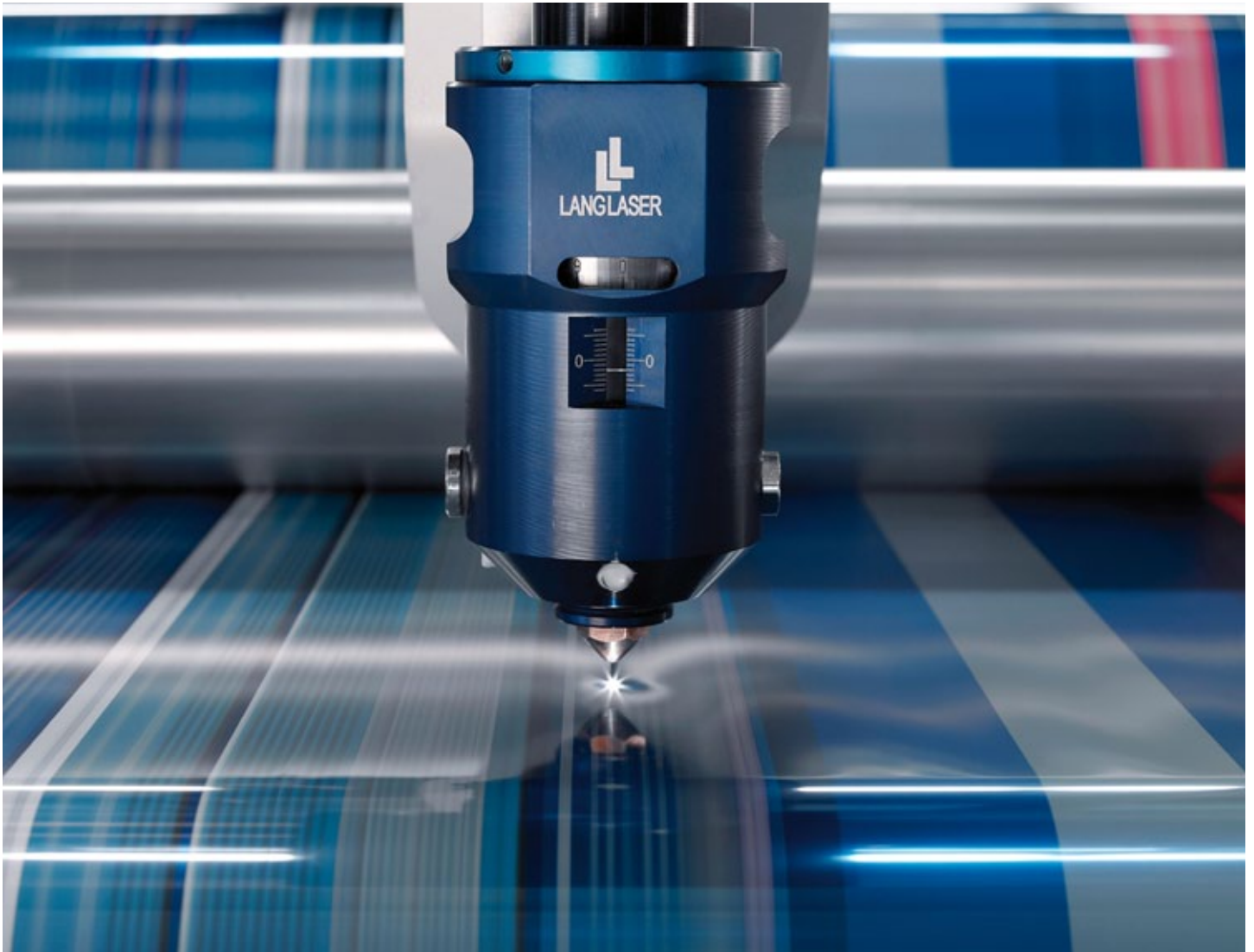




LANG LASER



LANG LASER SYSTEMS
Smart up your Packaging



A clever and convenient packaging must be easy to handle, easy to close, preserve and prolong the edibility of the content and must allow microwave cooking. A modern Packaging should look attractive, practicable, informative, and above all it should be easy to open. LANG LASER innovative systems, provide a cost-effective way to raise the perceived value of the Packaging and improve the consumer experience. With LANG LASER innovative laser processing, the easy and comfortable opening, the maximum shelf life, the content quality and practicability of the packaging can be easily achieved. LANG LASER-System GmbH as an international company with headquarter in Germany, the company develops and produces customized, reliable and cost-effective laser systems for different

branches of industry. The company delivers exceptional laser solutions for flexible packaging, cardboard and paper industries.

