



**İleri Teknik**  
Innovative Sawing Technologies

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## Proven In Production Since 1984

İleri Teknik was established in 1984 in Bursa/Turkey as a supplier of technical services to the metal and automotive industries. In 1989 started to design and produce Circular Sawing Machines. In 2021 started to design and produce Laser Tube Cutting Machines.

Nowadays İleri Teknik producing Laser tube cutting machines, fully automatic cutting lines with automatic loading and unloading systems, semi-automatic and manual cutting machines.

İleri Teknik uses the best materials and very well-known brands during production. Every single part has a quality control procedure and final control check list. All machines are tested before dispatch. All machines are tested and checked before shipment.

İLERİ TEKNİK as of 2023, it exports to a total of 45 countries, including all European countries, America, Canada, South Korea and Australia. Therefore, İLERİ TEKNİK is known as a very good machine builder in all over the world.



# SIRIUS F1

## Laser Pipe Cutting Machine





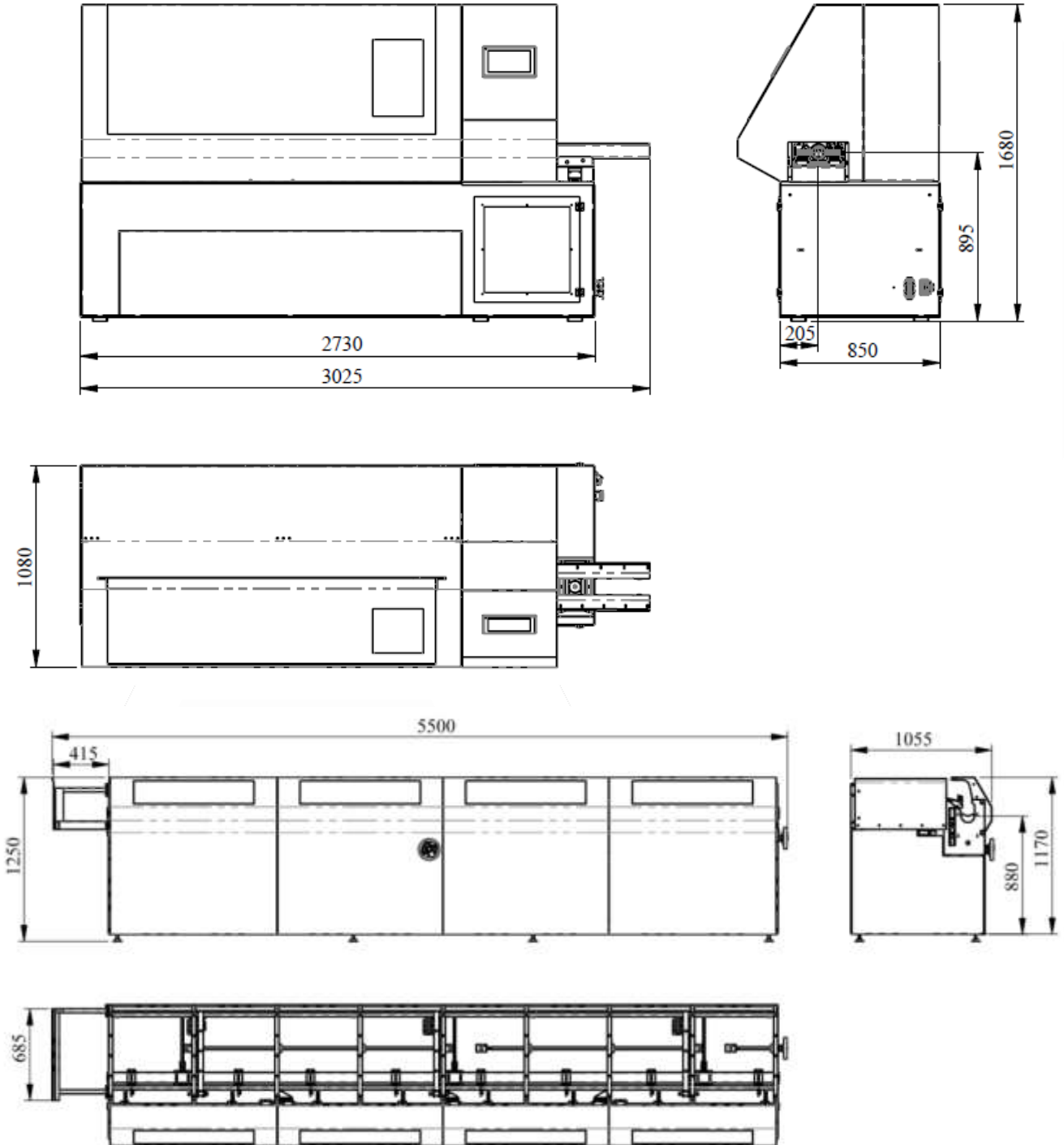
Professional pipe, profile cutting machine is a series that offers precision, high cutting quality and less service needed.

