KiMLA

FIBER LASER

LASER

FINECUT FLASHCUT POWERCUT Extremecut

KIMLA POLISH MANUFACTURER OF CNC

Why...

do companies that are working on the machines ...
Kimla succeed?

Kimla are the only company in Poland developing and producing, powerful, fast, stable and easy to use CNC machines. Our leading position is achieved through our creative attitude and impressive machine performance. We have a friendly, respectful attitude towards our clients, whose satisfaction is of paramount importance to us. We have extensive experience and have worked on advanced machine solutions for the past 21 years.

In the beginning we were focused on producing electronics and control systems for CNC machine tools. This has transformed into a full range of CNC machines offering advanced technological capabilities.

Today, recognized as a leader in the industry, having installed more than 2,500 machines and continually researching and developing new solutions, Kimla achieve the highest performance on the market with prices considerably lower than most reputable companies around the world.

With continual expansion and improvements to our production facilities we continue to grow our organization.

Winner of many prestigious awards

KiMLA

Saving energy

Good price

FIBER LASERS TECHNOLOGY ADVANTAGE OVER CO_2 LASERS

'Fibre laser' is the name given to lasers that operate using a fibre resonator. Unlike traditional CO_2 lasers, the active centre consists of an ytterbium-doped optical fibre, and the entire resonator is based on a solid body without any replaceable regulatory elements such as mirrors, for example. The resonator operates on a frequency which is ten times higher than a CO_2 laser (and therefore a ten times shorter wavelength), allowing for improved focusing of the beam and a higher concentration of energy.

CO_2 technology has been in development since the earliest use of lasers for cutting steel in the 1950s, but in recent years no significant improvements to the technology has been made. Its efficiency is limited by physical phenomena that do not affect fibre lasers, and consequently fibre optic technology is the most modern and efficient method currently available.

Fibre lasers consume significantly less energy than CO_2 lasers, with energy efficiency values in the region of 50%, as compared with just 5% for comparable CO_2 lasers. To illustrate this point, a CO_2 laser with a power output of 4kW needs an 80kW power supply to operate it, where a 2kW fibre laser of corresponding capabilities would consume just 7kW. This means that the cost of electricity associated with fibre laser operation may be up to ten times lower than in the case of a CO_2 laser.

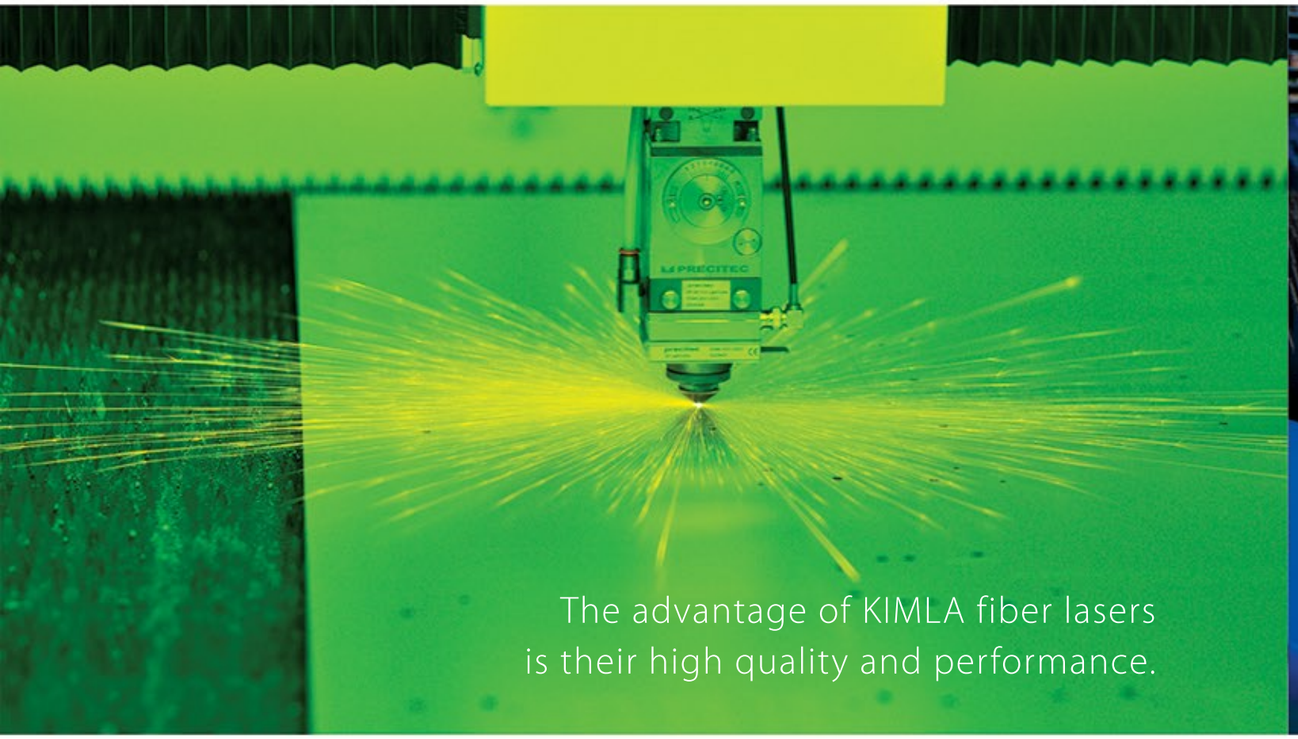
Another advantage of fibre lasers is the considerably shorter wavelength of the light they produce, which allows for a higher energy density within the focused beam. This higher energy density enables faster laser cutting with less power required for operation. Fibre lasers can frequently achieve the same cutting speeds as CO_2 lasers with just half the power, and in the case of very thin metal sheets the fibre laser is able to cut at much higher speeds than the CO_2 laser with equivalent power. With the development of optoelectronics and semiconductors, laser diodes are achieving ever greater efficiencies. The processing of energy from the light produced by laser diodes into the output beam takes place in the fibre, which can achieve processing efficiency of up to 80%. This solution delivers considerable energy savings, while the improved energy absorption of the fibre laser enables faster cutting.