The company LANG LASER-System is the market leader in laser system and component, our products are used for a wide variety of industries including flexible packaging, cardboard and paper packaging, medical, Food, Confectionery, Bakery, cosmetics, Pharmaceuticals, security documents, Consumer goods (non-food), banknotes printing, and other special industries. The machines are implemented in existing machines like slitting, rewinding, lamination, digital printing machines or can be also installed as independent machines. Our system solutions find use in following applications such as cutting, perforating, scoring, structuring and marking.

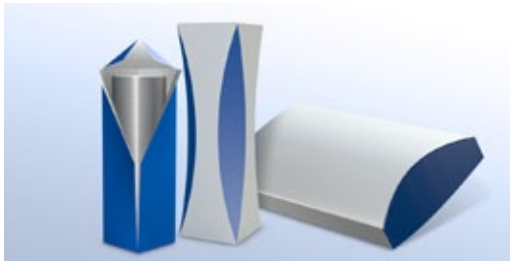
LASER SYSTEMS

For Packaging Applications



Laser Systems for foils

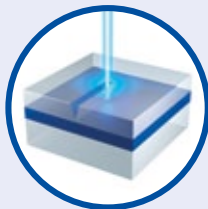
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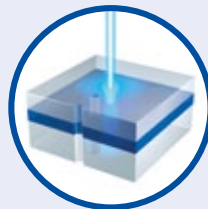
Laser Systems for
cardboard packaging

