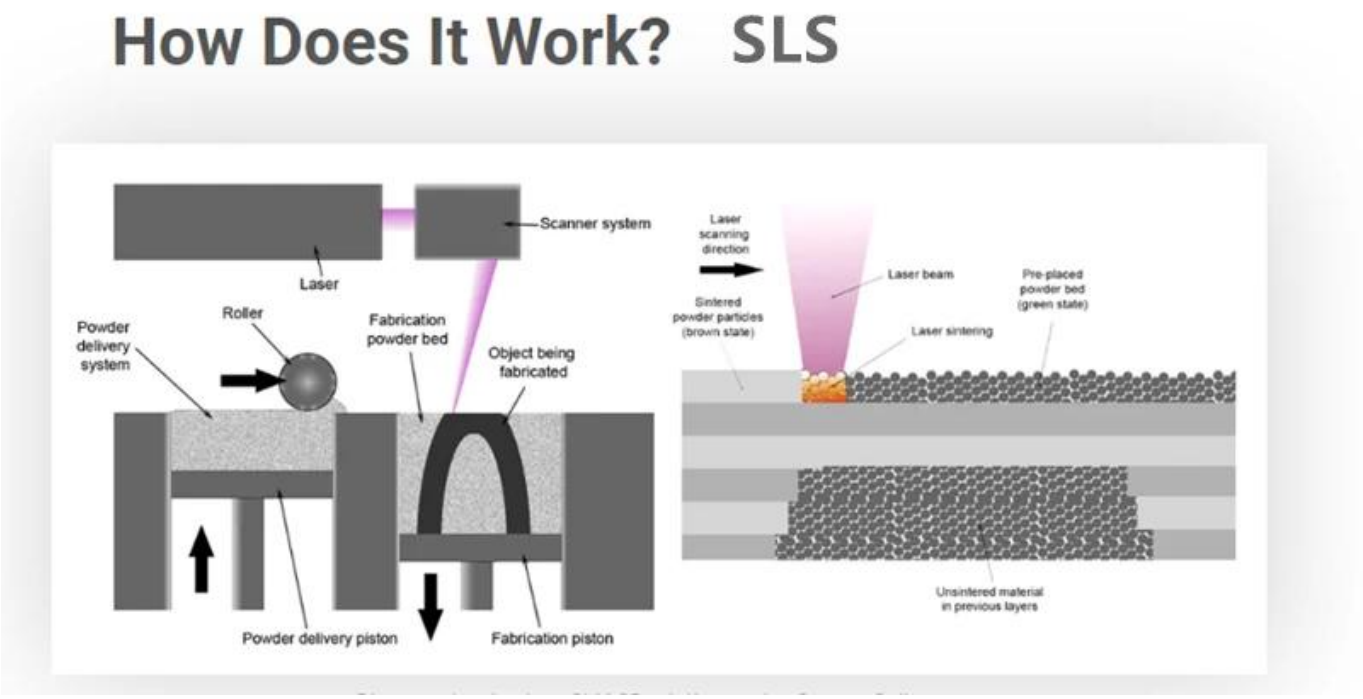
## Product Description

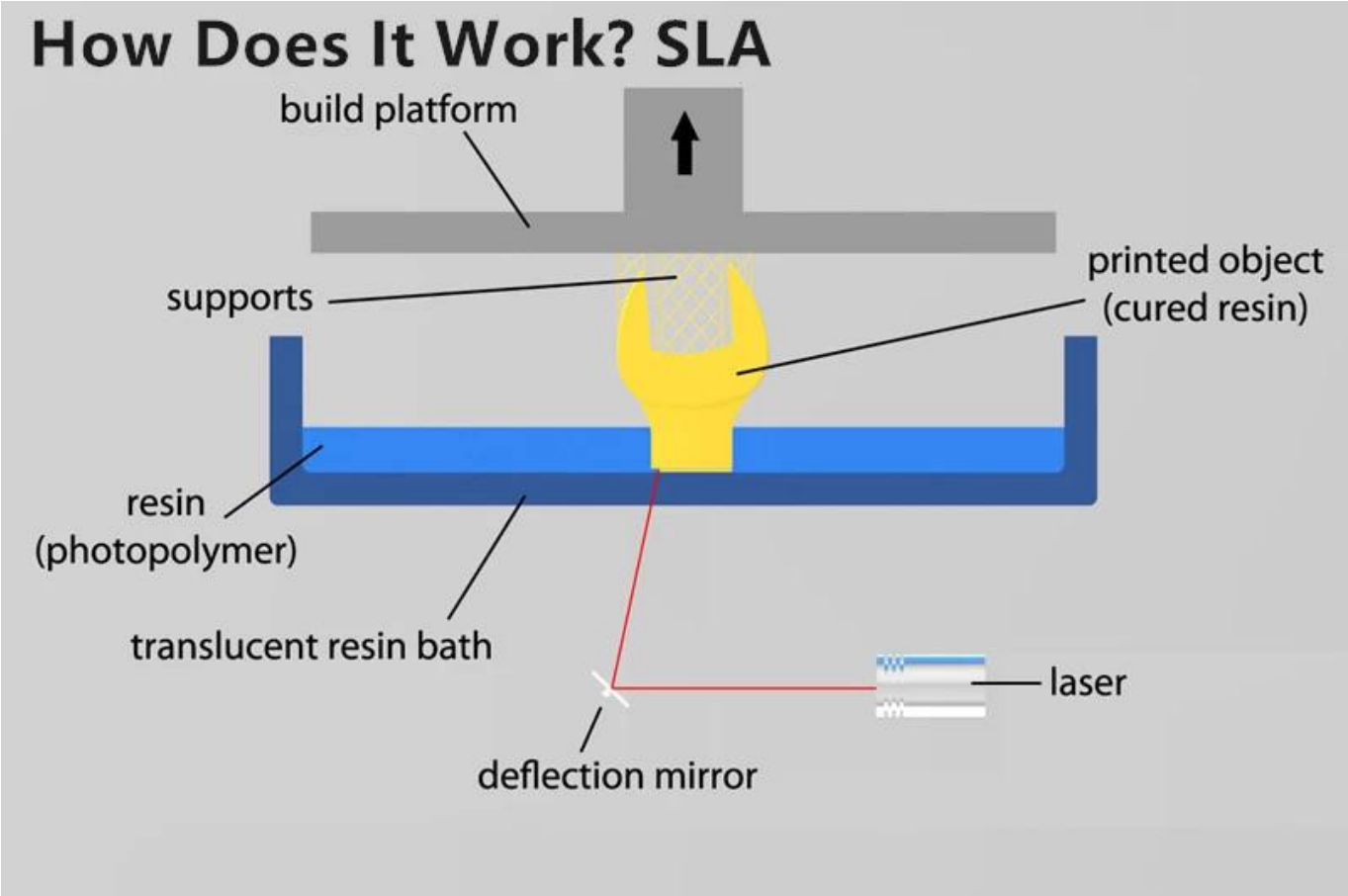
**SLM ( Selective laser melting)** is a type of metal additive manufacturing or 3D printing. Often, the terms SLM and direct metal laser sintering (DMLS) are used interchangeably. However, the two technologies differ slightly, in that SLM melts pure metals while DMLS fuses metal alloys.

**Additive Manufacturing Factory China** SLM is one of the most exciting 3D printing technologies available today and is utilized both for rapid prototyping and mass production. The range of metal alloys available is fairly extensive. The end result has properties equivalent to those manufactured via traditional manufacturing processes.


**China SLS Optical System Manufacturer** **SLS Printing** uses selective $CO_2$ laser sintering technology which sinters plastic powders(ceramic or metal powders with binding agent) into solid cross-sections layer by layer until a three-dimensional part is built. Before making the parts, need to fill the build chamber with nitrogen and rise the chamber temperature. When the temperature is ready, a computer controlled $CO_2$ laser selectively fuses powdered materials by tracing cross-sections of the part on the surface of a powder bed and then a new coat of materiel is applied for the new layer. The working platform of the powder bed will go one layer down and then the roller will pave a new layer of the powder and the laser will selectively sinter the cross-sections of the parts. Repeat the process until the parts completed.




