



ULTIMA 'N-LINE

UV LASER
WIRE MARKING
SOLUTIONS

ULTIMA IN-LINE

Speed, efficiency and modularity are the three key elements of the ULTIMA In-Line laser marking system.

ULTIMA is the ideal tool for marking electrical and optical fiber cables on a production line.

UV laser marking has long been the standard in terms of cable identification in the aeronautical industry. Today, more industrial sectors such as space, rail electronics and the automotive industry are moving toward laser wire marking for wire identification purposes.

UV laser marking provides a safe, permanent, high contrast identification mark on a large number of insulation types: PTFE (Teflon®), FEP (Teflon®), ETFE (Tefzel®), XL-ETFE (Tefzel®).

The ULTIMA system can mark alphanumeric characters, barcodes and logos of different sizes.

MARKING

Production files

The software interface provided with the ULTIMA Series machines allows for the creation and the edition of production files. These files are then stored in a database and can be easily duplicated and accessed at a later date.

Production files contain four types of information:

- Pattern repetition settings
- Pattern content and specifications
- Laser parameters
- Cable specifications

MODULAR SOLUTION

The ULTIMA UV In-Line laser marking system is a compact unit that can be integrated into different production lines. Synchronized through an encoder to the production line, ULTIMA automatically adjusts to the production line cable speed. The ULTIMA system can also be installed offline between de-reeling/re-reeling modules.

Advantages

- Permanent and precise marking
- Zero risk to cable insulation
- Clean marking
- Environmentally friendly
- No post-marking treatment
- No consumables
- Customizable fonts
- Compatible with electrical and optical fiber cables

Marking specifications

- Logo feature
 - Compatible with both vector DXF or HPGL and bitmap/png formats.
- Barcode feature
 - 1D (Code 39 / Code 128)
- Blockmark feature
 - Specific program feature that is designed to statically mark blocks with different marking parameters.
- Incremental feature
 - Special feature that allows for incremental marking by defining a sub-pattern of characters.

INNOVATIVE MARKING PROCESS

The ULTIMA series of machines are equipped with a high-performance vector marking unit. Vector marking is performed by scanning the laser beam directly on the wire.

Advantages

- High flexibility in the definition and selection of font size
- Reduced maintenance: ULTIMA machines do not require optical consumables.
- Lower operating costs
- Reduced noise level and energy consumption

ULTIMA In-Line system utilizes a Laselec patented process which guarantees marking accuracy and quality even at very high speed.

- "Ruler" feature
 - Ruler patterns are repeated at regular intervals.
- Other customizable features:
 - date
 - batch number

AVAILABLE MODELS

In-Line model:

Module designed to be integrated into a production line or between a de-reeler and a re-reeler.

– ULTIMA-IL03 :

3 watt laser
Air cooling system
On the fly marking

– ULTIMA-IL10 :

10 watt laser
Water cooling system
On the fly marking

DESCRIPTION OF THE ULTIMA IN-LINE MODEL

The ULTIMA In-Line system includes the following:

- UV laser marker available in two different versions:
 - ULTIMA-IL03: 3 watt UV laser, air-cooled
 - ULTIMA-IL10: 10 watt UV laser, water-cooled
- Movable cover equipped with a safety viewing window (in compliance with laser safety standards) and a safety sensor to allow access to guidance and marking zone for:
 - Guidance system adjustment
 - Wire loading/unloading
 - Cleaning of the marking area
- Cable guide: adjustment feature for cable and line height.
- A control cabinet mounted on wheels including: Windows 10 PC, keyboard and screen.

The frame is equipped with panels and access hatches to ensure the safety and maintenance of the machine, control-command rack with emergency stop button, and maintenance key, etc.

PRODUCTION LINE INTERFACE

Connectivity

System connects to production line via:

- Inputs/outputs
- Ethernet for log and traceability information transmission
- Coding system mounted on the marking head for cable progress monitoring

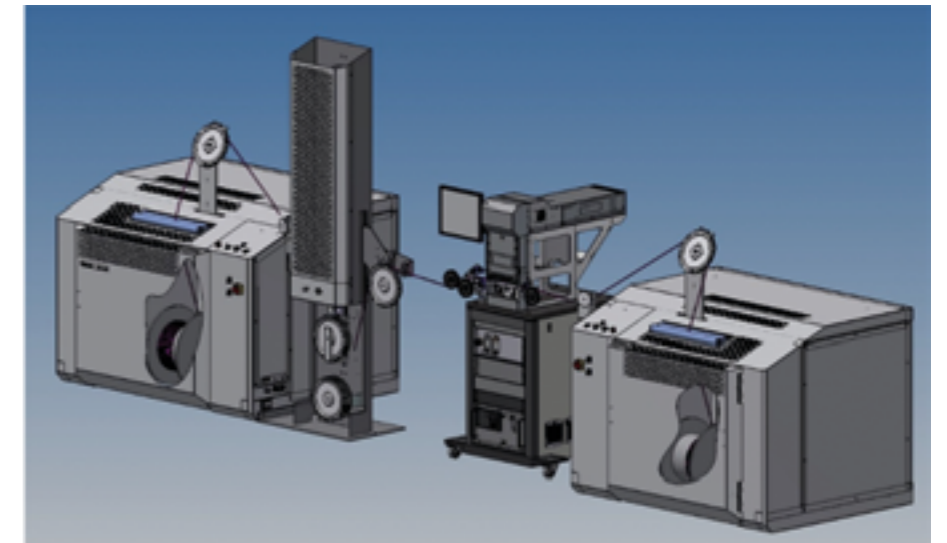
Cable speed:

The ULTIMA system automatically adapts to the cable's speed via an encoder signal.

