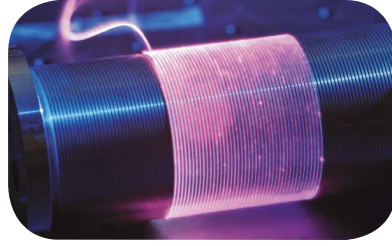
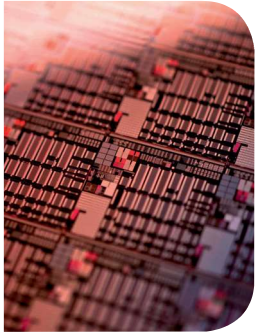


FIBER LASER

# EON PHOTONICS



[www.eonphotonics.com](http://www.eonphotonics.com)



## ABOUT US

Continuing its journey for development of technology with the perspective of 21st century at full throttle, EON Photonics transfers technology to the world from Turkey with its high R&D capability, its many years of experience in the industry and its investment power.

Focusing on efficiency in all areas by using resources effectively, EON continues its journey as the global brand of Ermaksan Group companies that realized the Laser Power Sources (Resonators), Laser Diodes, FBG Sensors and CNC controllers, which are produced by a limited number of countries throughout the world, for the first time in Turkey.

Products manufactured by EON using its own resources and delivered to more than 100 countries on 6 continents make a difference in the global arena with their advanced technology, environment-friendliness and efficiency features.

While currently employing competent and specialized manpower, including professors of their field, as well as a large number of staff with Ph.D. and Master of Science degrees, EON continues to invest in qualified human resources.

EON also has the capacity to implement all processes from idea to design, prototype to product successfully with its Data Center incorporating advanced technological systems and networks.

This center provide delicate clean rooms built to global standards, while innovative products, which are a significant reflection of the corporate culture, industry 4.0 applications and many national and international projects are being carried out here.

Decisively continuing to carry out joint projects with universities, institutes, institutions and organizations renown throughout the world, EON also continues to move confidently towards its forward-looking targets.



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# HIGH PERFORMANCE FIBER LASER SOURCES - COMPACT



## AS MUCH AS YOU NEED!

YRL series rack type fiber lasers offer you all the necessary components to operate the laser that your machine needs in a 19" rack cabinet with its compact structure. The perfect choice for OEM applications. The compact structure meets all requirements including power system. Lower costs. YRL lasers make your job very easy.

## DYNAMIC, POWERFUL AND PRECISE!

YRL series lasers are able to work in modulation mode up to 5kHz frequency thanks to their high speed control systems. It adds precision to your jobs with its powerful control system, dynamic structure and patented back-reflection protection technology.

## EASY INTEGRATION!

YRL lasers can be controlled independently of the process via different types of connection and control interfaces. Communication or IO configuration; it is possible to control YRL lasers via one of the two methods. Turn the key and choose your working mode. YRL lasers are with you with all their energy in processes like cutting, welding and drilling.

## HIGHLIGHTS

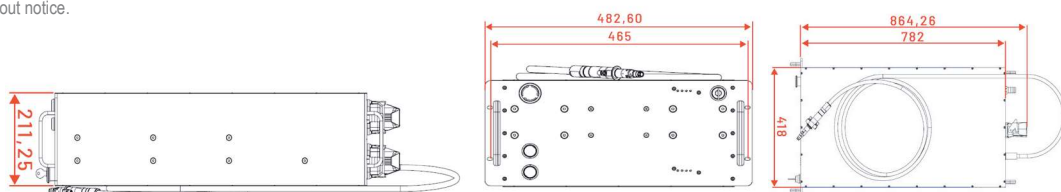
- 19" rack type case structure up to 2kW power
- 2 years warranty
- High beam quality
- Suitable for processes such as welding, drilling, cutting
- Easy integration thanks to its flexible control interfaces
- Patented back reflection technology