14

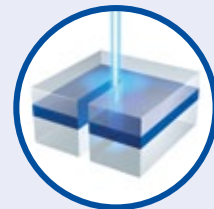
Laser Scribing



Laser Perforating

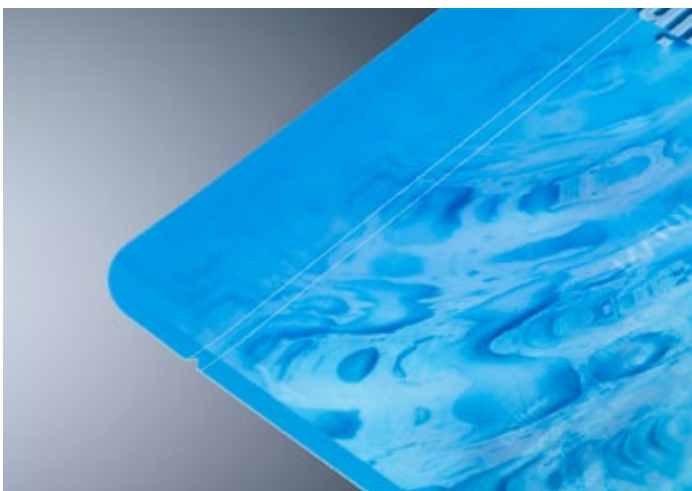


Laser Cutting





WEB DIRECTION



CROSS WEB

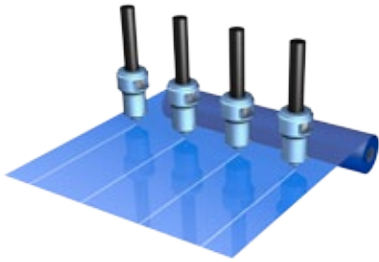


LASER SYSTEMS

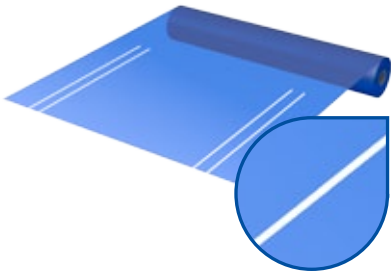
For a wide range of packaging

WEB DIRECTION

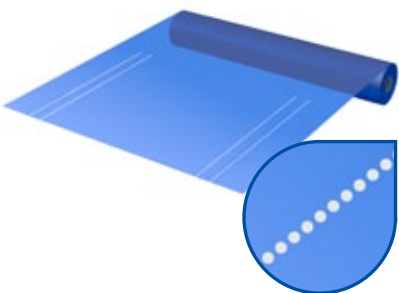
Laser Configuration



Scribing lines

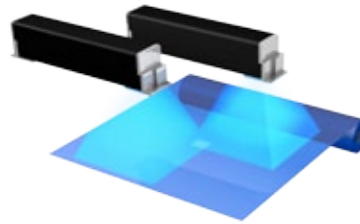


Perforation

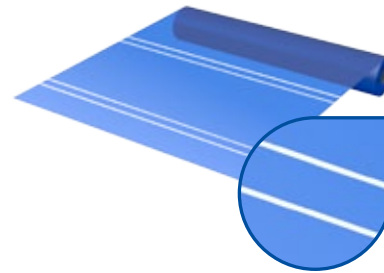


CROSS WEB

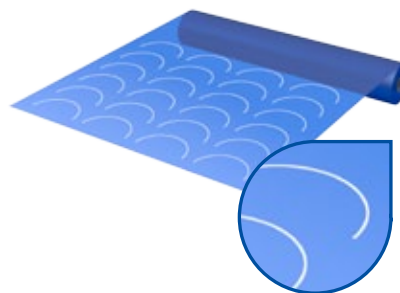
Laser Configuration



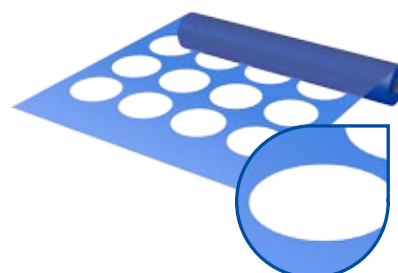
Scribing lines in Cross Web Direction



From simple to complex scribing contours



Contour cutting



Best Performance in Web Direction

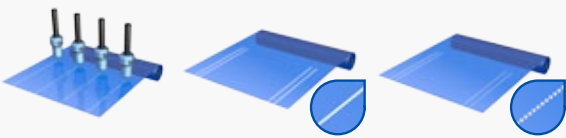


Intelligent packaging is easy to open. The optimum easy opening solution is a defined tear structure that gives the consumer a controlled and guided opening. This is precisely the strengths of the laser-assisted Easy Opening Systems from LANG LASER. Laser-scribed lines have a uniform melting edge, which leads to an exact course of the tear structure. At the same time, the surrounding Material area remains tear-resistant. The result is a packaging that Your customers like to open.

LANG LASER EasyScribe WD technology, offer the finest scratch lines at high speed, higher precision and higher quality. The process runs in web direction, and the scribing is done with individual laser beam sources and precision optics. Each beam produces a scratch or perforation pattern via its own focusing optics. The process can be also synchronised with the print mark.

YOUR ADVANTAGES:

- Unique performance with up to 12 processing heads in 2 layers
- Up to 60 scribing or perforation patterns with Multi-Focus Optics
- Scribing and perforating processes in a single production step
- Combination of different hole sizes and scribing line lengths
- Quicker product change
- Consistently high quality
- Powerful, easy-to-use control software



