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Model	PSH14-H	PSH20-H	PSH30-H
Water cool/sealed scan head	yes	yes	yes
Aperture (mm)	14	20	30
Effective Scan Angle	±10°	±10°	±10°
Tracking Error	0.19 ms	0.28ms	0.45ms
Step Response Time(1% of full scale)	≤ 0.4 ms	≤ 0.6 ms	≤ 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	≤ 1 urad	≤ 1 urad	≤ 1 urad
Repeatability	≤ 2 urad	≤ 2 urad	≤ 2 urad
<b>Temperature Drift</b>			
Offset Drift	≤ 3 urad/°C	≤ 3 urad/°C	≤ 3 urad/°C
Over 8hours Long-Term Offset Drift ( After 15min warn-up )	≤ 30 urad	≤ 30 urad	≤ 30 urad
Operating Temperature Range	25°C±10°C	25°C±10°C	25°C±10°C
Signal Interface	Analog: ±10V Digital: XY2-100 protocol	Analog: ±10V Digital: XY2-100 protocol	Analog: ±10V Digital: XY2-100 protocol
Input Power Requirement (DC)	±15V@ 4A Max RMS	±15V@ 4A Max RMS	±15V@ 4A Max RMS

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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

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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

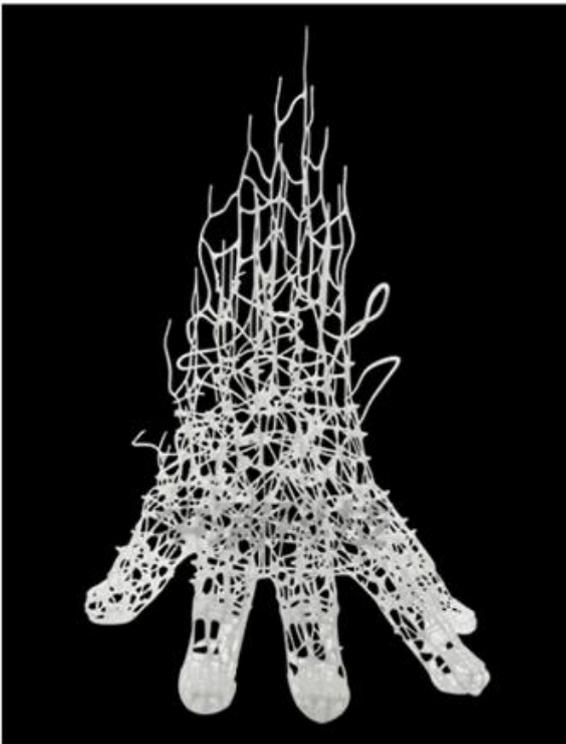
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355	355 (355)	355 (355)	355
355	30	3	355 @ 355, 45 Aoi
355	20	5	355 @ 355, 45
355	30	5	355 @ 355, 45