# FIBER LASER SOURCES - COMPACT

## TECHNICAL SPECIFICATIONS

		YRL 500 W			YRL 1 kW			YRL 1,5 kW			YRL 2 kW							
		Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	
Optical Specifications	Operating Mode		CW			CW			CW			CW						
	Polarization		RANDOM			RANDOM			RANDOM			RANDOM						
	Output Power	W		500			1.000			1.500			2.000					
	Optical Power Efficiency	%		70	75		70	75		70	75		70	75				
	Radiation Wavelength	nm	Max.Power	1080		Max.Power	1080		Max.Power	1080		Max.Power	1080					
	Output Power Modulation	kHz	Max.Power		5	Max.Power		5	Max.Power		5	Max.Power		5				
	Red Laser Output Power	mW		1	10	20		1	10	20		1	10					
	Transmission Cable Connector Type			QBH			QBH			QBH			QBH			QBH		
	Beam Quality (86%) (BPP)	mrad	Single Mod	<0,45		Single Mod	<0,45		Single Mod	<0,45		Single Mod	<0,45					
	Beam Quality (86%) (BPP)	mrad	50 µm transmission fiber		1	1,3	50 µm transmission fiber		1	1,3	50 µm transmission fiber		1	1,3	50 µm transmission fiber		1	1,3
	Beam Quality (86%) (BPP)	mrad	100 µm transmission fiber		2,20	2,50		2,20	2,50		2,20	2,50		2,20	2,50		2,20	2,50
	Power Stability	%	Output power: 500 W Operating period: 100 hours		±1	±2	Output power: 1.000 W Operating period: 100 hours		±1	±2	Output power: 1.500 W Operating period: 100 hours		±1	±2	Output power: 2.000 W Operating period: 100 hours		±1	±2
	Length of the Transmission Cable	m		5 (SM)	15	20		5 (SM)	15	20		5 (SM)	15	20		5 (SM)	15	20
	Transmission Cable Twist Diameter	mm			180	200			180	200			180	200			180	200
Physical Characteristics and Requirements	Temperature of the Operating Environment	°C		10	40		10	40		10	40		10	40		10	40	
	Humidity in the Operating Environment	%		10	80		10	80		10	80		10	80		10	80	
	Storage Temperature (With the Coolant Drained)	°C		-5	70		-5	70		-5	70		-5	70		-5	70	
	Weight	kg		55			55			60			65			65		
	Cooling Method			Water Cooled				Water Cooled				Water Cooled				Water Cooled		
	Laser Coolant Temperature (In a Non-Condensing Environment)	°C		19	20	22		19	20	22		19	20	22		19	20	22
	Water Pressure	bar		4-6				4-6				4-6				4-6		
Flow rate	l/min		14				18				14				26			
Cooling Capacity of the Chiller	kW		5,5				5,5				5,5				5,5			
Electrical Characteristics	Communication Interface		MODBUS RTU			MODBUS RTU			MODBUS RTU			MODBUS RTU						
	Control Interface		IO or BUS			IO or BUS			IO or BUS			IO or BUS						
	Operating Voltage		375-500VAC 50/60Hz 3P+Pe			375-500VAC 50/60Hz 3P+Pe			375-500VAC 50/60Hz 3P+Pe			375-500VAC 50/60Hz 3P+Pe						
	Power Capacity	kW		1,7			3,3			5			7					

\* All technical specifications are subject to change without notice.  
 \* 500 W | 2 kW Compact type dimensions.



# HIGH PERFORMANCE FIBER LASER SOURCES



Each EON Photonics laser manufactured are subjected to long service life tests under the harshest conditions. Our staff of qualified engineers and strong production infrastructure allow us to manufacture precise and high quality products.

## POWERFUL DYNAMIC CONTROL

- High - Tech laser controller and laser driver
- Input / output units designed in industrial standarts
- Control over digital and analogue inputs - outputs
- Control and monitoring over Modbus
- Closed circuit power control management
- Superior error detection algorithm
- High efficiency laser drive
- Real-time control

### PROTECTION AGAINST CORROSION

It is manufactured from galvanized steel sheet with closed-type profile (DIN EN 10142-00 DX51 D+Z), and only external parts are coated with iron-phosphate and painted with epoxy polyester powder. The internal parts that cannot be painted are resistant to corrosion as they are galvanized.

### CONTINUITY OF THE GROUNDING

Thanks to the earthing screws applied on all covers, the covers of the panel may be fully grounded.

