# LeMans Innovative Manufacturing



# **GF** Series

Smart-Cost High-Performance Fiber Laser Machines

(3kW-50kW)



#### Company culture



#### **Mission**

Our mission is:

- LeMans provides quality solutions for industrial CNC machines to meet the needs of our customers.
- 2. We say "NO" to headaches, we services machine here and now.
- We ensure a positive customer experience during installations of our technological innovation.

#### **Values**

Our core values are:

**TRUST** 

RELIABILITY

**DURABILITY** 

#### Vision

Our vision is:

- l. Become Europe's No.1 supplier of industrial CNC equipment.
- 2. Represent world-class brands.
- 3. Deliver the fastest standard range equipment on the market.
- 4. To have a LeMans showroom and educational centre.
- 5. Become a professional team of specialists with the aim of leadership in global projects.









#### Company profile



The LeMans group of manufacturers designs and manufactures sheet metal processing equipment - cutting lasers, bending, cutting machines, modular automatic systems. We provide warranty and post-warranty service, equipment servicing and technical support. LeMans technology is innovative production solutions that ensure high productivity and quick payback.



5+ Global Branches



50+ Countries Covered



\$1 Billion Annual Sales



1000+ Annual Capability

# GF series. 3000-50000w



### \* Machine dimensions

	GF3015	GF4022	GF6025	GF8025	GF10025	GF12025
Length	8950mm	11000mm	15200mm	19000mm	24000mm	28000mm
Width	3100mm	3590mm	3890mm	3980mm	3980mm	3980mm
Height	2300mm	2300mm	2300mm	2300mm	2300mm	2300mm

### Key components

Laser Source	RAYCUS/IPG
CNC Control System	3-6KW FSCUT4000E or 12KW+ FSCUT8000
Cutting Head	3-6KW RAYTOOLS or 12KW+ PRECITEC
Servo Motor	PANASONIC (JAPAN)
Pneumatic System	SMC PNEUMATIC COMPONENTS (Japan)
Rack and Pinions	HIWIN/CSK RACK AND PINIONS (Taiwan)
High Pressure Valve	SMC LOW PRESSURE VALVE + SMC HIGH PRESSURE VALVE
Guides	KH/CSK LINEAR GUIDE (Taiwan)

#### **Technical Parameters**

Machine model	3015, 4022, 6025, 8025, 10025, 12025
Machine type	Closed-type
Type of laser source	Fibre
Rated power, W	3000 - 50000
Manufacturer of laser source	Raycus/IPG
Automatic focus laser cutting head, mm	Precitec Lightcutter 2.0 Autofocus / Raytools Autofocus
Z-axis travel, mm	~0-250
Number of tables	2 pcs
Maximum movement speed for X, Y axes, m/min	140m/min
Laser positioning marking	Yes
Internal video camera for remote monitoring	2 pcs
Acceleration, G	1,5
Positioning accuracy, mm	+/- 0.05
Repeatability, mm	+/- 0.03
Managing monitor	LCD 17"
Software	Cypcut/Hypcut FSCUT
Monitoring monitor	LCD 24"
Materials to be cut	Steel, Stainless steel, Aluminium, Galvanized steel
Smoke filtration system	Option
Automatic lubrication system	Yes
Voltage stabilizer	Yes
CE certificate	Yes
Chiller	Yes
Mains frequency	50 Hz
Power supply, V/Hz	380/50 ± 5%

## **Cutting capabilities**

	3000w	4000w	6000w	6600w	12000w	20000w	30000w
Mild Steel	2/22mm	3/25mm	6/25mm	6/25mm	10/40mm	20/80mm	25/80mm
Stainless Steel	10mm	12mm	20mm	20mm	40/30mm	100/70mm	100/70mm
Aluminium	8mm	10mm	16mm	16mm	40mm	60mm	60mm
Brass	6mm	8mm	<u>12</u> mm	<u>12</u> mm	16mm	20mm	20mm

To reach maximum cutting capabilities of the machine all maintenance, pre-treatment, heating conditions must be optimal. To reach wanted result LeMans specialist engineer's will consult what is needed to reach this number. Blue mark - N2/Air Red mark - O2/Air