**SLA (Stereolithography)** is an additive manufacturing process that works by focusing an UV laser on to a vat of photopolymer resin. With the help of computer aided manufacturing or computer aided design(CAM/CAD) software, the UV laser is used to draw a pre-programmed design or shape on to the surface of the photopolymer vat. Photopolymers are sensitive to ultraviolet light, so the resin is photochemically solidified and forms a single layer of the desired 3D object. This process is repeated for each layer of the design until the 3D object is complete.




CARMANHAAS **China 3D Printer Optical system Manufacturer** could offer customer the

optical system mainly includes QBH optical module or Beam Expander, Galvo Scanner with F-THETA Lens or Dynamic optical scanning system with High speed · High precision · High quality function.

## Product Features :

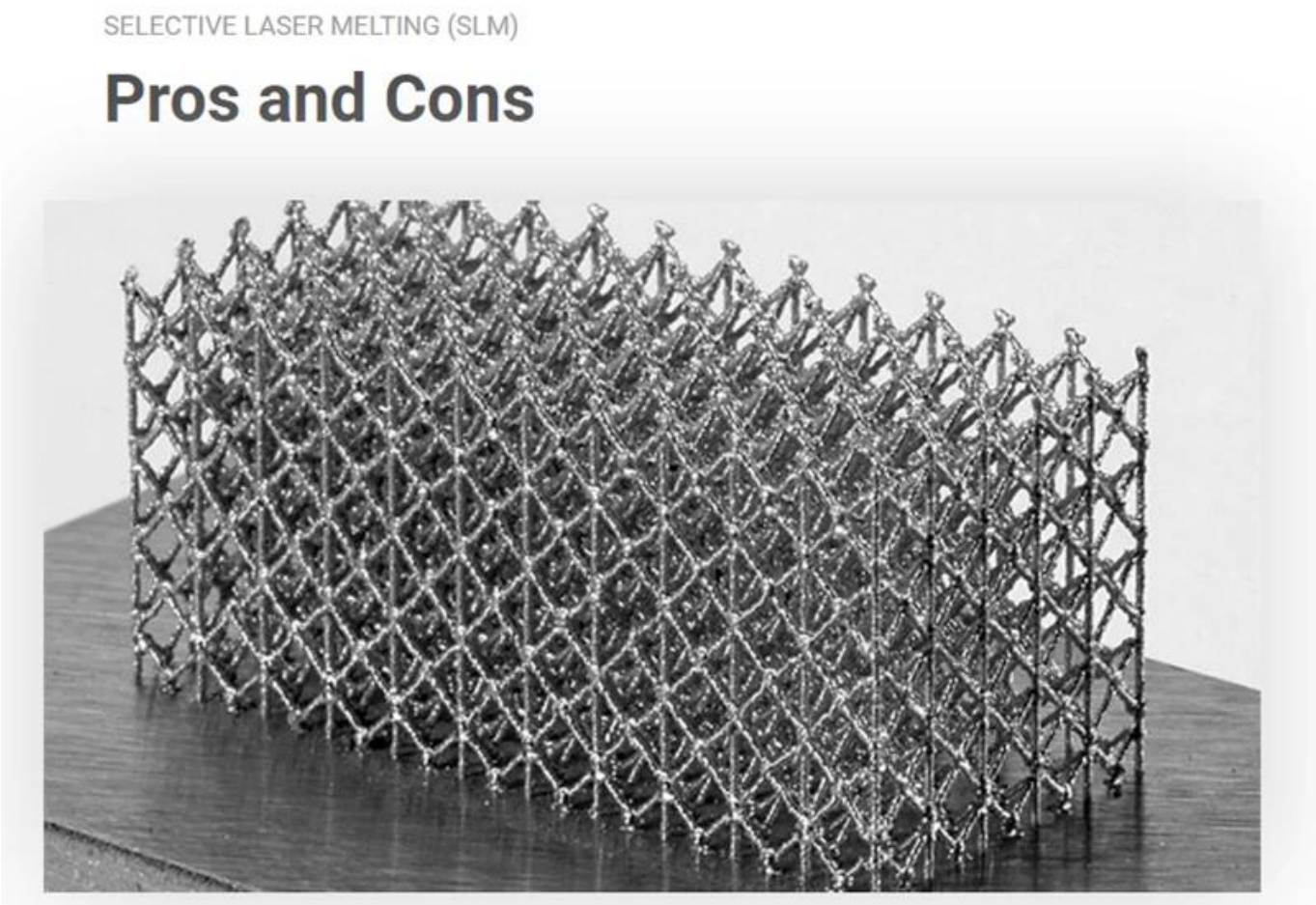
(1)Integrated design and optimization of the complete system to ensure that the impact of the entire optical system on M2< 0.04;