### MECHANICAL RESISTANCE

IK 10 ( IEC 62262 )

### CERTIFICATES

UL Listed, TSE, IEC 62208, CE, Gost, Seismic (IEC 60068), TYPE TESTS (IEC 61439)

# REAL TIME PRECISE CONTROL!

EON Photonics offers much more precise power control thanks to the high precision and real-time controller developed by EON. Standing out with their high power stabilization even with high power rates and under the most difficult working conditions, EON lasers offer operation with different laser systems thanks to different communication interfaces.

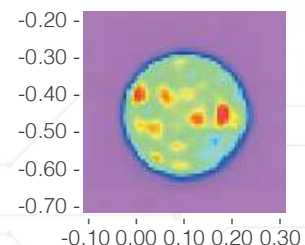
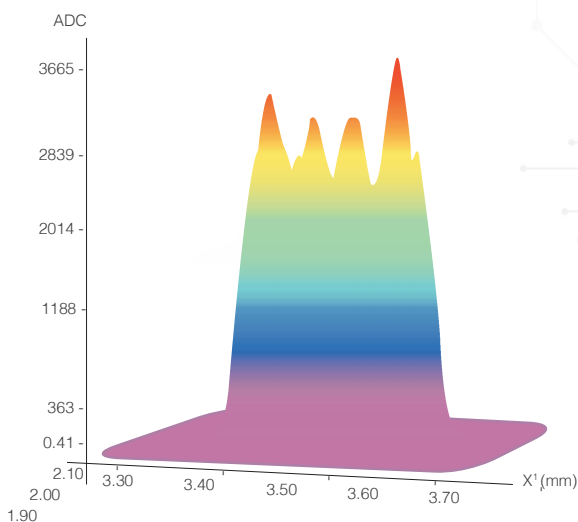
Manufacturing this technology, which can only be produced by a limited number of countries throughout the world, with its own resources and production capability, EON Photonics continues to export this product, offering different power capacities and supported with different software, to countries all around the world.



## EVERYTHING IS UNDER YOUR CONTROL WITH THE EON CONTROL SUITE!

EON Control Suite software allows you to monitor laser power, temperature, control signals and control variables quickly and easily. Plenty of information such as warnings, errors, operating times and runtime data are presented to the user intuitively with the user-friendly interface.

