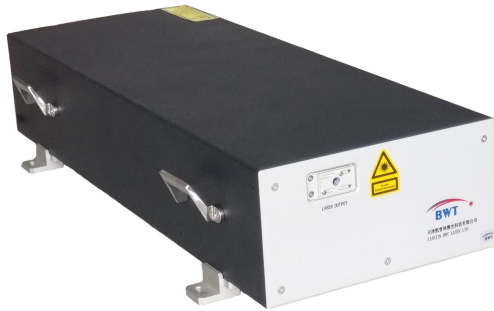


## 20W50 $\mu$ J IR Femtosecond Laser



### Features:

- ◆ Dimension: L848 x W375.6 x H180.5 (mm)
- ◆ Power: >20W@400KHz
- ◆ Max Energy: >50 $\mu$ J@400KHz
- ◆ Pulse width: <400fs
- ◆ Beam Quality: TEM00 ( $M^2 < 1.4$ )
- ◆ Beam Roundness: >90%
- ◆ Low-cost; maintenance-free
- ◆ Narrow pulse femtosecond; Excellent pulse quality and excellent stability
- ◆ High beam quality; Suitable for precision processing
- ◆ Real-time state monitoring
- ◆ User-friendly interface

### Applications:

- ◆ OLED dicing and drilling
- ◆ Glass, ceramic, sapphire dicing and drilling
- ◆ Dicing of semiconductor materials
- ◆ Fuel injector nozzles drilling dicing of films
- ◆ Micro-nano processing
- ◆ Dicing of films
- ◆ Precision marking
- ◆ Other precision processing

## 20W50 $\mu$ J IR Femtosecond Laser

Founded in 2017, Tianjin BWT Laser Ltd. is a subsidiary of BWT. Tianjin BWT Laser Ltd. is now a "high-tech" company focusing on developing and manufacturing femtosecond, picosecond and nanosecond lasers. The company is lead by national and Beijing specially recruited experts. More than 45% of the team members hold master's degree and three of them hold doctor degree. Moreover, the company has a joint research lab with Tianjin University, which includes intense cooperation in talents and technology transferring. Internally, the company is pursuing outstanding and high-efficient operation. Externally, the company is following the guideline of client first and wish to grow together with clients in business. Thus, Tianjin BWT Laser Ltd is committed to providing high-level and reliable lasers.

Tianjin BWT Laser Ltd. has 2000 square meters of R&D, production and office space, including one application laboratory and 700 square meters of clean room. For customers support, the company has set up a number of offices in east and south China. So far, Tianjin BWT Laser Ltd. has several products lines, including 10 to 100 watts of picosecond IR laser (energy up to 2mJ), femtosecond IR laser with 50W 50uJ output, 10 W femtosecond laser with narrow pulsewidth, and 30W picosecond UV laser etc. These lasers have been widely used in various fields such as industrial micro-processing, precision marking, medical treatment, scientific research and many other applications.