The advantage of the lasers over CO_2 lasers is visible particularly with thin metal sheets up to 6mm. The thinner the sheet, the greater the advantage of a fiber laser over a CO_2 laser. Fiber lasers are also a great complement to machines for waterjet cutting. Waterjet machines have a very wide operating range extending up to 200mm thickness of metal. But the speed of Waterjet machines is much lower than the speed of lasers. The optimal solution for metal cutting is: the fiber laser for thin metal sheets and Waterjet for thick plates.

Fiber laser technology is relatively new; devices of this type have been produced for only a few years. Companies which are familiar to most of the customers cannot pride themselves on many years of experience in this field, because they began the activity at a similar time. At this time, smaller companies can significantly outperform larger companies that have long-term procedures for adopting new technologies and adapting the software to the needs of a specific user.

KIMLA

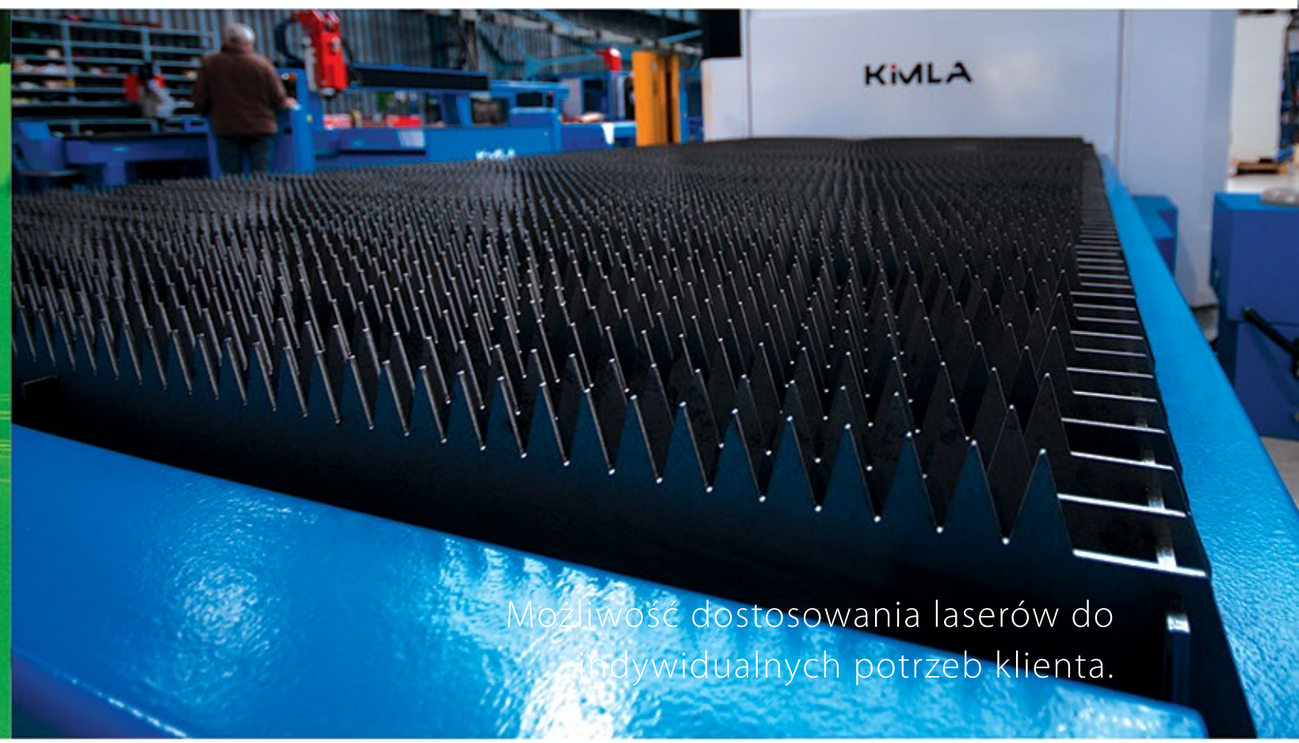
Amazing performance



With KIMLA fibre lasers, the user has the option of changing the size of the focused beam spot, allowing optimal adjustment of the laser's optical parameters to the type and thickness of a metal sheet. This is in direct contrast to CO^2 lasers where it is not possible to influence the diameter of the beam which will be focused in the head. In a fibre laser, beam delivery is done via a fibre optic, and having left the fibre the beam must be collimated. Collimation is the process of changing the diverging beam into a parallel one - a process carried out by means of a collimator lens.

Adjusting the focal length of the collimator lens influences the diameter of the beam. This in turn impacts on cutting speed and the ability to cut materials of varying thicknesses. The thinner the material, the smaller the diameter of the focused beam should be to make optimum use of the available power. For cutting thicker materials, the diameter of the focused beam should be increased; if the diameter is too small, the slot is not large enough to allow the shielding gas to blow out the melted material.

Flexibility



KIMLA lasers are manufactured in a variety of different configurations and to suit many different workspaces. This diversity of design relates to both the degree of automation as well as the laser power and its configuration. KIMLA manufacture lasers with a single work table, offering high efficiency at a low price, as well as production lasers which offer higher efficiency, higher maximum speeds and faster accelerations. These production lasers feature automatic pallet exchange with a high degree of automation, a suction system and systems for nesting and preparing production.

The unique possibilities for rapid cutting of thin metal sheets offered by KIMLA fibre lasers mean that they are a superior alternative not only to other fibre laser machines, CO_2 lasers, and punch presses, which were previously considered the cheapest technology for cutting repeatable metal sheet components. Thanks to the revolutionary technology used in fibre lasers, using them to cut thin metal sheets has now become cheaper than cutting on turret presses.

Kimla Company - a leading manufacturer of CNC machines, specializing in the application of innovative technologies, has created a unique line of fiber lasers with high performance and favorable price.