Laser Scribing

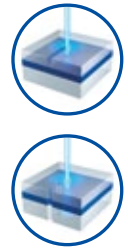


Laser Perforating



EASY SCRIBE WD, WD-P

Laser Systems for foils



Application	Scribing in the web direction with continuous or interrupted lines. Micro-perforation or perforation with different hole sizes for MAP applications, optionally with WSC (Web Speed Compensation module). Synchronisation with the Print mark
Processing	Scribing / perforation lines in the web direction, if necessary even in a single work operation
Number of scribing / perforation lines	2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 optionally with MFO up to 60
Laser power	30 – 500 W; Pulse peak power > 1,000W
Web width	≤ 1.800 mm
Web speed (material-dependent)	≤ 700 m / min
Laser protection class	1
Typical integration	Roll slitter, winder
Special features	Mature control software, scribing and perforating processes in a single production step is possible. Combination of different hole sizes and scribing lengths allow a flexible use of atmosphere applications and tear lines in the web direction. Upgrade with the Web Speed Compensation module for perforating at high web speeds

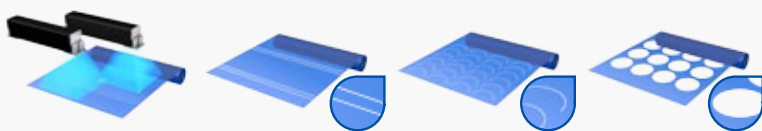
Highest Laser Quality for complex Contours and Lines in Cross Web Direction



Scribing is also often done in the Cross Web direction. The solution is called LANG LASER MultiScribe CW and can be easily integrated into existing systems. MultiScribe CW is extremely dynamic and, if necessary, can remove only single layers without damaging the web and the barrier properties during the scribing process. The print mark control synchronises different scribing structures and thus allows numerous applications: from simple lines to complex contours for reclosable packaging. This means that even diagonal and semicircular openings of the highest precision can be made. High-tech scanners ensure the necessary laser beam deflection. They can meet any challenge and master the smallest focus diameter, large work areas, highest deflection speeds and special quality standards. You can therefore achieve very fine, hardly visible, scribing lines.

YOUR ADVANTAGES:

- Finest perforations
- Unlimited contour freedom
- Innovative packaging
- Best suitability for complex processes
- Highest use flexibility



Laser Scribing

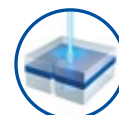
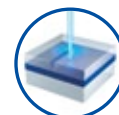


Laser Perforating



MULTI SCRIBE CW

Laser Systems for foils



Application	Scribing and perforating in the Cross Web direction and full contour freedom. Synchronisation with the foil print
Processing	Complete contour freedom for scribing and perforating (Scanner mirrors can be fixed in order to scribe in WD)
Number of scribing / perforation lines	1 – 6
Laser power	100 – 500 W; Pulse peak power > 1,000 W
Number of especially fast galvanometer scanners	1 – 6
Web width	≤ 1.800 mm
Web speed (material- and contour-dependent)	≤ 600 m / min
Laser protection class	1
Typical integration	Web slitter, winder / Rewinder, printing machines or Lamination machines
Special features	Use of especially fast 3-axis galvanometer scanners with variable working fields. Extremely small spot diameters ensure the finest, almost invisible scribing lines. 1 – 6 laser scanner units are used depending on the application and size of the working fields. High-precision compensation of the web speed and control of the laser power

Perfectly Combined

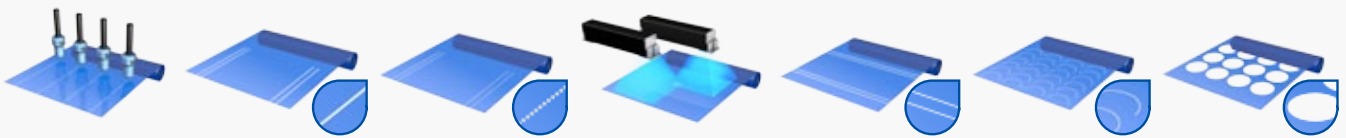


Fine perforations with LANG LASER ensure that your packaging breathes. A controlled oxygen exchange ensures that the contents stay fresh and have a long shelf life. Microscopically small, precise holes with a diameter of 60 – 140 μm ensure an optimum atmosphere. Comfortable opening, Easy opening and maximum shelf life is a combination desired for many packaging in the food area. The CombiScribe System from LANG LASER allows you to scribe and perforate in one work operation. This is ensured by the intelligent control software, which allows you to select any desired hole pattern and scribing line length, and synchronise this process with the print Mark of your matreial. You can therefore produce quickly and cost-effectively. The successful combination of both methods opens up an entirely new possibilities and market for you. CombiScribe WD / CW allows you to enhance your packaging with evermore innovative elements.

