ULYS
MODENA
SL/FL/V

UV laser wire and cable marking & identification

komax

ULYS
MODENA
SL/FL

Ideal for medium and high production volumes, the ULYS Modena laser cable marking range combines scalability, modularity and performance 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, high contrast identification on all cables guaranteed "UV-markable" by cable manufacturers, such as single or multi-wire twisted and jacketed 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 ULYS Modena 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 post-marking treatment and reduces operating costs with respect to wire identification.

Ulys Modena with multi-spool dereeler

The ULYS Modena SL/FL is certified and used by manufacturers, subcontractors and maintenance centers in the Aeronautics, Space 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

Stand-alone machine with low maintenance requirements

The machines in the ULYS Modena range are designed to operate without external adjustment nor daily maintenance. The operator's tasks are limited to changing the spools, selecting the production file and collecting the marked cables.

Multiple options and accessories can increase productivity by further reducing the number of operations to be performed by the operator.

RANGE OF PRODUCTS
ADAPTED TO YOUR REQUIREMENTS:

The ULYS-Modena range includes 5 models adapted to your production needs:

– **ULYS 110-SL Modena:**
This model offers access to the advantages of the ULYS SL Modena range at a very competitive price.

– **ULYS 220-SL Modena:**
The use of ULYS 220-SL Modena is particularly suitable for medium production volumes.

– **ULYS 330-SL Modena:**
This model is the best seller of the ULYS SL Modena range. It is designed to handle large volumes of continuous production.

– **ULYS 990-SL Modena:**
This model offers the best performance/price ratio. It is designed for very high production rates.

– **ULYS 990-FL / 330-FL Modena:**
This model is equipped with a diode pumped UV laser that does not require regular maintenance. This technology increases the overall productivity of the machine compared to ULYS-SL Modena.

The machines of the ULYS Modena range can also be used as cutting devices, particularly for non-jacketed cables.
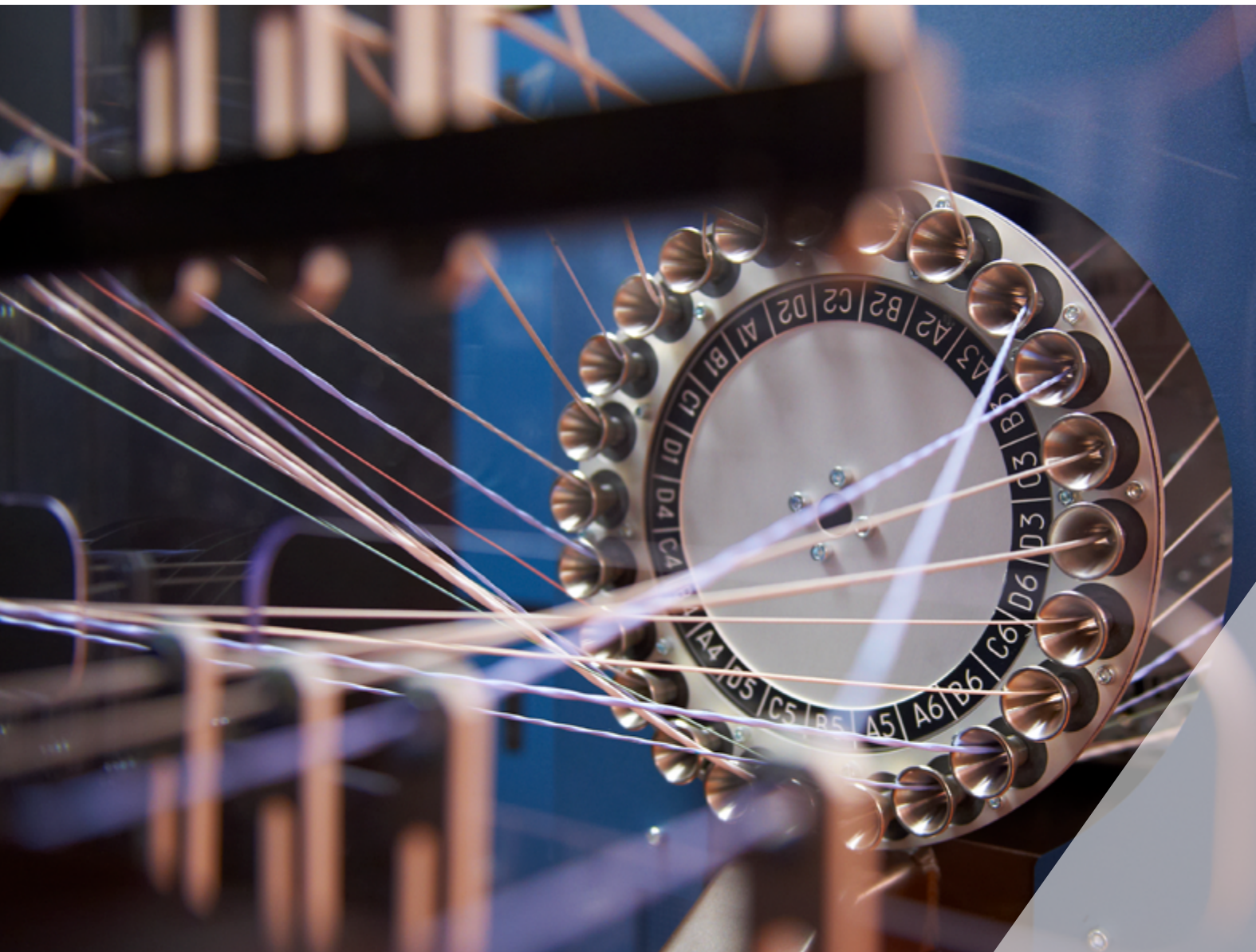
Komax France also proposes the ULYS CUT, an automatic solution for cutting cable to a specific length.

