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**Fiber Laser Cutting**

**TL series**  
**TL3015/4020/6020**

## High-Tech ! Ultimate Performance !

Built for high speed, high accuracy laser cutting

### Fully Exhibit Extraordinary Laser Cutting Performance

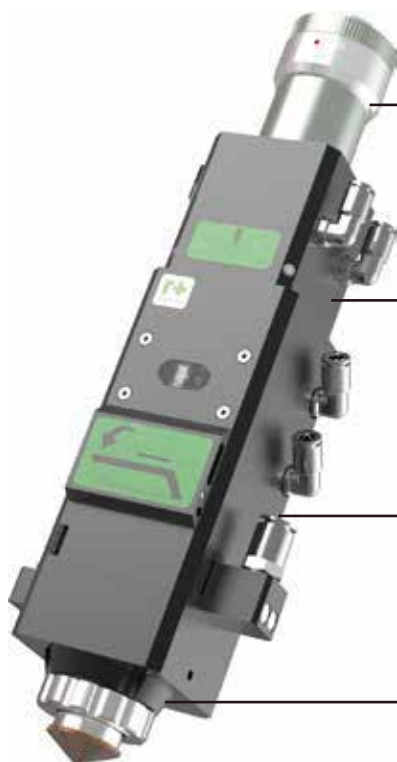
## RAYTOOL LASER CUTTING HEAD

- Optimized optical configuration and smooth and efficient airflow design.
- Auto focus ranges +10~-12mm, accuracy is 0.05mm.
- Can be equipped with the D30 lens group, the maximum fiber input power is 3KW.
- Maximum acceleration of focus lens drive 10m/s<sup>2</sup>, maximum speed 10m/min.
- Drawer-type of lens mount, quick and easy access to replace.
- Collimation and focusing lens can choose of single lens or lens group which can achieve the best optical quality and the effect of cutting.
- With the optical interfaces of QBH、QD、QCS、LLK-D, etc., can be adapted with a variety of fiber lasers.



# Fiber Laser Cutting Machine





- **Dustproof**

Comprehensive upgrade IP65 dust-proof design, Double protection, the risk of contamination of the lens is almost zero

- **High Efficient Water Cooling system**

Comprehensive upgrade IP65 dust-proof design, Double protection, the risk of contamination of the lens is almost zero

- **Dynamic Zero Focus**

Flexible adjustment of focus scale to unifies the zero focus position, for worry-free adjustment of process parameters

- **Structure**

integrally formed cover which can improve QBH fiber connector to prevent rust.

## CONSTRUCTION OF LASER CUTTING HEAD



**BT240S** adds an upper protective lens on the collimator to minimize the risk of contamination of the collimator. The design of dustproof is upgraded to double protection so that the lens is almost impossible to be contaminated.



The cutting head has built-in motor drive unit through the linear driver and the focusing lens can automatically change the position in the range of 22mm. The user can set the focus continuously through the program to complete the rapid piercing of thick sheets or other different thickness and materials.

## CONSTRUCTION OF LASER CUTTING HEAD

### • Structure

Modularization, Easy maintenance,  
Decrease down time.