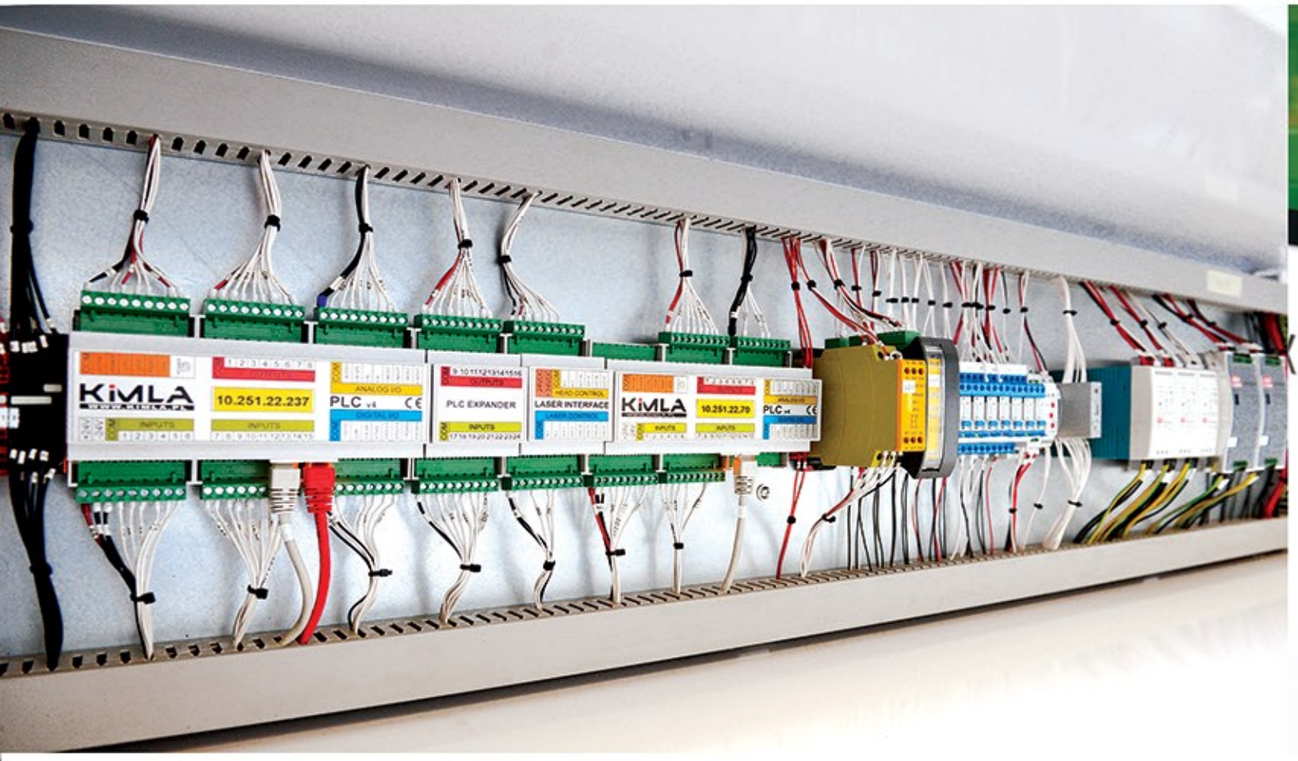
KIMLA Fibre Lasers utilize the most up to date technology for the efficient cutting of any shape from sheet metal. The difference between fibre and CO_2 lasers is particularly visible in the case of thin sheets up to 5mm, where the cost of cutting a detail can be reduced by up to ten times. This is possible due to superior energy efficiency of up to 30% (compared with just 5% for CO_2) and a greater concentration of power as a result of shorter light wavelengths.
Though the use of fibre laser technology for cutting sheet metal is still only a few years old it has gained many followers in this short time and the industry is growing very quickly. Laser cutters have never been cheap, but thanks to KIMLA fibre lasers this technology has the potential to reach the masses – our lasers can be as much as 50% less expensive to buy than 'big brand' machines, making them accessible not only to large factories, but to smaller workshops and service businesses as well.

The advantages of fiber lasers

- Extremely high efficiency gives an impressive ratio of cutting speed to laser power
- Cutting costs are as much as 10 times lower than with comparable CO_2 lasers
- No costly laser gases required, only technical nitrogen and oxygen as assist gases.
- No costly turbines and other mechanical components with the source unlike the CO_2 lasers, significantly reducing operating costs.
- Advanced anti-reflective protection allows for cutting of highly reflective materials
- Automatic adjustment of head height
- Liquid cooling provides stability and minimizes the risk of damage to the head and the fibre connector
- The lens in the head is safeguarded by a quartz window, which protects against splashes of cut material
- The laser optics can be adjusted to suit specific materials
- Fibre lasers do not require adjustment of mirrors in the resonator or the supply of gases to it