Each machine can be upgraded to one of the higher models in the range.
Also available for the ULYS CUT model which can be equipped with a laser marker.

OPTIMIZE
YOUR PRODUCTION

The ULYS Modena range enables you to optimize your production, thanks to the many exclusive features offered by Komax France.
Together, we can go further by developing solutions adapted to your needs.

◄ Marked cables

PRODUCTIVITY GAIN
THROUGHOUT THE PRODUCTION PROCESS:

The productivity gain allowed by the ULYS Modena 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: abel printer, traceability, etc.
– Ergonomic and intuitive. The EasyProd software offers a great flexibility in sorting production data.

PRODUCTIVITY COMPARISON
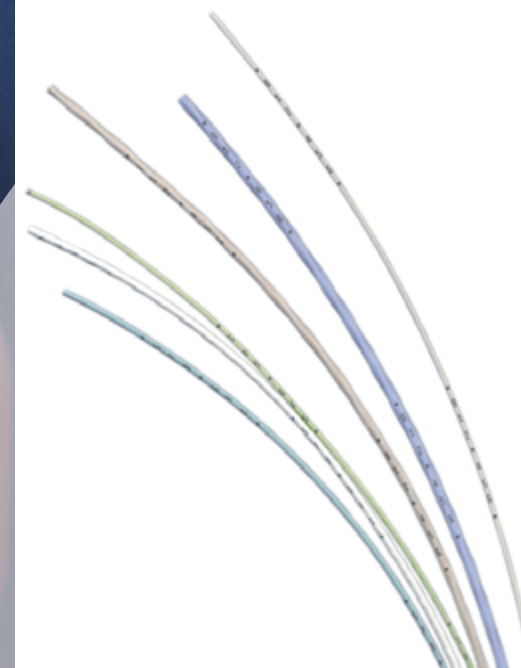### OF THE ULYS MODENA RANGE

Average number of marked meters of cable per hour

	3000
	2500
	2000
	1500
	1000
	500
	0

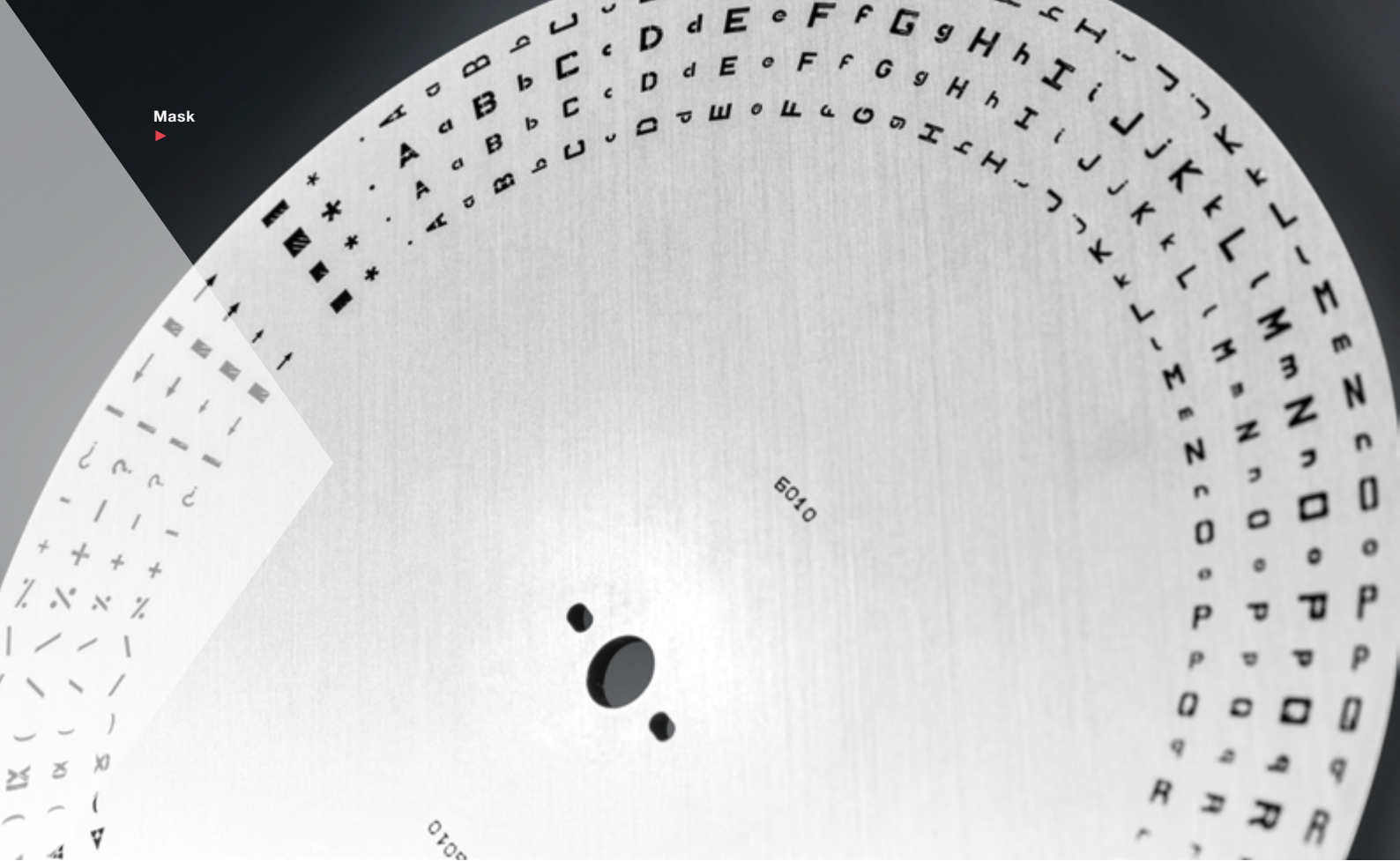| ULYS 110 SL	ULYS 220 SL	ULYS 330 SL	ULYS 990 SL
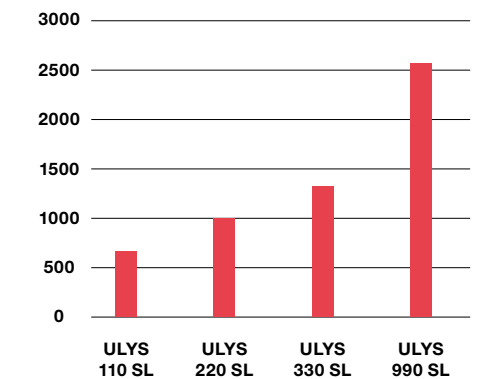
NB : The marking speed depends on the spacing of the characters, the number of characters per mark, etc.
The productivity of the machine is not only connected to the wire marking speed which only represents 30 % to 40 % of the total production time. These factors need to be considered: wire spools changing, wire feeding and configuration, software user-friendliness, production data handling and features offered to organize and optimize production.

