

## Product Information

### Product Description:

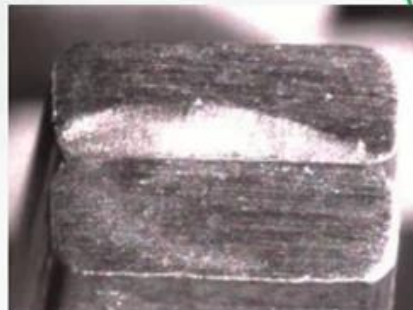
CARMAN HAAS Laser Technology (Suzhou) Co., Ltd established in February 2016, is a national high-tech enterprise integrating research and development, production, inspection, application testing and sales of laser optical components and optical systems. The company has a professional and experienced laser optics R&D and technical team with practical industrial laser application experience. It is one of the few professional manufacturers at home and abroad that have vertical integration from laser optical components to laser optical systems. The company actively deploys independently developed laser optical systems (including laser welding systems and laser cleaning systems) in the field of new energy vehicles, mainly focusing on laser applications of power batteries, flat wire motors and IGBT.

### Galvo Scan Head Welding Supplier China Technical Parameter:

1. Wavelength: 1030-1090nm
2. Laser Power: 6000W/8000W
3. Laser Source: IPG or Carmanhaas Customized
4. Core Diameter: 50 $\mu$ m/100 $\mu$ m
5. Application: Copper Hairpin Welding

## 1. Laser welding application in the production line of hairpin stator

### ➤ Production process of hairpin stator



## 2. Laser Solution of hairpin stator welding

### ➤ Laser System Specifications:

#### Option: 1

Laser: IPG/Customized 6kW **Multimode** laser

Galvo: Model: CHS 30

Laser Core Diameter: 50μm



#### Option: 2

Laser: IPG/Customized 8kW **Ring** laser

Galvo: Model: CHS 30

Laser Core Diameter: 50/ 150μm

- Working Area: 180\*180mm;
- Single shot range 2 slots;
- Welding immediately after taking pictures, no servo motion mechanism, low production cycle



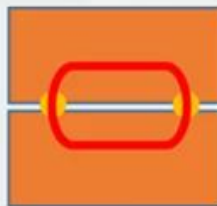
## 3. Intelligent application of laser welding vision for hairpin stator

### ➤ Intelligent trajectory of laser vision

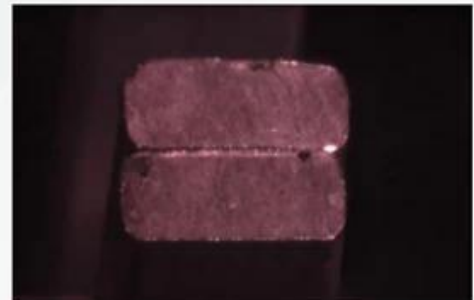
- With a variety of visual tools, flexible solutions, easy to customize, you can grab points, lines, circles, ellipses and their complex graphics;
- For pins with a slightly larger fit gap, you can visually skip the gap, and then continue welding after the gap is fused.



Before the gap is filled



After the gap is filled



## 4. Difficulties and solutions for laser welding of hairpin stator

### ➤ Laser welding spatter

Plasma cloud suppression (Ring Air Knife)



Air Knife



Without Air Knife

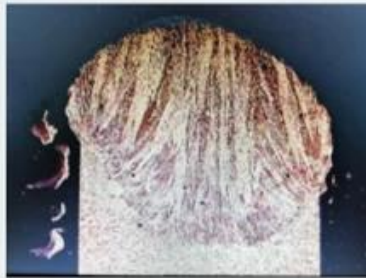


## 5. Excellent welding quality

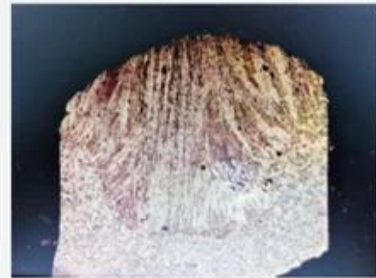
- The flow area of the welding is more than 1.5 times that of the base material