Version No	Modified items	Date of Modification
00	V 1.0	2021.11.12

## 20W50μJ IR Femtosecond Laser

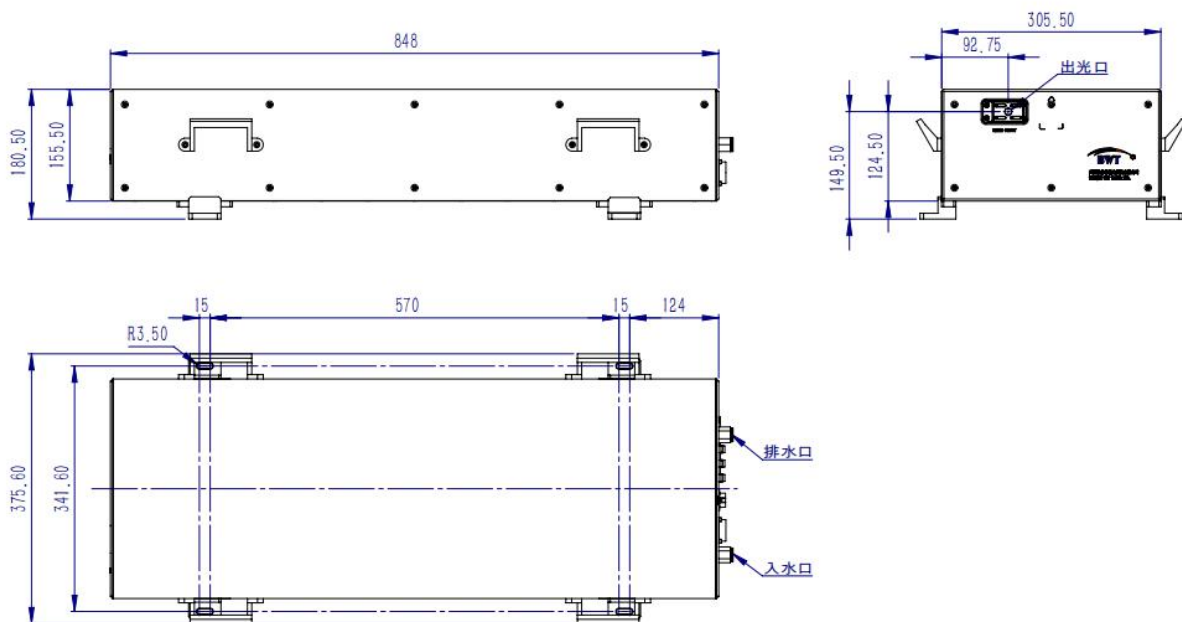
Parameters		Unit	BFL-1030-20B
			Specifications
Optical Parameters <sup>(1)</sup>	Power	W	20
	Central wavelength	nm	1030
	Pulse Repetition Rate	Hz	1-400K
	Pulse width	fs	<400
	Average Power	W	20
	Maximum Pulse Energy	μJ	50
	Average Power Stability	-	2.0% rms
	Pulse-to-Pulse Instability	-	3.0% rms
	Spatial Mode	-	TEM00 ( $M^2 < 1.40$ )
	Beam Roundness	-	90%
	Beam Divergence	mrad	2.0 (Full Angle)
	Polarization Direction	-	vertical
	Polarization Ratio	-	100:1
Electrical Parameter	Operation Voltage	V	220
Other Parameters	Warm-up Time	min	20
	Ambient Temperature	°C	15-30
	Relative Humidity	-	10%-80%
	Storage Temperature <sup>(2)</sup>	°C	-10-50
	Cooling Approach	-	Water-cooling

(1) All the parameters are listed corresponding to environment temperature within 25°C±0.1°C

(2) Do not operate or store the laser in environment easy for dew formation

## 20W50 $\mu$ J IR Femtosecond Laser

### Outline Drawings (mm)



### Instructions

- ◆ Connect 110V~260V AC power supply for laser operation
- ◆ Place the laser in a clean environment with space for sufficient heat dissipation
- ◆ Set the environment temperature close to 25°C which is the set temperature of chiller (Generally, 25°C is a typical set temperature of chiller. This value may vary for different lasers. Refer to the printed report attached with the laser for the real value. ) Set the environment humidity within 10%~80%. Operation of laser in high/low temperature or high humidity environment is prohibited.
- ◆ Make sure the power supply of the laser is grounded. Operation of the laser in environment with strong electromagnetic interference is not recommended.
- ◆ Always wearing laser goggle when the laser is operating. Staring into the laser output window is strictly prohibited.
- ◆ Regularly examine of the cleanness of the distilled water and filter. Replace the filter every month. Make sure the water volume,

## 20W50 $\mu$ J IR Femtosecond Laser

water quality, flow rate is normal. The laser may be damaged permanently if the water is insufficient in chiller or the water flow is blocked.

- ◆ Always use packing box provided by Tianjin BWT Laser Ltd. for moving or storage of the laser. Always move the laser slowly and steadily and avoid sudden shock. Special fixture may be necessary for moving the laser.
- ◆ Operation Temperature 15-30°C
- ◆ Storage Temperature -10-50°C

### Tips For Safety

Label

Descriptions



Warnings

Potential danger for human body. Specific procedure needed for operation. Human body may be hurt if the operation is incorrect. Do not violate the requirements following the warning sign, which is important for the safety of the operator.



Notice

Potential damage for the laser system. Specific procedure needed for operation. Otherwise, some parts or the whole laser system may be damaged. For normal operation of the laser system, do not violate the requirements following the notice sign.



Laser radiation Label

This label is the sign of laser radiation. Generally, this label is placed near the laser output window.