- Don`t use turbines or vacuum pumps, which significantly reduces operating costs
- The laser beam is guided using a fibre located within the cable guides
- Available versions with a single pallet, double pallet or thrid pallet system
- Available pallet with tube cutting system
- Software includes an option of NESTING, which allows for optimal distribution of detail on the sheet
- System offers dynamic analysis of vectors – providing high performance for more complex shapes
- Graphic online visualization of laser operation
- Very low power consumption
- Monolithic laser construction provides high stability and accuracy
- Rigid steel construction eliminates vibration and thermal drifts
- Compact space-saving design- smallest footprint?
- Self-supporting construction, eliminating the need for special foundations during installation
- Totally enclosed working area, protecting the operator from radiation in accordance with health and safety requirements
- Machines feature laser safety barriers
- Cutting chamber equipped with automatic extraction of dust generated during cutting
- Easy import GEO files for customers using machines produced by other companies
- Print head labels work pieces very quickly, facilitating identification later
- Scanning head allows scanning of existing detail, shortening project preparation time
- Prices of fibre lasers are comparable to CO_2 cutting machines, despite superior performance

KiMLA

The innovative control system dedicated to lasers



The control system of the KIMLA laser is equipped with extremely efficient drives that are based on technology allowing data transmission through real-time Ethernet. Using this fast method of communication, we have achieved exceptional dynamics of work and the ability to send four motion parameters (position, velocity, acceleration and jerk) to servo drives – a highly innovative solution since most solutions applied by other companies only give speed or position.