12.23mm<sup>2</sup>

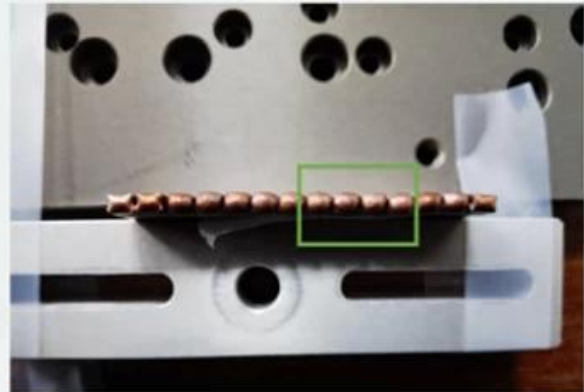


15.21mm<sup>2</sup>

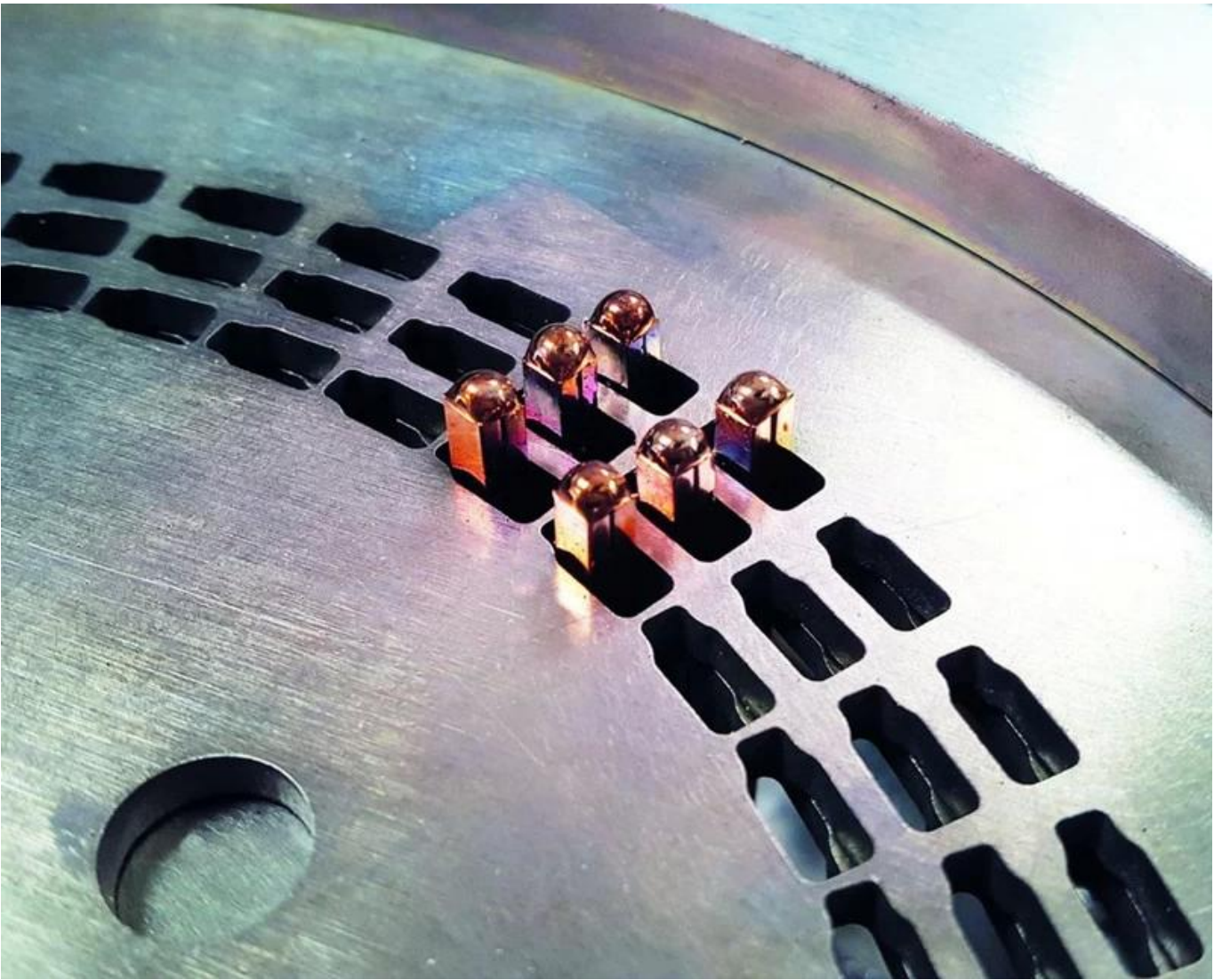
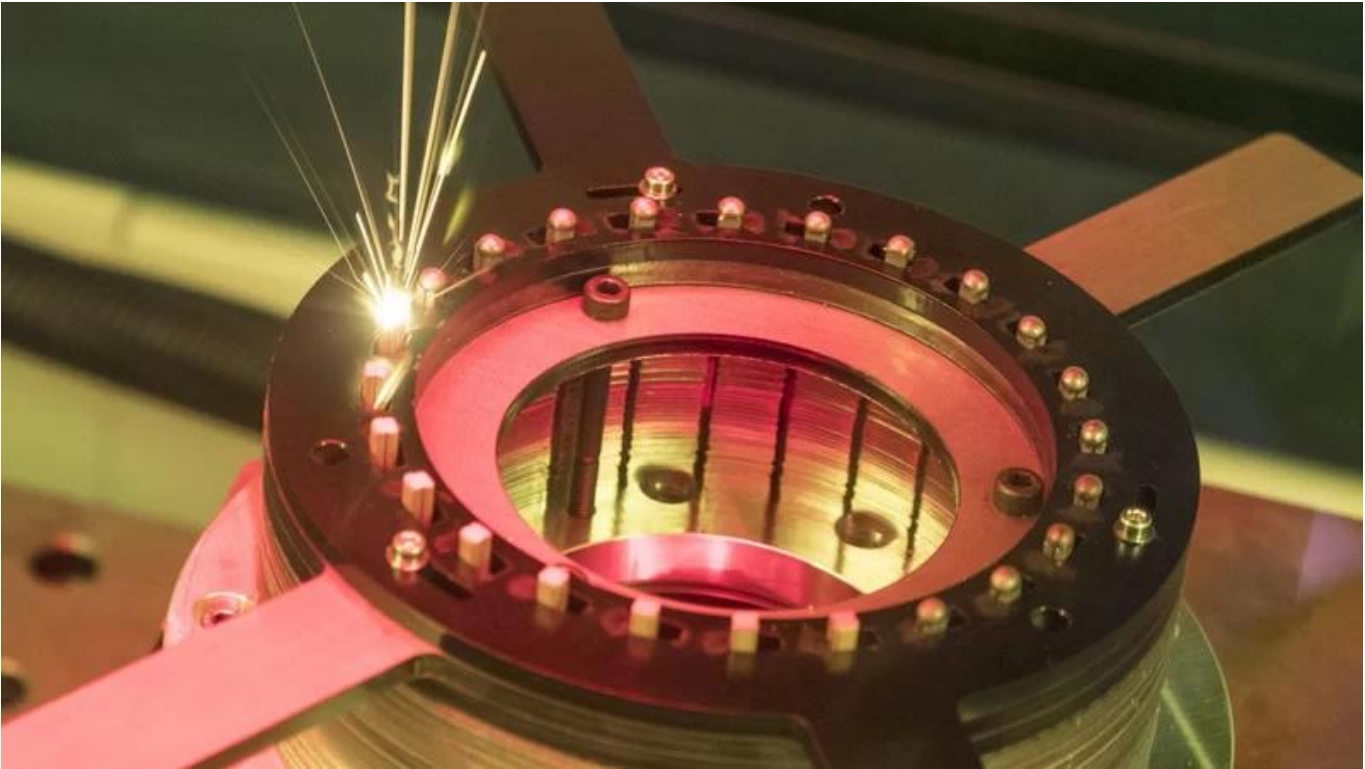