## **Power Consumption**

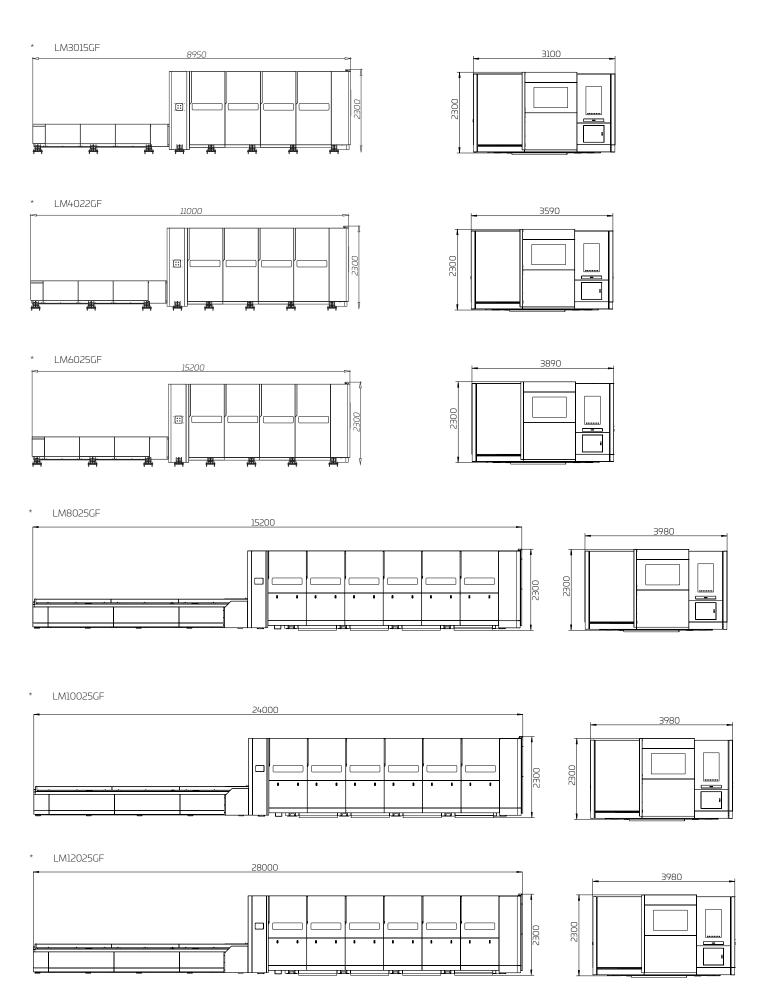
		Unit	Raycus 4kW	Raycus 6kW	Raycus 12kW	Raycus 20kW	Raycus 30kW
	Laser source	kVA	15	20	45	75	112,5
	Chiller	kVA	5,5	6,6	18	22,5	31
Maximum power	Machine Bed	kVA	18	18	18	18	18
consumption	Other devices	kVA	0	0	0	0	0
	Fuse	А	65	75	135	193	270
	Power Supply	kVA	38,5	44,6	81	115,5	161,5
	Laser source	kVA	15	20	45	75	112,5
	Chiller	kVA	5,3	6,6	18	22,5	31
Rated Power	Machine Bed	kVA	18	18	18	18	18
Nated Fower	Other devices	kVA	0	0	0	0	0
	Fuse	А	65	75	135	193	270
	Power Supply	kVA	38,3	44,6	81	115,5	161,5
	Laser source	kVA	7,5	10	22,5	37,5	56,25
	Chiller	kVA	5,3	6,6	18	22,5	31
Actual Running Power	Machine Bed	kVA	9	9	9	9	9
	Other devices	kVA	0	0	0	0	0
	Fuse	А	37	43	83	115	161
	Power Supply	kVA	21,8	25,6	49,5	69	96,25
	Laser source	kVA	0,2	0,2	0,2	0,2	0,2
Chan dhu Davina	Chiller	kVA	5,3	6,6	18	22,5	31
	Machine Bed	kVA	0,5	0,5	0,5	0,5	0,5
Standby Power (No Laser Output)	Other devices	kVA	0	0	0	0	0
	Fuse	А	10	12	31	39	53
	Power Supply	kVA	6	44,6	81	115,5	161,5

## Maximum payload

	3015GF	4022GF	6025GF	8025GF	10025GF	12025GF
1000-4000W	800kg	1400kg	3100kg	4000kg	≤8000kg	≤6000kg
3000-4000W	800kg	1400kg	3100kg	4000kg	≤8000kg	≤6000kg
6000W	1000kg	2000kg	3500kg	4800kg	8000kg	6000kg
8000-12000+W	1400kg	2800kg	4800kg	6300kg	8000kg	9500kg

To reach maximum payload capabilities of the machine all maintenance conditions must be optimal.

## **Machine layout**



#### Strong and stable frame

The internal structure of the frame is a honeycomb structure welded with rectangular profiles. Stiffness ribs increase the strength and tensile strength of the frame. It also increases the vibration resistance and stability of the guide system, ensures effective prevention of frame deformation. High strength, stability, resistance to vibrations, ensures the use of the equipment for 30 years without deformation of the geometry. The frame is welded, hardened in the furnace and at the end of the production process machined in the milling centre.