### • Multiple Protection

3pcs of protection lens and highly  
protection to the collimating lens.  
vaav

### • Durability

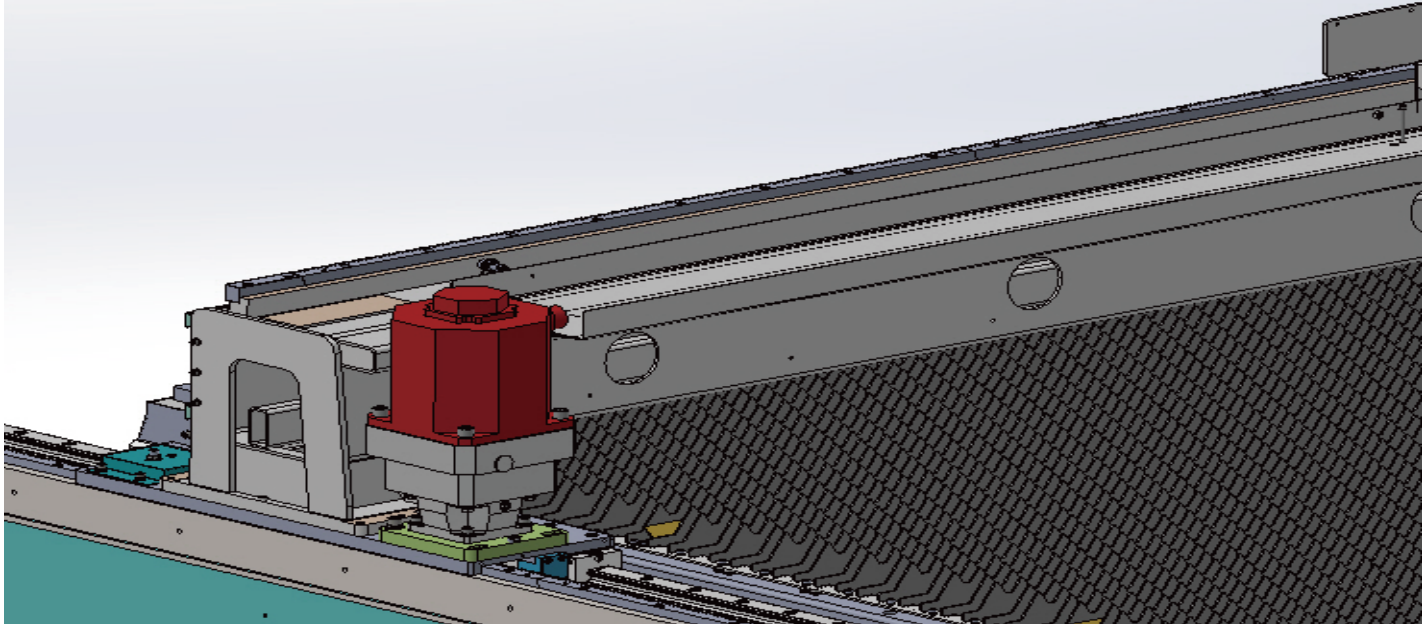
The design of dual water cooled  
optical system can extend  
continuous working time efficiently.

### • Dustproof

Comprehensive upgrade IP65  
dust-proof design, Double  
protection, the risk of contamination  
of the lens is almost zero

### • Auto Focus

Focusing speed 10m/min and  
reposition accuracy is 50um.



## Electric Circuit System

All components comply with CE&UL standard. With high-response and high-resolution 24-bit encoder (16,777,216 pulses/rev) Japan YASKAWA Sigma-7 servomotor achieves the highest performance in the industry (compared with other servo brands).