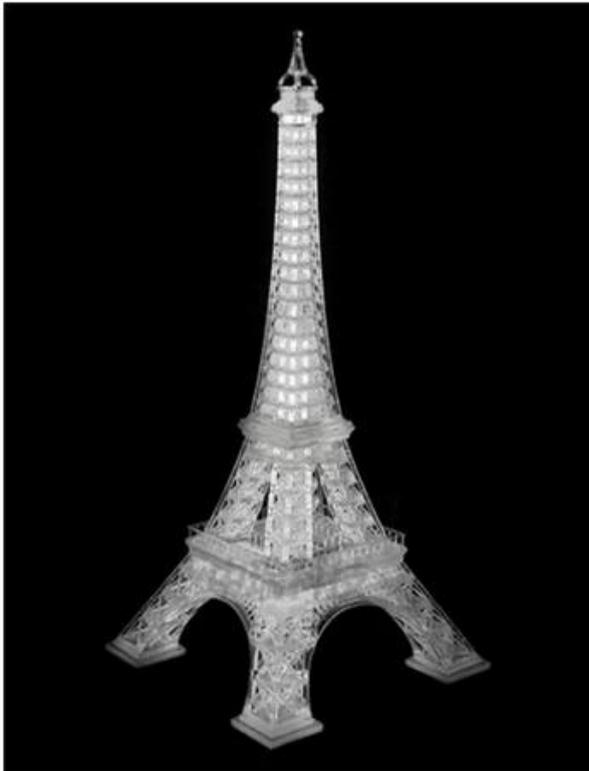
355 355-355 355 355 355



<b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )	Appearance: White liquid Density: 1.10 g/cm <sup>3</sup> @25°C Viscosity: 450 CPS @25°C Dp: ≥0.16 mm Ec: 8.5 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: 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 °C Tg Glass transition temperature: 62 °C CTE Coefficient of thermal expansion: 93°E-6	



<b>PHYSICAL CHARACTERISTICS</b> ( 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>
	<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	



<p><b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )</p>	<p>Appearance: Transparent liquid Pale Purple</p> <p>Density: 1.10 g/cm<sup>3</sup> @25°C</p> <p>Viscosity: 190 CPS @25°C</p> <p>Dp: ≥0.18 mm</p> <p>Ec: 6.9 mJ/cm<sup>2</sup></p>
<p><b>MOLDING PERFORMANCE A</b></p> <p>MOLDING PERFORMANCE @355nm point laser @150mW power @5.0m/s scanning @No UV post-cure</p>	<p>Appearance: High Transparency</p> <p>Transmittance: 85% (MAX)</p> <p>Bending Modulus: 1500~1700 MPa</p> <p>Bending Strength: 45~55 MPa</p> <p>Notched Impact Strength: 25~35 J/m</p> <p>1.2mm Bend Angle: 140~170°</p>
<p><b>MOLDING PERFORMANCE B</b></p> <p>MOLDING PERFORMANCE @90min UV post-cure</p>	<p>Bending Modulus: 1890~2340 MPa</p> <p>Bending Strength: 55~62 MPa</p> <p>Notched Impact Strength: 40~55 J/m</p> <p>Hardness: 79</p> <p>Elongation at break: 10~15%</p> <p>HDT Heat deflection temperature: 52 °C</p> <p>Tg Glass transition temperature: 62 °C</p> <p>CTE Coefficient of thermal expansion: 93*E-6</p>

Real ABS ( ABS Like )



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

## Red Wood ( Tooling Board Like )



<p><b>PHYSICAL CHARACTERISTICS</b> ( LIQUID STATE )</p>	<p>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></p>
<p><b>MOLDING PERFORMANCE A</b>                  MOLDING PERFORMANCE                  @355nm point laser                  @330mW power                  @5.0m/s scanning                  @No UV post-cure</p>	<p>Bending Modulus: 2000~2300 MPa                  Bending Strength: 75~85 MPa                  Notched Impact Strength: 35~45 J/m                  1.2mm Bend Angle: ≥170~180°</p>
<p><b>MOLDING PERFORMANCE B</b>                  MOLDING PERFORMANCE                  @90min UV post-cure</p>	<p>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</p>



