EN

MRO 200
A/B/S/XS

**UV LASER WIRE &
CABLE MARKING**

**Low/medium
volume production**

Laselec

MRO 200
A/B/S/XS

Ideal for low to medium volume production, the MRO-200 UV laser wire marking range combines efficiency and compactness at a very competitive price.

UV laser marking has long been the standard in terms of wire / cable identification in the aerospace industry.

Clear, unalterable and permanent marking
UV laser marking provides a safe, permanent and high contrast identification mark on all cables guaranteed "UV-markable" by cable manufacturers, such as single or multi-wire jacketed twisted cables with PTFE (Teflon®), FEP (Teflon®), ETFE (Tefzel®), XL-ETFE (Tefzel®).
Unlike inkjet, laser leaves an unalterable mark, preventing any cable identification problems.

Non-aggressive marking
Unlike hot stamping, the UV laser marking process utilized by the MRO 200 range of markers presents zero risk of cable alteration.

Low operating costs
UV laser marking is faster and more efficient than manual shrinkable tubing processes. It does not require a manual post-marking treatment and reduces operating costs with respect to wire identification.

These machines are certified and used by manufacturers, subcontractors and maintenance centers in the Aerospace and Ground Vehicles sectors.

Complies with the following standards:
– CE
– FDA "Radiation Control for Health and Safety Act"
– Underwriters Laboratories (UL)

Aeronautics:
– AIRBUS : AIPS / AIPI
– BOEING : BAC 5152
– SAE ARP 5607
– SAE AIR 5468
– SAE AS 50881 (MIL 5088 L)
– SAE AS 5649
– ASD EN 4650
– ASD EN 3475-100
– ASD EN 3475-706
– ASD EN 3838

Machine:
– EN 60204-1

Laser:
– EN 60825-1
– EN 60825-4
– EN ISO 11553-1

Limited Maintenance
The MRO 200 range is characterized by its ease of maintenance operations.

A test menu linked with remote maintenance software allows quick and reliable diagnosis.
A laser auto-calibration system reduces the number of interventions on the machine.
Side panels enable quick access to the entire machine.
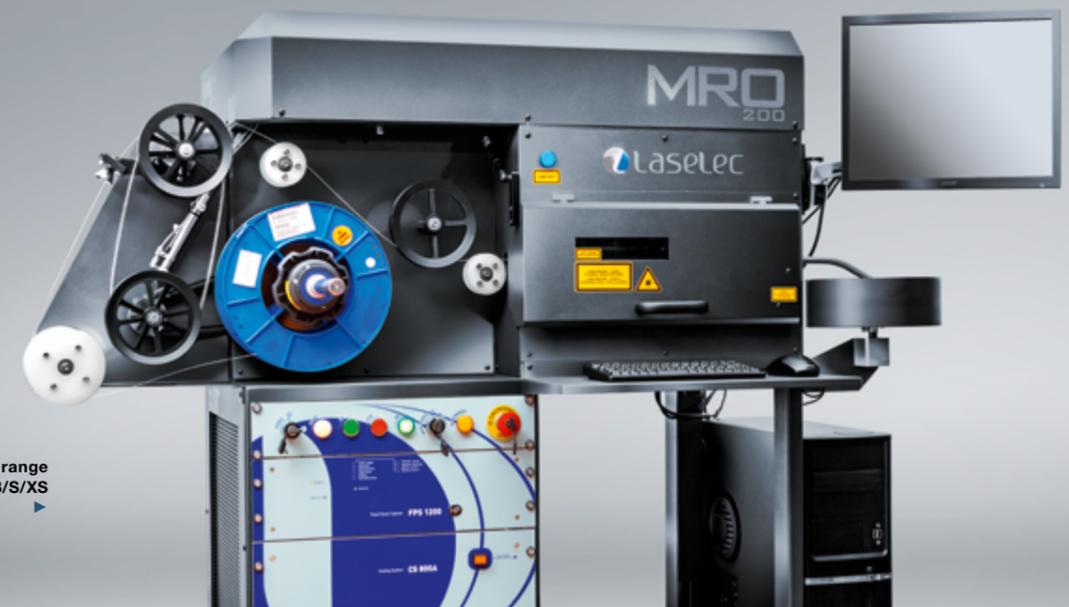
Modular product range
MRO 200 A/B/S/XS
▶

RANGE OF PRODUCTS
ADAPTED TO YOUR REQUIREMENTS

The MRO 200 range includes 4 models adapted to your production needs:

– **MRO 200-A:** machine suited for occasional production.

– **MRO 200-B**: meets the needs of low and medium usage.

– **MRO 200-S**: "best-seller" of the MRO 200 range capable of handling significant production volumes.