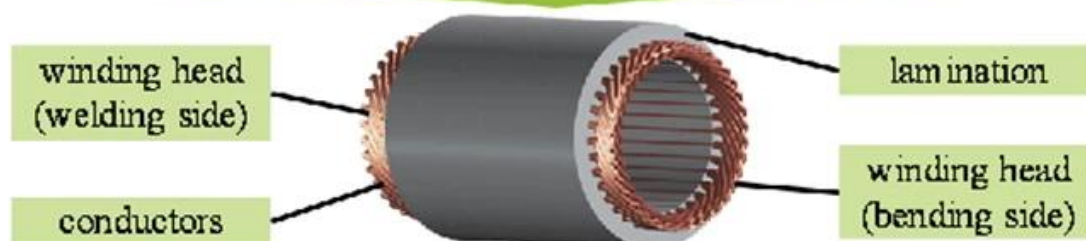
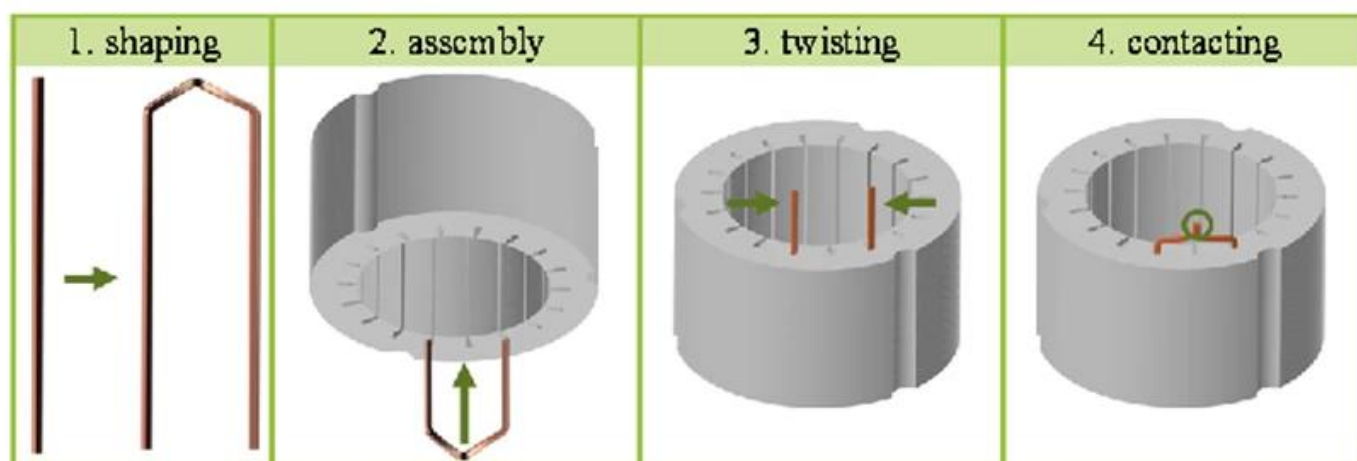
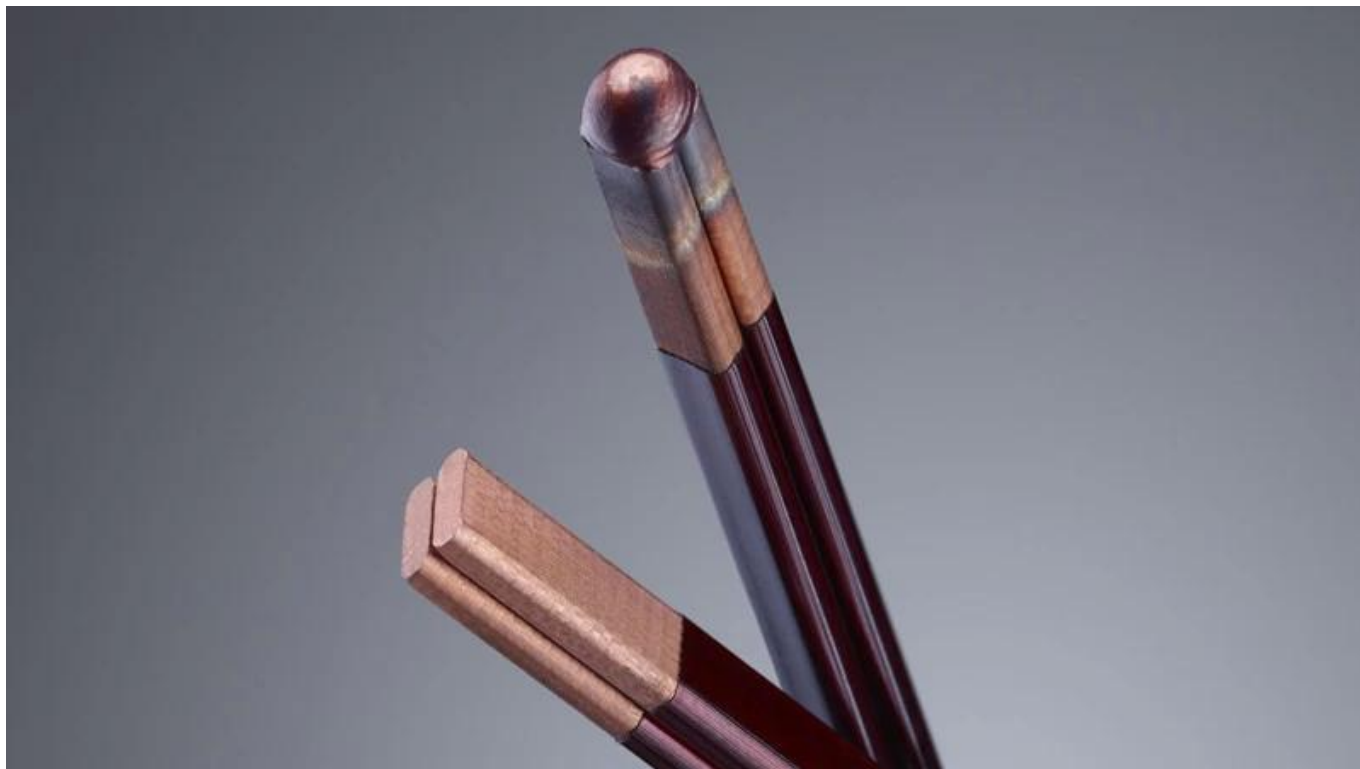
12.35mm<sup>2</sup>

