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 VLASE 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_2 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.

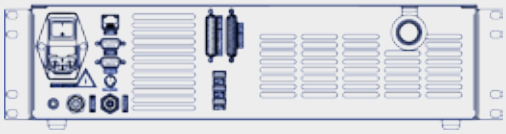
Long wavelength (10.600nm) ensure good results even on glass, rubber, food, wood and many other materials.

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.



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 easy 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 click.
- 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

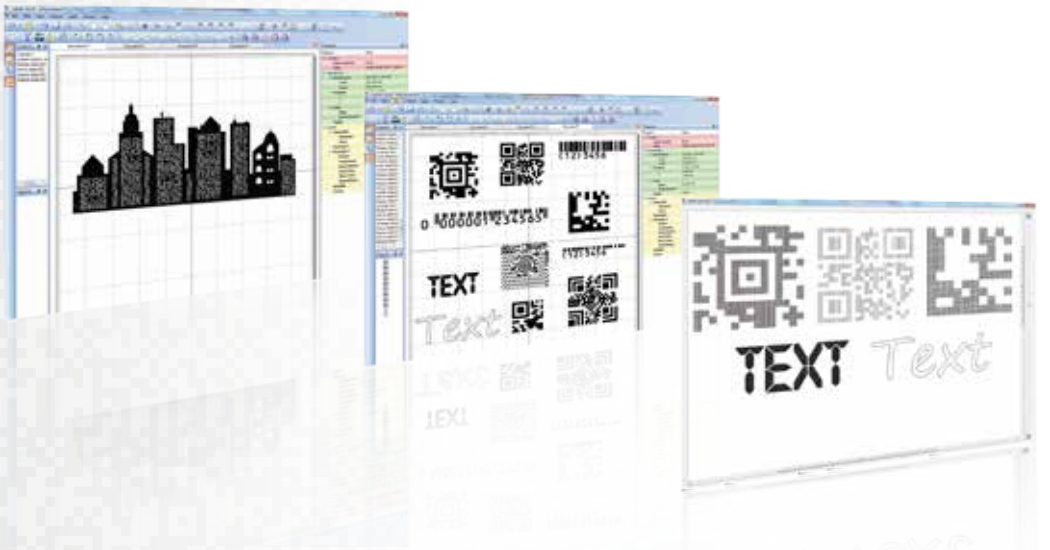
LIGHTER Suite support script capability, easily integrated with legacy systems through a wide range of combinations of transmission media, protocols and architectures, but also to create full automatic or customized marking process.

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

- AREX
- EOX
- VLASE Series
- ULYXE
- UNIQ



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 sames 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

VLASE IR

The VLASE IR is a DPSS air-cooled laser marking source @1064nm, available in 10, 15 and 20W. Excellent beam quality, necessary for marking a broad range of materials, is one of the leading characteristics of the VLASE IR laser sources.

APPLICATIONS

- Metal marking: steel, stainless steel, iron titanium, carbide, brass, (bare, coated, anodized)
- Color enhanced plastic
- Thermo plastic (ABS, PP, PES, PET, PPMA)

VLASE UV

The VLASE 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. The VLASE 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.

APPLICATIONS

- High stability, 'non-doped" plastic marking
- High Density Polyethylene (HDPE) marking
- Medical & surgical plastic marking
- Silicon scribing
- Ceramic & glass marking

VLASE GREEN

The VLASE 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.
The VLASE 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. Superior absorption efficient in semi-conductor material used in solar cells makes this source ideal for photovoltaic applications.

APPLICATIONS

- High stability, 'non-doped" plastic marking
- Wafer & semiconductor marking
- WLC (Wafer-Level Package), memory cards, ICs marking
- Silicon scribing
- Glass epoxy marking
- Copper marking