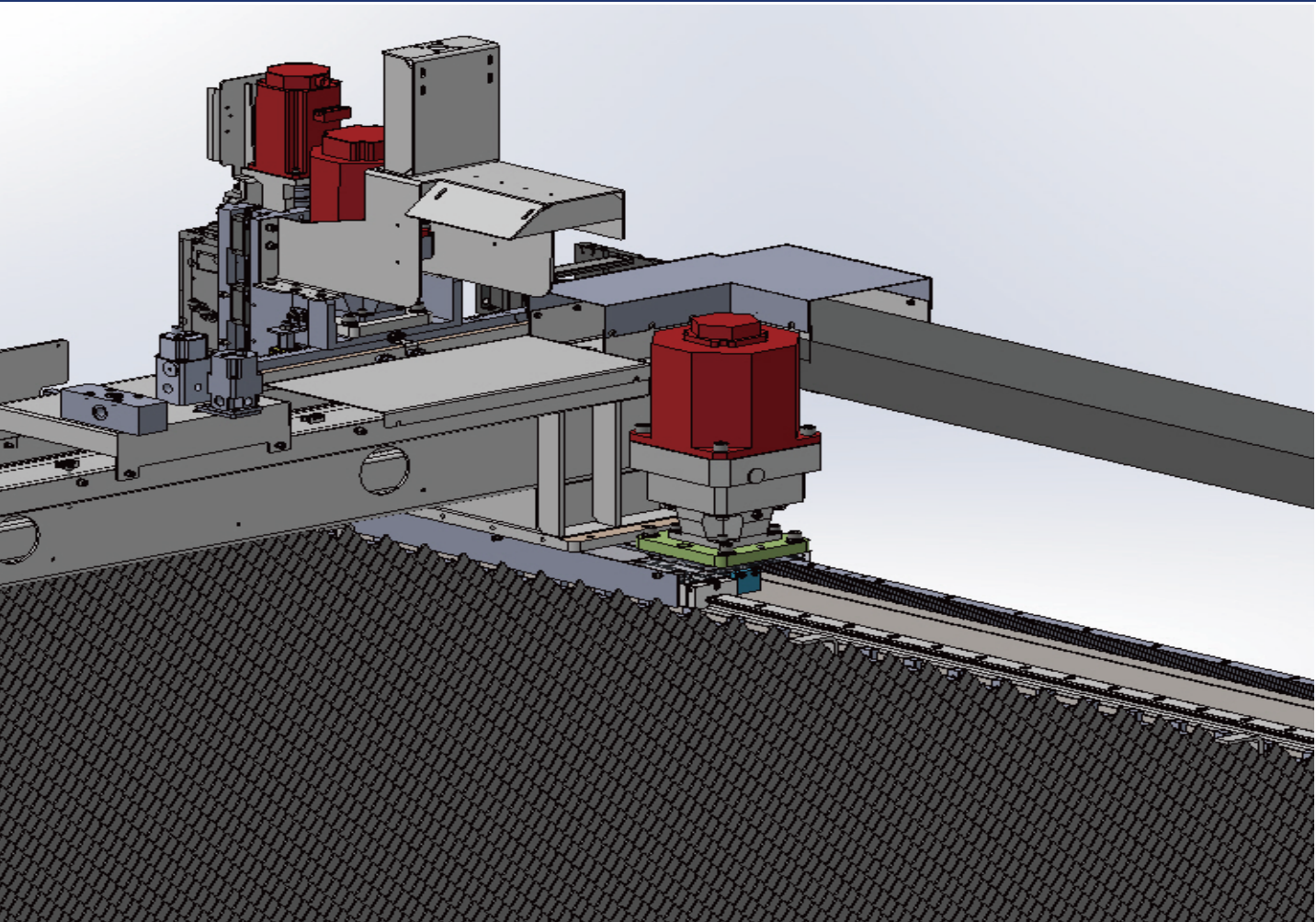
## Dry Dust collector (Optional)

Filter system: Ultra high efficiency HEPA filter

Different pressure cleaning controller

Oil and water separator





## Intelligent Feed Drive

X and Y axes are equipped with YASKAWA servo drive system with high rigidity and precision gear reducer and rack & pinion system;

Light weighted, Dual servo motor synchronized Y axis carriage design is to ensure position accuracy and high speed.

## Dual Exchange Table

Easy to loading/unloading different types and sizes sheet materials, Reduces the machine idle time and increase production capacity. Improve the efficiency of processing.



Back of equipment  
and switch table



## nLight Oscillator

nLIGHT's semiconductor lasers are the industry's brightest and operate at unique wavelengths and power combinations. Our high-power continuous wave fiber lasers provide significant advantages over legacy fiber lasers for Programmability, Serviceability and Reliability.

- Reflection Protection

Hardware-based protection provides uninterrupted failsafe processing of reflective metals with no damage to the laser.

- Unparalleled Serviceability

Modular design simplifies repairs maximizing uptime.





# CNC Controller

- Easy to operation interface—user friendly
- Cutting Correction, burn correction, Punching correction at different processing component
- Break point selection: unexpected power failure, or unplanned downtime, choose whether or not to reprocess the last processed.



Watch the picture.



