

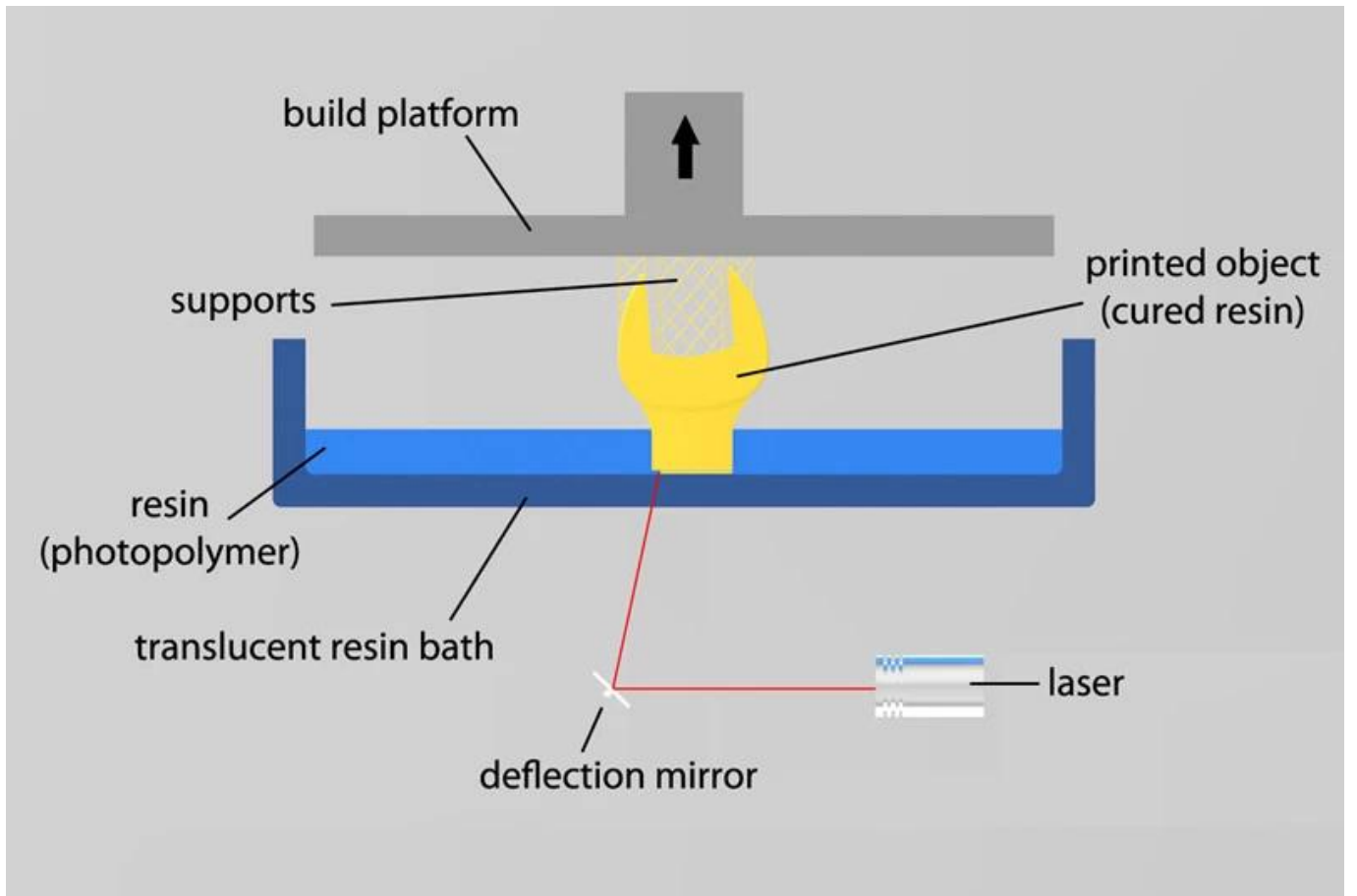


產品系列:

