

SLA 3D printing process diagram

3D printing process:

355nm laser source Galvo

| 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 |
| Typical Speed | | | |
| 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 |
| Precision | | | |
| Linearity | 99.9% | 99.9% | 99.9% |
| Resolution | ≤ 1 urad | ≤ 1 urad | ≤ 1 urad |
| Repeatability | ≤ 2 urad | ≤ 2 urad | ≤ 2 urad |
| Temperature Drift | | | |
| 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 |

355nm □□□□□□ F-Theta

| 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 □□□□□□ □□□□

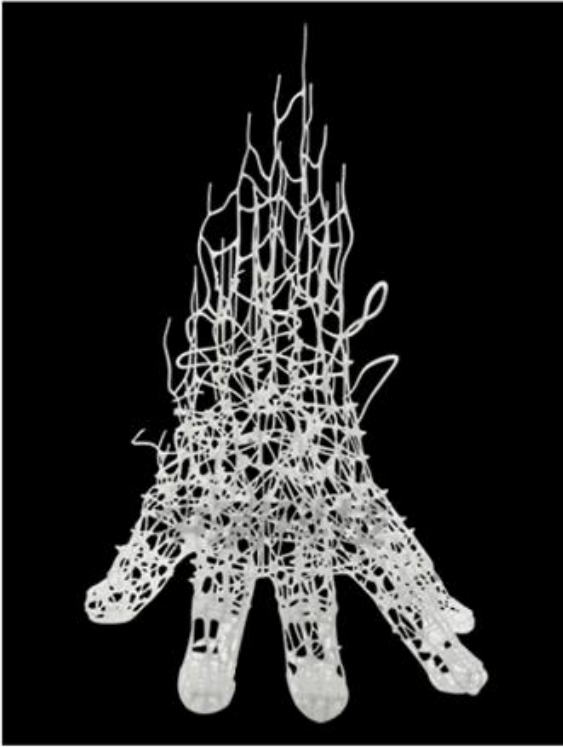
| Part Description | Expansion Ratio | Input CA (mm) | Output CA (mm) | Housing Dia(mm) | Housing Length(mm) | Mounting Thread |
|--------------------------------------|-----------------|---------------|----------------|-----------------|--------------------|-----------------|
| BE3-355-D30:84.5-3x-A(M30*1-M43*0.5) | 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.□□□□

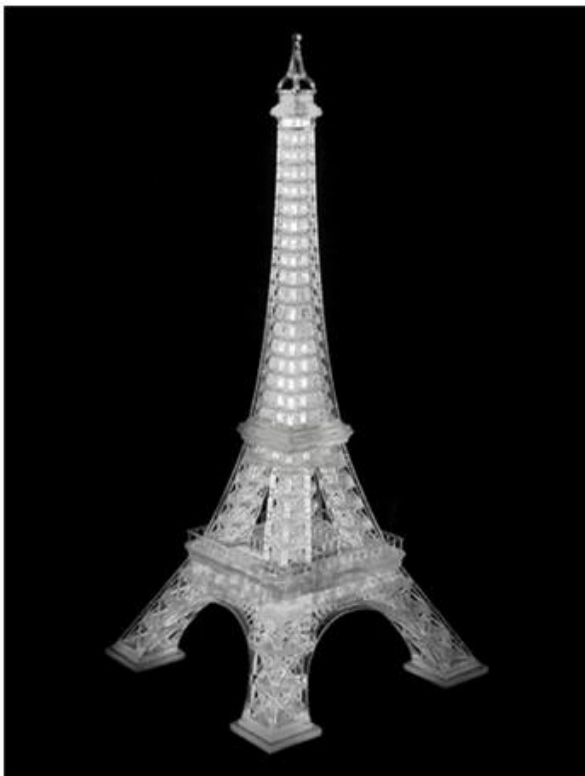
| □□□□□□ | □□□eter (□□) | □□) □□□) | □□□□ |
|----------|--------------|----------|--------------------------|
| 355.□□□□ | 30. | 3. | HR @ 355NM □ 45 □□□□ AOI |
| 355.□□□□ | 20. | 5. | HR @ 355nm □ 45 □□□□aoi. |
| 355.□□□□ | 30. | 5. | HR @ 355nm □ 45 □□□□aoi. |