## Device Abnormal record screen



## Handling suggested mode information when cutting exceptions



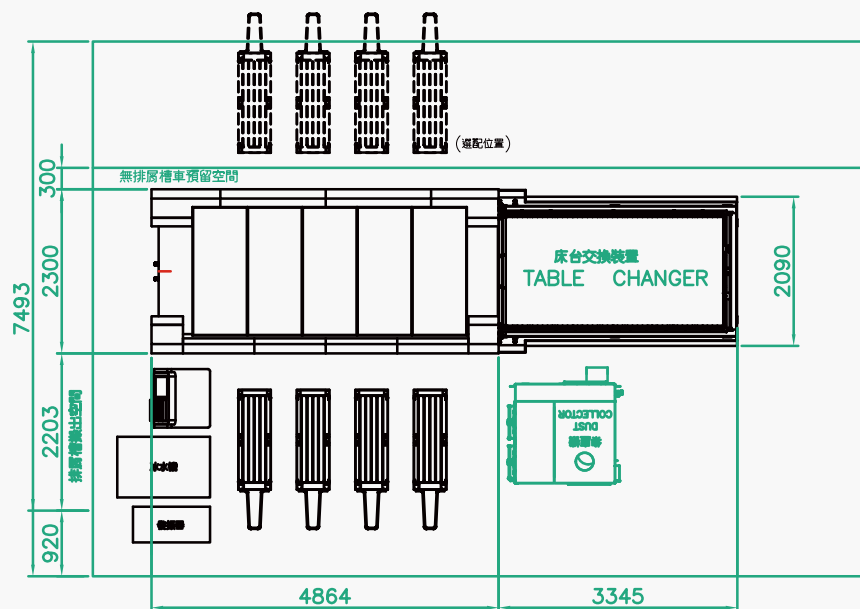
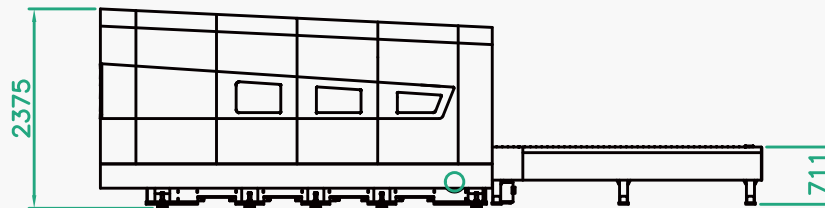
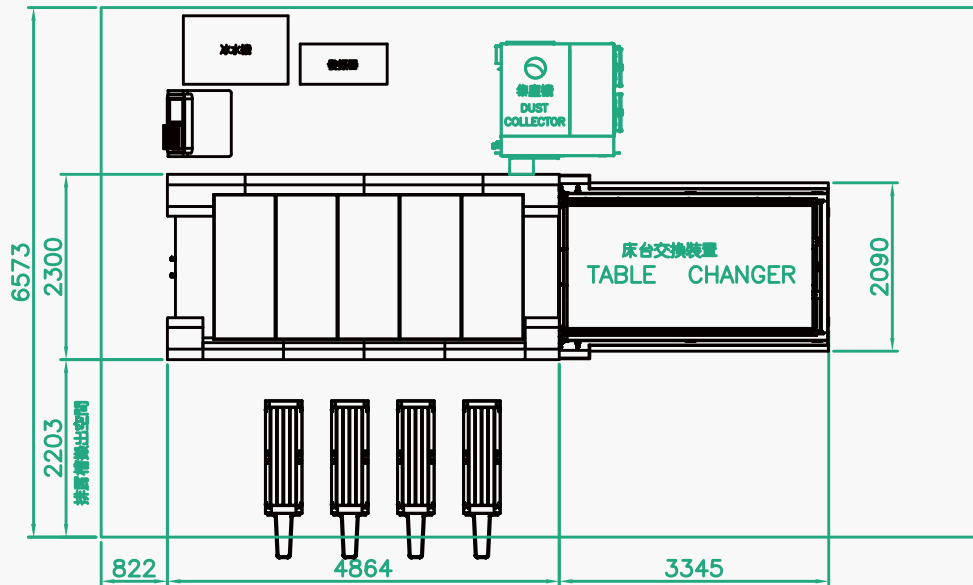
Manual Operation Features Page

