

tyco

Electronics

LMS6000 Laser Marking System



LMS6000 Laser Marking System

Tyco Electronics is pleased to announce the launch of the LMS6000 Laser Marking System, a fully functional, closed-loop, Ytterbium doped fiber laser system that is fast, efficient, flexible and reliable. The LMS6000 system comes integrated with state-of-the-art software and transport systems. These integrated systems are capable of marking on a variety of flat label materials. When purchased with the optional direct part marking module, the laser also has the capability to mark on specific metallic and plastic components. The labels meet the requirements of most Military and Commercial print performance and mark perma-



nence requirements, including AS81531, Mil-STD-130, and Mil-STD-202F method 215J. The LMS6000 system also features an optional built-in data matrix validation and error correction system. The system comes complete with a fume extraction system to meet the strictest of emission and safety regulations. If validation is not required, the system can be fitted with an optional cutter used to cut the labels as they exit the marking chamber.



DIRECT PART MARKING MATERIALS

LMS6000 system has the flexibility and capability of direct marking on non-flat profiled parts. The system comes with an optional direct part marking module that has an adjustable Z-axis to focus/de-focus the laser beam based on the type of the material and the height of the part. The Z-axis can either be manually or electrically operated (optional).

Materials that can be direct marked inside the marking chamber:

- Stainless Steel
- Brown Steel
- Oxidation on specific materials
- Thermoplastic
- Duroplast
- Copper
- Epoxide (FR)
- Solder mask on PCB
- Titanium
- Carbide

FEATURES

Energy efficient with only 200W, Q-switched for better efficiency and peak power

Precise focus and resolution up to 1000dpi for the minutest of bar codes and 2D data-matrices

Wide marking area up to 185mm for the continuous system and up to 1M square for the optional direct part marking module

Multiple substrates can be marked and cut

Fast cutting and engraving with speeds up to 2000mm/sec

Reliable with MTBF of over 10000hrs for the system and 50000hrs for the laser fiber

Modular design for efficient maintenance and parts replacement

Modern technology fiber optic laser beam delivery and digitally controlled mirrors

Lightweight 35Kg

LASER MARKABLE LABELS

ANODIZED ALUMINUM

DIE CUT SIZE	PART NUMBERS	Color Options
.50" x .50"	AL-AN-127127-50-0	Red
1.5" x .50"	AL-AN-381127-1.5-0	Blue
1.825" x 1.00"	AL-AN-381191-1.25-0	Black
1.50" x .750"	AL-AN-445191-1.25-0	Green
1.75" x .750"	AL-AN-464254-1-0	
2.00" x 1.00"	AL-AN-508254-1-0	
2.50" x 1.50"	AL-AN-635381-75-0	

CABLE MARKER

DIE CUT SIZE	PART NUMBERS	Color Options
N/A	CM-SCE-TP-1/2-4H-9	White

POLY A-200

DIE CUT SIZE	PART NUMBERS	Color Options
.50" x .50"	POLY-A-200127127-50-0	Black
1.5" x .05"	POLY-A-200-381127-1.5-0	
1.825" x 1.00"	POLY-A-200-381191-1.25-0	
1.50" x .750"	POLY-A-200-445191-1.25-0	
1.75" x .750"	POLY-A-200-464254-1-0	
2.00" x 1.00"	POLY-A-200-508254-1-0	
2.50" x 1.50"	POLY-A-200-635381-75-0	

POLY A-400

DIE CUT SIZE	PART NUMBERS	Color Options
.50" x .50"	POLY-A-400-127127-50-9	Black
1.5" x .50"	POLY-A-400-381127-1.5-9	
1.825" x 1.00"	POLY-A-400-381191-1-25-9	
1.50" x .750"	POLY-A-400-445191-1.25-9	
1.75" x .750"	POLY-A-400-464254-1-9	
2.00" x 1.00"	POLY-A-400-508254-1-9	
2.50" x 1.50"	POLY-A-400-635381-75-9	

ACR-400 Polyester

DIE CUT SIZE	PART NUMBERS	Color Options
.50" x .50"	TYCO-ACR-127127-50-0	Black
1.5" x .50"	TYCO-ACR-381127-1.5-0	
1.825" x 1.00"	TYCO-ACR-381191-1-25-0	
1.50" x .750"	TYCO-ACR-445191-1-25-0	
1.75" x .750"	TYCO-ACR-464254-1-0	
2.00" x 1.00"	TYCO-ACR-508254-1-0	
2.50" x 1.50"	TYCO-ACR-635381-75-0	

All labels listed above can be purchased in matte or gloss finishes. Other materials can be optimized by Tyco Electronics. Please contact your sales engineer.

