

# Product Information

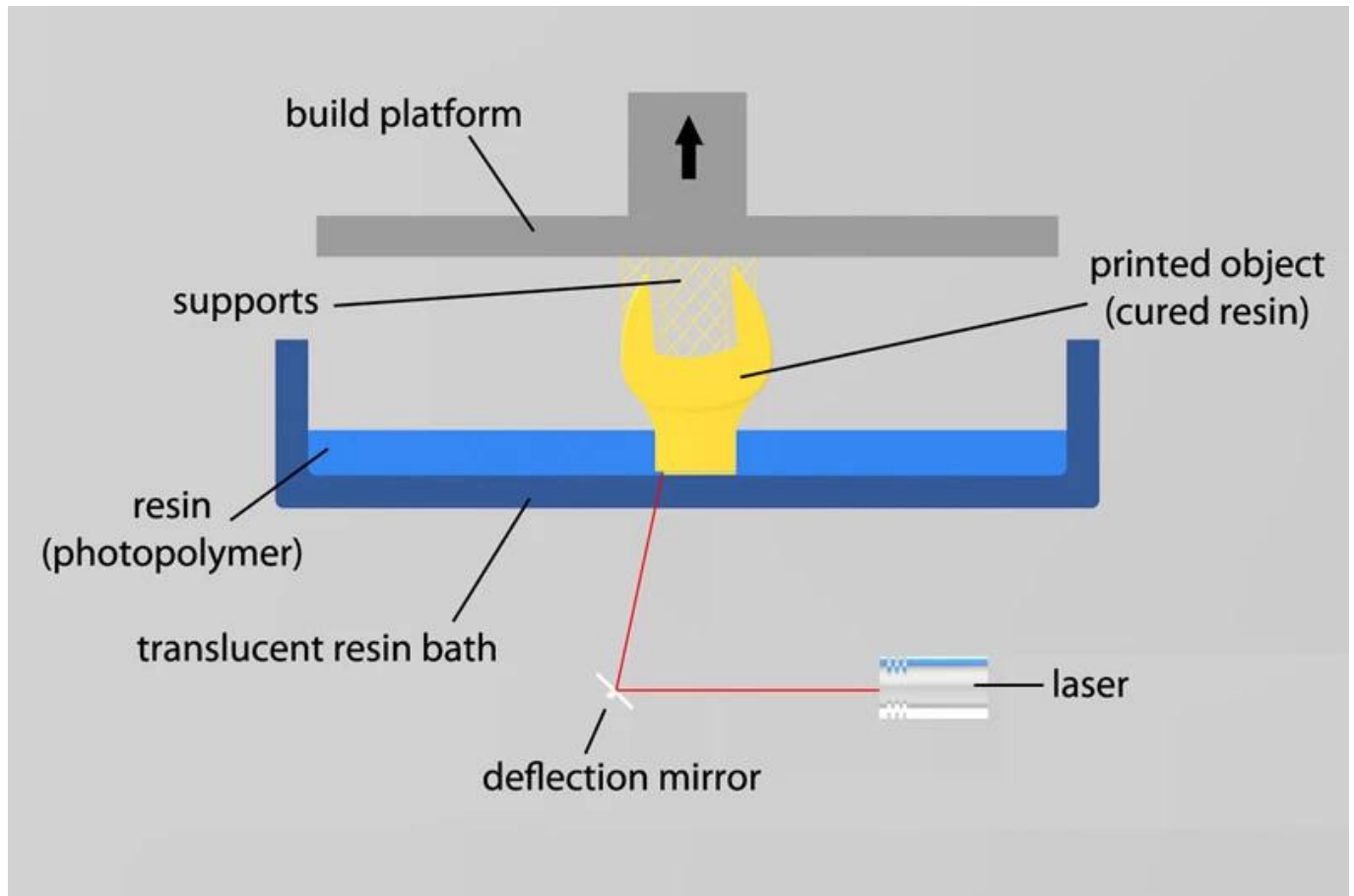
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## Product Description:

SLA(Stereolithography) is an additive manufacturing process that works by focusing an UV laser on to a vat of photopolymer resin. ([SLA Optical System Supplier China](#))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 [3D Galvo Scanner Company China](#) could offer customer the optical system mainly includes fast Galvanometer Scanner and F-THETA scan lens, Beam expander, Mirror, etc.