| | |
|---|---------------------------------------|
| PHYSICAL CHARACTERISTICS (LIQUID STATE) | Appearance: White liquid |
| | Density: 1.10 g/cm ³ @25°C |
| MOLDING PERFORMANCE A MOLDING PERFORMANCE @355nm point laser @330mW power @5.0m/s scanning @No UV post-cure | Viscosity: 450 CPS @25°C |
| | Dp: ≥0.16 mm |
| | Ec: 8.5 mJ/cm ² |
| | Bending Modulus: 1500~1700 MPa |
| MOLDING PERFORMANCE B MOLDING PERFORMANCE @90min UV post-cure | Bending Strength: 55~60 MPa |
| | Notched Impact Strength: 60~68 J/m |
| | 1.2mm Bend Angle: 140~170° |
| | 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 | |



| | |
|--|---|
| PHYSICAL CHARACTERISTICS (LIQUID STATE) | Appearance: White liquid Density: 1.10 g/cm ³ @25°C Viscosity: 400 CPS @25°C Dp: ≥0.16 mm Ec: 7.9 mJ/cm ² |
| | MOLDING PERFORMANCE A MOLDING PERFORMANCE @355nm point laser @330mW power @5.0m/s scanning @No UV post-cure |
| 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 ³ @25°C Viscosity: 190 CPS @25°C Dp: ≥0.18 mm Ec: 6.9 mJ/cm ² |
| | MOLDING PERFORMANCE A MOLDING PERFORMANCE @355nm point laser @150mW power @5.0m/s scanning @No UV post-cure |
| 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)



| | |
|---|---|
| <p>PHYSICAL CHARACTERISTICS (LIQUID STATE)</p> | <p>Appearance: Bright yellow liquid Density: 1.10 g/cm³ @25°C Viscosity: 400 CPS @25°C Dp: ≥0.16 mm Ec: 7.9 mJ/cm²</p> |
| <p>MOLDING PERFORMANCE A 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>MOLDING PERFORMANCE 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> |

Red Wood (Tooling Board Like)



| | |
|---|---|
| <p>PHYSICAL CHARACTERISTICS (LIQUID STATE)</p> | <p>Appearance: Epoxy Tooling Board Like (Pink) liquid Density: 1.10 g/cm³ @25°C Viscosity: 400 CPS @25°C Dp: ≥0.16 mm Ec: 7.9 mJ/cm²</p> |
| <p>MOLDING PERFORMANCE A 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>MOLDING PERFORMANCE 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> |