(2)The roundness within 1.5 times of the sharp length is greater than 93%;

(3)The damage threshold of the whole optical system  is 50J/cm2, which can withstand 2000W Single Mode Laser;

(4)The focal spot size is more than 95% consistent across the entire frame;

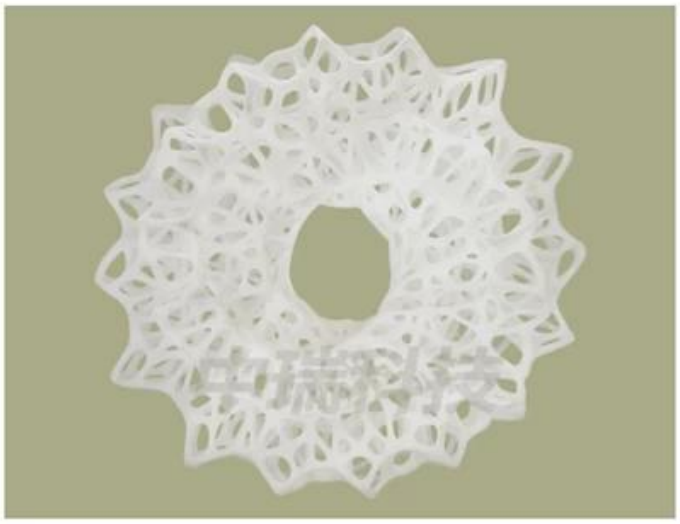
(5)Low focus drift and good stability after long-term use;



# Stainless Steel

Desktop FDM | Industrial FDM | Desktop SLA | Industrial SLA | Industrial SLS

## ZRPA12 ( PA12 Nylon Powder )



| | |
|---|---|
| **PHYSICAL CHARACTERISTICS** | Grain Size: 50~55μm<br>Shape: Spherical<br>Apparent density: ≥0.40 g/cm³ |
| **THERMAL PROPERTY** | Melting Point: 182~185℃ (10℃/min)<br>Melting Enthalpy: ≥90 J/g<br>HDT: 83.8℃ @1.8MPa / 146.1℃ @0.45MPa |
| **MOLDING PERFORMANCE** | Density: 0.97 g/cm³<br>Tensile Modulus: 1600 MPa<br>Tensile Strength: 43 MPa<br>Elongation at break: ≥15 %<br>Un-notched Impact Strength: 20.7 KJ/m²<br>Notched Impact Strength: 3.8 KJ/m²<br>Bending Modulus: 1432 MPa<br>Bending Strength: 57 MPa |

## ZRTPU ( Thermoplastic Polyurethanes Powder )

| | |
|---|---|
| **PHYSICAL CHARACTERISTICS** | Grain Size: 60μm<br>Shape: Spherical<br>Apparent density: 0.47 g/cm³ |
| **THERMAL PROPERTY** | Melting Point: 165℃<br>HDT Heat deflection temperature: -25℃ |
| **MOLDING PERFORMANCE** | Density: 1.15 g/cm³<br>Tensile Modulus: 61 MPa<br>Tensile Strength: 21 MPa<br>Elongation at break: 310 %<br>Tear strength: 101 N/mm<br>Bending Modulus: 74 MPa<br>Bending Strength: 3.3 MPa |

