1. Optical characteristics

No.	Characteristics	Parameter value	Unit
1	Central power	>4000	W
	Outer ring power	>2000	W
2	Total power	>6000	W
3	Maximum modulation frequency	5	kHz
4	Central wavelength	1080±5	nm
5	Spectral width @3dB	<10	nm
6	Power adjustment range	5-100	%
7	Beam parameter product / BPP (Central)	<2.2	/
8	Beam parameter product / BPP (Outer Ring)	<7	mm*mrad
9	Laser switching ON/OFF time	<100	μs
10	Output power instability	<2	%
11	Polarization direction	Random	/
12	Indicator light power (660nm red light)	~1	mW
13	Output core diameter	50/150	μm
14	Delivery cable length	20	m

2. Electrical characteristics

No.	Characteristics	Parameter value	Unit
1	Power supply voltage	380	V
2	Working current	<30	A
3	Power consumption	<20000	W

3. Environmental requirements

No.	Characteristics	Parameter value	Unit
1	Operating temperature	10 - 40	℃
2	Storage temperature	0 - 60	℃
3	Cooling method	Water Cooling	/

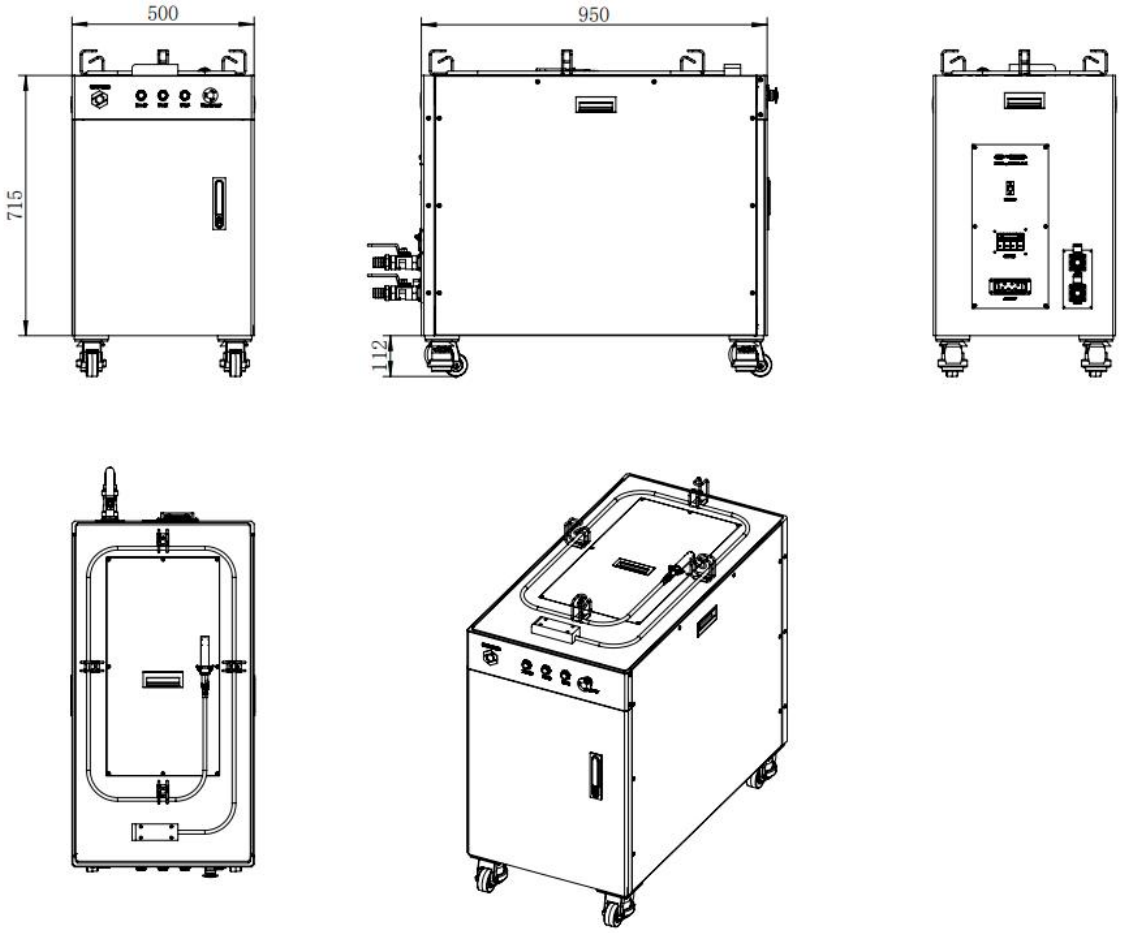
4. Water cooling requirements

No.	Characteristics	Parameter value	Unit
1	Cooling capacity	>15000	W
2	Water flow rate	>60	L/min
3	Water cooling temperature	25±1	℃
4	Water Pipe Diameter	25	mm