- Appearance of welding with different defocus









## Our Service

### □ Pre-sale service

(1) Free sample marking

For free sample testing, please send us your file, we will do marking here and make video to show you the effect, or send sample to you for checking quality.

(2)Customized machine design

According to customer's application, we may revise our machine accordingly for customer's convenience and high production efficiency.

□ **After-sale Service**

(1)Installation:

After the machine reach the buyer's site, the engineers from the seller are responsible for machine installation and commissioning by using the special tools under the help of the buyer. Buyer should pay for our engineer visa fee, air tickets, accommodation, meals etc.

(2)Training:

In order to provide training in safe operation, programming and maintenance, Machine Supplier shall provide qualified instructors after Buyer finally installs the equipment.

- 1.Mechanical maintenance training
- 2.Gas / electronic maintenance training
- 3.Optical maintenance training
- 4.Programming training
- 5.Advanced operation training
- 6.Laser safety training

**Click to learn more:** [China Laser Welding Wholesales Factory](#)

**Factory**

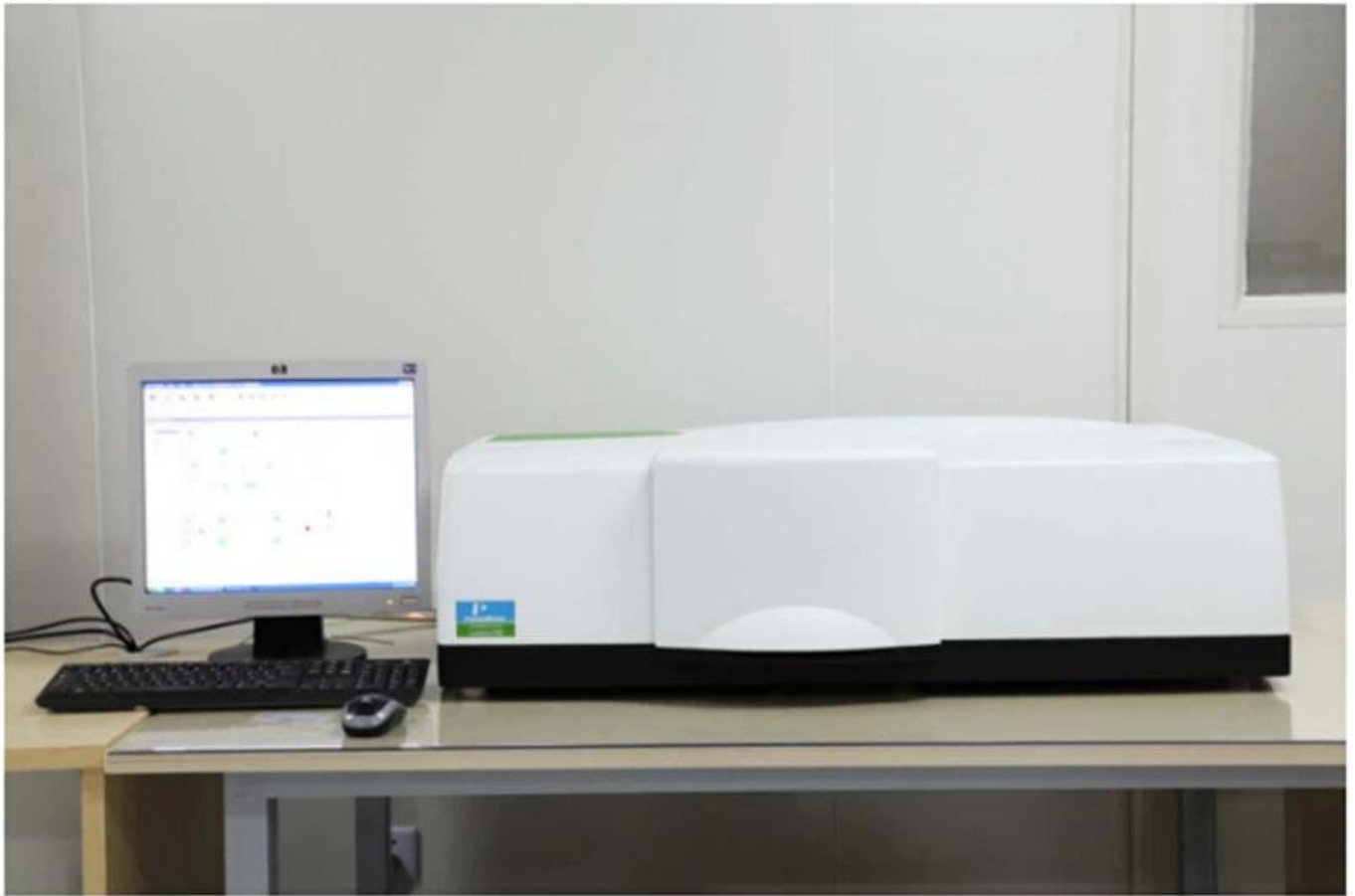












PerkinElmer Lambda 950---Testing Transmission and Reflectivity





## Certificate&Exhibition



# CERTIFICATE

## ATTESTATION CERTIFICATE OF MACHINERY AND LOW VOLTAGE DIRECTIVES

Technical file of the company mentioned below has been observed and audit has been completed successfully. 2006/42/EC Machinery Directive and 2014/35/EU Low Voltage Directive have been taken as references for these processes

Company Name : **Camman HAAS Laser Technology (Suzhou) Co., Ltd.**

Company Address : No 155, West Road Suhong, Suzhou Industrial Park, Suzhou City, Jiangsu, P.R.China

Related Directives and Annex : **Low Voltage Directive 2014/35/EU  
Machinery Directive 2006/42/EC**

Related Standards : **EN ISO 12100:2010; EN 60204-1:2006+A1:2009+AC:2010**

Product Name : **Laser Marking Machine**

Report No and Date : **SD-90049717:09.08.2018**

Product Brand/Model/Type : **LMCH-3W,LMCH-5W,LMCH-10W,LMCH-15W,LMCH-20W,LMCH-25W,  
LMCH-30W,LMCH-50W,LMCH-60W,LMCH-70W,LMCH-100W,  
LMCH-120W,LMCH-150W,LMCH-200W,LMCH-300W,LMCH-500W**

Certificate Number : **M.2018.201.N6073**

Initial Assessment Date : **10.08.2018**