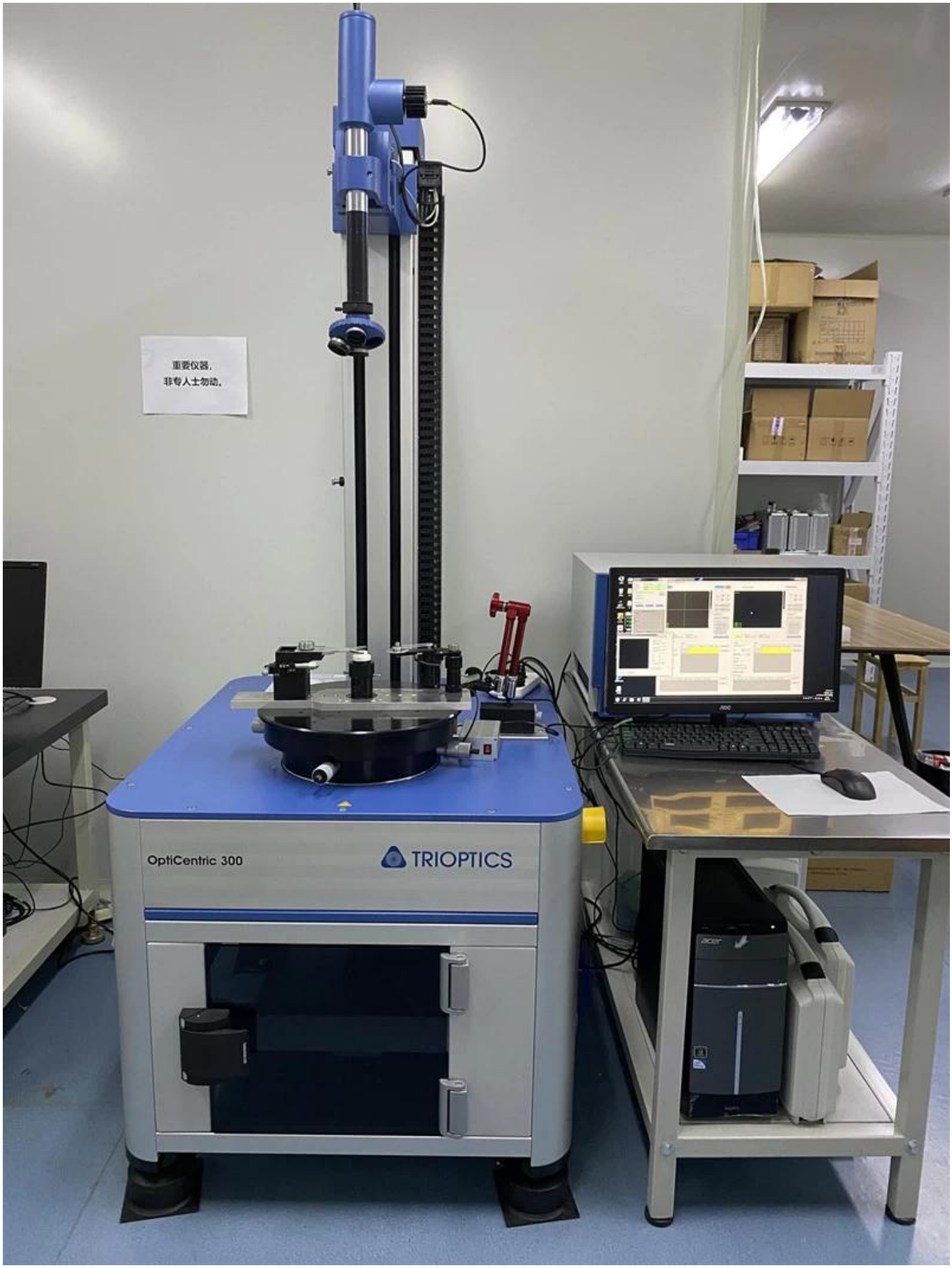
Co-Cr Alloy ( MP1 )