SLA (直接數字化製造) 是製造業的未來。它允許製造商直接從 CAD 模型中製造零件，而無需傳統的模具或工具。CARMAN HAAS 的 SLA 系統具有高精度、高速度和高效率。我們的系統可以製造出複雜的零件，如醫療器械、航空航天零件和工業零件。我們的系統還可以製造出具有特殊性能的零件，如耐高溫零件和耐腐蝕零件。我們的系統還可以製造出具有特殊形狀的零件，如球形零件和圓柱形零件。我們的系統還可以製造出具有特殊尺寸的零件，如大尺寸零件和小尺寸零件。我們的系統還可以製造出具有特殊材料的零件，如金屬零件、塑料零件和陶瓷零件。我們的系統還可以製造出具有特殊表面處理的零件，如拋光零件和噴砂零件。我們的系統還可以製造出具有特殊塗層的零件，如鍍金零件和鍍銀零件。我們的系統還可以製造出具有特殊精度的零件，如微米級零件和納米級零件。我們的系統還可以製造出具有特殊性能的零件，如超硬零件和超強零件。我們的系統還可以製造出具有特殊形狀的零件，如球形零件和圓柱形零件。我們的系統還可以製造出具有特殊尺寸的零件，如大尺寸零件和小尺寸零件。我們的系統還可以製造出具有特殊材料的零件，如金屬零件、塑料零件和陶瓷零件。我們的系統還可以製造出具有特殊表面處理的零件，如拋光零件和噴砂零件。我們的系統還可以製造出具有特殊塗層的零件，如鍍金零件和鍍銀零件。我們的系統還可以製造出具有特殊精度的零件，如微米級零件和納米級零件。我們的系統還可以製造出具有特殊性能的零件，如超硬零件和超強零件。

我們的 CARMANHAAS 系統支持 F-THETA 掃描 (F-THETA 掃描系統) 以實現高精度的掃描。





□□□□□ □□□□□□□□:

355nm □□□□□ □□□□□ □□□□ □□□□□

| 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 warm-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 |

355 355 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 点阵式点阵式点阵式

| 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 |

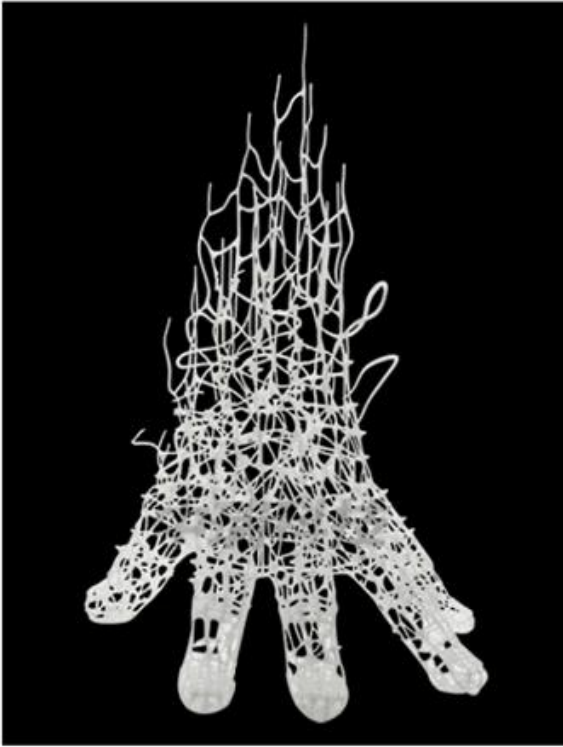
355 点阵式点阵式点阵式

| 点阵式点阵式 | 点阵式eter (点阵式) | 点阵式点阵式 | 点阵式 |
|---------|---------------|--------|-----------------------|
| 355 点阵式 | 30 | 3 | HR @ 355nm 45 点阵式 AOI |
| 355 点阵式 | 20 | 5 | HR @ 355nm 45 点阵式 AOI |
| 355 点阵式 | 30 | 5 | HR @ 355nm 45 点阵式 AOI |