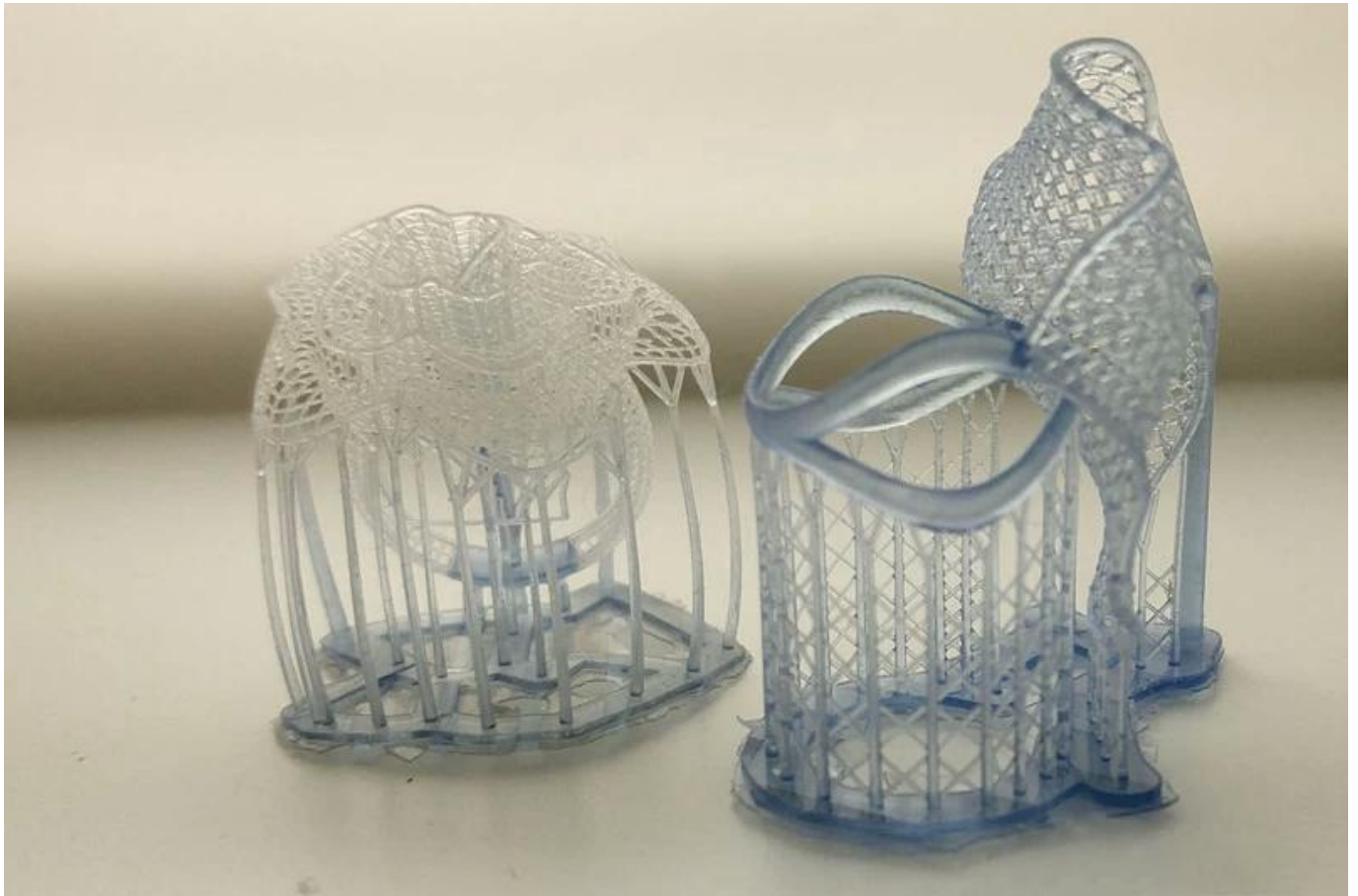
Desktop FDM

Industrial FDM

Desktop SLA

Industrial SLA

Industrial SLS



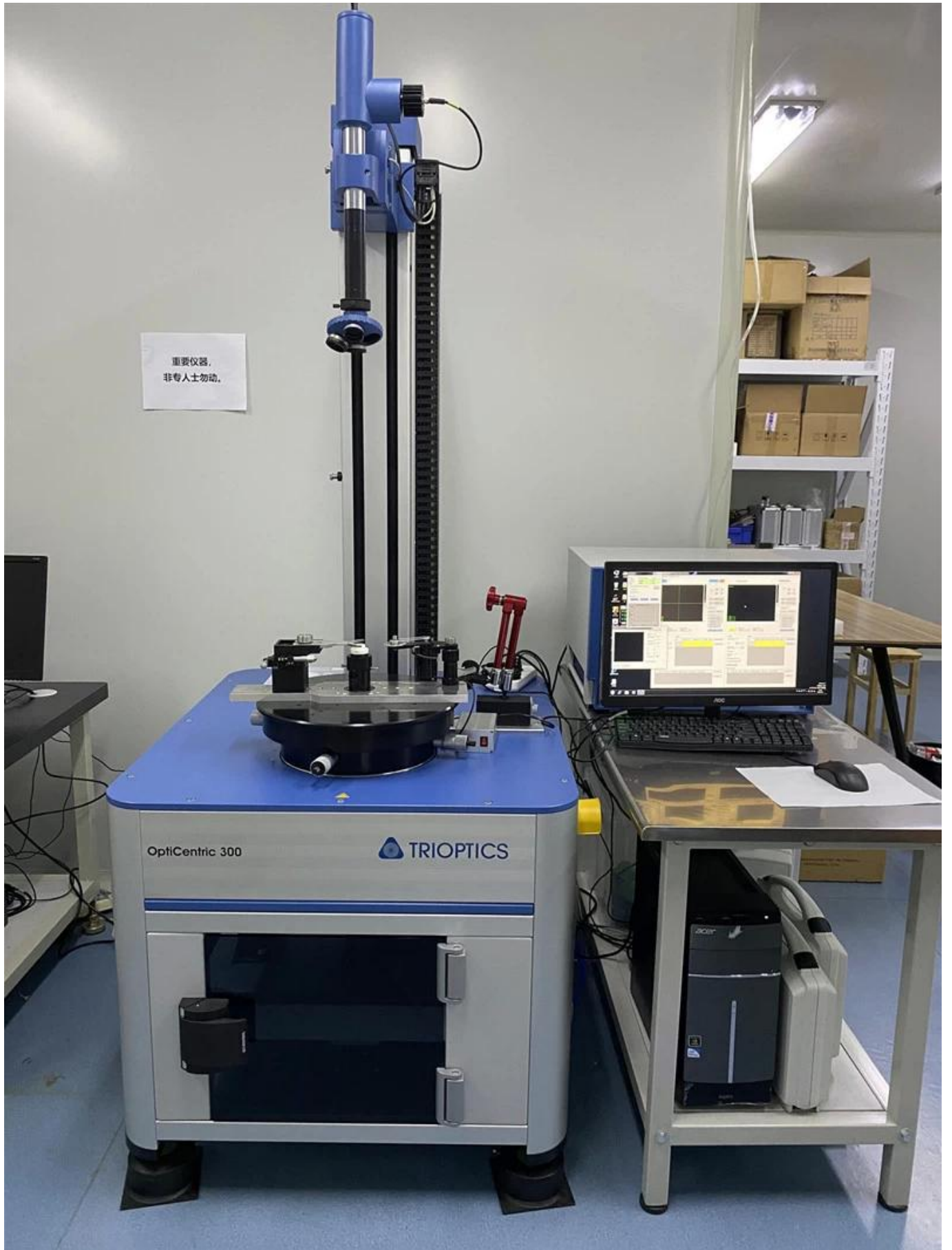




Factory



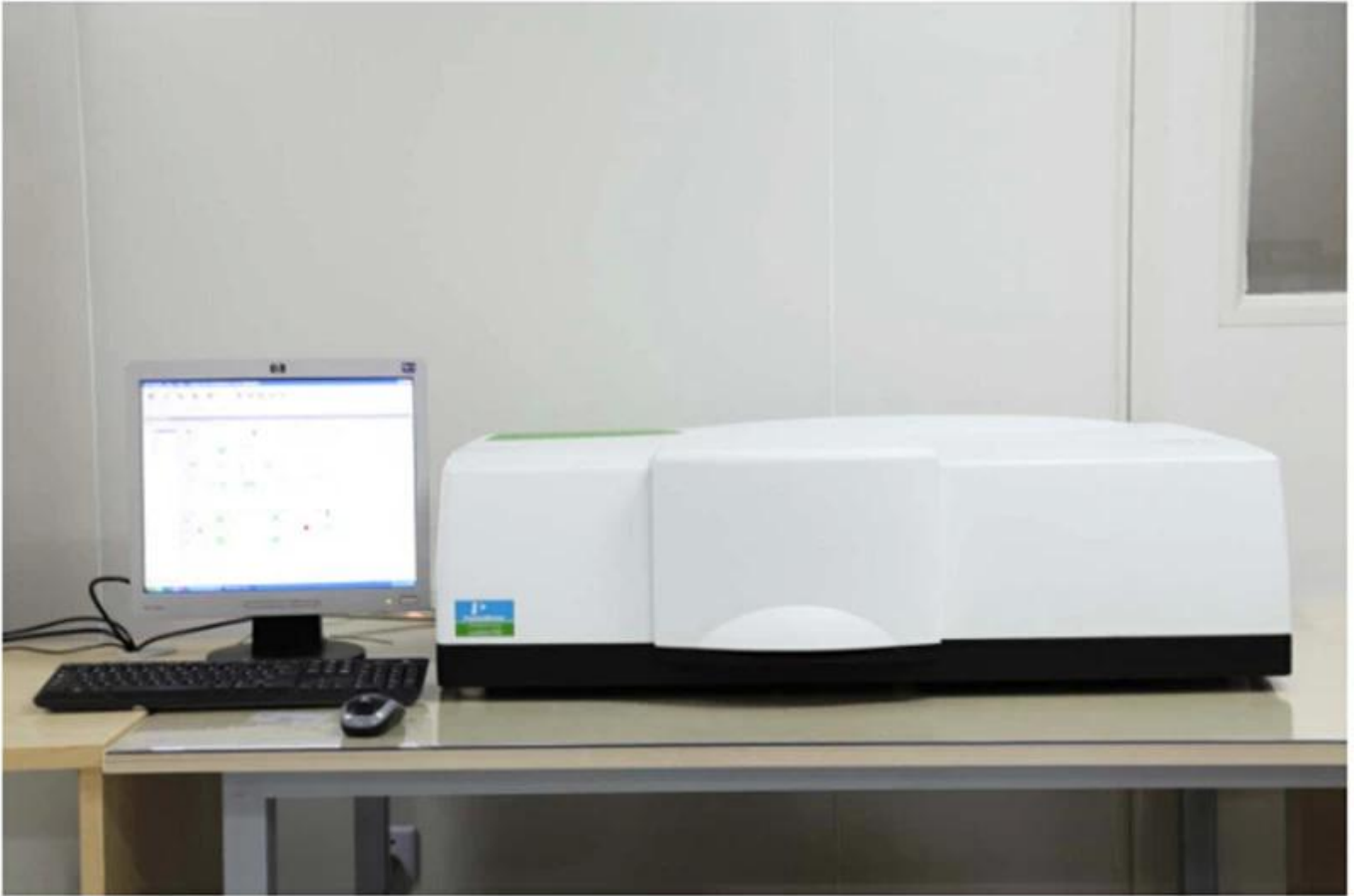