### Technical Parameters:

355nm Galvo Scanner Head

Model	PSH14-H	PSH20-H	PSH30-H
Water cool/sealed scan head	yes	yes	yes
Aperture (mm)	14	20	30
Effective Scan Angle	$\pm 10^\circ$	$\pm 10^\circ$	$\pm 10^\circ$
Tracking Error	0.19 ms	0.28ms	0.45ms
Step Response Time(1% of full scale)	$\leq 0.4$ ms	$\leq 0.6$ ms	$\leq 0.9$ ms
<b>Typical Speed</b>			
Positioning / jump	$< 15$ m/s	$< 12$ m/s	$< 9$ m/s
Line scanning/raster scanning	$< 10$ m/s	$< 7$ m/s	$< 4$ m/s
Typical vector scanning	$< 4$ m/s	$< 3$ m/s	$< 2$ m/s
Good Writing quality	700 cps	450 cps	260 cps
High writing quality	550 cps	320 cps	180 cps
<b>Precision</b>			
Linearity	99.9%	99.9%	99.9%
Resolution	$\leq 1$ urad	$\leq 1$ urad	$\leq 1$ urad
Repeatability	$\leq 2$ urad	$\leq 2$ urad	$\leq 2$ urad
<b>Temperature Drift</b>			
Offset Drift	$\leq 3$ urad/ $^\circ\text{C}$	$\leq 3$ urad/ $^\circ\text{C}$	$\leq 3$ urad/ $^\circ\text{C}$
Over 8hours Long-Term Offset Drift ( After 15min warm-up )	$\leq 30$ urad	$\leq 30$ urad	$\leq 30$ urad
Operating Temperature Range	$25^\circ\text{C} \pm 10^\circ\text{C}$	$25^\circ\text{C} \pm 10^\circ\text{C}$	$25^\circ\text{C} \pm 10^\circ\text{C}$
Signal Interface	Analog: $\pm 10\text{V}$ Digital: XY2-100 protocol	Analog: $\pm 10\text{V}$ Digital: XY2-100 protocol	Analog: $\pm 10\text{V}$ Digital: XY2-100 protocol
Input Power Requirement (DC)	$\pm 15\text{V} @ 4\text{A Max RMS}$	$\pm 15\text{V} @ 4\text{A Max RMS}$	$\pm 15\text{V} @ 4\text{A Max RMS}$

### 355nm F-Theta Lenses

Part Description	Focal Length (mm)	Scan Field (mm)	Max Entrance Pupil (mm)	Working Distance(mm)	Mounting Thread
SL-355-360-580	580	360x360	16	660	M85x1
SL-355-520-750	750	520x520	10	824.4	M85x1
SL-355-610-840-(15CA)	840	610x610	15	910	M85x1
SL-355-800-1090-(18CA)	1090	800x800	18	1193	M85x1