#### Drives and guides

Panasonic servo motors and drives, HIWIN racks, CSK/PMI linear guides.

#### Raytools / Precitec - Autofocus Laser Cutting Head

The software automatically adjusts the focus lens to automatically punch and cut sheets of different thicknesses. Auto focus adjustment speed is ten times faster than manual adjustment. Adjustment range -10mm~+10mm, accuracy 0.01mm. The collimator and focus lens are liquid cooled to regulate the temperature of the cutting head and thus improve the life of the cutting head.

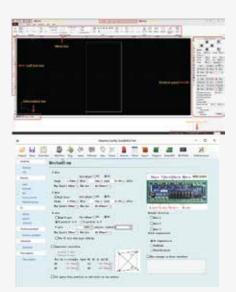




#### # Control system

The GF series has the international standard FSCUT Cypcut/Hypcut CNC control system, which guarantees high stability and reliability, performs the following functions:

- Convenient interface with built-in English operating system, significantly increased operating efficiency.
- AC servo motor and drive: a combination of reliability, fast response and maintenance-free.
- Easy to control cutting-file uploading.
- Straight line/circular arc interpolation coupling and gap compensation.
- There is a USB and broadband interface for data transfer.



#### Raycus Fiber Laser Source





LeMans uses the world-famous brand Raycus series laser source. Good cutting performance of stainless steel, aluminium, and other materials. The source functions stably, the service life of the main components reaches up to 100,000 hours, which guarantees the overall quality of the equipment. The laser source produces the highest fibre quality, ensures thinner cut lines, increases productivity, and enables the high processing quality.

#### **BSCE 100E Height Positioning Sensor**

Anti-collision function can effectively avoid tip-up collision risk in production. Add protection in find edge process to avoid laser head hits machine slat when exceed sheet border. Supports vibration suppression to restrict laser head resonating with vibrated thin sheet under pressured gas. Supports real time capacitance calibration, and automatically offset the local capacitance change caused by temperature drift, collision, nozzle dismantle and plasma cloud. Works with cutting software can realize the functions of 'find workpiece edge', 'frog-leap' and 'stepping pierce' etc. Supports lock down function for security or payment collection. Supports local or online firmware update. Supports oscilloscope function to monitor real time capacitance and height change



#### Supply of Stabilised Voltage

The stabilised voltage power supply can achieve the function of variable stabilised voltage, achieve the stable electricity demand of laser equipment in different countries and regions, and guarantee the safe and stable operation of the equipment.





#### Laser Source Chiller



Tongfei water cooler, professional laser water cooling equipment. The water circulation system uses a stainless-steel water pump and a stainless-steel water tank with good corrpsion resistance. Air cooling, no water-cooling tower needed, easy to install. Computer controller in English, intuitive dynamic number display, simple operation, accurate temperature control. Dual temperature and dual control with automatic fault alarm function: compressor delay protection, overcurrent protection, water flow alarm, high and low temperature alarm and output corresponding signals to improve equipment safety. The surface is treated with high voltage electr static spraying.

### SMC Low/High Pressure proportional valve for Oxygen/Nitrogen



### Siemens / Schneider # connectors and contact systems



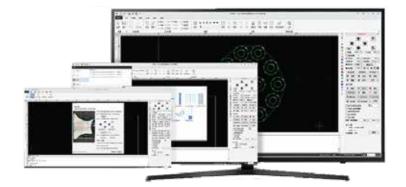


# **Extended Functions**

#### CAM Software: METALIX CNC KAD

- Metalix offers a full range of CAD/CAM capabilities for CNC lasers
- Including support for sorting and stacking devices attached to your machine.
- Fully automated nesting
- Live import full live preview of the geometry import results.
- Hole Filling interior holes in parts are identified and filled with compatible parts, creating efficient solutions.
- Grouping automatic and manual grouping of parts to simplify nesting solutions.





#### / Software: CypNest

 The FSCUT CypNest is a nesting software for sheet laser cutting CNC systems, developed for the sheet metal laser cutting software HypCut/CypCut. It enables fast nesting, drawing processing, toolpath editing, and form generation functions.

# Extended Functions Automatic Loading

# Automatic UnLoading

MODEL & Format (LxW)

1500 mm x 3000 mm

2000 mm x 4000 mm

2000 mm x 6000 mm

Sheet Thickness

0.6 - 15 mm

Number of layers

Maximum Load per sheet

3-5T

Single Layer spacing

450 mm

Total Load of the Warehouse

30T - 40T

Total Power

23kW / 25kW / 28kW

Output Voltage

380V

30T - 40T









Building Tomorrow's Manufacturing

# LeMans Innovative Manufacturing



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