

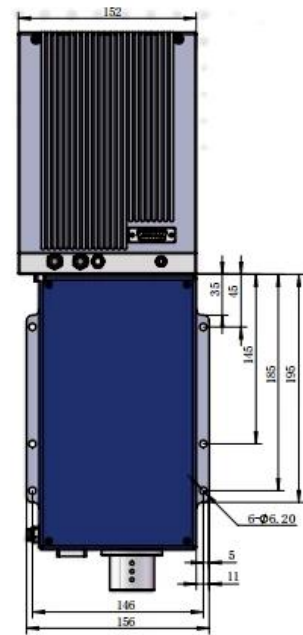
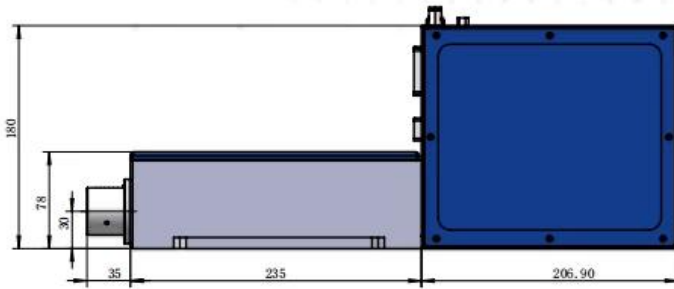
SLS 3D printing process (Selective Laser Sintering) uses a laser to sinter powder particles layer by layer to create a 3D part. The process uses a CO₂ laser source. The powder is fed into a chamber where it is spread in a thin layer. The laser then scans the powder bed, sintering the particles together. The process is repeated until the part is fully built. The part is then cooled and removed from the chamber. The process is highly precise and can create complex geometries.

Carmanhaas (**SLS 3D printing process**) is a



Mechanical Drawings

(Dimensions in mm)



The printer is designed for high precision and reliability. It features a CO₂ laser source and a powder bed fusion mechanism. The printer is capable of producing parts with complex geometries and high surface quality. The process is highly repeatable and can be used for both prototyping and production. The printer is easy to operate and maintain. It is a reliable and efficient solution for 3D printing.



□□:

(1) □□ □□ □□ □□□□ (8 □□ □□ □□ □□□□ $\leq 30 \mu\text{rad}$);

(2) □□ □□ □□□□ ($\leq 3 \mu\text{rad}$);

(3) □□□□□□ □□□ □□□;

□□□□ □□ □□□□ :

Carmanhaas□ □□□□ 3D □□ □□□ □□ □□ □□ □□□□□□□□□□ □□□□ □□□□ □□□□□□. □□□□ □□ □□□□ □□, □□ □□, □□□□ □□ (3D □□), □□□□ □□, □□□□ □□ □ □□ □□ □□ □□□□□□.

Carmanhaas□ □□□□ □□ / □□ □□ □□□□ □□□□ □□□□ □□ □□□□ □□□□ □□□□.

□□ □□ :

DFS30-10.6-WA, □□ : 10.6um

□□ □□ (mm x mm)	500x500.	700x700.	1000x1000.
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SPOT 1 / e ² (μm)	460.	710.	1100.
(mm)	661.	916.	1400.
(mm)	12.	12.	12.

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- (1) : 0000 0000 0000 0000 0000 0000.
- (2) m² = 1.

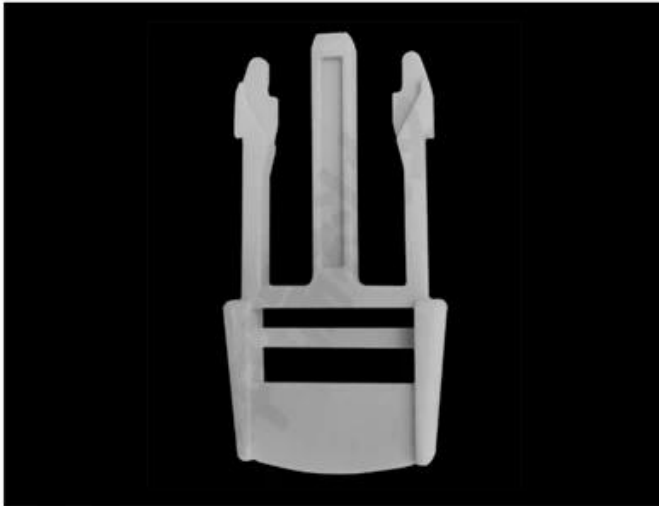
(mm)	(mm)	
80.		AR / AR@10.6um.
90.		AR / AR@10.6um.
110.		AR / AR@10.6um.
90 * 60.		AR / AR@10.6um.
90 * 70.		AR / AR@10.6um.