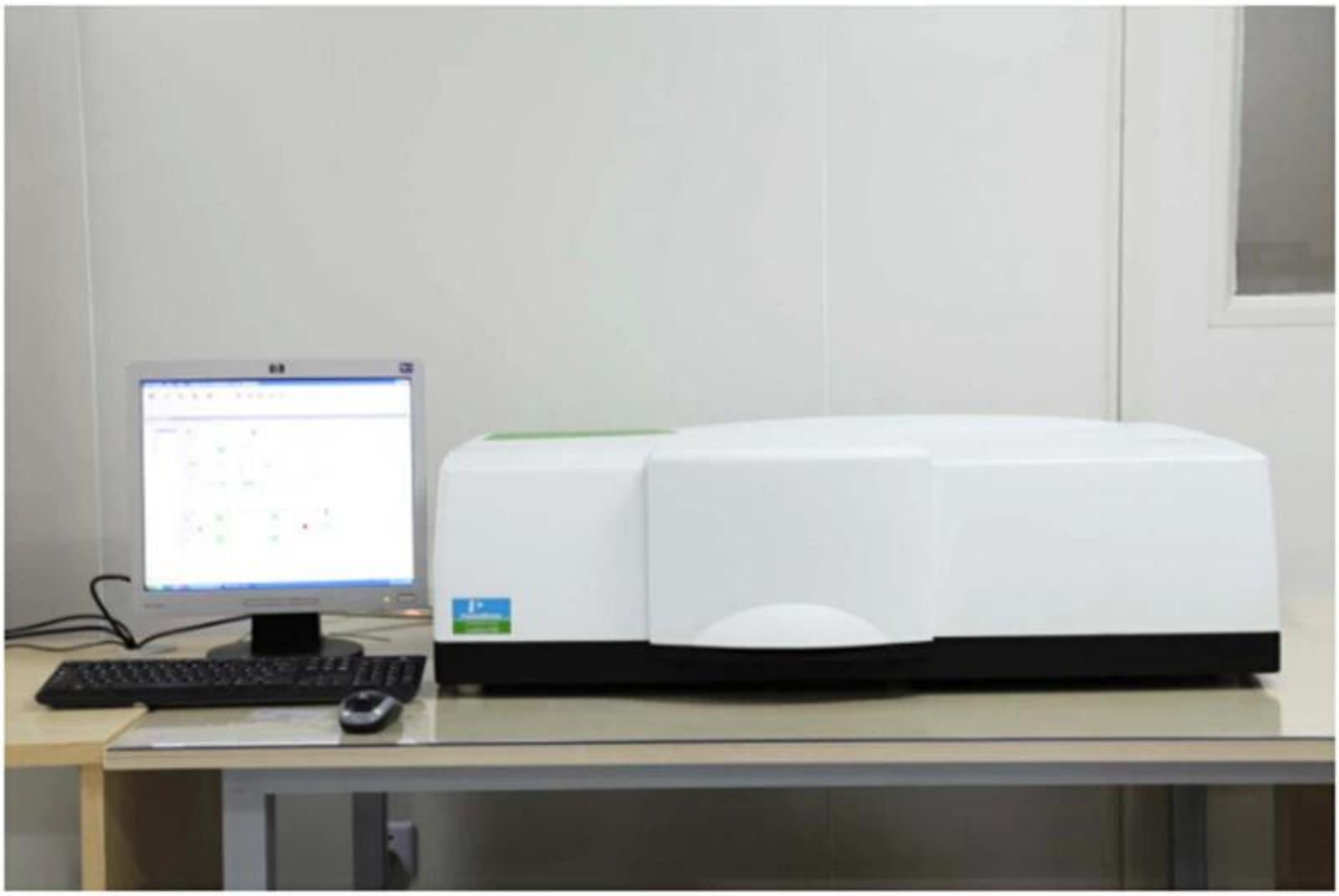
## Factory


卡门哈斯（苏州）
CARMAN HAAS


CARMAN HAAS
企业愿景：致


verifire
zygo


重要仪器，
非专人士勿动。
OptiCentric 300
TRIOPTICS



PerkinElmer Lambda 950---Testing Transmission and Reflectivity

## Certificate&Exhibition

# CERTIFICATE

## ATIESTATION
## 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 | : **Carman 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**<br>**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** |