The combination of different optics, deflection units and beam sources in a single laser system offers you almost unlimited possibilities.

YOUR ADVANTAGES:

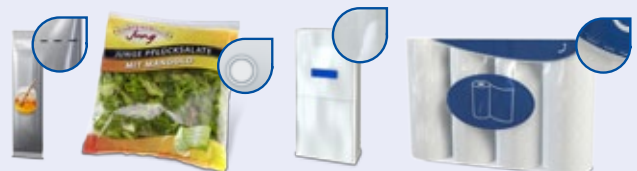
- Finest perforations
- Unlimited contour freedom
- Innovative packaging
- Best suitability for complex processes
- Highest use flexibility



Laser Scribing

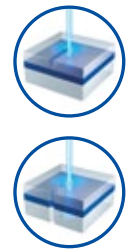


Laser Perforating



COMBI SCRIBE WD / CW

Laser Systems for foils



Application	Combines the two EasyScribe and MultiScribe methods and thus offers a high degree of freedom and flexibility at the best quality. CombiScribe combines the entire spectrum and contains the scribing and perforating know-how of LANG LASER
Processing	Combination of scribing and perforation lines in the web direction and complete contour freedom
Number of scribing / perforation lines	WD 2 – 16 optional with MFO up to 60; CW 1 – 6
Laser power	30 – 500 W; Pulse peak power > 1,000W
Number of especially fast galvanometer scanners	1 – 6
Web width	≤ 1.800 mm
Web speed (material- and contour-dependent)	≤ 600 m / min
Laser protection class	1
Typical integration	Roll slitter, winder
Special features	Ideally suitable for complex production processes. Use of different lasers allows the realisation of all customer wishes: multi-functional solution even for future requirements