The software used by KIMLA lasers is the most advanced solution in recent years. Our company has developed software with a number of new features that promote fast and efficient work. The control system of the KIMLA laser has the ability to edit, correct, make geometrical changes, alter distribution or generate a path, all whilst continuing work. Preparation takes very little time as the system enables multi-threaded operation.

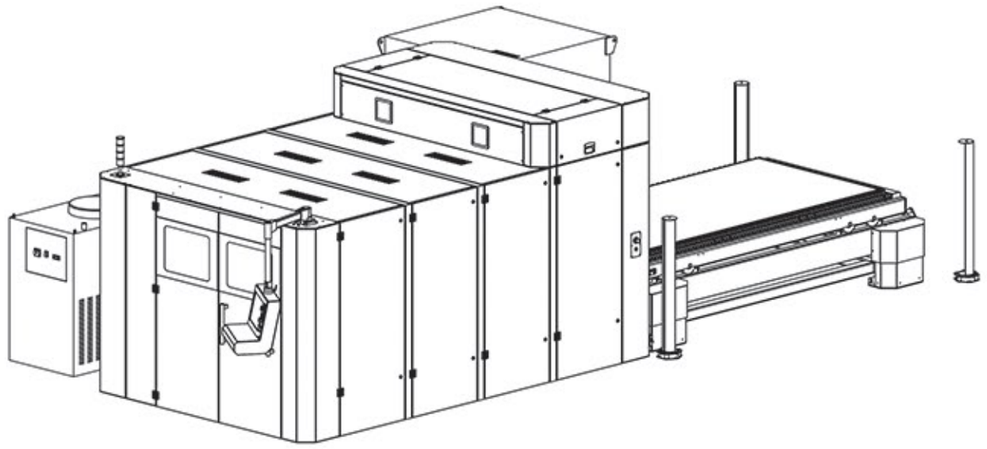
The control system - you can all Built-in modules CAD / CAM / NEST / CNC

While the machine is cutting, the operator can prepare the next elements directly in the control system. Communication with the external system can be achieved via Ethernet computer networks or USB. KIMLA laser systems are also equipped with automatic nesting modules to manage production, which enables the execution of orders and the creation of pre-prepared libraries. Our control system has integrated parameter sets that facilitate the cutting of various materials of different thicknesses, and our lasers achieve very high speeds and acceleration through dynamic vector analysis and a special software-optimized design for deformation analysis. The software also comes with automatic cutting costs calculations as standard.

KIMLA

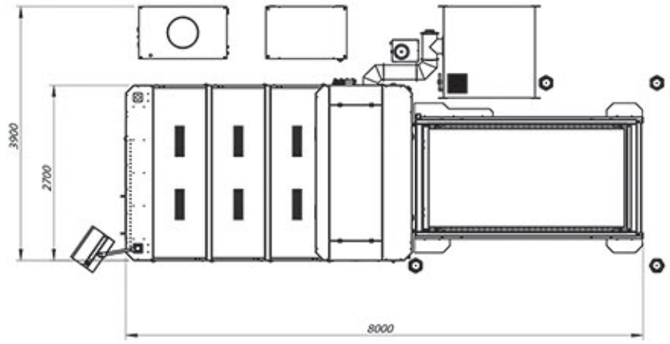
Construction laser Kimla

KIMLA lasers designed to cut steel with a fibre resonator comprise a mechanical part, which operates a linear drive system. These drives position the cutting head which is equipped with a focusing lens and nozzle which provides the cutting gas supply. The machine employs the Cartesian coordinates system; the material is fixed during cutting and the head moves in three axes: x, y and z. Industrial versions of KIMLA lasers are equipped with an automatic pallet exchange system which facilitates a continuous production process by enabling the operator and machine to work continuously. While work pieces are being cut on one pallet, the operator collects cut elements from the other pallet before installing the next quantity of material to be cut. On completion of cutting, the automatic pallet exchange is made while the laser continues to cut and the operator begins the next material change.