- 1kW, 1,5kW and 2kW power source alternatives,
- Suitable for cutting round pipes,
- Maximum cutting capacity is for round pipe from  $\varnothing$  16 mm up to  $\varnothing$  60 mm,
- Suitable for fixing max. 6.100 mm length profile and pipes with max. 65 kg loading weight.

# 1. Technical Details

Machine		Features			
Machine Model		SIRIUS F1			
Dimensions LxWxH (m)		8.25x1.08x1.68			
Weight (Kg)		2.300			
Cutting Head		Raytools BD04K			
Resonator		Raycus / Max Photonics / Ipg / nLight			
Resonator Power		1 kW	1,5 kW	2 kW	3 kW
Material Cutting Capacities	Mild Steel	4 mm	6 mm	8 mm	10 mm
	Stainless Steel	2 mm	4 mm	5 mm	6 mm
	Aluminum (AlMg3)	3 mm	4 mm	6 mm	8 mm
	Cooper	1,5 mm	2 mm	3 mm	5 mm
	Brass	1,5 mm	2 mm	3 mm	5 mm
Cutting Capacities	Profile Types Can Be Cut	Round			
	Min - Max. Pipe Diameter	Ø16 mm – Ø60 mm			
Max. Material Length		1400 mm			
Unloading Length		-			
Max. Total Workpiece Weight		65 kg			
Height of Chuck Center		900 mm			
Chiller		S&A / I-Tech / Ipg / Omi			
Chuck		Ø16 – Ø60 mm Hollow Wrist			
Motors		Panasonic			
Reducer		Liming			
Motion Control		Beijer			
Screen		10" Beijer Industrial Touch Screen Panel			
Electrical Components		Eaton, Kraus&Naimer, Phoenix			

## 2. Layout



Machine Weight  $\cong$  2.300 Kg

## 3. Component List

### 3.1 RAYCUS / RFL-C2000W FIBER LASER SOURCE



RFL-C2000W 2 kW resonator is suitable for cutting 8 mm mild-steel, 5 mm stainless steel and 6 mm aluminum with correct speed. It has higher electro-optical conversion efficiency, lower power consumption and more excellent beam quality.

### 3.2. CWFL-2000 PRO SERIES FIBER LASER CHILLER

Suitable for 2 kW fiber laser power source and work correspondingly.  
Multiple warning protections, water level alarm, over-temperature alarm, water flow alarm, etc.  
Thermal insulation for water tubing, pump and evaporator  
Fully hermetic compressor with built-in motor protection



### 3.3. RAYTOOLS BD04K SERIES CUTTING HEAD



Auto Focus Tube Cutting Head up to 4 kW Power Rating. It has a Lightweight design with fast acceleration, Optimized optical configuration and efficient airflow design significantly to improve cutting quality and efficiency.

### 3.4. CHUCKS



It adopts pneumatic clamp design and it can modulate the center of the materials for pipes automatically and precisely. The diagonal adjustable range is 16-60mm.

### 3.5. INDUSTRIAL TOUCH SCREEN CONTROL PANEL



User Friendly 10" Industrial touch screen control panel with emergency button. Inside the electrical panel, all servo drivers are connected to the PLC, so it is easy to control servo drivers directly from the screen.

### 3.6. PANASONIC SERVO MOTOR & DRIVERS

Highly reliable, efficient and high precision Panasonic motor and Drivers control the axis.





### 3.7. LIMING REDUCERS

Liming are the High Precision reducers which used together with Panasonic motors. They are well fits and high-capacity reducers well match with Sirius F1 Tube cutting machine.



### 3.8. EATON, KRAUS&NAIMER, PHOENIX ELECTRICAL COMPONENTS



All components used inside the electrical box are proven all around the world and are well-known brands. They are suitable for CE norms and give the highest safety.

## 4.Details about the components

### 4.1 RAYCUS / RFL-C2000W FIBER LASER SOURCE

Compared with traditional lasers, Raycus CW fiber laser has higher efficiency electric-optical conversion, lower power consumption and excellent beam quality. The fiber laser is compact and ready to use. It can be used as a stand-alone unit or easily inserted into user's apparatus.