GF100 (Glass Fiber Composite Nylon Powder)



PHYSICAL CHARACTERISTICS	Apparent density: ≥0.66 g/cm ³
THERMAL PROPERTY	Melting Point: 183°C (10°C/min) HDT: 89°C @1.8MPa / 163°C @0.45MPa
MOLDING PERFORMANCE	Density: 1.24 g/cm ³ Tensile Modulus: 3498 MPa Tensile Strength: 43 MPa Elongation at break: 5 % Un-notched Impact Strength: 19.26 KJ/m ² Notched Impact Strength: 4.11 KJ/m ² Bending Modulus: 2413 MPa Bending Strength: 67 MPa

MF100 (Mineral Fiber Composite Nylon Powder)



PHYSICAL CHARACTERISTICS	Apparent density: $\geq 0.53 \text{ g/cm}^3$
THERMAL PROPERTY	Melting Point: 180°C (10°C/min) HDT: 125°C @1.8MPa / 170°C @0.45MPa
MOLDING PERFORMANCE	Density: 1.18 g/cm^3 Tensile Modulus: 6128 MPa Tensile Strength: 50 MPa Elongation at break: 4.6 % Un-notched Impact Strength: 20.75 KJ/m^2 Notched Impact Strength: 5.58 KJ/m^2 Bending Modulus: 4630 MPa Bending Strength: 74 MPa

ZRTPU (Thermoplastic Polyurethanes Powder)



PHYSICAL CHARACTERISTICS	Grain Size: $60\mu\text{m}$ Shape: Spherical Apparent density: 0.47 g/cm^3
THERMAL PROPERTY	Melting Point: 165°C HDT Heat deflection temperature: -25°C
MOLDING PERFORMANCE	Density: 1.15 g/cm^3 Tensile Modulus: 61 MPa Tensile Strength: 21 MPa Elongation at break: 310 % Tear strength: 101 N/mm Bending Modulus: 74 MPa Bending Strength: 3.3 MPa









PerkinElmer Lambda 950---Testing Transmission and Reflectivity







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**


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 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 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:91320594MA1MF4EP56
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

ISO 9001





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- 1 問) 〇 〇〇〇 〇〇〇〇 〇〇〇〇〇〇.
- 2 問) 〇〇〇 〇〇〇 〇〇 〇〇〇 〇 〇〇 〇〇 〇〇〇〇〇〇.
- 3 問) 〇〇〇 〇〇〇〇 〇〇 〇〇〇 〇〇〇〇〇.
- 4 問) 〇〇 〇 〇〇 〇〇 〇〇〇 〇〇 〇〇〇 〇〇〇〇〇.

問 問:

- (1) 〇〇〇 〇〇 〇〇 〇〇〇 〇〇 DHL, UPS, FedEx, TNT, EMS, ETS 〇 〇〇〇 〇 〇〇〇〇.
- (2) 〇〇〇〇〇〇〇〇〇〇〇〇, 〇 〇 〇〇〇〇~〇〇〇〇〇 〇〇~〇 〇〇〇〇〇〇 〇〇 FOB, CNF, CIF. 〇 〇〇〇〇〇〇~〇 〇〇〇〇〇〇〇〇 〇〇〇〇〇〇〇〇〇〇〇〇〇〇〇〇〇 〇.

〇〇〇〇 〇〇

Q1. 〇〇〇〇〇〇?

A1 : 〇, 〇〇〇 〇〇 〇〇〇 〇〇 〇 〇〇 〇〇〇 〇〇 〇〇〇〇〇 〇〇 〇 〇〇〇〇〇〇〇.

Q2. 〇〇〇 〇〇〇 〇〇〇〇?

A2 : 〇〇〇 〇〇〇〇 QC 〇〇 〇〇 〇〇〇 〇〇〇〇 〇〇〇〇 〇〇 〇〇 〇, 〇〇 〇〇 〇 〇〇〇 〇〇〇〇 〇〇〇 〇〇〇 〇〇〇〇〇.

Q3. 〇〇〇 〇〇〇〇〇?

A3 : 〇〇〇 〇〇 〇〇〇〇 〇〇 〇〇〇〇 〇〇 〇〇〇〇〇 〇〇〇 〇〇〇〇〇.

Q4. 〇〇〇 〇〇〇 〇〇〇 〇〇〇〇?

A4 : 〇〇〇 〇〇〇〇〇 〇〇 〇〇 〇〇 〇〇〇〇 〇〇 〇〇〇 〇〇 〇〇, 〇〇, 〇〇 〇〇 〇 〇〇 〇〇〇〇〇. 〇〇〇〇〇.

Q5. May MARKING 〇〇〇 〇〇〇〇〇 〇〇 〇〇〇 〇〇〇 〇?

A5 : 〇! 〇〇〇 〇〇〇 〇〇〇 〇〇〇〇 〇〇〇〇〇 〇〇 〇〇〇 〇〇 〇 〇〇〇〇.

Q6. 〇〇〇 〇〇 〇 〇 〇〇〇?

A6 : 〇, 〇〇〇 〇〇〇 〇〇〇 〇〇〇 〇〇〇〇 〇〇 〇〇〇〇〇.

Q7. OEM 〇〇 ODM 〇〇〇 〇〇〇 〇 〇 〇〇〇?

A7 : 〇〇 OEM / ODM ORD 〇〇 〇〇 〇〇〇 〇〇ers. 〇〇〇 〇〇〇〇 〇〇〇〇〇 〇〇〇〇 〇〇 〇〇 〇〇〇〇〇.

Q8. 〇〇〇 〇〇〇 〇〇〇〇〇?

A8 : 〇 〇〇〇 〇〇〇 〇〇〇 〇〇 〇〇 〇 MOQ 〇〇〇 〇〇〇 T / T 〇〇 〇 〇 〇〇〇.