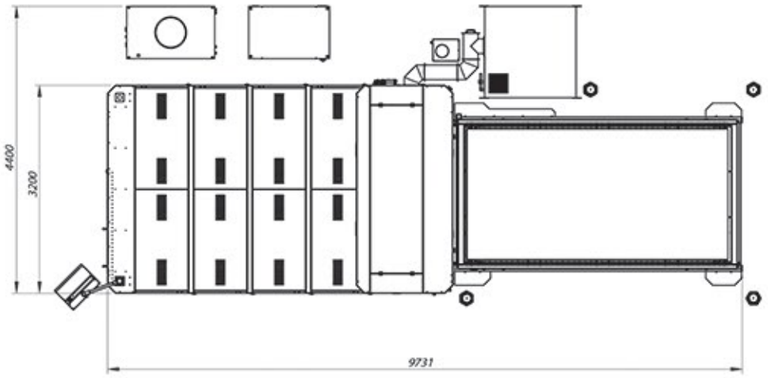


MACHINABLE MATERIALS:

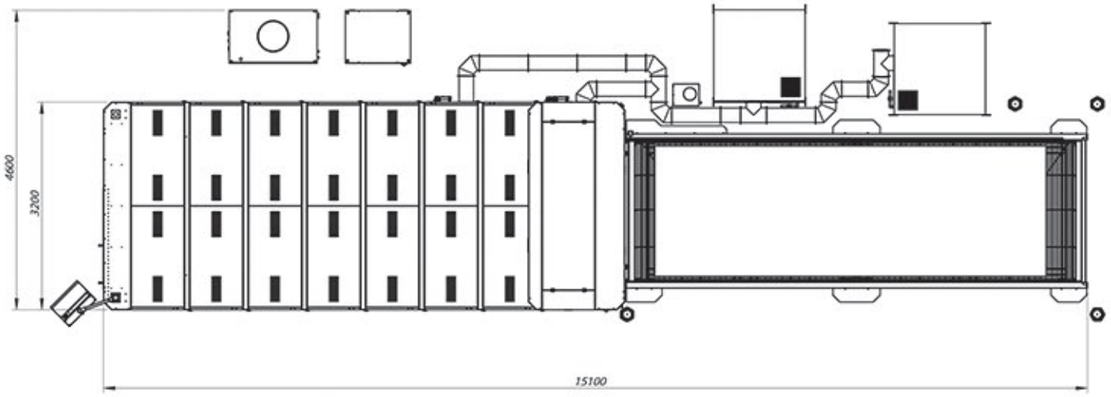
- Carbon steel
- Stainless steel
- Aluminium
- Copper
- Brass



Laser Linear 1530



Laser Linear 2040



Laser Linear 2060

The loading and unloading Kimla Storesystem LUS30

Innovative automated loading and unloading Kimla Store system has been designed to maximize productivity. The store consists of a tower rack, which stores the sheet metal, a loading frame that retrieves the sheet from the store and transports it to the loading table and a removal system that collects the cut parts and puts them onto the cut part shelves. The compact design allows for additional Kimla Store system shelves. The Store system works automatically with the Fibre Laser, eliminating the need for human labor in loading and unloading sheets of cut parts. During operation of the laser the operator can quickly and conveniently control the system and optimize the flow of material, which minimises machine downtime and achieves greater profitability.

Kimla LaserCEL

Couple the three pallet system to our Storesystem for the ultimate production flexibility. LaserCEL enables you to fully utilise the speed of our fibre optic laser. The operator can automatically load and unload or manually load and unload from the third pallet table. When compared to the two pallet system, an integrated three pallet system allows far more flexibility and greater efficiency.