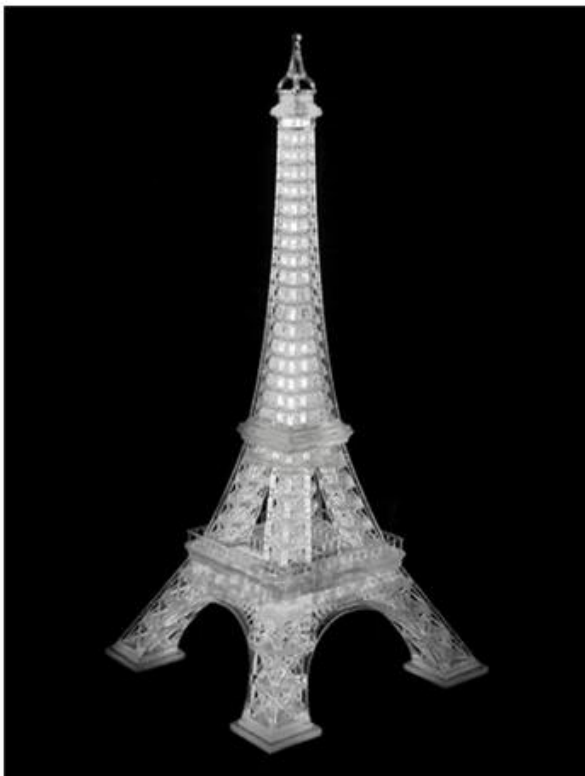
点阵式点阵式点阵式点阵式点阵式点阵式点阵式点阵式



| | |
|---|---------------------------------------|
| 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)



| | |
|--|---|
| PHYSICAL CHARACTERISTICS (LIQUID STATE) | Appearance: Bright yellow 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 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 |

Red Wood (Tooling Board Like)



| | |
|--|---|
| PHYSICAL CHARACTERISTICS (LIQUID STATE) | Appearance: Epoxy Tooling Board Like (Pink) 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 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 |