## BEAM PROFILE OF THE MULTI MODE EON LASER SYSTEM



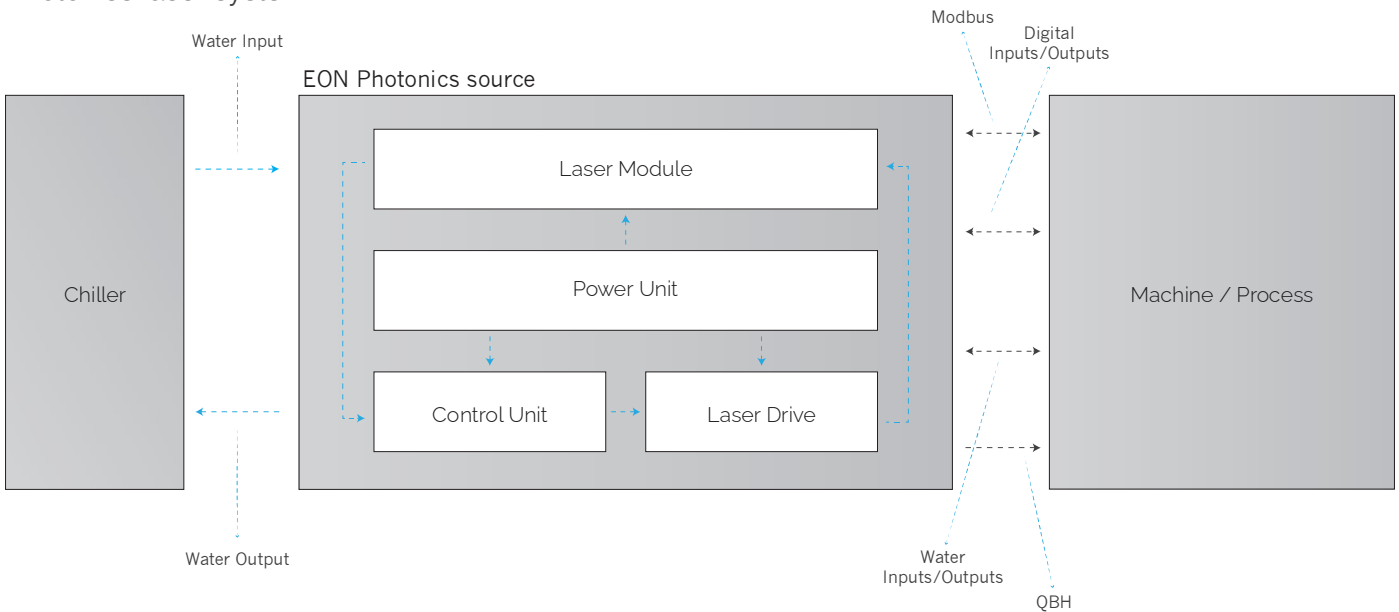
• 2D beam profile view

• Isometric 3D beam profile view

# EASY INTEGRATION

You may easily adapt the EON Photonics laser to your existing processes. The EON Photonics laser unit requires only one external chiller unit.

You may replace your current laser with EON Photonics laser without making any changes to your existing structure thanks to the different connection interfaces provided. Using one or more of the options, such as MODBUS communication, fault inspection over digital input-outputs and power control over analogue input-outputs, you may use your existing system or your system under development together with the EON Photonics laser system.



## CABINET SPECIFICATIONS

- EON lasers may be operated under different climate and ambient conditions thanks to its sealed body and adaptive dehumidification system.
- Problems that may arise due to humidity on the electronic and optical components under the harsh environmental conditions of the processing industry shall be costly in general. Thanks to the adaptive humidity control inside the cabinet, the problems caused by humidity are largely prevented and the costs for service and spare parts are minimized.
- When the cab is positioned, the anti-vibration mount shall be lowered and the castors shall be raised from the floor to ensure that the unit becomes fully stationary.



• Mechanical Strength





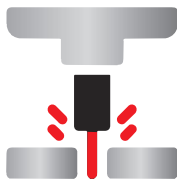
## REMOTE ACCESS

You may respond to problems encountered with remote access.



## HIGH POWER EFFICIENCY

EON laser system operates with an electrical-optical power efficiency of 35%.



## HIGH EFFICIENCY LASER DRIVE

With the advanced laser drive system, the laser diodes are driven with high efficiency and the desired power may be obtained. The laser drive system is equipped with state-of-the-art equipment that may convert electrical power to optical power with minimal loss.



## CRITICAL RESPONSE TIME

The laser system reacts very quickly to changes in the control inputs and ensures that the output laser power is increased to the desired level in microseconds.



## INTERNAL FAULT RECORD

When the laser source does not communicate with the computer software, it stores the fault data in the internal memory of the laser control system. In this way, historical errors may be read through the laser system by accessing remotely, and thus, problems may be solved more easily.



## REAL TIME CONTROL

The improved embedded control system enables real-time control of the laser source. Errors are reported to the operator and changes made to the input signals may be transferred to the output instantaneously. Thus, real-time and precise control of the system may be achieved.

# UNINTERRUPTED LASER POWER

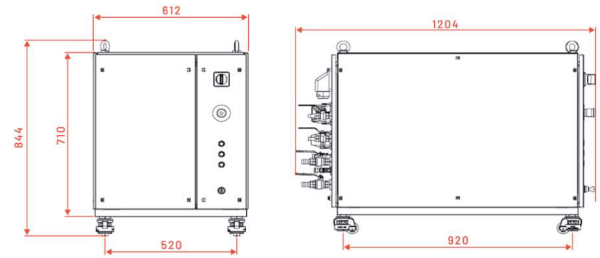


- Precise power stability :  $\pm 1\%$
- Laser power options : up to 14 kW
- Fiber cable options : Single mode, 50 $\mu\text{m}$ , 100 $\mu\text{m}$ , 200 $\mu\text{m}$ , 300 $\mu\text{m}$
- Impulse frequency range : up to 5kHz
- Laser wavelength : 1080 nm
- Power percentage range : 5-100%