QUALITY
CONTROL

– **Fault Detection**

Sensors on the de-reeler and on the ULYS Modena machine interrupt production and display an error message for 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.
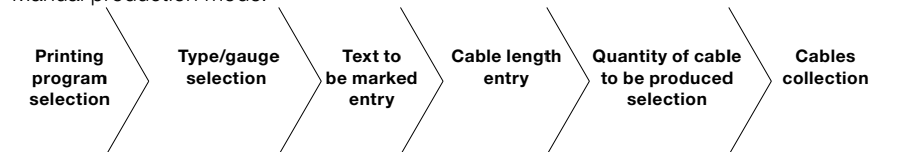
CONTROL
SYSTEM

– **Hardware:** 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:

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 |

MASK
(EXCLUDING VECTOR MARKING RANGE)

The marking is performed by a laser shot through the rotating stainless steel mask that is composed of 4 fonts: 2 horizontal; 2 vertical. The stainless steel mask is warranted for 10 years.

Komax France offers as standard the 6010 or 6020 masks for ULYS 110/220/330-SL Modena machines and the 5010 or 5020 masks for ULYS 990-SL and ULYS 990-FL Modena machines.

Benefits
- marking quality
- process widely tested in the field

Mask ref 6020/5020

		Height	Width
Horizontal		1.2 mm (0. + 0.1 mm)	1.1 mm (0. + 0.1 mm)
		0.9 mm (0. + 0.1 mm)	0.75 mm (0. + 0.1 mm)
Vertical		1.0 mm (0. + 0.1 mm)	0.75 mm (0. + 0.05 mm)
		1.6 mm (0. + 0.1 mm)	0.6 mm (0. + 0.05 mm)

Mask ref 6010/5010

		Height	Width
Horizontal		1.2 mm (0. + 0.1 mm)	1.1 mm (0. + 0.1 mm)
		0.9 mm (0. + 0.1 mm)	0.75 mm (0. + 0.1 mm)
Vertical		1.0 mm (0. + 0.1 mm)	0.75 mm (0. + 0.05 mm)
		1.4 mm (0. + 0.1 mm)	0.7 mm (0. + 0.05 mm)

0-9	A-Z	Spacing	Block mark (1.6 x 0.6 mm)	ref 6020 / 6010 [ ] = : { } > < Ø # Δ) α (/ \ % + - ? ← →	ref 6020 / 6010 Number of characters available per font: 90	Barcode (optional)
				ref 5020 / 5010 : * > < # / \ + -	ref 5020 / 5010 Number of characters available per font: 50	

ULYS MODENA V

Vector marking range

ULYS 220-V Modena
ULYS 330-V Modena
ULYS 990-V Modena

These three new models use the reliable and robust mechanical construction that has long been proven on the ULYS Modena range.