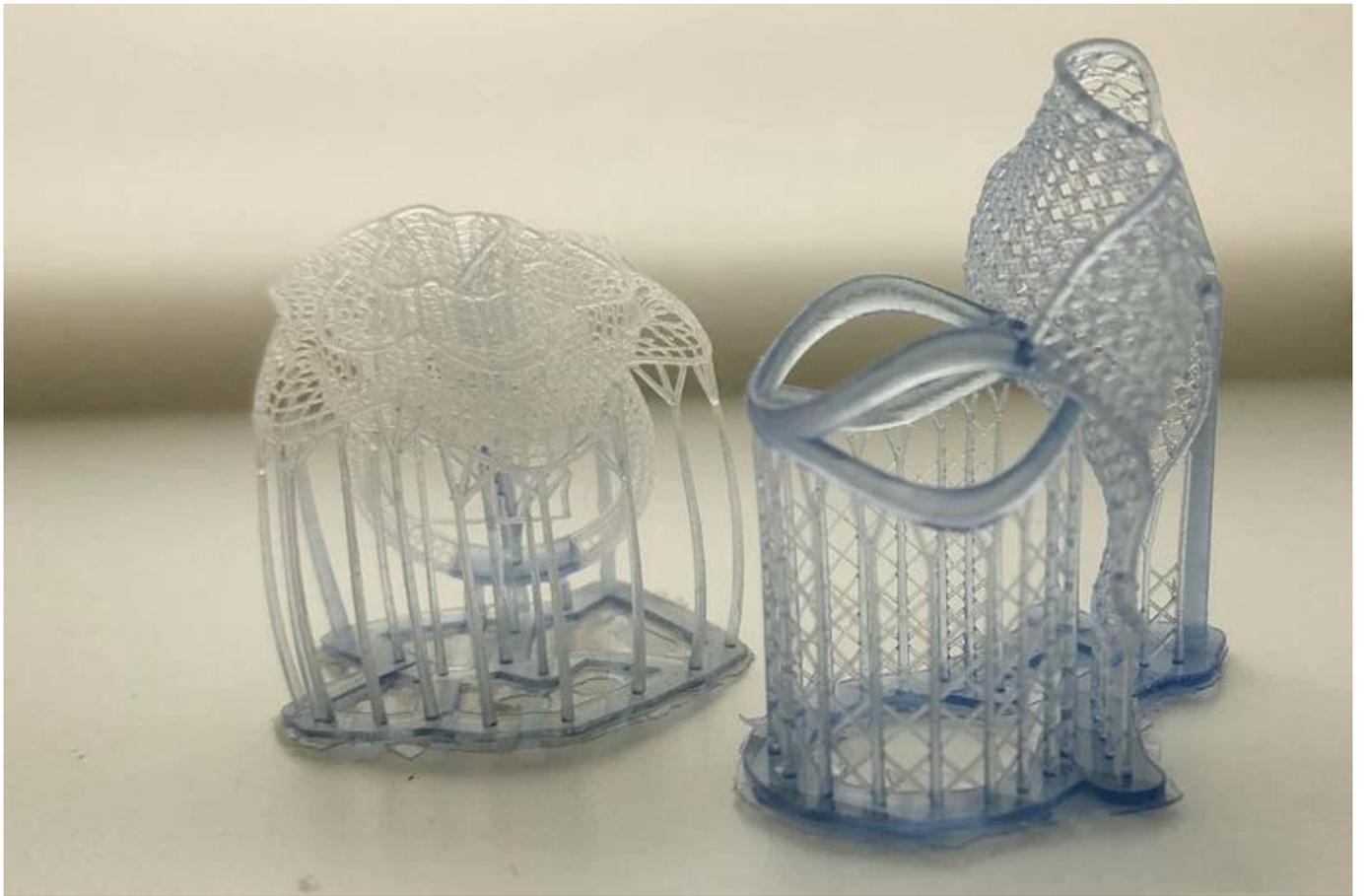
Desktop FDM

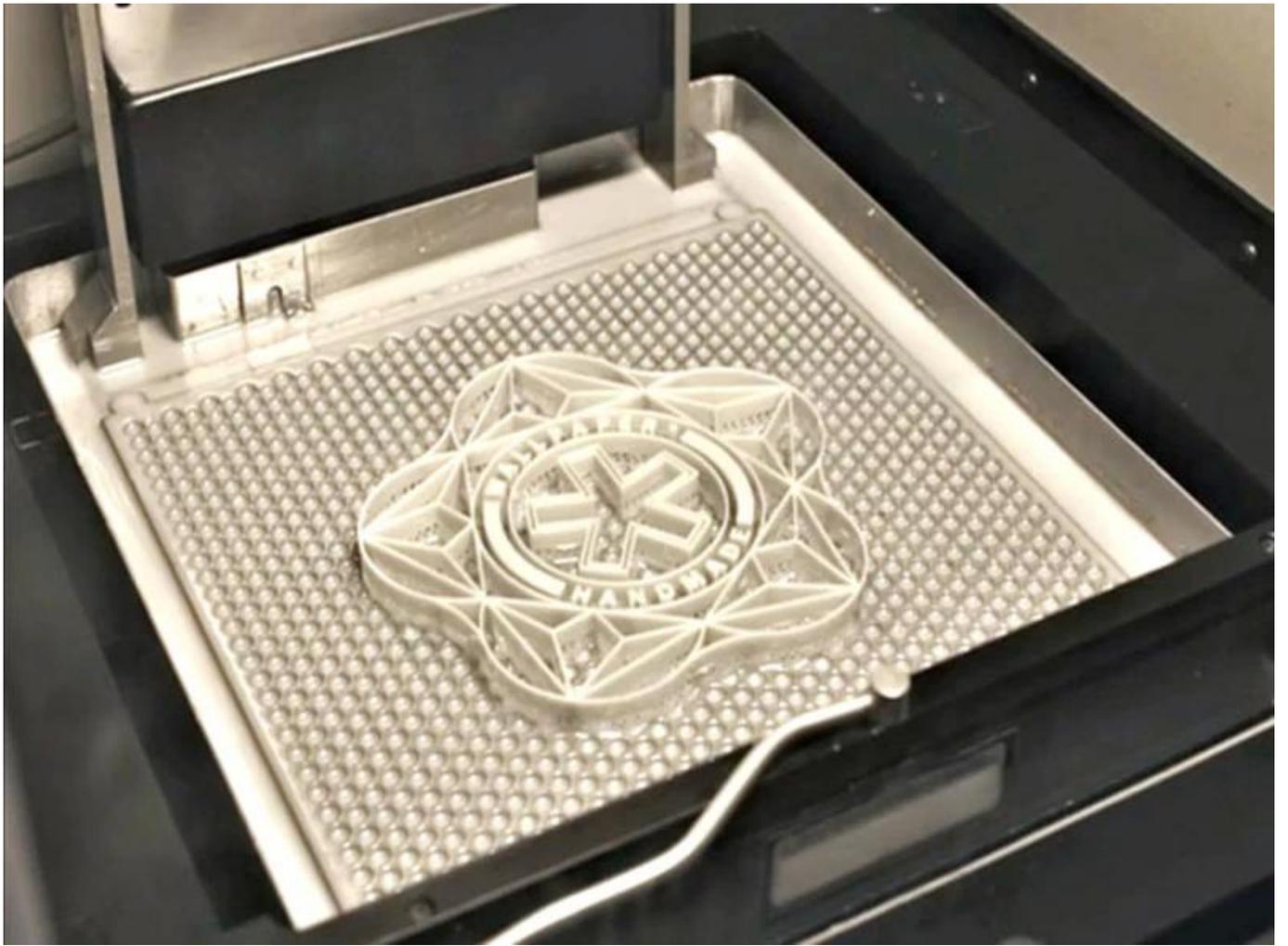
Industrial FDM

Desktop SLA

Industrial SLA

Industrial SLS

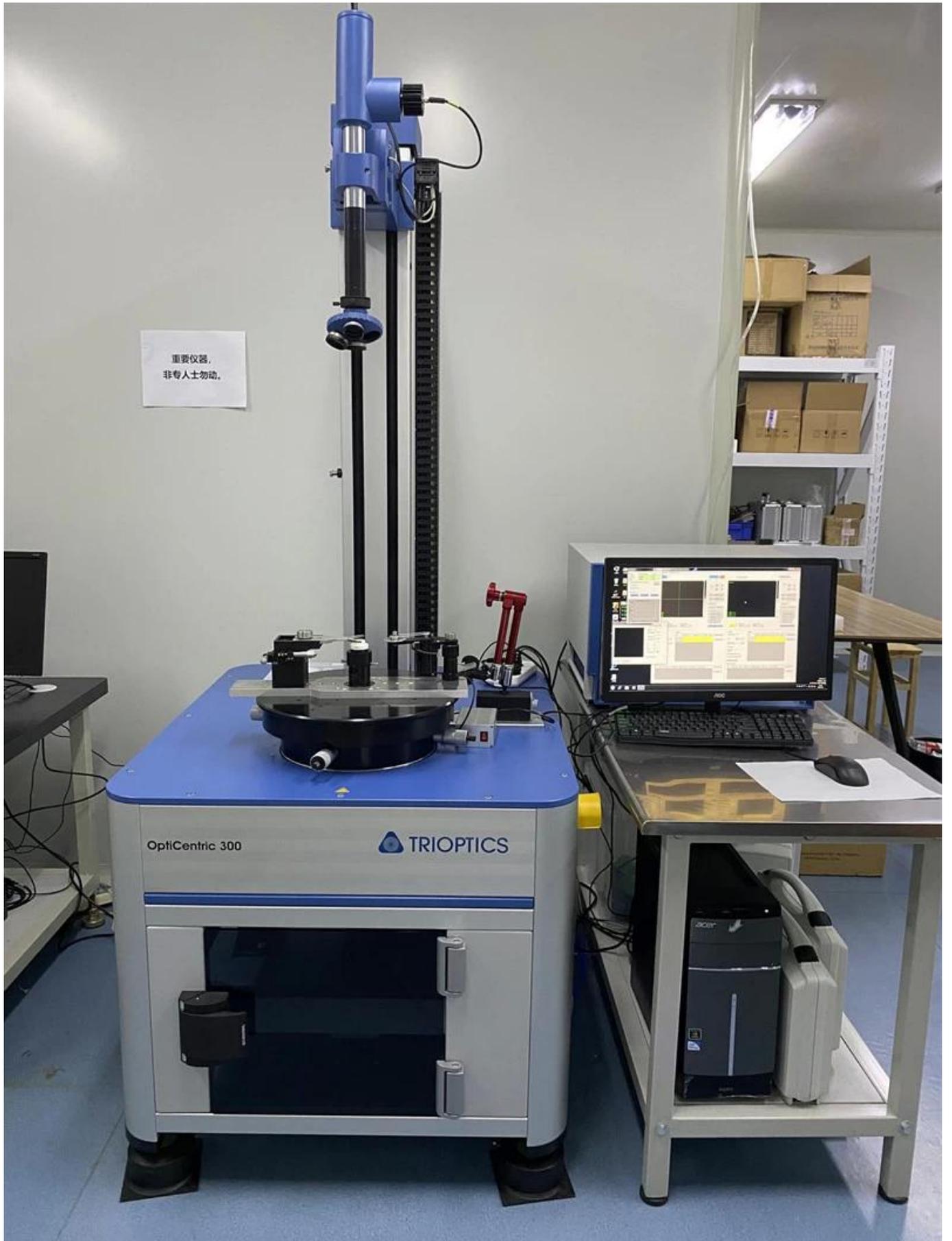




Factory



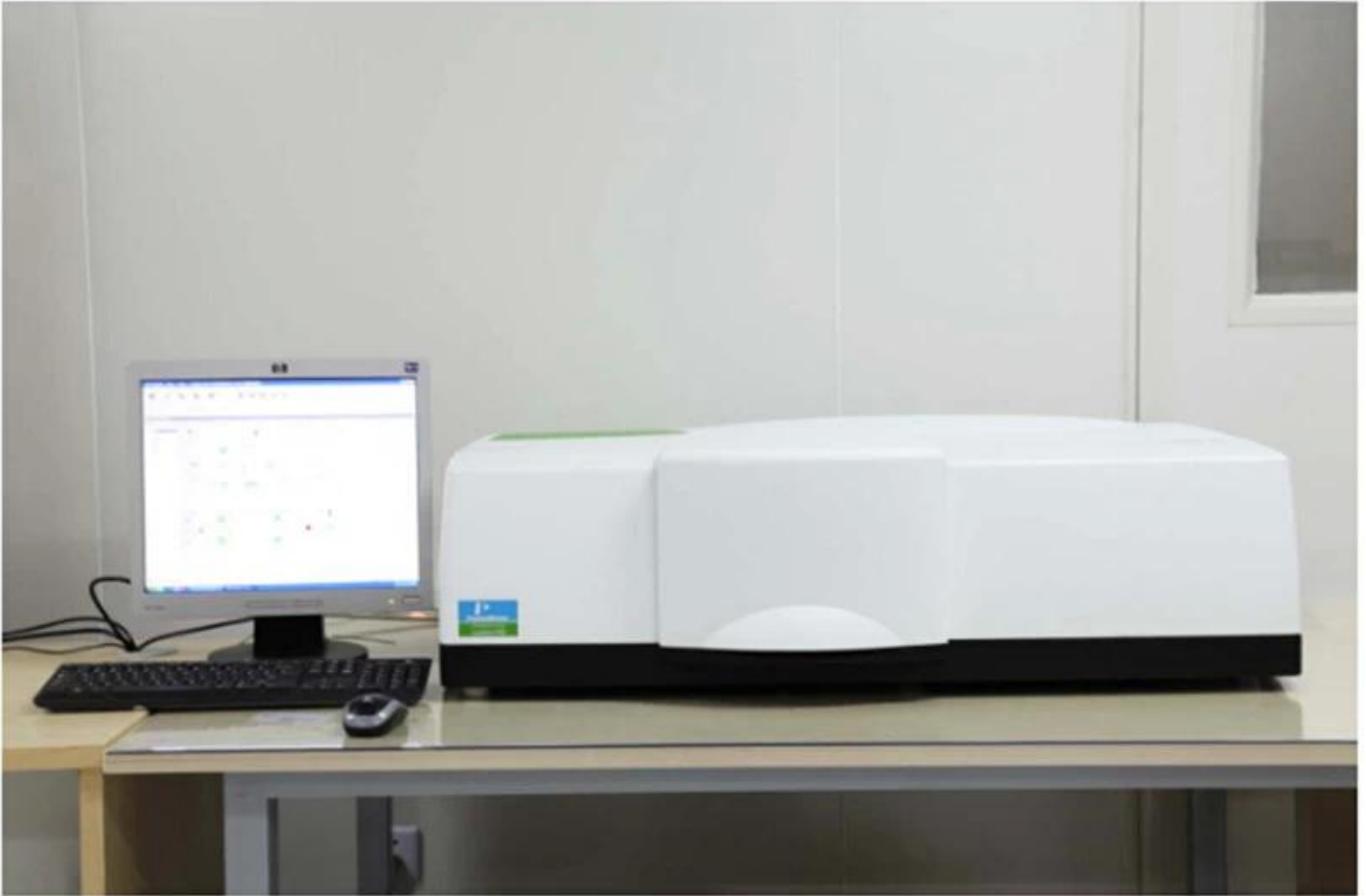




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TRIOPTICS



PerkinElmer Lambda 950---Testing Transmission and Reflectivity







# 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 : **Camnan 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**

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



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 notified in case of any changes on the product(s)  
Address: Mulkikent Mahallesi 2073 Sokak (Eski 93 Sokak) No:10 Çankaya - Ankara - TÜRKİYE  
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)



## Certificate of Approval

Certificate No.: 10119Q12565ROM

Awarded to

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

Organization Code Certificate No. / Unified Social Credit Code:91320594M1MF4EP56  
Add.:No.155, West Road Suhong, Suzhou Industrial Park, Suzhou City, Jiangsu Province, P.R. China. 215000

Beijing ZhongLian TianRun 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

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## Packing List



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