### 355nm Beam Expander

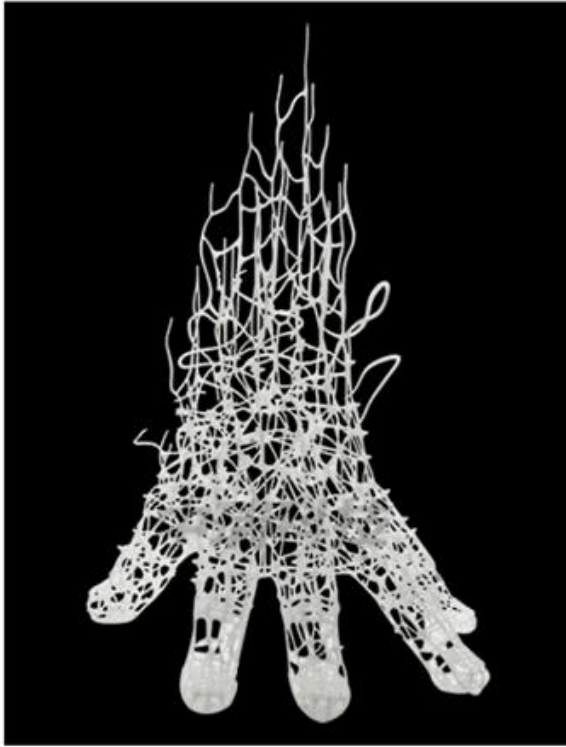
Part Description	Expansion Ratio	Input CA (mm)	Output CA (mm)	Housing Dia(mm)	Housing Length(mm)	Mounting Thread
BE3-355-D30:84.5-3x-A(M30*1-M43*0.5)	3X	10	33	46	84.5	M30*1-M43*0.5
BE3-355-D33:84.5-5x-A(M30*1-M43*0.5)	5X	10	33	46	84.5	M30*1-M43*0.5
BE3-355-D33:80.3-7x-A(M30*1-M43*0.5)	7X	10	33	46	80.3	M30*1-M43*0.5
BE3-355-D30:90-8x-A(M30*1-M43*0.5)	8X	10	33	46	90.0	M30*1-M43*0.5
BE3-355-D30:72-10x-A(M30*1-M43*0.5)	10X	10	33	46	72.0	M30*1-M43*0.5

355nm Mirror

Part Description	Diameter(mm)	Thickness(mm)	Coating
355 Mirror	30	3	HR@355nm,45°AOI
355 Mirror	20	5	HR@355nm,45°AOI
355 Mirror	30	5	HR@355nm,45°AOI



<b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )	Appearance: White liquid Density: 1.10 g/cm³ @25℃ Viscosity: 450 CPS @25℃ Dp: ≥0.16 mm Ec: 8.5 mJ/cm²
<b>MOLDING PERFORMANCE A</b> MOLDING PERFORMANCE @355nm point laser @330mW power @5.0m/s scanning @No UV post-cure	Bending Modulus: 1500~1700 MPa Bending Strength: 55~60 MPa Notched Impact Strength: 60~68 J/m 1.2mm Bend Angle: 140~170°
<b>MOLDING PERFORMANCE B</b> MOLDING PERFORMANCE @90min UV post-cure	Bending Modulus: 2688~2790 MPa Bending Strength: 66~73 MPa Notched Impact Strength: 60~68 J/m Hardness: 88 Elongation at break: 10~15% HDT Heat deflection temperature: 52 ℃ Tg Glass transition temperature: 62 ℃ CTE Coefficient of thermal expansion: 93*E-6



#### PHYSICAL CHARACTERISTICS ( LIQUID STATE )

Appearance: White liquid  
Density: 1.10 g/cm<sup>3</sup> @25°C  
Viscosity: 400 CPS @25°C  
Dp: ≥0.16 mm  
Ec: 7.9 mJ/cm<sup>2</sup>

