	120 ns	20-25 ns@20kHz
Max Pulse Energy	0.75mJ	300µJ@15 kHz
Aiming & Focus Beam	Semiconductor Laser 630 – 670 nm	Semiconductor Laser - 630 – 670 nm
Connectivity	USB, RS232, Ethernet, TCP-IP	USB
Power Supply	100/240 VAC – 50/60 Hz – 200 W (MAX)	24VDC/13A
Cooling System	Air cooled	Air cooled
IP protection level	IP54	IP21
Temperature Range	Operative 5°C to 40°C	Operative 15°C to 35°C
Dimensions	Rack: 497,3 x 150 x 183,5 mm <sup>3</sup> Weight:10,2 Kg	426x154x170 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 ÷ 200 kHz	50 kHz ÷ 200 kHz
Laser source	Pulsed Fiber Laser			
Pulsewidth (Typ)	100 ns			
Aiming & Focus Beam	Semiconductor Laser - 630 – 670 nm			
Protection degree	Head: IP54 Controller: IP 21			
Cooling	Air cooled			
Power Supply	100/240 VAC – 50/60 Hz – 400 W (MAX)			
Resonator Dimension	87x112x298 mm3			
Rack Dimension	111x430x370 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-to-stop movement conditions. **MOF increases production lines throughput with linear speeds up to 75m/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
Aiming & Focus Beam	Semiconductor Laser - 630 – 670 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

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9C513900U



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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