TECHNICAL DATA

		VLASE IR 10	VLASE IR 20	VLASE GR 10	VLASE UV 3
Wavelenght	[nm]	1064	1064	532	355
Nominal Power	[W]	10	20	10	3
Repetition Rate Range	[KHz]	10 ÷ 100	20 ÷ 100	20 ÷ 100	20 ÷80
Pulse Width	[ns]	15@10KHz	8@20KHz	10@25KHz	8@25KHz
Max Pulse Energy	[mJ]	0.48@10kHz	0.55@20KHz	0.31@20KHz	0.12@25KHz
Peak power	[kW]	32@10KHz	65@20KHz	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	[nm]	Semiconductor Laser - 630 – 670			
Power Supply		100- 240 VAC 50/60Hz – 600 W max			
Cooling System		Air cooled			
Temperature Range	[°C]	5° to 40° (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 technolgy **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 , bicolors 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
Technology		Fiber	Solid State
Wavelenght	[nm]	1060-1070nm	1064nm
Nominal power	[W]	15W	6W
Repetition Rate range	kHz	15-100 kHz	15-200 kHz
Pulse Width	[ns]	120 ns	20-25 ns@20kHz
Max Pulse Energy	[mJ]	0.75mJ	300µJ@15 kHz
Aiming & Focus Beam	[nm]	Semiconductor Laser 630 – 670	Semiconductor Laser - 630 – 670
Connectivity		USB, RS232, Ethernet, TCP-IP	USB
Cooling System		Air cooled	Air cooled
Temperature Range	[°C]	Operative 5° to 40°	Operative 10° to 35°
Dimensions		Rack: 497,3 x 150 x 183,5 mm^3 Weight:10,2 Kg	426x154x170 mm
Power Supply		100/240 VAC – 50/60 Hz – 200 W (MAX)	24VDC/13A
IP protection level		IP54	IP21

AREX SERIES

The **AREX Series** is a multi-functional and all-inclusive line of fiber laser markers dedicated to direct part marking in the Automotive, Electronics, and precision mechanics industry.

Thanks to ultra compact scan-head, the flexible marking platform and the advanced software features, AREX laser marker, provides a flexible, reliable, cost effective solution for permanent and indelible high quality marking directly on your production line.

AREX Series includes 5 different fiber laser sources, 10W, 20W, 30W, 50W and the new 20W M.O.P.A. on one single unified platform.

AREX design and configuration dramatically simplifies and speeds up machine design and system integration, LIGHTER Suite, thanks to its intuitive and easy-to-learn interface, simplifies the development of complete and cost effective Laser Marking Station for OEM and Machine builders.

MOPA MW FIBER LASER TECHNOLOGY

M.O.P.A. (Master Oscillator Power Amplifier) fiber laser technology offers an higher level of parametric flexibility thanks to the capability to adapt laser pulse duration on a wider range of repetition frequency.

The capability to adjust pulse width allows to minimize the material's heat affected zone (HAZ) and to avoid unwanted thermal effect induced in sensitive materials.

High pulse-to-pulse stability ensure high contrast stability even on critical substrate.

AREX 20 MW

AREX PULSED

APPLICATIONS

- High contrast DPM (Direct Part Marking) on plastic and metals in automotive, electronics and healthcare industries
- Laser Engraving on metal
- Annealing & color marking on metals components in aerospace precision mechanic industry
- Label Replacement
- High quality Branding and texturing on electronics devices

TECHNICAL DATA

		AREX 10	AREX 20	AREX 30	AREX 50	AREX 20MW
Wavelength	[nm]	1060-1080				
Laser source		Pulsed Fiber Laser				M.O.P.A. Fiber Laser
Nominal power	[W]	10	20	30	50	>20
Repetition rate	kHz	20 ÷ 100	30 ÷ 100	50 ÷ 100	20 ÷ 500	Repetition rate
Pulsewidth (Typ)	[ns]	FIXED: 100				Adj: 4, 8, 12, 30, 50, 100, 200, 250
Pulse energy (max)	[mJ]	0,5	1,0	1,0	1,0	0,6
Peak power (max)	[kW]	5	10		11	12
Fiber lenght	[m]	3				
Marking capabilities		Static, Rotary axis, On the fly (marking in motion)				
Integration		Up to 4 mechanical axis driving capabilities (step motors) Up to 10 digital inputs and 10 digital output fully programmable dedicated connectors Encoder and Photocell				
Aiming & Focus Beam	[nm]	Semiconductor laser @ 635				
Protection rating		Head: IP54; Controller: IP21				
Cooling		Air cooled				
Power Supply		100/240 VAC – 50/60 Hz – 400 W (MAX)				

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
Wavelenght	[µm]	10,6	10,6
Nominal power	[W]	10	30
Aiming & Focus Beam	[nm]	Semiconductor Laser - 630 – 670	
Cooling System		Air cooled	
Temperature Range	[°C]	Operative 15° to 35°	
Head dimensions	[mm]	180x185x634	180x185x634
Rack dimensions	[mm]	-	437x94x333
Power Supply		100/240 VAC - 50/60 Hz	