Registration Date : **13.08.2018**

Reissue Date/No :

Expiry Date : **12.08.2023**

The validity of the certificate can be checked through [www.udem.com.tr](http://www.udem.com.tr). The CE mark shown on the right can only be used under the responsibility of the manufacturer with the completion of EC Declaration of Conformity for all the relevant Directives. This certificate remains the property of UDEM International Certification Auditing Training Centre Industry and Trade Inc. Co. to whom it must be returned upon request. The above named firm must keep a copy of this certificate for 10 years from the registration of certificate. This certificate only covers the product(s) stated above and UDEM must be notified in case of any changes on the product(s).

Address: Muratkerem Mahallesi 2073 Sokak (Eski 93 Sokak) No:10 Çankaya - Ankara - TÜRKİYE

Phone: +90 0312 443 03 90 Fax: +90 0312 443 03 76

E-mail: [info@udemtd.com.tr](mailto:info@udemtd.com.tr) [www.udemtd.com.tr](http://www.udemtd.com.tr)

UDM International Certification  
Auditing Training Centre Industry  
and Trade Inc. Co.



## Certificate of Approval

Certificate No.: 10119Q12565ROM

Awarded to

**Carman Haas Laser Technology(SuZhou)  
Co., Ltd.**

Organization Code Certificate No. / Unified Social Credit Code:91320594MA1MF4EP56  
Add: No.155, West Road Suhong, Suzhou Industrial Park, Suzhou City, Jiangsu Province, P.R. China. 215000

Beijing ZhongLianTianRun Certification Center (ZLTR) certify that the  
Quality Management System of the above organization has been assessed and found to be  
in accordance with the requirements of the standard:  
**GB/T19001-2016 / ISO9001:2015**

### SCOPE OF CERTIFICATION/REGISTRATION

**The Research and Development and Production of Optics Lenses (Except the limits of  
national laws and regulations.)**

This certificate is made valid when used with certification scopes and the requirements of applicable  
laws and regulations. These requirements include, but are not limited to, administrative permits,  
scopes of qualifications, and CCC requirements.

Subject to operation conditions in requirements conformity with Quality Management System,

This Certificate is valid for a period of three years only,

**Date from: Mar 13th,2019 To: Mar 12th,2022**

The effectiveness of this Certificate shall be Validated by periodic surveillance audit  
of ZLTR for maintenance.