# FIBER LASER SOURCES

## TECHNICAL SPECIFICATIONS

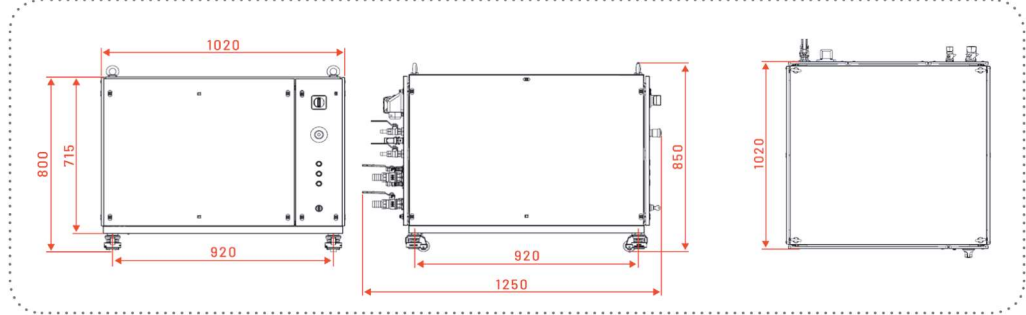
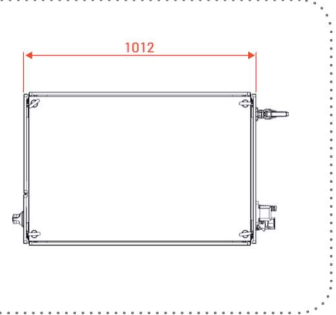
\*1 kW | 2 kW Dimensions.



		1 kW				1,5 kW				2 kW				
		Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	
Optical Specifications	Operating Mode		CW				CW				CW			
	Polarization		RANDOM				RANDOM				RANDOM			
	Output Power	W		1.000				1.500				2.000		
	Optical Power Efficiency	%		70	75			70	75			70	75	
	Radiation Wavelength	nm	Max.Power	1080		Max.Power	1080		Max.Power	1080		Max.Power	1080	
	Output Power Modulation	kHz	Max.Power	5		Max.Power	5		Max.Power	5		Max.Power	5	
	Red Laser Output Power	mW		1	10	20		1	10	20		1	10	20
	Transmission Cable Connector Type			QBH			QBH			QBH			QBH	
	Beam Quality (86%) (BPP)	mmrad	Single Mod	<0,4		Single Mod	<0,4		Single Mod	<0,4		Single Mod	<0,4	
	Beam Quality (86%) (BPP)	mmrad	50 µm transmission fiber		1	1,3	50 µm transmission fiber		1	1,3	50 µm transmission fiber		1	1,3
	Beam Quality (86%) (BPP)	mmrad	100 µm transmission fiber		2,20	2,50	100 µm transmission fiber		2,20	2,50	100 µm transmission fiber		2,20	2,50
	Physical Characteristics and Requirements	Power Stability	%	Output power: 1.000 W Operating period: 100 hours	±1	±2	Output power: 1.500 W Operating period: 100 hours	±1	±2	Output power: 2.000 W Operating period: 100 hours	±1	±2	±1	±2
Length of the Transmission Cable		m		10	15	20		10	15	20		10	15	20
Transmission Cable Twist Diameter		mm			180	200			180	200			180	200
Temperature of the Operating Environment		°C		10		40		10		40		10		40
Humidity in the Operating Environment		%		10		80		10		80		10		80
Storage Temperature (With the Coolant Drained)		°C		-5		70		-5		70		-5		70
Weight		kg			135			150				200		
Cooling Method				Water Cooled				Water Cooled				Water Cooled		
Laser Coolant Temperature (In a Non-Condensing Environment)		°C		19	20	22		19	20	22		19	20	22
Water Pressure		bar		4				4				4		
Flow rate		l/min		16	18	22		20	22	26		24	26	30
Cooling Capacity of the Chiller		kW			5,5			5,5				5,5		
Electrical Characteristics	Communication Interface		MODBUS RTU			MODBUS RTU			MODBUS RTU					
	Control Interface		IO or BUS			IO or BUS			IO or BUS					
	Operating Voltage		375-500VAC 50/60Hz 3P+Pe			375-500VAC 50/60Hz 3P+Pe			375-500VAC 50/60Hz 3P+Pe					
	Power Capacity	kW		3,3			5			7				

\* All technical specifications are subject to change without notice.