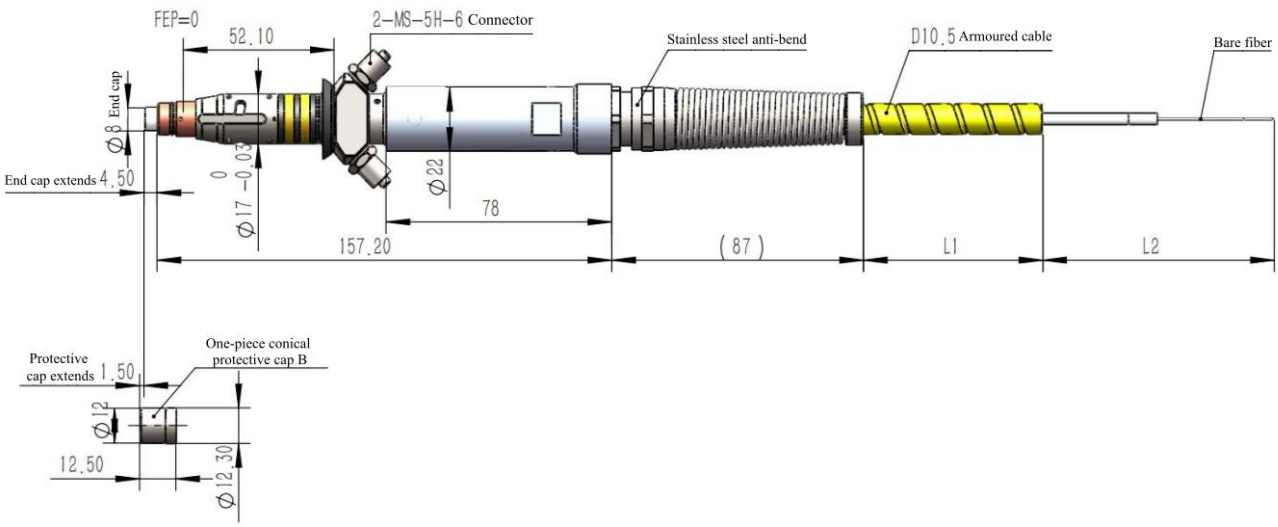
5. Structural characteristics

No.	Characteristics	Parameter value	Unit
1	Laser dimension	950*500*715 (excluding lifting eyes and castors)	mm^3
2	Output head dimension	QBH Standard Parts	As shown in the figure
3	Net weight	~180	kg

6. Dimension



Laser dimension (See the actual product for details of the eye bolt)



QBH dimension (See the actual product for details of the tap)

7. Interface Definitions

7.1 Power Connection Definitions

The laser power supply interface definitions are shown in the table below,

Table.1 Power Connection Definitions

Name	Colour	Description
AC-G	Yellow-green	GND
AC-L1	Blue	AC input phase L1
AC-L2	Green	AC input phase L2
AC-L3	Red	AC input phase L3

7.2 DB9 Interface Definitions

The RS232 interface is a DB9 male connector. The specific pin definitions are shown in the table below. A crossover cable must be used when connecting to a computer.

The DB9 interface definitions are shown in the table below:

Table.2 DB9 Interface Definitions

Pin	Description
1,4,6-9	Not connected
2	RXD
3	TXD
5	GND

7.3 DB25 Interface Definitions

The DB25 interface definitions are shown in the table below:

Table.3　DB25 Interface Definitions

Pin Number	Signal Name	Signal Type	Logic Level	Description
1	Interlock1+	Input		Interlock signals are passive contacts. Do not connect an external power supply or earth. They automatically reset upon reconnection.
4	Interlock1-	Input		
2	Interlock2+	Input		Interlock signals are passive contacts. Do not connect an external power supply or earth. They automatically reset upon reconnection.
3	Interlock2-	Input		
5	Central module analogue power output input	Input	0-10V	0V——0% 2V——20% 4V——40% 6V——60% 8V——80% 10V——100%
6	Central module feedback voltage output	Output	0-4V	0V——0% 0.8V——20% 1.6V——40% 2.4V——60% 3.2V——80% 4V——100%

7	GND	AGND		5-pin, 6-pin: Common ground for analogue voltages
8	Central module modulation control input	Input	5V/24V	Default 24V, switchable between 5V and 24V
9	Central module modulation control input	Input	GND	8pin ground
10	Remote start	Input		Remote START button control input; the internal main power supply can be activated by closing or opening the passive contacts (this function is currently disabled)
11	Remote start	Input		
12	Ring module analogue power output input	Input	0-10V	0V——0% 2V——20% 4V——40% 6V——60% 8V——80% 10V——100%
13	Ring module feedback voltage output	Output	0-4V	0V——0% 0.8V——20% 1.6V——40% 2.4V——60% 3.2V——80% 4V——100%
14	GND	AGND		12-pin, 13-pin: Common ground for analogue voltages
15	Ring module	Input	5V/24V	Default 24V, switchable

	modulation control input			between 5V and 24V
16	Ring module modulation control input	Input	GND	15pin ground
17	Indicator light control	Input	5V/24V	Controls the switching on and off of the indicator light; default 24V, switchable between 5V and 24V
18	Enable control	Input	5V/24V	Controls the switching on and off of the enable signal; default 24V, switchable between 5V and 24V
19	Fault output	Output	5V	High-level output-laser operating normally Low-level output-laser fault
20	GND	GND		Pins 17-19, 21-24: Reference ground
21	Fault reset	Input	5V/24V	Resets laser error; default 24V, switchable between 5V and 24V
22	Key switch status output	Output		Laser keyless switch; function not yet enabled
23	Power supply status output	Output	24V	Main power on; outputs a high level of 24V
24	Enable status output	Output	24V	External control enable signal on; outputs a high level of 24V
25	High/low power switch	Input		This function has not yet been developed

Notes: 1. The host computer can be used to switch between 5V and 24V control. At 5V, 3–6V is considered a high level; at 24V, 15–24V is considered a high level. Please take care with the voltage, as errors may result in damage to the laser.

2. The InterLock interface comprises pins 1 and 4, and pins 2 and 3 of the DB25 connector. If these pins are disconnected, the laser will immediately cease emitting laser and display an InterLock alarm. The InterLock interface must not be connected to any active signals, as this will result in damage to the interface and trigger a laser alarm.