Information of this certificate can be found on the official website of Beijing ZhongLianTianRun  
Certification center (<http://www.zltr.com.cn>)



**Beijing ZhongLianTianRun Certification Center**

Room2003, 22nd Floor, 2nd Unit, Block 1, No.4 Yard, Qiyang Road, Chaoyang District, Beijing, P.R. China 100022

Information of this certificate can be found on the official website of Certification and Accreditation Administration of the People's Republic of China (<http://www.cnca.gov.cn>)

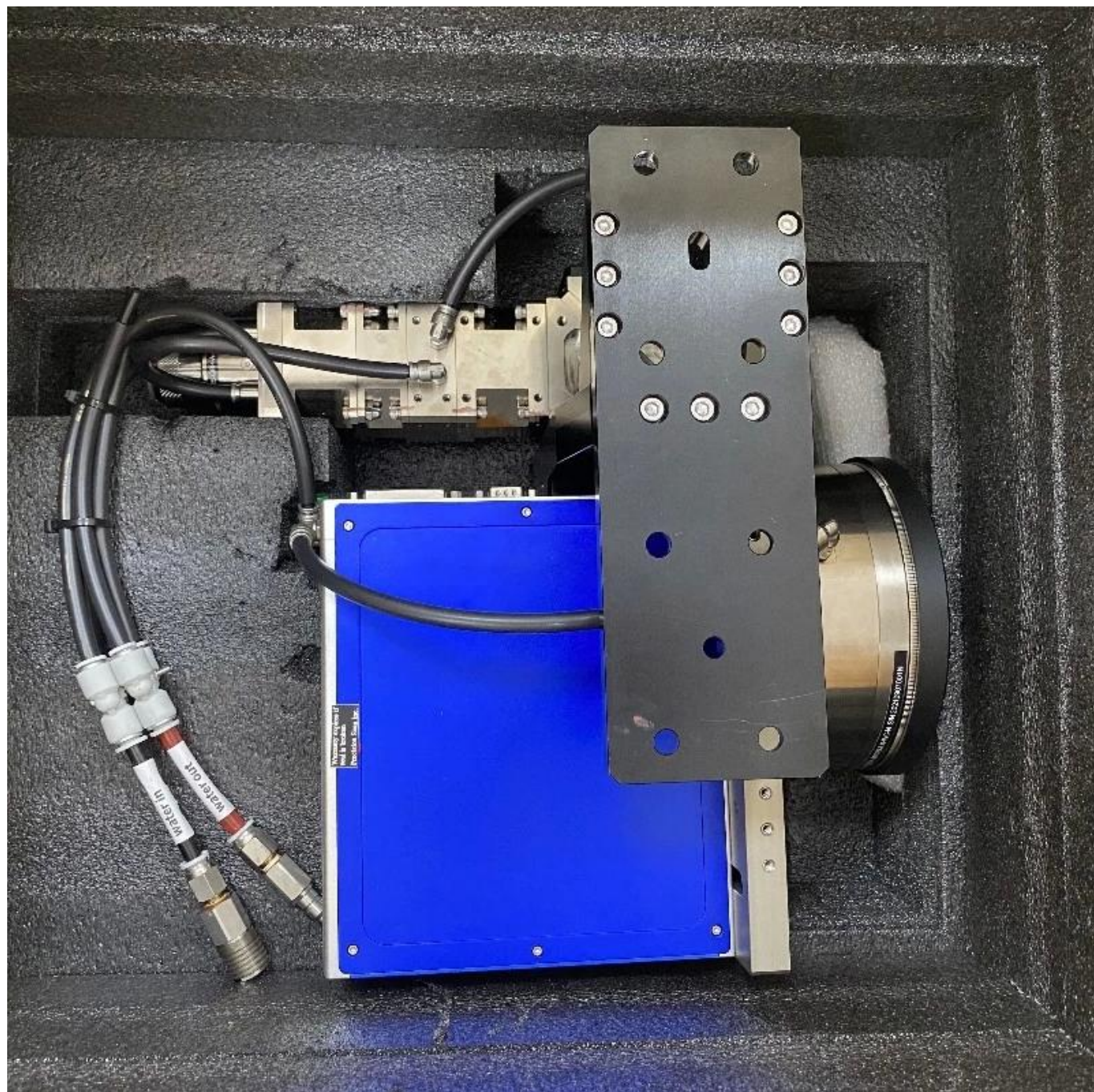
ISO 9001

ISO 9001



## Packing List





消火栓

KEEP UPRIGHT  
保持直立状态



CAUTION  
小心装卸

MONITORED TILTOKEE SHIPMENT  
防倾倒运输监测显示标签

 WARNING 警告

请注意：该货物必须始终保持直立，否则会导致货物损坏或完全报废。请勿受外力冲击，并不得倾斜。装卸时请小心轻放，避免野蛮装卸。如有损坏，请立即停止使用。该货物必须在直立状态下运输，不得倾斜或倒置。如有损坏，请立即停止使用。该货物必须在直立状态下运输，不得倾斜或倒置。如有损坏，请立即停止使用。

Please notice: The indicator is attached, please take good care of the position of the indicator and report the safety operation which should not be avoided. If indicator is not in the upright position, please report it immediately and request for replacement or compensation.