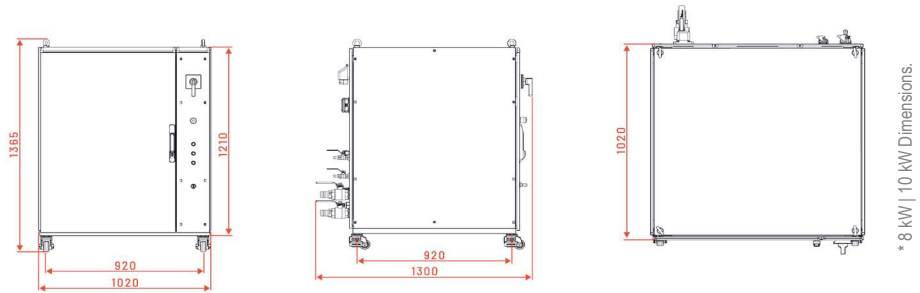
\* 3 kW | 6 kW Dimensions.



3 kW				4 kW				5 kW				6 kW			
Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max
	CW				CW				CW				CW		
	RANDOM				RANDOM				RANDOM				RANDOM		
		3.000				4.000				5.000				6.000	
		70	75			70	75			70	75			70	75
Max.Power		1080		Max.Power		1080		Max.Power		1080		Max.Power		1080	
Max.Power			5	Max.Power			5	Max.Power			5	Max.Power			5
	1	10	20		1	10	20		1	10	20		1	10	20
		QBH				QBH				QBH				QBH	
100 µm transmission fiber		<3,3		100 µm transmission fiber		<4,4		100 µm transmission fiber		<4,4		100 µm transmission fiber		<4,4	
Output power: 3.000 W Operating period: 100 hours		±1	±2	Output power: 4.000 W Operating period: 100 hours		±1	±2	Output power: 5.000 W Operating period: 100 hours		±1	±2	Output power: 6.000 W Operating period: 100 hours		±1	±2
	10	15	20		10	15	20		10	15	20		10	15	20
		180	200			180	200			180	200			180	200
	10		40		10		40		10		40		10		40
	10		80		10		80		10		80		10		80
	-5		70		-5		70		-5		70		-5		70
		225				250				350				400	
	Water Cooled				Water Cooled				Water Cooled				Water Cooled		
	19	21	20		19	20	22		19	20	22		19	20	22
	4	6	8		4	6	8		4	6	8		4	6	8
	38	40	45		53	55	60		62	65	70		72	75	80
		10,5				10,5				18,0				18,0	
	MODBUS RTU				MODBUS RTU				MODBUS RTU				MODBUS RTU		
	IO or BUS				IO or BUS				IO or BUS				IO or BUS		
	375-500VAC 50/60Hz 3P+Pe				375-500VAC 50/60Hz 3P+Pe				375-500VAC 50/60Hz 3P+Pe				375-500VAC 50/60Hz 3P+Pe		
		10,2				13,8				17				20,7	

# FIBER LASER SOURCES

## TECHNICAL SPECIFICATIONS



		YRL 8 kW				YRL 10 kW				
		Test Conditions	Min.	Nominal	Max	Test Conditions	Min.	Nominal	Max	
Optical Specifications	Operating Mode		CW				CW			
	Polarization		RANDOM				RANDOM			
	Output Power	W		8.000				10.000		
	Optical Power Efficiency	%		70	75			70	75	
	Radiation Wavelength	nm	Max.Power	1080		Max.Power	1080			
	Output Power Modulation	kHz	Max.Power		5	Max.Power		5		
	Red Laser Output Power	mW		1	10	20		1	10	2
	Transmission Cable Connector Type			QBH			QBH			
	Beam Quality (86%) (BPP)	mrad	100 μm transmission fiber		<3,3		100 μm transmission fiber		<4,4	
	Power Stability	%	Output power: 8.000 W Operating period: 100 hours		±1	±2	Output power: 10.000 W Operating period: 100 hours		±1	±2
Physical Characteristics and Requirements	Length of the Transmission Cable	m		10	15	20		10	15	20
	Transmission Cable Twist Diameter	mm			180	200			180	200
	Temperature of the Operating Environment	°C		10		40		10		40
	Humidity in the Operating Environment	%		10		80		10		80
	Storage Temperature (With the Coolant Drained)	°C		-5		70		-5		70
	Weight	kg			450			500		
	Cooling Method			Water Cooled				Water Cooled		
	Laser Coolant Temperature (In a Non-Condensing Environment)	°C		19	20	22		19	20	22
	Water Pressure	bar		4	4,	6		4	4,5	6
	Flow rate	l/min		98	100	105		118	120	125
Cooling Capacity of the Chiller	kW			18,0				36		
Electrical Characteristics	Communication Interface			MODBUS RTU				MODBUS RTU		
	Control Interface			IO or BUS				IO or BUS		
	Operating Voltage			375-500VAC 50/60Hz 3P+Pe				375-500VAC 50/60Hz 3P+Pe		
	Power Capacity	kW			28				35	