#### MOLDING PERFORMANCE A

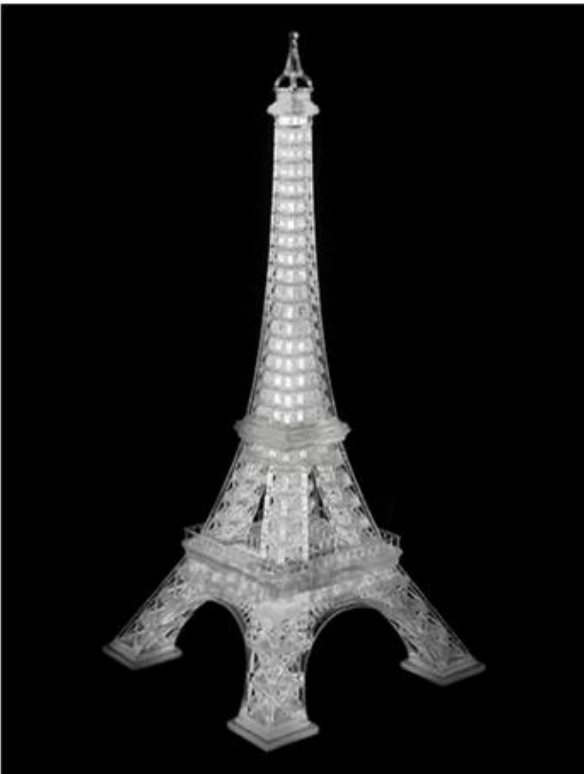
MOLDING PERFORMANCE  
@355nm point laser  
@330mW power  
@5.0m/s scanning  
@No UV post-cure

Bending Modulus: 2000~2300 MPa  
Bending Strength: 75~85 MPa  
Notched Impact Strength: 35~45 J/m  
1.2mm Bend Angle: ≥170~180°

#### MOLDING PERFORMANCE B

MOLDING PERFORMANCE  
@90min UV post-cure

Bending Modulus: 2813~3520 MPa  
Bending Strength: 83~90 MPa  
Notched Impact Strength: 42~50 J/m  
Hardness: 87~92  
Elongation at break: 13~20%  
HDT Heat deflection temperature: 52 °C  
Tg Glass transition temperature: 62 °C  
CTE Coefficient of thermal expansion: 93\*E-6



#### PHYSICAL CHARACTERISTICS ( LIQUID STATE )

Appearance: Transparent liquid Pale Purple  
Density: 1.10 g/cm<sup>3</sup> @25°C  
Viscosity: 190 CPS @25°C  
Dp: ≥0.18 mm  
Ec: 6.9 mJ/cm<sup>2</sup>

#### MOLDING PERFORMANCE A

MOLDING PERFORMANCE  
@355nm point laser  
@150mW power  
@5.0m/s scanning  
@No UV post-cure

Appearance: High Transparency  
Transmittance: 85% (MAX)  
Bending Modulus: 1500~1700 MPa  
Bending Strength: 45~55 MPa  
Notched Impact Strength: 25~35 J/m  
1.2mm Bend Angle: 140~170°

#### MOLDING PERFORMANCE B

MOLDING PERFORMANCE  
@90min UV post-cure

Bending Modulus: 1890~2340 MPa  
Bending Strength: 55~62 MPa  
Notched Impact Strength: 40~55 J/m  
Hardness: 79  
Elongation at break: 10~15%  
HDT Heat deflection temperature: 52 °C  
Tg Glass transition temperature: 62 °C  
CTE Coefficient of thermal expansion: 93\*E-6

Real ABS ( ABS Like )



<b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )	Appearance: Bright yellow liquid Density: 1.10 g/cm <sup>3</sup> @25°C Viscosity: 400 CPS @25°C Dp: ≥0.16 mm Ec: 7.9 mJ/cm <sup>2</sup>
<b>MOLDING PERFORMANCE A</b> MOLDING PERFORMANCE @355nm point laser @330mW power @5.0m/s scanning @No UV post-cure	Bending Modulus: 2000~2300 MPa Bending Strength: 75~85 MPa Notched Impact Strength: 35~45 J/m 1.2mm Bend Angle: ≥170~180°
<b>MOLDING PERFORMANCE B</b> MOLDING PERFORMANCE @90min UV post-cure	Bending Modulus: 2813~3520 MPa Bending Strength: 83~90 MPa Notched Impact Strength: 42~50 J/m Hardness: 87~92 Elongation at break: 13~20% HDT Heat deflection temperature: 52 °C Tg Glass transition temperature: 62 °C CTE Coefficient of thermal expansion: 93*E-6