## Specifications

Project	Unit	TL3015-12	TL3015-20	TL3015-25	TL3015-30
Movement method		3 axes simultaneously controlled			
Control method		Advantech controller			
Machining range(X*Y)	mm	1500*3000			
Travel(X*Y*Z)	mm	1525*3050*150			
Maximum axis movement speed	m/min	80/80			
Feed rate	m/min	110			
Acceleration		1.5G			
Positioning accuracy	mm	0.05/500			
Repeatability accuracy	mm	±0.02			
Power source		AC 3ph.4 wires 220V 50Hz/380V 50Hz			
nLIGHT alta resonator	W	1200	2000	2500	3000
Wave length of laser	nm	1080±10			
lase head		Manual focus adjustment / Automatic (OP)-Only 1200W Automatic-2000~3000W			
Focusing distance for lase head		F125/F150(OP)			
Auxiliary gas for cutting		Oxygen 10bar	Oxygen 10bar ;		
		Nitrogen 10bar	Nitrogen 16bar		
		Air 16 bar	Air 16bar		
Table tupe		Chain Pull Parallel Exchange Workbench			
Height limit	mm	20			
Table Switching time	s	10~15			
Max.workpiece load	kg	600	750		
Machine dimensions (L*W*H)	mm	5010x2285x2375/ 8300x2285x2375(OP)			
Machining accuracy		±0.10			
Machine weight	kg	7000			

- Specifications are subject to change without prior notice.
- Cutting speed may vary with the selected focus, fiber code and equipment.