– **MRO 200-XS**: the most productive MRO 200 in the range with a very attractive price/performance ratio.

The machines of the MRO 200 range can also be used as a simple cutting machine, particularly for non-jacketed cables.

Laselec also proposes the MRO CUT, an automatic solution for cutting cable to a specific length. Please see your sales representative for more information.

Each machine can be upgraded to one of the higher models in the range.

PRODUCTIVITY
COMPARISON

Average number of marked meters of cable per hour

1200			
1000			
800			
600			
400			
200			
0			
MRO 200 A	MRO 200 B	MRO 200 S	MRO 200 XS
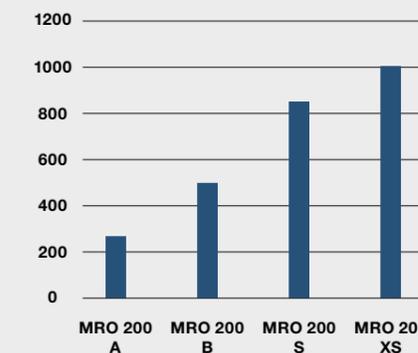
NOTE : The marking speed depends on the spacing of the characters, the type of marking, the number of characters per mark and the operator tasks (labelling, changing spools, etc.).

PRODUCTIVITY GAIN
THROUGHOUT THE PRODUCTION PROCESS:

The productivity gain reached by the MRO 200 is not only related to a high marking speed but also to a production optimization on both hardware and software:

– Easy and fast spool change and cable set-up

– Identification and font change between two different wires done automatically during the cutting of the cable

– Specific equipment: re-reeler, label printer, traceability, etc.

– Ergonomic and intuitive. The EasyProd software offers a great flexibility in sorting production data

OPTIMIZE
YOUR PRODUCTION

The MRO 200 range of laser wire markers enables you to optimize your production, thanks to the many exclusive features offered by Laselec.

Together, we can go further by developing solutions adapted to your needs.

MASKS

	Horizontal Font	Vertical Font
Mask 1604	Height: 1,2 mm (0+0,1 mm) Width: 1,1 mm (0+0,05mm)	Height: 1,6 mm (0+0,1 mm) Width: 0,6 mm (0+0,05mm)
Mask 1605 (option))	Height: 1,2 mm (0+0,1 mm) Width: 1,1 mm (0+0,05mm)	Height: 1,6 mm (0+0,1 mm) Width: 0,6 mm (0+0,05mm)

0-9	A-Z	« spacing»	/	\	+	-	α	Δ

■ Block mark (1,6 x 0,6 mm)	a-z (option)	Barcode (option)

QUALITY
CONTROL

Fault Detection

Sensors on the de-reeler and on the MRO 200 machine interrupt the production and send an error message to the operator as soon as a fault occurs.

Laser Auto Calibration

The machine automatically adjusts the laser energy density depending on the cable parameters defined on the EasyProd software. This exclusive feature increases the energy for cables that are difficult to mark and reduces energy on cables that are easily marked, thus minimizing consumables, wear, and operating costs while increasing marking quality.

EasyProd Software ▼

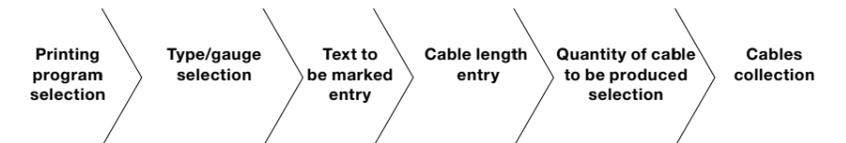◄ **Vector marking machines MRO 200-AV / MRO 200-BV**

CONTROL SYSTEM

– A computer running under Windows 10® (64bit) specially adapted for machine control

– EasyProd software

Automatic or manual entry of marking data (ID, space between markers and cable length, etc.):

– Manual Production Mode:

Printing program selection	Type/gauge selection	Text to be marked entry	Cable length entry	Quantity of cable to be produced selection	Cables collection

– Automatic Production Mode: (optional for the MRO 200-A model)

The automatic production mode is used to mark and cut large amounts of cable through the use of the production file. The software offers different production modes for cables, particularly by type/gauge (to reduce the number of spool changes).

The cable is divided into 5 marking areas that can be easily customized using the EasyProd software.

Source#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	Destination#
END 1		SS1		Large step		SS2		END 2

VECTOR MARKING RANGE
MRO 200-AV / MRO 200-BV

These two new models use the reliable and robust mechanical construction that has long been proven on the MRO 200 range.

These machines are equipped with a diode pumped UV laser which uses vector marking technology. Marking occurs by scanning the laser beam directly on the wire.