#### Main Features:

- Excellent beam quality
- High quality fiber output
- High Power Stability
- Output power continuously adjustable, fast switching response
- Maintenance free operation
- High efficiency of electric-optical conversion
- Convenient control interface
- Fast modulation

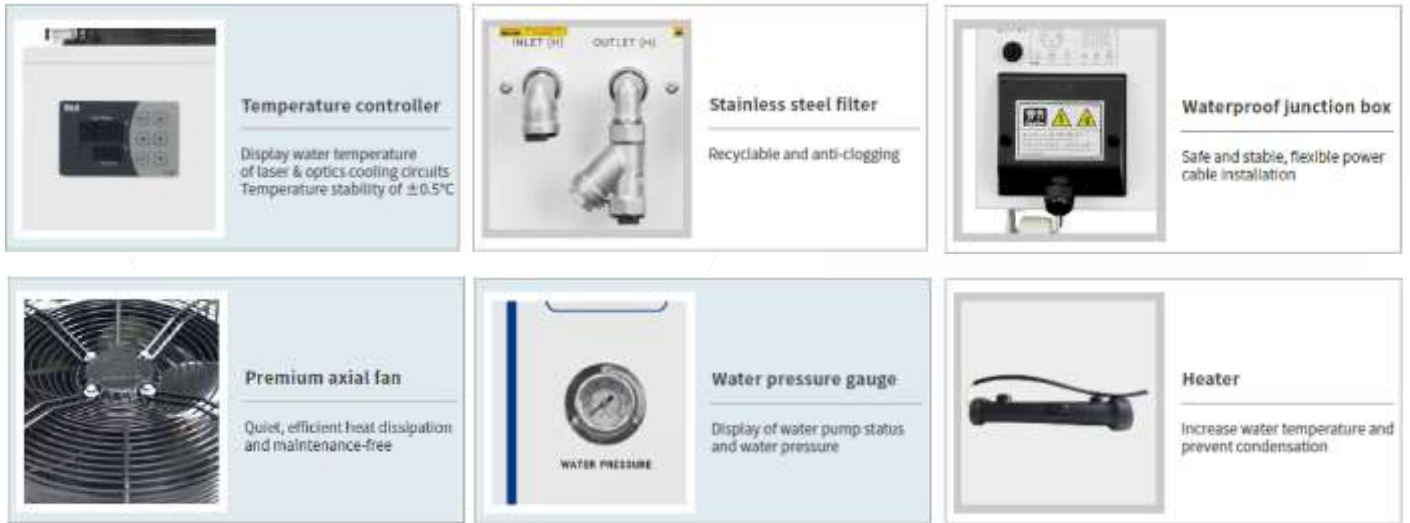


Model	C100	C200L	C200	C300L	C300	C500	C750	C1000	C1500	C2000	Test Conditions	
<b>Optical Characteristics</b>												
Nominal Output Power(W)	100	170	200	250	300	500	750	1000	1500	2000		
Operation Mode	CW/Modulated											
Polarization State	Random											
Output Power Tunability(%)	10~100											
Emission Wavelength(nm)	1080±5											
Output Power Instability	±1.5											
Modulation Frequency(Hz)	50~50,000											
Red Guide Laser Power(mW)	0.1~1											
<b>Optical Output Characteristics of QBH head</b>												
Beam Quality	M <sup>2</sup> ≤1.3						BPP <2.3 (mm×mrad)			Nominal Output Power		
Core Fiber(μm)	25						50(25, 100, 200 optional)					
Delivery Cable Length(m)	15						20					
<b>Electrical Characteristics</b>												
Power Supply	220±10% V AC, 50/60Hz						380±10% V AC, 50/60Hz					
Numerical Aperture (NA)	0.11						0.2					
Max. Power Consumption(W)	400	800	800	1000	1000	2000	3000	4000	5000	6500		
Control Mode	RS-232/AD/Ethernet											
<b>Other Characteristics</b>												
Dimensions(W×H×D)	485×237×663(include. handles)						485×237 lude. handles)		520×620×986 handles)			
Weight(kg)	<50						<80					
Operating Ambient Temperature(°C)	10~40											
Humidity (%)	<70											
Storage Temperature(°C)	-10~60											
Cooling Method	Water Cooling											

## 4.2 RAYCUS /CWFL-2000 PRO SERIES FIBER LASER CHILLER



CWFL-2000 is specially made to control the temperature of fiber laser metal cutter machine up to 2kW.



Model	CWFL-2000ANP	CWFL-2000BNP
Voltage	AC 1P 220V-240V	AC 1P 220V-240V
Frequency	50Hz	60Hz
Current	3.4~17.8A	3.9~17.3A
Max. power consumption	3.03kW	3.38kW
Heater power	600W + 600W	
Precision	$\pm 0.5^{\circ}\text{C}$	
Reducer	Capillary	
Pump power	0.55kW	0.75kW
Tank capacity	14L	
Inlet and outlet	Rp1/2"+Rp1/2"	
Max. pump pressure	4.4bar	5.3bar
Rated flow	2 L/min+>15 L/min	
N.W	77Kg	70Kg
G.W	87Kg	82Kg
Dimension	70×47×89 cm (L×W×H)	
Package dimension	74×61×104 cm (L×W×H)	

### 4.3 RAYTOOLS BD04K SERIES CUTTING HEAD

## RAYTOOLS BD04K SERIES



Auto Focus Tube Cutting Head

Power Rating **4KW**

#### Excellent Design

Lightweight design with fast acceleration, Optimized optical configuration and efficient air flow design significantly to improve cutting quality and efficiency.