Red Wood ( Tooling Board Like )



<b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )	Appearance: Epoxy Tooling Board Like (Pink) liquid Density: 1.10 g/cm <sup>3</sup> @25°C Viscosity: 400 CPS @25°C Dp: ≥0.16 mm Ec: 7.9 mJ/cm <sup>2</sup>
<b>MOLDING PERFORMANCE A</b> MOLDING PERFORMANCE @355nm point laser @330mW power @5.0m/s scanning @No UV post-cure	Bending Modulus: 2000~2300 MPa Bending Strength: 75~85 MPa Notched Impact Strength: 35~45 J/m 1.2mm Bend Angle: ≥170~180°
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Desktop FDM

Industrial FDM

Desktop SLA

Industrial SLA

Industrial SLS



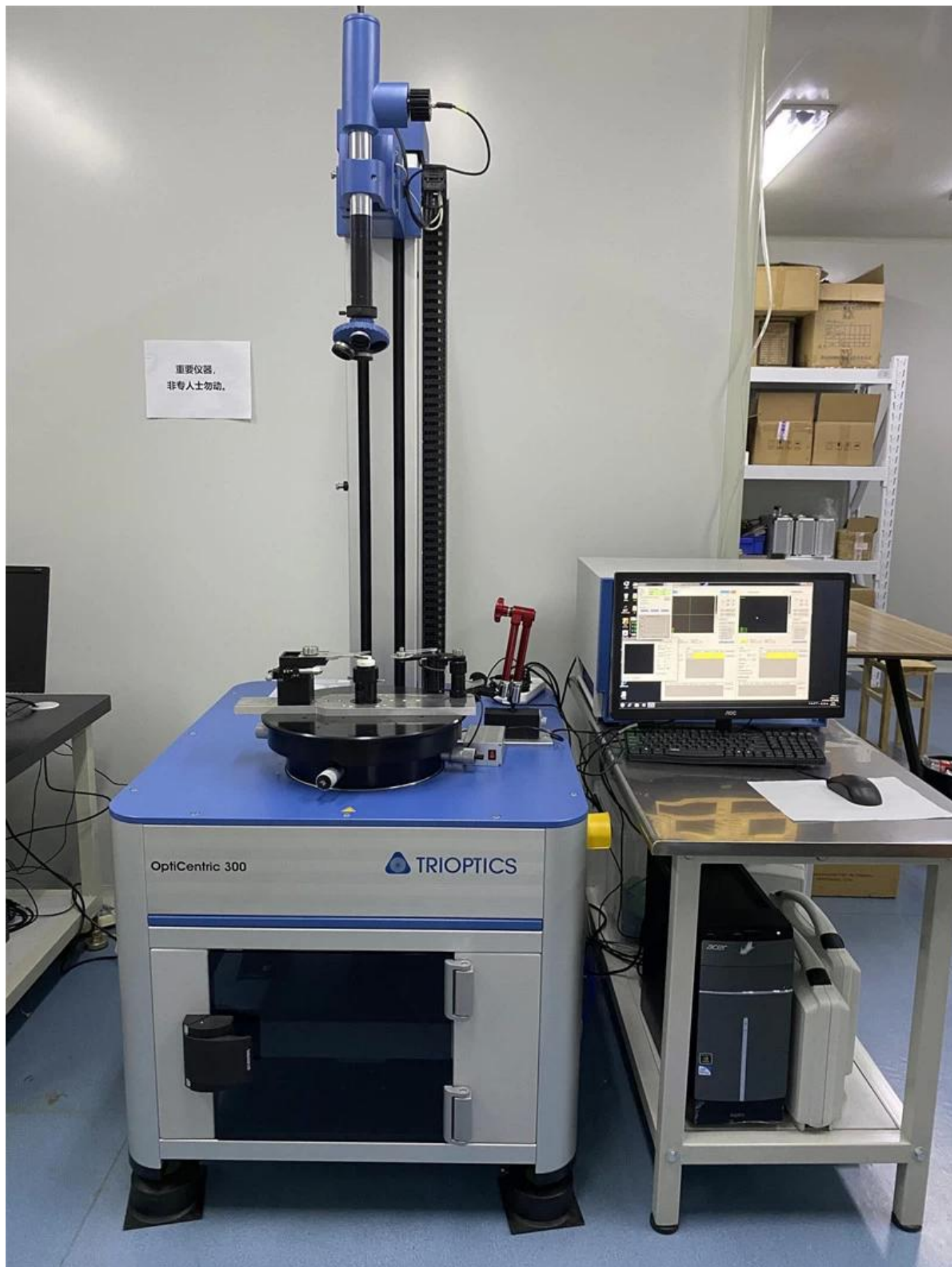


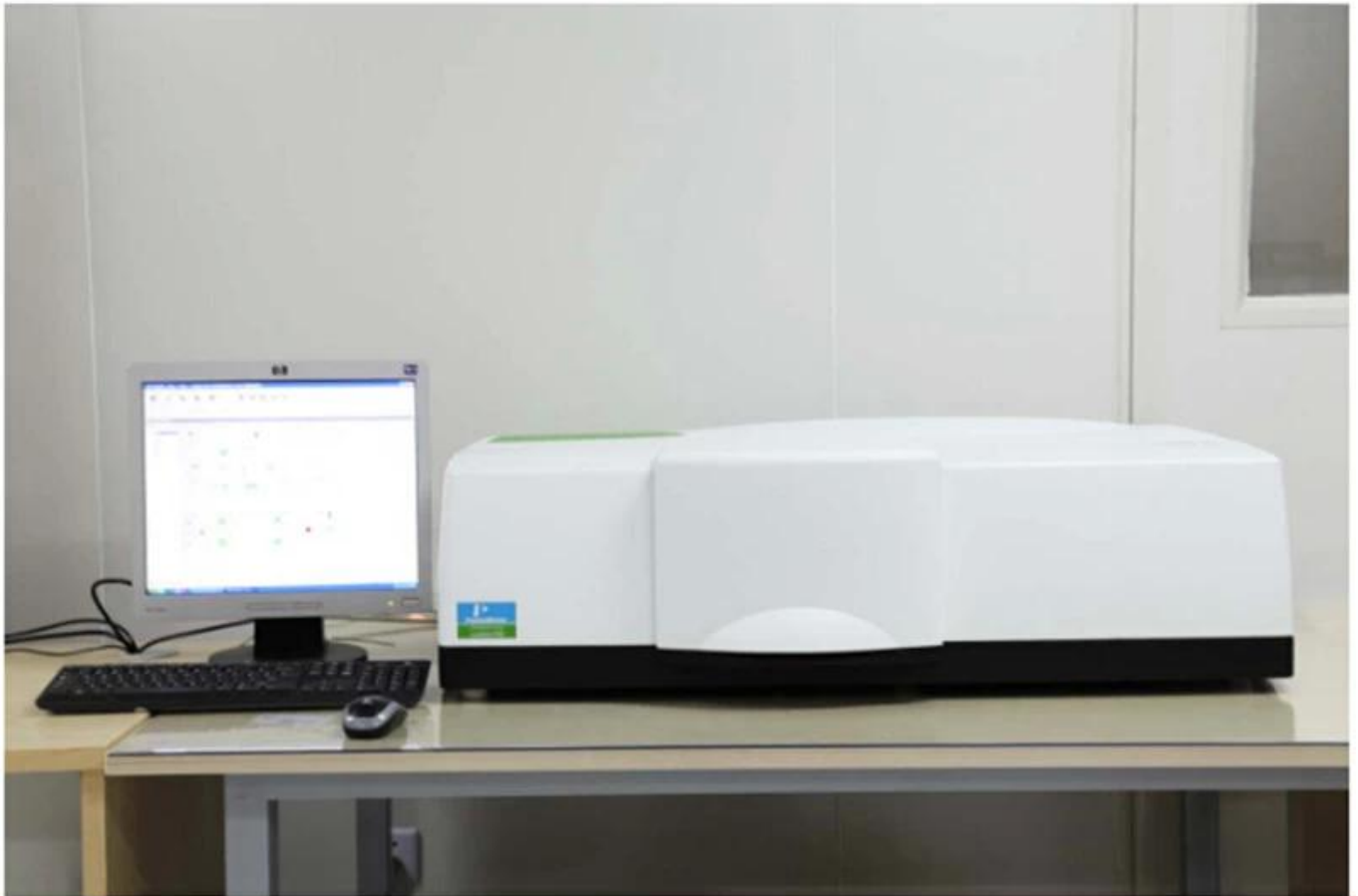
# Factory

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PerkinElmer Lambda 950---Testing Transmission and Reflectivity



# Certificate&Exhibition

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# 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 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 70  