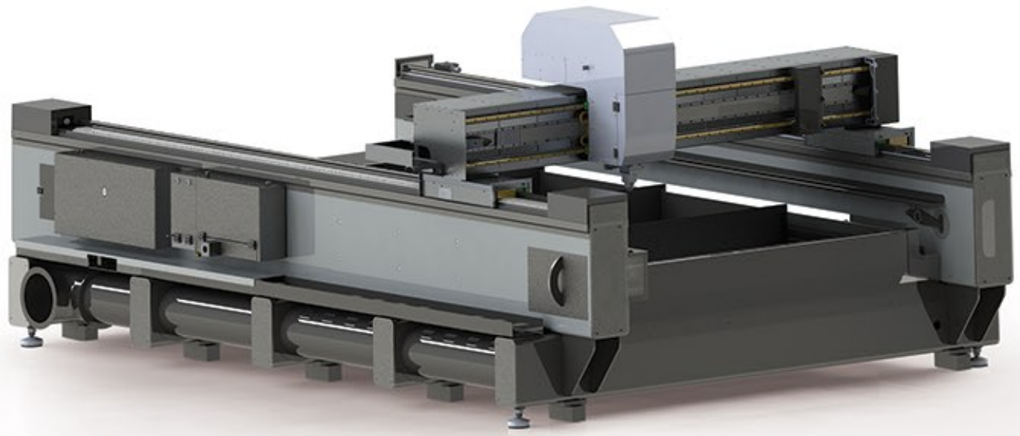
The highest performance

KIMLA's laser is built on a rigid and monolithic body on which the system driving the cutting head moves along. All linear guide surfaces are machined in one, with a precision milling machine. This precision manufacturing eliminates the need for compensation joints, providing greater stiffness of the drive train. These systems have been designed using software for analysis of deformation, and their design and construction has been derived from aerial structures, where low weight and high rigidity are the main priorities. By using such a solution, the dynamics of KIMLA lasers greatly exceeds current standards.

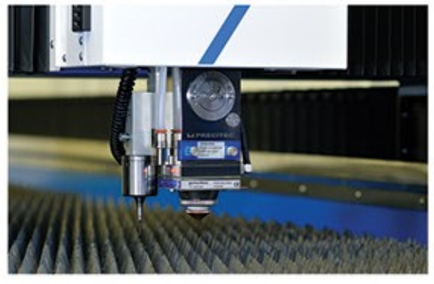
The control system is in a rack integrated in the housing of the laser, thus reducing space requirements.

The fibre cable is fed to the head by means of guide rails through the machine. This construction requires no inspection and is entirely maintenance-free.

KIMLA lasers utilitise an error free control, where tracking inaccuracy is not proportional to the speed of the feed rate, as in most devices, but is at a constant level of individual micrometers. This solution enables very fast and dynamic operation with high accuracy even at very high cutting speeds. Only these machine are able to exploit the full potential of fibre laser technology.

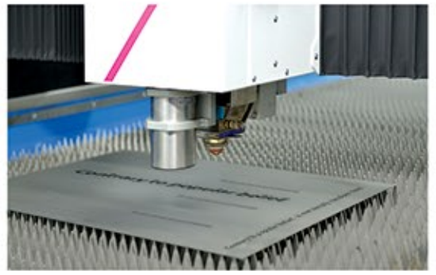


Additional options:



The scanning head – Measuring probe

An optional scanning head is an indispensable piece of equipment on the machine for more demanding projects or complex shapes. The measuring probe placed on the carriage of the laser automatically scans cut parts and can duplicate them, shortening the time it takes to prepare a project.



Printing head - Inkjet

An automatic ink based head allows for quick marking of sheets before they are cut, making identification of parts on the sheet a breeze, the marking is automatically distributed via the integrated nesting software. The printing head marks the part with ink that can later be easily cleaned without leaving any trace on the material.

Tube cutting system

Thanks to a new solution, which is a mounted turntable on one of the pallets it has become possible to cut a standard sheet and different shapes in tubes. This is done on the same KIMLA laser system. The tube rests freely during the cutting process without the tube chuck clamps that block the possibility of cutting the ends of the pipe. As a result, it can be cut without unnecessary waste.

The Finecut series of lasers have been designed for companies that start the adventure with laser cutters.

The Flashcut series of lasers are dedicated to customers who require high-performance and versatile laser cutters.

The Powercut series of lasers have been designed for the needs of the most demanding of customers. Powercut is available with capacities up to 8kW and allows you to cut with high performance.

Our Extremecut laser has a lightweight bridge made with Carbon fiber, dedicated for customers who want extreme performance.

Technical data

Finecut Series

Finecut Series Cutters of this series are dedicated to customers who appreciate high quality and performance and low purchase cost. A Finecut Laser can be perfectly applied in small or medium-sized company machining thin sheets.

Flashcut Series

Flashcut Series Industrial lasers of the Flashcut series are frequently chosen products by small and medium-sized manufacturing plants. The high degree of automation and flexible control system provide fast and more efficient operation.

Powercut Series

Powercut series are the most powerful production cutters on the market. Powercut lasers are equipped with the innovative KIMLA control system with all the possible functions, which allows you to achieve the highest operating speeds up to 5m/s.