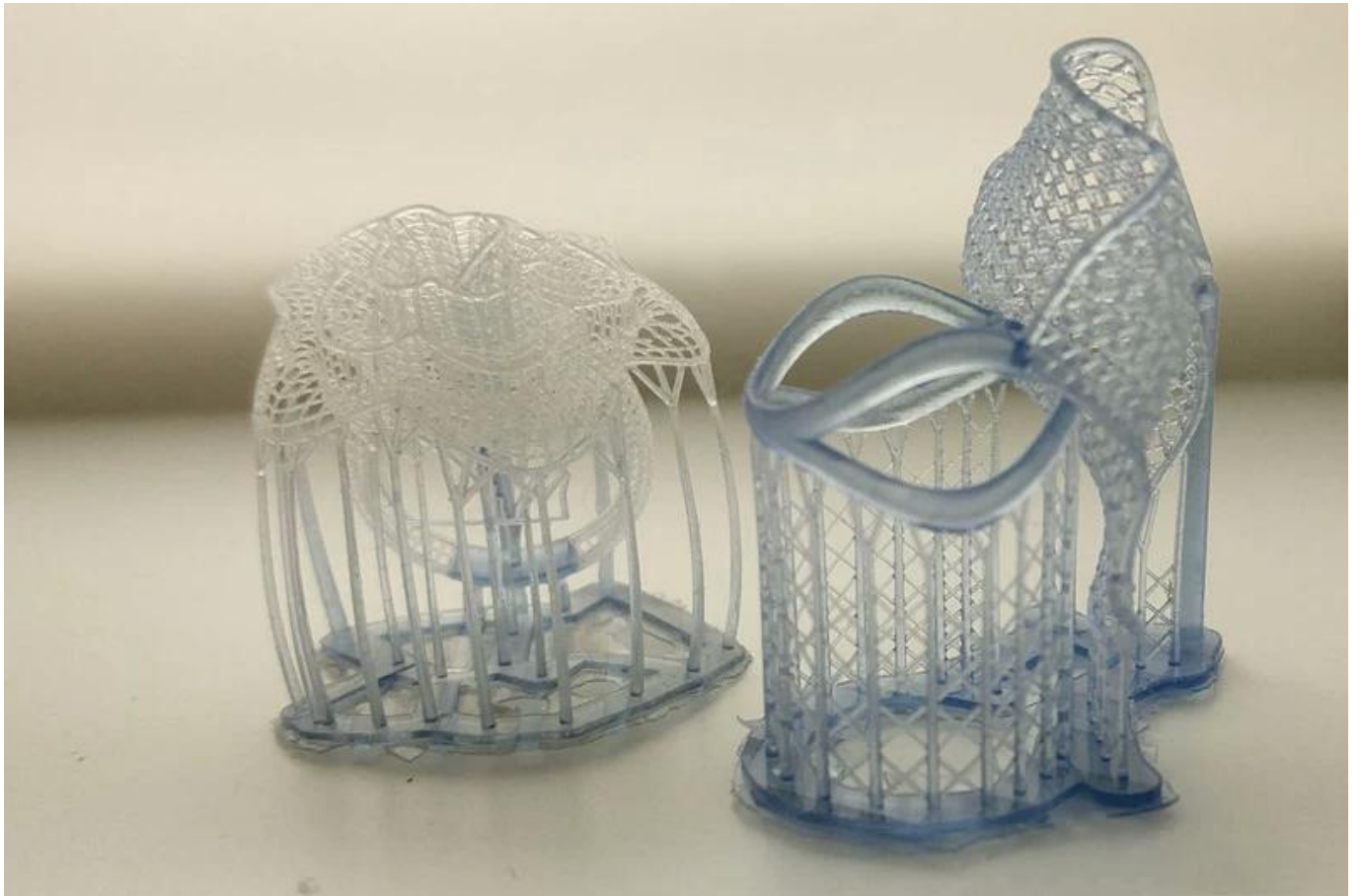
Desktop FDM

Industrial FDM

Desktop SLA

Industrial SLA

Industrial SLS

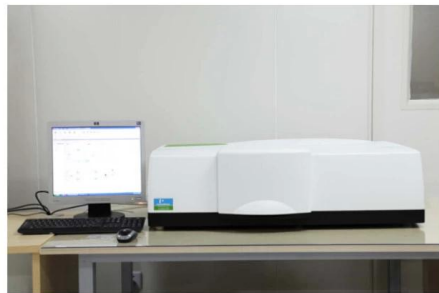








TRIOPTICS OptiSpheric 2000 AF
---Testing EFL, R, Centering Error, Wedge Angle, BFL, MTF

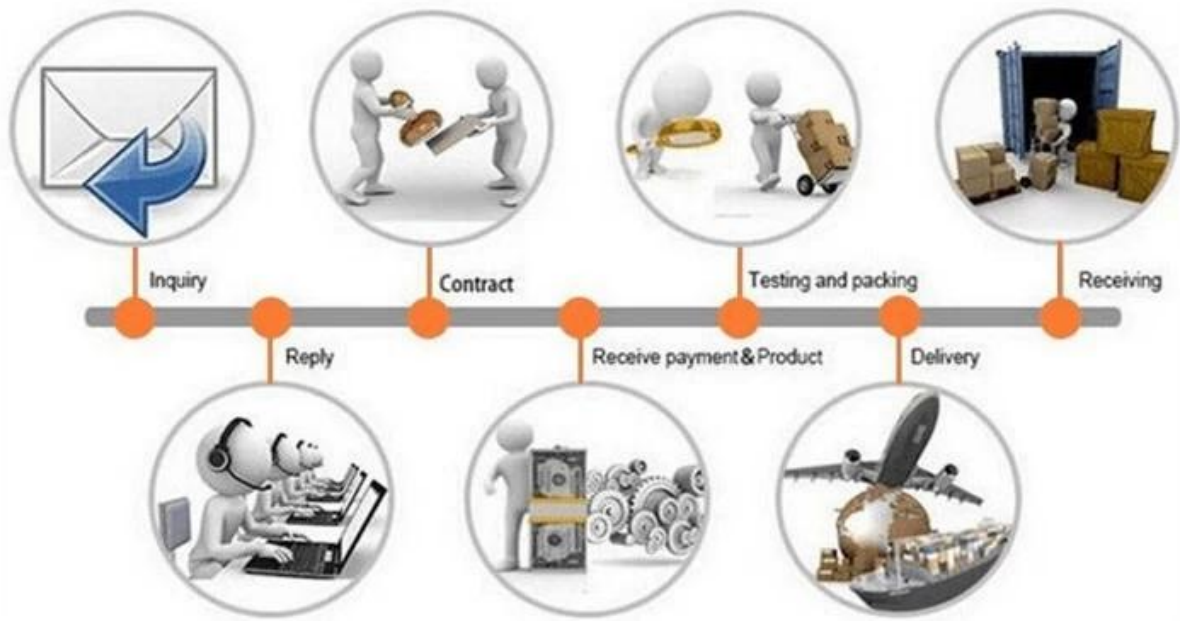


PerkinElmer Lambda 950---Testing Transmission and Reflectivity



Carmanhaas Coating Machine





□□□□□□ □□□□:

: 1. 2. 3. 4.

. (1)

. (2)

. (3)

. (4)

QUESTION:

(1) DHL UPS FedEx TNT EMS ets

(2)

ANSWER:

Q1:

A1:

Q2: How

:2

.3

A3:

.4

A4:

.5

:5

.6

A6:

.7

A7: OEM / ODMers.

□□□□□□ □□□□ □□ □□□□ □□□□ .8 □

A8: □□□□ □□ □□□□□□ □□□□□□ T / T □□□□ □□□□ □□□□□□ □□□□ □□□□□□ □□□□□□ □□□□□□ □□□□□□.