HEADQUARTERS

Datalogic Automation Srl
Via Lavino, 265
40050 Monte San Pietro - Bologna - Italy
Tel: +39 051/6765611
info.automation.it@datalogic.com

BRANCHES AND SALES OFFICES

EUROPE

BENELUX

Datalogic Automation Benelux
Newtonweg 3
4104 BK Culemborg - The Netherlands
Tel. +31 345/589489
info.automation.nl@datalogic.com

FRANCE

Datalogic Automation Srl
Succursale en France
Le Parc Technologique de Lyon
333 cours du 3ème Millénaire - Le Pôle
69800 Saint Priest
Tél. +33 (0)4/72476180
info.automation.fr@datalogic.com

GERMANY

Datalogic Automation Srl
Niederlassung Central Europe
Gottlieb-Stoll-Straße 1,
73271 Holzmaden
Tel. +49 7023 7453-100
info.automation.de@datalogic.com

ITALY

Datalogic Automation Italy
Via Lavino, 265
40050 Monte San Pietro - Bologna
Tel. +39 051/6765611
info.automation.it@datalogic.com

Via Taormina 1
20093 – Cologno Monzese (MI) Italy
Tel. +39 02 25151211
info.automation.it@datalogic.com

Via Le Gorrey, 10 11020, Donnas - Aosta
Tel. +39-0125-8128201
info.automation.it@datalogic.com

SPAIN

Datalogic Automation Iberia
Sucursal en España
C/ Frederic Mompou 4 esc A, 4° puerta 3ª
08960 Sant Just Desvern - Barcelona
Tel. +34 (0)93/4772059

NORDIC

Datalogic Automation AB
Höjdrodergatan 21
21239 Malmö - Sweden
Tel. +46 (0)40/385000
info.automation.se@datalogic.com

UNITED KINGDOM

Datalogic Automation UK
Datalogic House
Dunstable Road, Redbourn - Herfordshire
AL3 7PR
Tel. +44 (0) 1582 791750
info.automation.uk@datalogic.com

TURKEY

Datalogic ADC Turkey
Merkezi Italya Istanbul Merkez Şubesi Süleyman
Seba Cad. No:48 BJK Plaza A. Blok Kat:4 D.44
34357 - Istanbul - Turkey
Tel. +90 212 396 1550
info.adc.tr@datalogic.com

NORTH AMERICA

Datalogic Automation Inc
511 School House Road
Telford, PA 18969-1196 - United States
Tel. +1-800-BAR-CODE or +1-215-723-0981
info.automation.us@datalogic.com

Datalogic Automation Inc
Machine Vision
5775 W Old Shakopee Rd
STE 160, Bloomington, MN 55437
United States
Tel. +1-952-996-9500
info.automation.us@datalogic.com

SOUTH AMERICA

Datalogic Brazil
Avenida Olivio Roncoletta, 465
Bairro Vila Hortolandia Jundiaí (SP), Brazil
Tel. +55 11 29232600
info.automation.br@datalogic.com

APAC

Australia-New Zealand

Datalogic Automation Pty Ltd
Unit 130, 45 Gilby Road
Mt Waverley - Victoria, 3149 - Australia
Tel. +61 (0)3/95589299
info.automation.au@datalogic.com

CHINA

Datalogic Automation Asia
2nd Floor,10 Building, Dayuan Industrial Zone,
No.1,Pingshan 1st Road,
Liuxuan Blvd.Xili, Nanshan District,
518054,Shenzhen,China
Tel: +86 (0)755-8629 6779
info.automation.cn@datalogic.com

R206, 2F, No. 1288 Longdong Avenue,
Pudong New Area,
Shanghai,201203
Tel: +86 (0)21-5836 6692
info.automation.cn@datalogic.com

Floor 20, Room 2019, Building 2,
16 West Nan San Huan Road
Fengtai District, Beijing
Tel: +86 (0)10-8757 6375
info.automation.cn@datalogic.com

1202, Excellence Build, 128 Yanji Road,
Shibei District, Qingdao, China
Tel: +86 (0)532 55787889

JAPAN

Idec Auto-Id Solutions Corporation
8-10, Shioe 5-chome, Amagasaki Hyogo,
Japan 661-0976
Tel. +81-6-7711-8880
www.idec.com

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