#### High Adaptability

With QBH,QD,G5 and other types of optical fiber interfaces, it is applicable to various fiber lasers.



#### Sealed Beam Path

Good sealing to keep beam path clean.

#### Auto Focus

Automatically change the focus position.

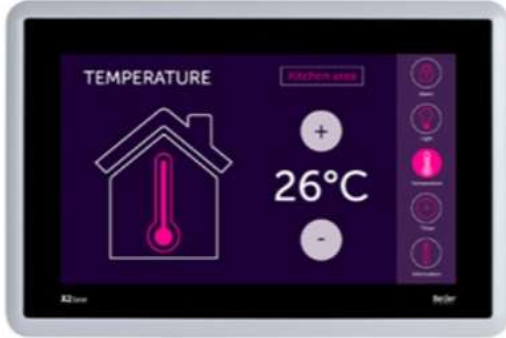
### Technical Data

Item	Specification
Collimation Length	100mm
Focusing Length	200mm
Cover Glasses	
-Top	Φ24.9*1.5mm
-Middle	Φ27.9*4.1mm
-Bottom	Φ27.9*4.1mm
Auto Focus Control	
-Pulse+Direction	
-0~10V Analog	
-EtherCAT	
Beam Alignment	Collimator X/Y
Beam Alignment Range	±1mm

Item	Specification
Focus Adjustment	Focus Lens Moving
Auto Focus Range	-12~+12mm
Fiber Interface	QBH,QD,G5
Weight	~4.8Kg
Nozzle Style	Single/Double
Diameter of Nozzle Tip	1.2mm,1.5mm,2.0mm,2.5mm 3.0mm,3.5mm,4.0mm
Height Follow System	Optional
-Standalone	
-0~10V Analog	
-EtherCAT	

## 4.4 BEIJER PLC MOTION CONTROL SYSTEM

**Beijer**  
ELECTRONICS



### X2 base 10 v2 10" HMI with iX runtime

- 1024 x 600 pixel (17:10)
- TFT-LCD touch screen
- 1 x Ethernet, 4 x serial, 1 x USB as standard
- Operating temperature -10° to -50° C
- CE, FCC, UL approvals

#### General description

Part number	630005310
Life cycle status	Active
Warranty	2 year

#### Certifications

General	CE, FCC, UL 61010-2-201
Safety	UL 61010-1, UL 61010-2-201, CAN/CSA-C22.2 No. 61010-1, CAN/CSA-C22.2 No. 61010-2-201

#### Mechanical

Mechanical size	290 x 193 x 40mm
	Panel Mount
	1 million finger touch operations
Touch type	Resistive
Cut-out size	275 x 177mm
Weight	0.86 kg
Housing material	Plastic (PC+ABS), Gray
Buzzer	No
LED	No

#### Power

Input voltage	24 V DC (18 to 32 VDC) CE: The power supply has to be conform with the requirements according to IEC 60950 and IEC 61558-2-4. UL and cUL: The power supply has to be conform with the requirements for class II power supplies.
Power consumption (max)	6.9 W
Input fuse	Internal DC fuse

CPU	ARM Cortex A8 600MHz
RAM	512 MB
FLASH	2 GB

#### Display

Size diagonal	10.1" diagonal
Resolution	1024 x 600 pixel (17:10)
Backlight	LED Backlight
Backlight life time	30000 hours
Backlight brightness	350 cd/m <sup>2</sup>
Backlight dimming	Industrial Dimming
Display type	TFT-LCD with LED backlight

#### Digital IO

Digital output	No
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#### Serial communication

Number of serial ports	1port3pinDsub, 1port3pin5crw
Serial port 1	RS 232 (RTS/CTS)
Serial port 2	RS422/485
Serial port 3	RS 485
Serial port 5	RS 485

#### Ethernet communication

Number of Ethernet ports	1
Ethernet port 1	1x10/100 Base-T (shielded RJ45)

#### Expansion interface

Expansion port	No
SD card	No
USB	1

#### Environmental

Operating temperature	-10°C to +50°C
Storage temperature	-20°C to +60°C
Shock	15g, half-sine, 11ms according to IEC60068-2-27
Vibration	1g, according to IEC 60068-2-6, Test Fc
Sealing front	IP65, NEMA 4X/ 12 and UL 50E Type 4X/ 12
Sealing back	IP20
Humidity	5% - 85% non-condensed