These machines are equipped with a diode pumped UV laser which utilizes 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: ULYS Modena 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	ULYS Modena SL	ULYS Modena FL	ULYS Modena V
Laser	Yag	Diode	
Marking technology	Mask		Vector marking
Laser security	Class I laser compliant with European (CE) and American (FDA) standards: suitable for work in covered workshops		
Operating temperature range	+15°C to +32°C		+15°C to +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	Min. 2 power supply lines: • 208-230 volts - 50-60 Hz – 20 A • 208-230 volts - 50-60 Hz – 32 A		
Compressed air	6 bar		
Smoke extraction (recommended)	The machines in the ULYS Modena range are equipped with a smoke extraction system. We recommend connecting the smoke extractor outlet to the building's extraction system. An optional filter can be provided in case the smoke is not properly evacuated. Additional power supply line required: 208-230 volts - 50-60 Hz - 16 A		
Cooling unit	The laser head is cooled by means of a water/ water heat exchanger and an external cooling unit.	The laser head is cooled by means of an integrated cooling unit.	The laser head is cooled by means of an integrated autonomous air- cooling unit.
Coiling pan	A 220 mm motor-driven coiling pan is provided with the machine. Other dimensions are available as options. The rotating speed of the coiling pan is adjusted to the cable speed to ensure perfect wire looms.		
Max. spool dimensions	Motorized de-reeler: Maximum diameter: 400 mm Maximum thickness: 250 mm Minimum winding diameter: 150 mm Central hole diameter: 2.54 cm or 3.81 cm with adapter Weight: 25 kg		
	Manual de-reeler: Maximum diameter: 370 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: 999 m		
Accepted cable diameter	From 26 AWG to 6 AWG (0.75 mm to 6.3 mm)		
Driving unit performance	From +0 to +20 mm (+0 to +0.8 in) precision for cables less than 4 m (13 ft) in length From +0 to +0.5 % for cables of 4 m (13 ft) and greater		
Machine dimensions (standard)	1.72 m (L) x 1.45 m (W) x 1.80 m (H) (depends on the de-reeler)		
Machine weight	Depends on the de-reeler		

Additional features

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Equipment	Description	Equipment	Description
Cable de-reeling solutions			
Single spool motorized de-Reeler Automatic Feeding System	De-reeling mechanism composed of 1 spool mounted on a motorized horizontal axis with automatic loading system. Cable waste length reduction to less than 6 in (15cm). Simplified spool loading, less than 20 seconds.	**Single spool motorized de-reeler Manual loading Standard unit**	De-reeling mechanism composed of 1 spool mounted on a motorized horizontal axis. It can handle cables from 6 to 26 AWG. Very compact and easy to use. 30 second spool loading time.
Multi-spool motorized de-reeler Automatic Feeding System	De-reeling system designed to automate most spool loading operations and cable changes. Configuration: 6,12,18 or 24 spools. This system offers the best production flexibility. Example: production of an entire harness from a single production file without changing spools manually.	**Multi-spool unpowered de-reeler Manual loading**	De-reeling mechanism composed of 5 spools. Front side: 3 spools for cables 12 to 26 AWG Back side: one spool for cable AWG 6 to 12 and one spool for cable AWG 12 to 26. Optimization of the production time by minimizing time losses due to spool changes. (Not available for ULYS 990-SL Modena / ULYS 990-FL Modena / ULYS 990-V Modena)
Cable output solutions			
Motor-driven coiling pan	The rotating speed of the coiling pan is adjusted to the cable speed to ensure perfect wire looms Standard diameter delivered: 220 mm Optional diameters: 300 or 400 mm		
RapidShare	The RapidShare robot is designed for the automated handling of laser marked wires and cables. It is a flexible solution in which each production process – labeling, grouping, stripping (optional), etc. – is customized according to the customer's needs.		
Options			
Cable detector	An optional cable detector can be added to control cable presence and its good positioning. A message will inform the operator if the cable is missing when starting the production.	**Label printing**	A label printer can be linked to the machine to print information from EasyProd software and from the production files.
Traceability with a barcode reader	The produced cable data is stored in the text file created during the periodic data backup.	**Barcode marking**	Specific option for marking barcodes (code 39) on the cable.
Coiling pan sensor	The machine can be configured to pause between each produced cable. This 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.	**Touch screen**	17" touch screen replacing the LCD screen (automatically integrated for machines equipped with the Rapidshare system)
Additional equipment			
Contrast measurement tool EasyContrast	Fast and accurate contrast measurement tool. It can edit a quality control report (for more information please refer to the dedicated brochure).		

Komax – leading the field now and in the future

As a pioneer and market leader in automated wire processing, Komax provides its customers with innovative solutions. Komax manufactures series and customer-specific machinery, catering to every degree of automation and customization. Its range of quality tools, test systems, and intelligent software and networking solutions complete the portfolio, and ensure safe, flexible, and efficient production.
Komax is a globally active Swiss company with highly qualified employees and development and production facilities on several continents. It provides local support to customers worldwide through its unique sales and service network and offers services that help them get the most out of their investments.

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