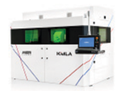
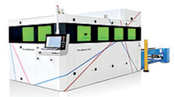
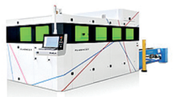
Extremecut Series

Extremecut Series Extremecut series lasers are equipped with a very light and rigid bridge made of Carbon fibre composites. They allow you to achieve peak performance.

✔ - It is standard

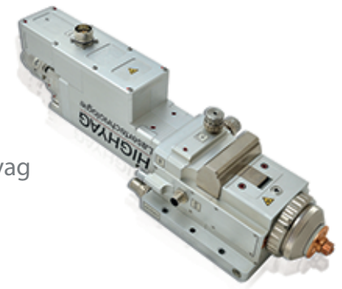
● - option

✘ - n/a

	FINECUT BASIC	FLASHCUT EFFICIENCY	POWERCUT PREMIUM	Extremecut LASER LINEAR
				
Specifications laser				
Laser power	up to 2kW	up to 4kW	up to 8kW	up to 8kW
Working area	1000 x 2000 mm 1500 x 3000 mm	1000 x 2000 mm 1500 x 3000 mm 2000 x 4000 mm	1000 x 2000 mm 1500 x 3000 mm 2000 x 4000 mm 2000 x 6000 mm 2000 x 8000 mm 2000 x 10000 mm 2500 x 3000 mm 2500 x 6000 mm 2500 x 8000 mm 2500 x 12000 mm	1000 x 2000 mm 1500 x 3000 mm 2000 x 4000 mm 2000 x 6000 mm 2000 x 8000 mm 2000 x 10000 mm 2500 x 3000 mm 2500 x 6000 mm 2500 x 8000 mm 2500 x 12000 mm
Cutting head	Precitec	Highyag or Precitec	Highyag or Precitec	Highyag or Precitec
Linear actuators	✔	✔	✔ (HP)	✔ (HP)
Automatic pallet changer	✘	✔	✔	✔
Laser security barrier	✘	✔	✔	✔
Doors on each side of the laser	✔	✔	✔	✔
Dust filters Ultraweb	✘	✔	✔	✔
The variable focal length of the head (zoom)	✘	●	✔	✔
Automatic height adjustment	✔	✔	✔	✔
The beam of carbon composites	✘	✘	✘	✔
Controls and Software				
The control system of CAD / CAM / NEST / CNC	✔	✔	✔	✔
Nesting production management	●	1 position	1 position	2 positions
The connection to the ERP system	✘	●	✔	✔
Cutting on the fly (flycut)	●	✔	✔	✔
Position control servo pallets	✘	✔	✔	✔
Zonal extraction system	✔	✔	✔	✔
Dynamic Analysis of Vectors	✔	✔	✔	✔
Frequency regulators positions	20kHz	20kHz	20kHz	20kHz

Technical data

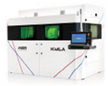
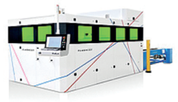
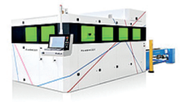
Precitec Lightcutter



Highyag

Precitec Procutter

- ✔ - It is standard
- ● - option
- ✘ - n/a

	FINECUT BASIC	FLASHCUT EFFICIENCY	POWERCUT PREMIUM	Extremecut LASER LINEAR
				
Control and software				
Electronic adjustment of the angle of the gate	✔	✔	✔	✔
Laser beam modulation	✔	✔	✔	✔
Common line cutting	✔	✔	✔	✔
Automatic edge detection of material	✔	✔	✔	✔
Sheet detection	✔	✔	✔	✔
Gas Pressure monitoring	✔	✔	✔	✔
Collision detection with restart function	✔	✔	✔	✔
Arc positioning	✔	✔	✔	✔
Smooth operation splines and polylines	✔	✔	✔	✔
Encoder absolute resolution of 1nm	✔	✔	✔	✔
Twin drives for bridge movement	✔	✔	✔	✔
Automatic focus control	✔	✔	✔	✔
Tube processing	✘	●	●	●
Speed, efficiency, positioning accuracy				
Operating speeds	up to 150m/min	up to 180m/min	up to 250m/min	up to 250m/min
Acceleration	up to 20m/s²	up to 30m/s²	up to 60m/s²	up to 60m/s²
Positioning accuracy	0.03mm	0.03mm	0.02mm	0.02mm
Positioning repeatability	0.001mm	0.001mm	0.001mm	0.001mm
Additional information				
The print head for labelling components	✘	●	●	●
Scan head	✘	●	●	●
Warranty	24 months	24 months	24 months	24 months

KiMLA

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