(17V) 78286
(1P) 70361-03005-107
(S)C512-00016

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SAFETY FEATURES

Certification: Compliant w/21 CFR 1040

Laser controller: Key switch controlled, shutter and pointer toggles

Type reset function: "Yes" key driven on laser controller, E-stops

Safety contact laser safety housing: Remote interlock connector wiring, E-Stops

Laser emission indicator

Requires laser safety class 1 equipment

TECHNICAL SPECIFICATIONS

Operating power: 85-220V, 50-60Hz – laser, 110V, 60Hz – fume extractor

Maximum output power: 10 watts laser power, 0.5mJ

Power consumption: 350W Laser only

Operating temperature: 10-40C

Humidity non-condensing: 30-85%

Weight: 42KG

Laser type: Ytterbium doped fiber laser, pulsed Q-switched

Cooling system: Air cooled

Beam dimensions: TEM-00 (M2<1.4), Plano Spherical 163

Wavelength: 1062nm

Pulse width: 100nsec

Pulse frequency: 20-80KHz

Pilot laser: 650nm/1mW

Laser protection class: 4

Lens focal length: 187±5mm

Marking area: 130mm x 130mm

Resolution: 725-1000dpi

Beam attenuator: Galvo Mirrors, Safety shutter included

Exhaust: Integrated Fume Extractor with Rheostat control, filter layers and exhaust indicators

SOFTWARE SPECIFICATIONS

Operating system: Windows 2000 and XP, Pentium IV, 500-Mhz, 150MB hard drive, USB Interface

Characters: All true type fonts under Windows, filled, outlined, laser specific double or triple line fonts. All fonts can be scaled or wobbled stretching, compressing, circular arc

Graphics: All standard dimensional, PLT, DXF, BMP, JPG, PCX, WMF, EPS, TIFF. All elements can be scaled, moved, grouped or mirrored

Barcodes: 1D – Code 39, Code 93, Code 128, Data-matrix – ECC200, QRCode

Additional features: Serialization, number, date, direct insertion of graphic data, 4-axis controllable for lifting, rotating, moving axis

Integration capabilities: Industry standard ERP/MRP systems, databases and programs

ORDERING INFORMATION

LMS part number LMS-6000-130

LMS Part Options

Direct Part Marking Module:

- Part Number - LMS6000-XYZ30, direct part marking module, 300mm x 300mm
- Part Number - LMS6000-XYZ80, direct part marking module, 800mm x 800mm
- Part Number - LMS6000-XYZ100, direct part marking module, 1000mm x 1000mm
 - Fume Extractor Unit
- Part Number - LMS6000-FE-110V, integrated fume extractor system
 - Verifier/Validator
 - Part Number – LMS6000-VRF-100, integrated data matrix verifier/validator

Warranty: 18 Months from the date of purchase including parts and labor



A LASER SOURCE AND OPERATOR INTERFACE

The operator Graphic User Interface (GUI), is a visual display that controls the laser. The GUI highlights the operation and the operating sequence and displays errors, open circuits and alarms. It also has downloading capability from major ERP, MRP systems, office files, databases or manual entry. The operator interface saves the history of events, including the data and grade reports. The time, date stamps and the amount of process time for each step are filed for traceability and serialization.

B SOFTWARE

The WinLase® label design package is an advanced label design and laser optimization package. The software has the ability to download graphics, click & drop or drag & drop menus for alpha-numeric, bar codes, 2D data-matrices and common industry symbologies. The package has the ability to store multiple material profiles for oxidation, engraving or cutting on different materials. It also allows for one-click changes to profiles, objects and templates. The software has direct connectivity to the laser for on-off part optimization and can operate in the pointer mode to prevent unnecessary destruction of expensive parts. The system also displays the marking area to further optimize the positioning of the product in the marking chamber.

C TRANSPORT SYSTEM

The reel-to-reel transport system allows for high volume, complex data runs while being flexible enough to print only a few labels. The system is equipped with position sensors to keep the material tensioned as it moves through the process. The 100mm rollers prevent materials like anodized aluminum from wrinkling and setting. The intelligent design is capable of transporting inside or outside wound rolls of material. Routing the labels through the system takes under 25 seconds, thanks to the intelligent route design and slots. The transport system also has strategically placed sensors to locate and differentiate the die-cut materials from continuous roll materials, thus preventing laser cutting of pre-cut materials.

D VERIFIER/VALIDATOR

The LMS6000 system has an optional integrated VRF-100 Verifier/Validator that checks and grades the image based on the materials. In case of a failing grade, the system reverses the direction, imprints on the bad image and resumes normal operation so a sub-par label never gets used. The vision system can grade bar codes and 2D data matrix codes to industry standard grading terminologies like AS9132, IAQG and ISO. The VRF-100 can also measure specific parameters in alpha-numeric and graphic imprints. The grades for specific attributes are displayed with color codes in the GUI and recorded alongside the read data in the record file. The set-up is easy with quick calibration and input of the material profiles into the vision system for optimum lighting characteristics.

E FUME EXTRACTION SYSTEM

The LMS6000 system comes integrated with the industry's most advanced fume extraction system. The fume extraction system acts as a vacuum in the marking chamber to keep labels 'flat'. The airflow is also controlled in the chamber to prevent overheating of the marked materials using an adjustable rheostat. The system incorporates 3 levels of filtration – pre-filter, main filter and an active carbon filter that ensures optimum air quality and emissions controls. It has a serial communication port to communicate with the operator interface. In the event the filters clog when starting/stopping the system, the laser comes with an indicator light to warn the operator of the problem when the airflow drops below minimum thresholds.