\* All technical specifications are subject to change without notice.

# FIELD OF APPLICATION



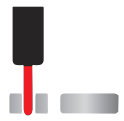
## FIBER LASER CUTTING

It is an unrivalled technology that allows the production of high-precision parts with high speed and low cutting damage compared to conventional blade-cutting machines for different types of metal sheets.



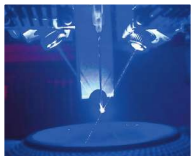
## FIBER LASER DRILLING

Your machine shall not stop while drilling! Thanks to the EON laser systems protected even against very high backreflected power, drilling operations are now very easy!



## FIBER LASER BOILING

Laser systems stand out thanks to their capability of adjustment of power required for the welding of metal parts (copper, aluminium, stainless etc.) with specifications such as different melting points etc.



## FIBER LASER SOLDERING

Materials may be combined by laser soldering. Thus, the smallest solder locations and precision electronic components may be combined. This is widely used in the automotive industry or in the electronics industry.



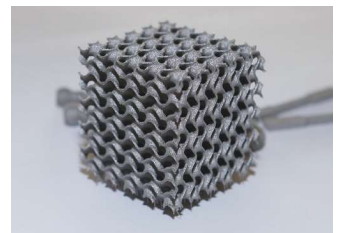
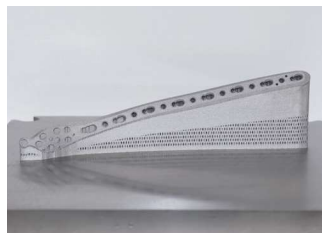
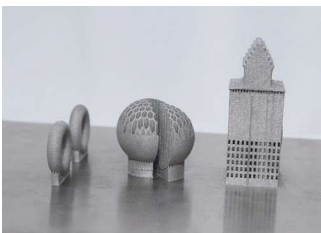
## FIBER LASER MARKING

EON Photonics laser systems provide a wide range of solutions from the surface cleaning of materials such as metal, textile, etc. to marking application on different types of materials with their short pulse duration and high pulse energy.



## ADDITIVE MANUFACTURING

This is one of the most prominent technologies of recent years. Thanks to additive manufacturing, it is possible to provide unique solutions in almost every field you may think of from medicine and space and aviation, from industry to defence industry and robotics. With "ENA VISION", where EON Photonics laser systems offering high beam quality and different beam profiles are used, it is possible to manufacture detailed parts even in very tiny dimensions specific to application using different metal powders as required.

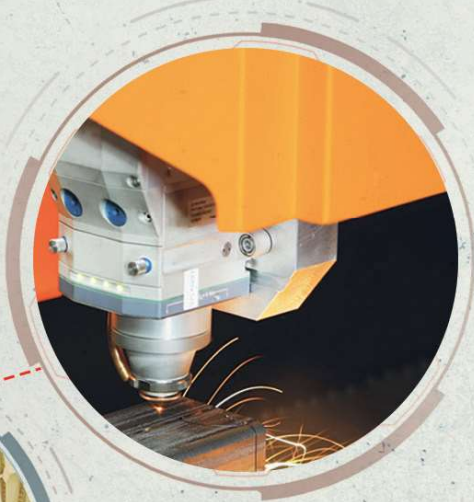


# THE POWER BEHIND YOUR BRAND

[www.eonphotonics.com](http://www.eonphotonics.com)

EON Photonics, 500W to 14kW power offers options on defence industry, health industry, communication and in many other sectors it has a field of use.







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