# TL3015 / FLOOR PLAN



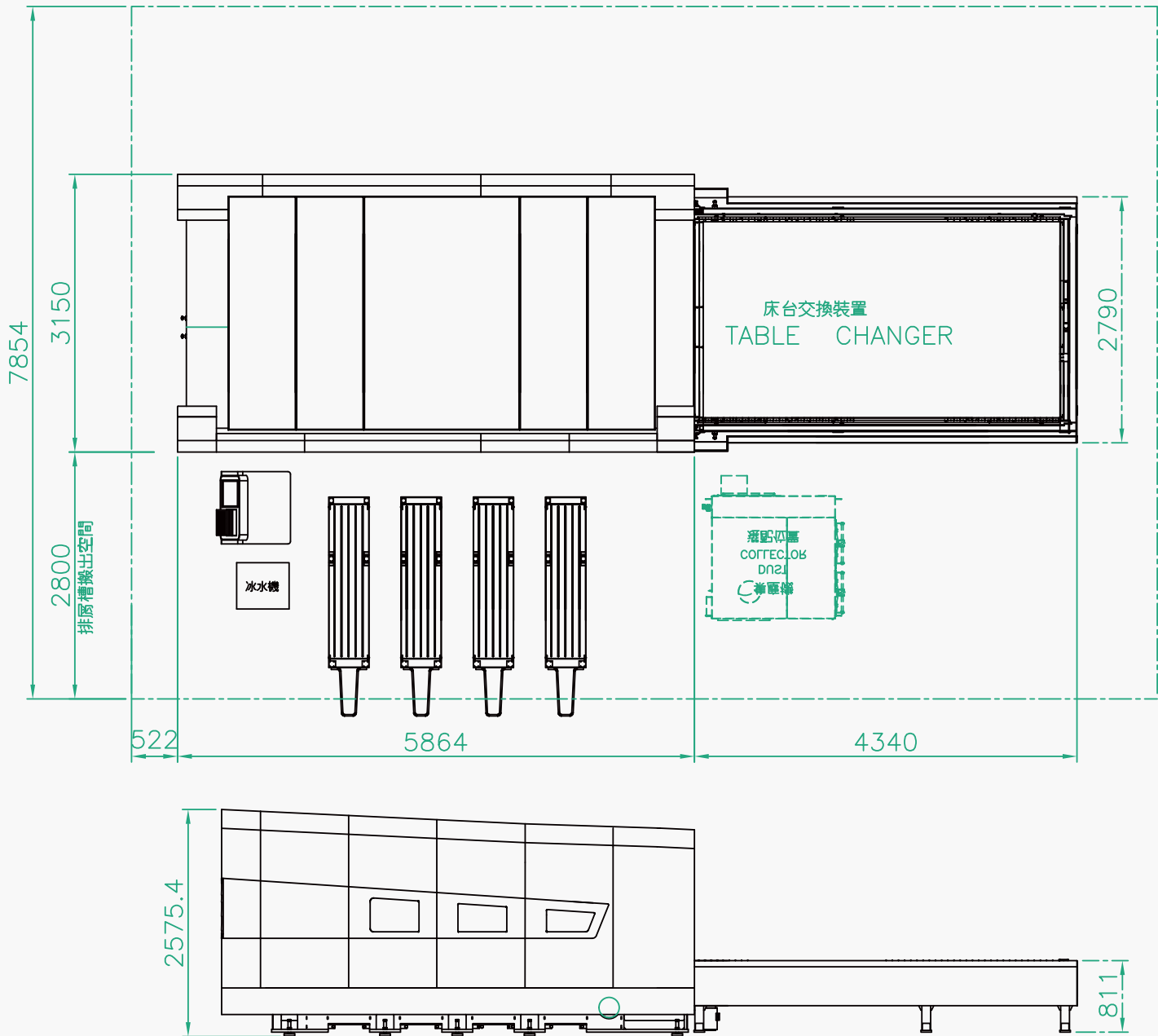
unit: mm

## Specifications

Project	Unit	TL4020-12	TL4020-20	TL4020-25	TL4020-30	TL4020-40
Movement method		3 axes simultaneously controlled				
Control method		Advantech controller				
Machining range(X*Y)	mm	2000*4000				
Travel(X*Y*Z)	mm	4010*2015*200				
Maximum axis movement speed	m/min	80/80				
Feed rate	m/min	110				
Acceleration		1.5G				
Positioning accuracy	mm	0.05/500				
Repeatability accuracy	mm	±0.02				
Power source		AC 3ph.4 wires 220V/60Hz				
nLIGHT alta resonator	W	1200	2000	2500	3000	4000
Wave length of laser	nm	1080±10				
lase head		Manual focus adjustment / Automatic (OP)-Only 1200W Automatic-2000~4000W				
Focusing distance for lase head		F125/F150(OP)				
Auxiliary gas for cutting		Oxygen 10bar	Oxygen 10bar ;			
		Nitrogen 10bar	Nitrogen 16bar			
		Air 16bar	Air 16bar			
Table tupe		Chain Pull Parallel Exchange Workbench				
Height limit	mm	-				
Table Switching time	s	15~20				
Max.workpiece load	kg	800	1005	1260	1350	2000
Machine dimensions (L*W*H)	mm	10250x3100x2576				
Machining accuracy		±0.10				
Machine weight	kg	8500				