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C E R T I F I C A T E

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**


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E-mail: info@udemtd.com.tr 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>)

ISO 9001

ISO 9001



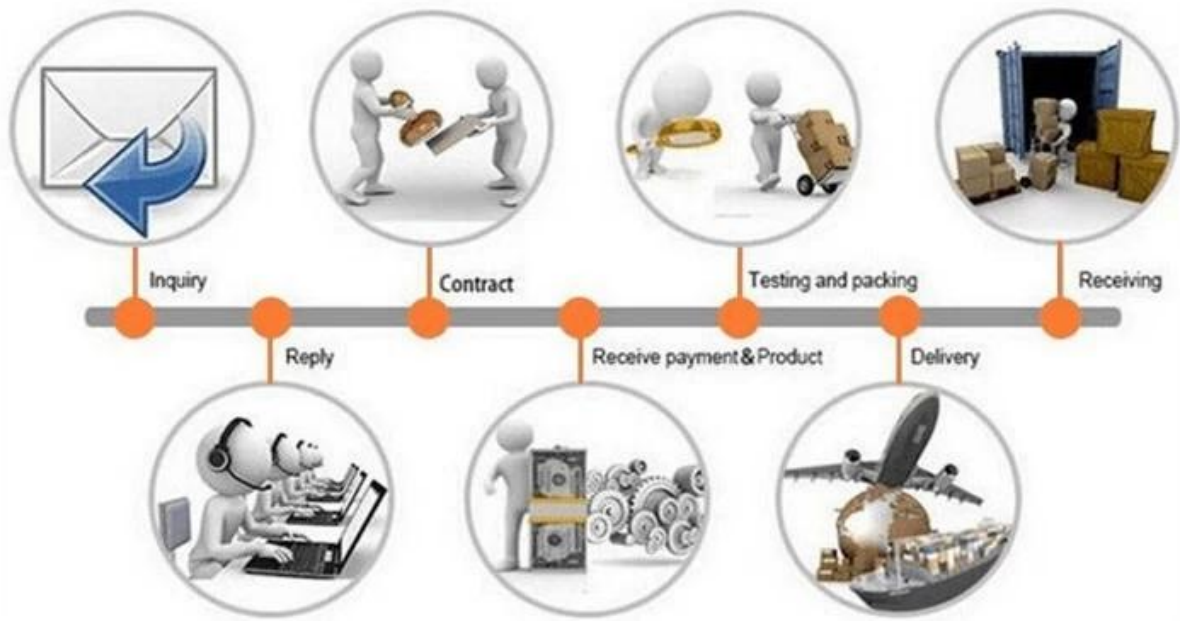
Beijing Zhongliantianrun Certification Center

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>)



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