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

The validity of the certificate can be checked through 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 15 years from the registration of certificate. This certificate only covers the product(s) stated above and UDEM must be noticed in case of any changes on the product(s)

**Address:** Mutlukent Mahallesi 2073 Sokak (Eski 93 Sokak) No:10 Çankaya – Ankara – TURKEY
**Phone:** +90 0312 443 03 90 **Fax:** +90 0312 443 03 76
**E-mail:** info@udemltd.com.tr www.udem.com.tr

ISO 9001

ISO 9001

# *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 Zhonglian Tianrun Certification center (http://www.zltr.com.cn)

SCC Accredited CB-MS OCSM Accredité CCN Accredited CB-MS (Certification Body – Management Systems)

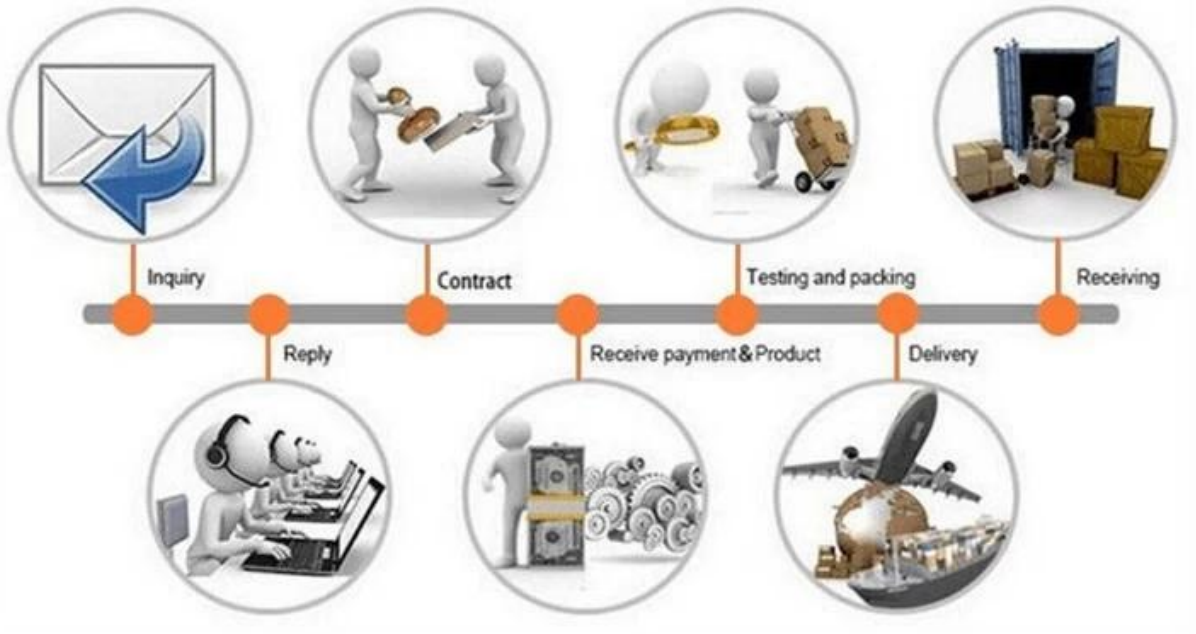
MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Beijing Zhongliantianrun Certification Center ISSUED BY

Beijing Zhongliantianrun Certification Center
Room2603, 22nd Floor, 2nd Unit, Block 1, No.4 Yard, Qiyang Road, Chaoyang District, Beijing, P.R. China 100102
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)




## Packing List





**Return Policy:**

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:**

(1)For Laser Optics order delivery,can be optional with DHL,UPS,FedEx,TNT,EMS,ets

(2)For Laser machine order delivery,can be optional with terms of EXWork FOB,CNF,CIF By Air or by Sea based on the buyer's forwarders 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.