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# TL4020 / FLOOR PLAN



unit: mm

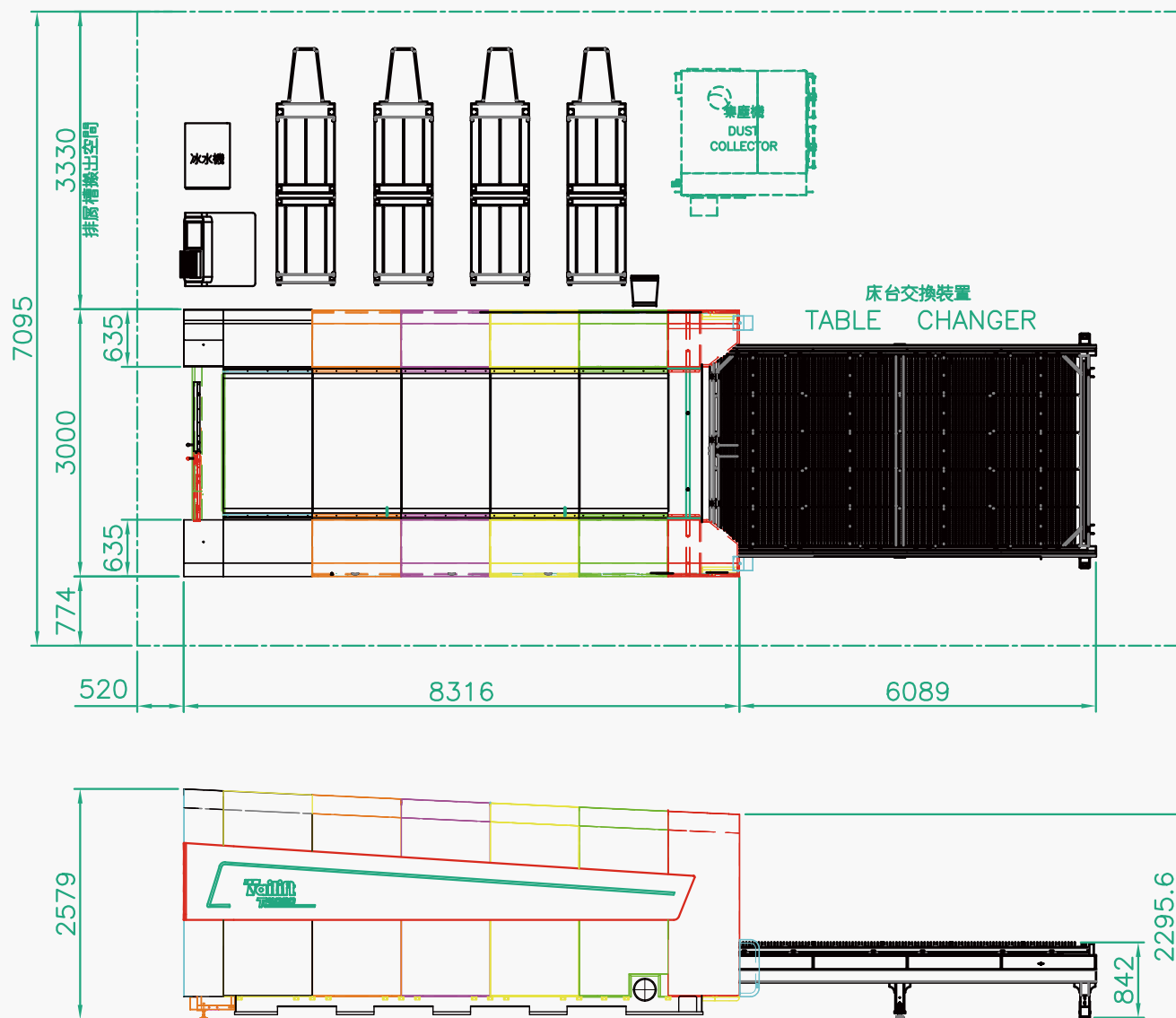


## Specifications

Project	Unit	TL6020-20	TL6020-25	TL6020-30	TL6020-40
Movement method		3 axes simultaneously controlled			
Control method		Advantech controller			
Machining range(X*Y)	mm	6000*2000			
Travel(X*Y*Z)	mm	2015*6050*200			
Maximum axis movement speed	m/min	80/80			
Feed rate	m/min	110			
Acceleration		1.5G			
Positioning accuracy	mm	0.05/500			
Repeatability accuracy	mm	±0.02			
Power source		AC 3ph. 220V/380V 50/60Hz			
nLIGHT alta resonator	W	2000	2500	3000	4000
Wave length of laser	nm	1080±10			
lase head		Automatic			
Focusing distance for lase head		F125/F150(OP)			
Auxiliary gas for cutting		Oxygen 10bar ;			
		Nitrogen 16bar			
		Air 16bar			
Table tupe		Chain Pull Parallel Exchange Workbench			
Height limit	mm				
Table Switching time	s	15~25			
Max.workpiece load	kg	1005	1260	1350	2000
Machine dimensions (L*W*H)	mm	14405x3150x2580			
Machining accuracy		±0.1			
Machine weight	kg	11000			

- Specifications are subject to change without prior notice.
- Cutting speed may vary with the selected focus, fiber code and equipment.

# TL6020 / FLOOR PLAN



unit: mm



Ultimate machining; Excellent Quality.



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