BENEFITS

– High flexibility in the creation and choice of font size

– Reduced maintenance: MRO 200 vector marking machines require no consumables for the laser

– Lower operating costs

– Reduced noise level and energy consumption

MARKING
SPECIFICATIONS

– ASCII Universal Characters 32 to 126

– Barcode (Code 39)

– 3 fonts (other fonts on request):
  – Vertical : 0,7 x 1,4 mm
  – Vertical : 0,6 x 1,4 mm
  – Horizontal : 1,1 x 1,2 mm

Technical characteristics

Description	MRO 200-A/B/S/XS	MRO 200-Av/Bv
Laser	UV laser	
Marking technology	Mask	Vector
Laser security	Class I laser compliant with European (CE) and American (FDA) standards: suitable for work in covered workshops	
Operating temperature range	+15°C à +32°C	+15°C à +30°C
	For optimal laser operation, it is recommended to avoid large temperature variations	
Storage temperature	+1°C à +45°C	
Relative air humidity	80% (non-condensing)	
Input requirements	220 AC (+/-10 VAC) – 20A ou 208V AC (+/-10 VAC) – Phase/Phase 20A	
Compressed air	6 bar	
Smoke extraction	It is recommended to use a smoke extraction system connected to an extraction system outside the room. A filtration unit is available as an option	
Cooling unit	An autonomous cooling unit (water) integrated into the machine ensures the cooling of the laser head.	Air-cooled
Coiling pan	220mm motor-driven or manual coiling pan. Other dimensions are available as options. The rotating speed of the coiling pan is adjusted to the cable speed to ensure perfect wire looms.	
Maximum spool dimensions as standard*	Maximum diameter: 305 mm Maximum thickness: 250 mm Minimum winding diameter: 150 mm Central hole: 2.54 cm or 3.81 cm with adapter Weight: 20 kg	
Cable length	Minimum: 15 cm - maximum 999m	
Accepted diameters for cable cutting	From 28 AWG to 6 AWG (4 AWG in option)	
Accepted diameters for cable marking	From 26 AWG to 4 AWG	
Driving unit performance	From +0 to +20 mm (+0 to +0.8 inches) precision for cables less than 4 m (13 feet) in length From +0 to +0.5% for cables of 4 m (13 feet) and greater	
Machine dimensions	1.56 m (L) x 0.71 m (W) x 1.26 m (H)	
Machine weight	330 kg	

Options

Options	Description	MRO 200-A/Av	MRO 200-B/Bv	MRO 200-S	MRO 200-XS
Auto-EasyProd	Automatic Production Mode (by production file)	Yes (optional for MRO200-A)	Yes	Yes	Yes
Large section cutting kit	Reinforced blades for cutting cables up to 4 AWG.	Optional	Optional	Optional	Optional
Production traceability function with a barcode reader	The produced cable data is stored in the text file created during the periodic data backup.	Optional	Optional	Optional	Optional
Knot detector	The system is designed to stop the machine operation and warn the operator in the event of knot detection.	Optional	Yes	Yes	Yes
Label printing	A label printer can be linked to the machine to print information from EasyProd software and from the production files.	Optional	Optional	Optional	Optional
Barcode marking	Specific option for marking barcodes on the cable.	Optional	Optional	Optional	Optional
Motor-driven coiling pan (diameter: 220 mm)	The rotating speed of the coiling pan is adjusted to the cable speed to ensure perfect wire looms.	Optional	Yes	Yes	Yes
Motor-driven coiling pan (diameter: 300 or 400 mm)	Depending on your production needs, larger diameter coiling pans are available.	Optional	Optional	Optional	Optional
Coiling pan sensor	The sensor detects the operator's hand removing the cable from the coiling pan and resumes the production while the operator is processing the produced cable.	Optional	Optional	Optional	Optional
Re-reeler	The re-reeler is designed to re-spool the marked wires without cutting the cable between two identifiers. A cutting mark is placed where the machine normally cuts the cable. The re-spooler is fully controlled via EasyProd software to improve simplicity and quality.	Optional	Optional	Optional	Optional

Additional equipment

Contrast measurement tool – EasyContrast	Measurement tool that includes specific software for measuring contrast, archiving, traceability and the publishing of comprehensive reports. For more information contact your sales representative or refer to the dedicated brochure.	

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Komax Laselec S.A.

Innovate together to challenge wire processing solutions
and create a successful tomorrow.

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.

Headquartered in Toulouse, France, Laselec has been part of the
Komax group since 2017. The two companies have been successfully
working together on various projects, illustrated by the merger in 2021
of Komax France & Laselec S.A. into Komax Laselec S.A.. Thanks to
this partnership, Laselec's solutions have increasingly found their way
into other markets, such as the automotive and railway industries.