E-mail: [info@udemtd.com.tr](mailto:info@udemtd.com.tr) [www.udem.com.tr](http://www.udem.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 Zhonglian Tianrun  
Certification center (<http://www.zltr.com.cn>)



**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>)

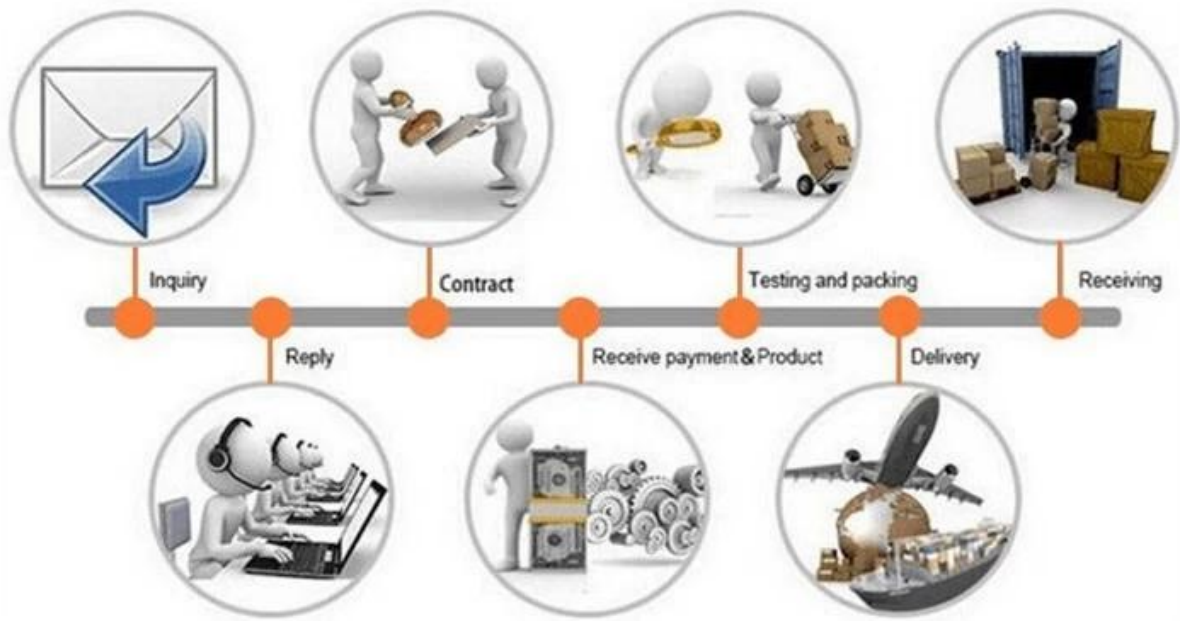
ISO 9001

ISO 9001



## Packing List

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## 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

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### **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.