The cable speed is measured in real time by the ULTIMA system. If the cable speed is inaccurate the system automatically stops marking the cable. A "speed error" message is displayed on the screen.

Traceability files and log:

All marking information, events and production files can be transferred and stored on a networked computer.



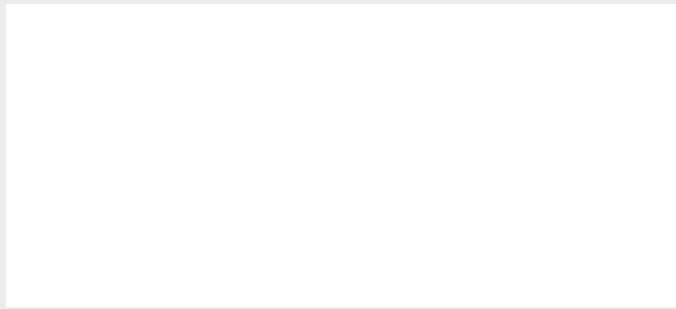
Technical characteristics

Description	ULTIMA-IL03	ULTIMA-IL10
Laser source	Nanosecond pulsed diode pumped solid state laser	
Cooling system	Air-cooled	Water-cooled
Laser wavelength	355 nm	
Maximum optical output average power	3 watts	10 watts
Marking spot size	0,1 or 0,2 mm	
Wire range (outer diameter)	From 0.8 to 15 mm (larger diameters upon request)	
Marking type	Alphanumeric, Arabic, Asian and Cyrillic characters Bar code 1D (Code 39, Code 128), logos, multiple fonts / dimensions	
Maximum length of individual mark	300 mm (11.8 inches)	
Typical marking speed	On-the-fly marking 60 m /min (200 ft/min) (10 characters, 1 mm each, single-line font)	On-the-fly marking 200 m / min (10 characters, 1 mm each, single-line font)
Mark position accuracy	± 0.5%	
Input requirements	100 - 230 VAC 50/60 Hz	1x 230 VAC 50 Hz or 1x 100 VAC 60 Hz (To be specified on order)
Power consumption	1 kW <11 m³/h (388.5 ft³/h)	2.8 kW
Noise level	<65 dB	<75 dB
Ambient temperature range	+ 15°C to +32°C / 60°F to 90°F	+ 15°C to +35°C/ 60°F to 95°F
Relative air humidity	Maximum 85%, non-condensing	
Fume Extraction	Must be connected to a fume extraction exhaust system with suction capacity > 50 m³/hr Hose inner diameter: 60 mm / 2.3 inches (hose not supplied)	
Weight of the ULTIMA marking module	60 kg / 132 lbs	75 kg / 165 lbs
Dimensions of the ULTIMA Marking Module (L x W x H)	780 x 350 x 730 mm / 31 x 14 x 29 inches	1200 x 350 x 730 mm / 47 x 14 x 29 inches
Umbilical Length (from the cabinet output to marker head output)	Approx. 2.5 meters / 100 inches	1200 x 350 x 730 mm / 47 x 14 x 29 inches
Laser safety	Class 1 laser product (in operation): appropriate for open workshop environment	
Norms	CE Compliant	

Additional features	Description
Air filter/ suction system	The suction system is connected to the marking area and to the back of the machine, and includes the following: – HEPA H13 air filter, removing 99.95% of particles that have a size greater than or equal to 0.3 micrometers. – Wide band gas filter (50% activated carbon and 50% Chemisorb)
Light column	Indicates the system status (stand-by, marking ON, fault, maintenance).
Input-output option	I/O machine interface cable

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Headquartered in Toulouse, France, Laselec develops laser solutions for stripping and marking wires as well as interactive assembly boards for wire harness manufacturing.

Laselec is one of the leading companies in the world for the development and production of serial production machines and customized solutions for laser wire processing. The company meets all significant international quality standards in the aerospace industry and counts renowned aircraft manufacturers among its customers.

Having strived to be at the forefront of innovation and quality, its unique expertise and experience allows Laselec to manufacture the most efficient equipment available, while providing customers with low maintenance and operating costs.

Laselec has been part of Komax since 2017. The two companies have been working successfully together on various projects since then. Thanks to this partnership, Laselec's solutions have increasingly found their way into other markets, such as the automotive and railway industry.

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