高 可  
装卸和运输的货物应始终保持直立（在货物和包装上）的  
正确和垂直位置（在直立位置下一个）。



CAUTION  
小心装卸

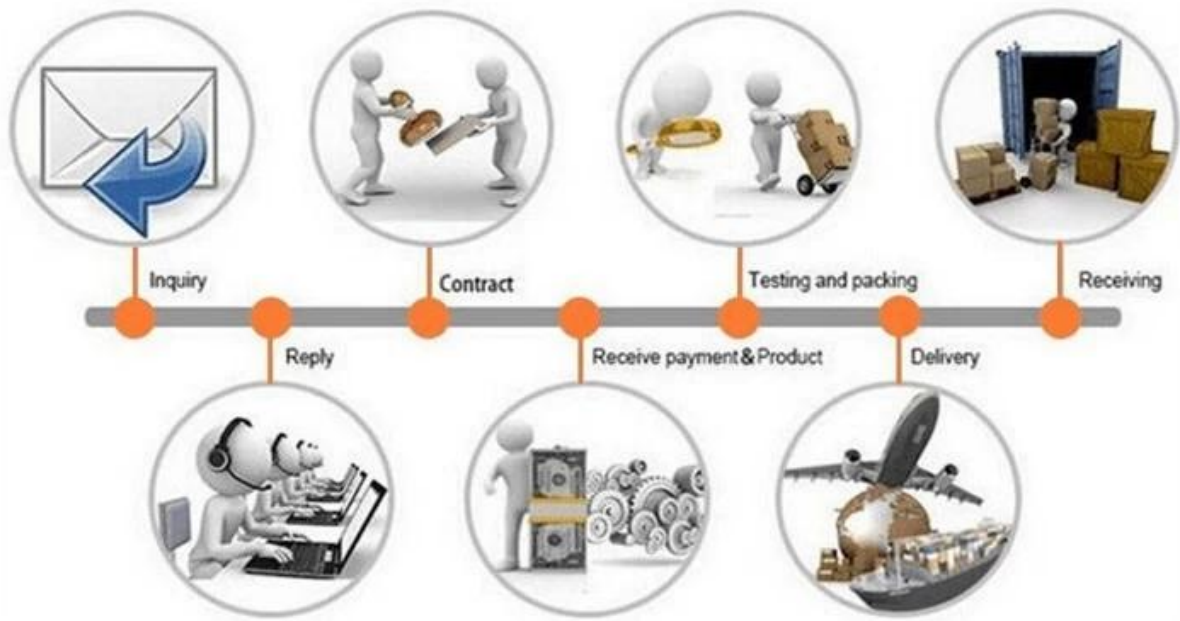
TILTOKEE  
SHOCKOKEE











**Return Policy:**

We provide a free ONE YEAR Full Machine WARRANTY and TWO YEARS Laser Source WARRANTY

Should returns be required:

Step 1) Contact us with this website email.

Step 2) Provide as much detail as possible about the problem you are having.

Step 3) Authorization to return the item will be issued.

Step 4) Return the item for the agreed replacement or refund.

## **Logistics:**

Optics order ship by DHL, UPS, FedEx, TNT, EMS etc

For Laser Machine order delivery, can be optional with terms of EXW, FOB, CNF, CIF by Express, Air Freight or Sea Freight based on the buyer's forwarder or ours.

## **FAQ**

### **Q1.Are you a manufacturer?**

A1: Yes, we are professional and experienced manufacturer with our own molds and production lines.

### **Q2.How about quality of products?**

A2: Our technicians and QC teams test the products one by one using aging line, professional devices and instruments to ensure the quality for all products.

### **Q3.How about price?**

A3: We are a manufacturer and always offer our customers the most competitive prices.

### **Q4.How to place an order?**

A4: Contact with online service, or sent email to us directly, we will reply to you with product price, specifications, packing etc. soon. Thank you.

### **Q5.May I send material to test marking performance?**

A5: Yes! You are welcome to send material to test our superior quality and service.

### **Q6.Can I visit your factory?**

A6: Yes, welcome to visit our factory at your convenient time.

### **Q7.How can I make OEM or ODM orders?**

A7: We have different print processing for different OEM/ODM orders. Please contact us with online service or send email to us directly.

**Q8. How should I pay for my orders?**

A8: You can pay by T/T would be available for qualified bank and MOQ required for each order.