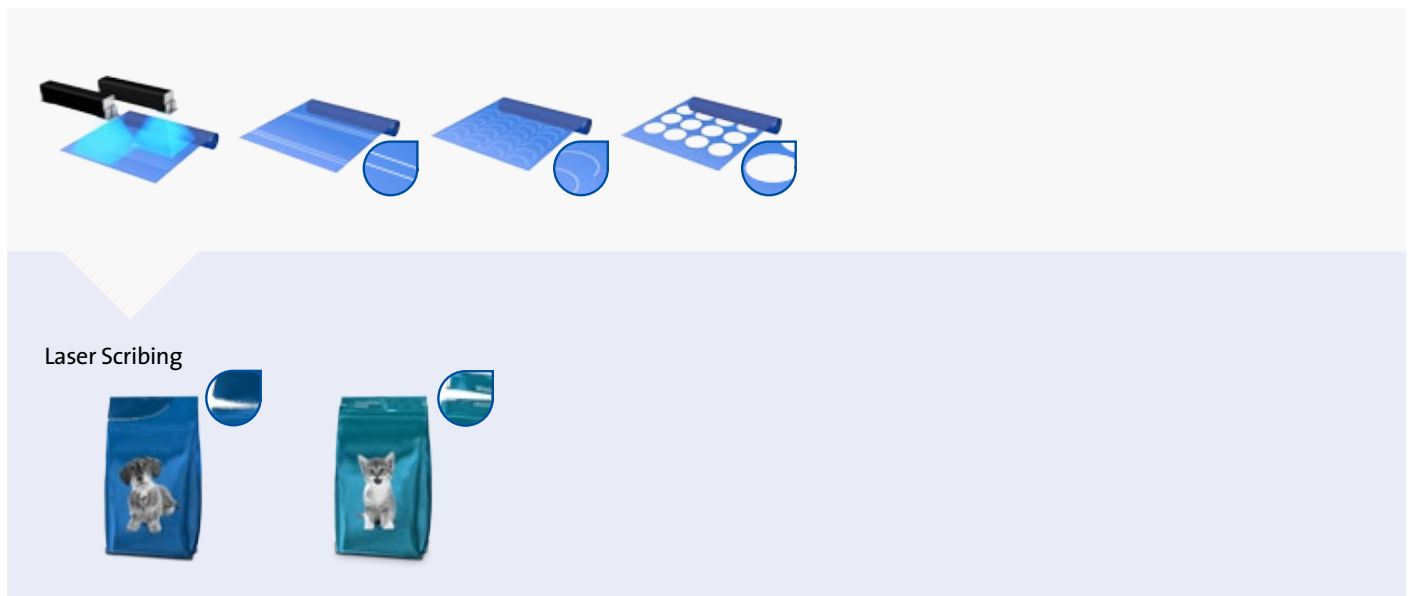
Amazingly Good Pouches



Pouches and bags made from flexible Packaging are frequently used in everyday life. The unique easy-open features sets a high standard in practice and efficiency of the pouch and bags, for the consumer, the opening should be easy, practicable and should run smoothly. Pouch packaging can only be easily opened if the scribing structures on both sides are in line. This is achieved when the laser, on the pouch making machine, simultaneously makes the lines on the front and back side during the pouch production process. LANG LASER gives you the exact tailored solution to your pouch making machine. PouchScribe has been successfully integrated into all common machine types. Because of the lower speed in the pouch making process, 100 watts Laser are preferably used for pouch making machines. PouchScribe offers you high-quality laser processing at a low cost.

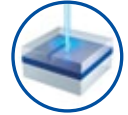
YOUR ADVANTAGES:

- Exact lines through high-quality laser processing
- The easy opening is made by an exact coincident scribing lines on both sides, front and back
- Low Investment cost
- High efficient
- Low maintenance cost



POUCH SCRIBE

Laser Systems for Flexible packaging



Application	Scribing with continuous or interrupted lines simultaneously on the front and rear side of a pouch. Optionally also available with scanner for simple shapes, like diagonals or arcs of a circle. Synchronisation with the Film print mark if necessary
Processing	Scribing lines in the web direction. Optional: Scribing contours like diagonals or curves as easy opening on the corners of a standing bottom pouch. Circular removal for insertion of drinking straw
Number of scribing / perforation lines	2
Laser power	30 – 200 W
Number of especially fast galvanometer scanners	2 with scribing contours option
Web width	Independent of web width
Production speed CPM	120 cpm
Laser protection class	1
Typical integration	Pouch making machines (FFS etc.)
Special features	Compact design, simple integration, low-cost alternative. Easy-to-Use software. Can be used with double spot or multi-spot (MFO) optics if desired

LASER SYSTEMS FOR CARDBOARD PACKAGING



LANG LASER delivers highly innovative laser technology for the production of folded boxes. The big advantage lies in the digital illustration of cutting and folding line processes. With the quick dynamic mirror beam scanning system the laser beam is exactly guided to the scribing, cutting, and engraving position on the cardboard web with extremely high speed. The lines and contours are created by a special graphics software, which is especially developed for these processes. The production of folded boxes is absolutely digital thanks to those of LANG LASER developed laser technology and allows quick product changes, short processing time and high flexibility. The system offers creasing and cutting production with

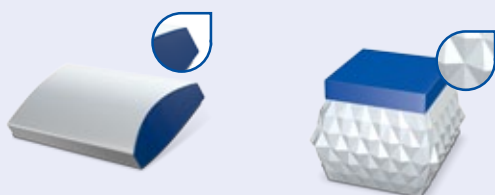
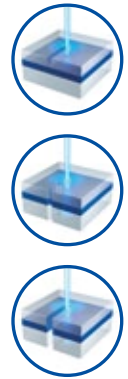
high quality and high speed. It is also possible to realise very decorative cut-outs or engraving in the same working flow. Various printing companies and converters trust in our technology.

YOUR ADVANTAGES:

- No Die systems, no tools
- No special plates
- Lower production cost and higher availability of the machine
- Higher flexibility and quick delivery time (Just in Time)

For production of small series and prototypes and for Large-scale production

Laser Systems for cardboard packaging





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