Product Information

Product Description:

Carmanhaas Telecentric scanning lenses are a special configuration in which the arrangement of optics are designed to focus the beam such that it is always perpendicular to the flat field. This is especially important for drilling applications such as via hole drilling in printed circuit boards, ensuring that the drilled holes are perpendicular to the surface even off the center of the scanning field. Welding and structuring applications can also benefit from the use of a telecentric lens, as the spot remains round, even along the edges of the field.
Telecentric scanning lenses are always multi-element designs and are supplied in a housing. At least one lens element will be larger than the field size to be scanned. In practice, this means that for reasons of manufacture and cost that only small field sizes are possible, in turn implying short focal lengths. Each specific application demands custom solutions for these lens types. Contact us with your specifications for a preliminary design and we will quote you.

TELECENTRIC f-THETA SCANNER LENSES

Characteristics
(1)High precision, small assembly error: < 0.05mm
(2)High transmittance: >/=99.8%
(3)High damage threshold: 10GW/cm2

Carmanhaas Advantages:
(1)Made to custom requirements.
(2)Advanced in-house design, based on years of innovation in the field
(3)Perpendicular beam for critical applications

Telecentric F-theta Scan Lenses

CARMAN HAAS

1030-1090nm Fiber Laser

532nm Green Laser

355nm UV Laser

Technical Parameters:

1064nm/1030-1090nm Telecentric F-Theta Scan Lenses

Part Description	FL(mm)	Scan Field (mm)	Max Entrance Pupil (mm)	Working Distance (mm)	Mounting Thread
TSL-1064-80-130-(14CA)	131.5	80*80	14	158.7	M85x1
TSL-(1030-1090)-45-100-(14CA)	100	45*45	14	137	M85x1
TSL-(1030-1090)-60-120-(15CA)	120	60*60	15	162	M85x1
TSL-(1030-1090)-85-170-(20CA)	170	85*85	20	215.5	M85x1

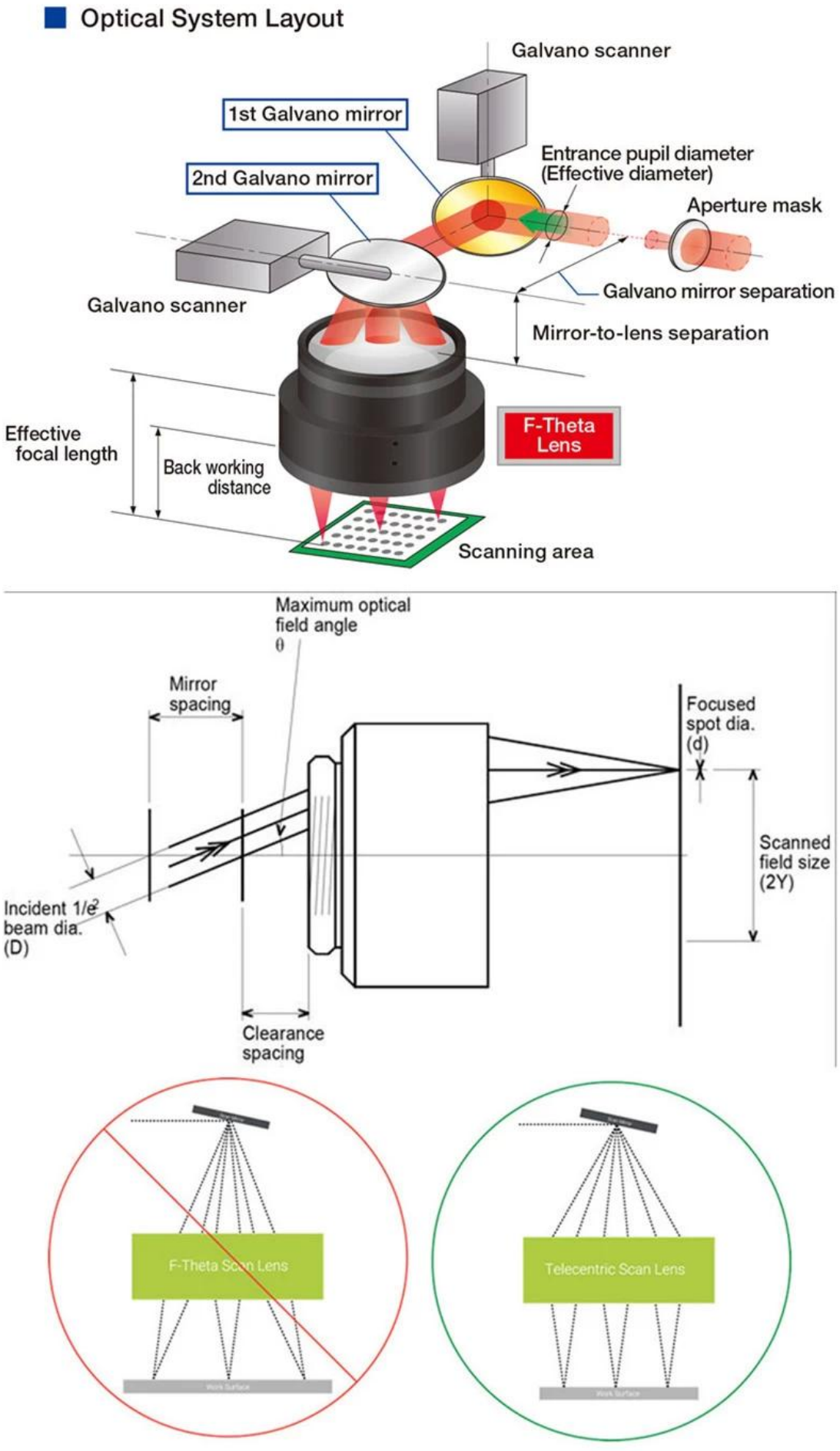
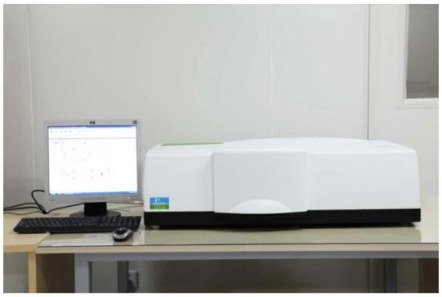


Figure 2: Non-telecentric vs. telecentric f-theta lenses.

Factory

TRIOPTICS OptiSpheric 2000 AF

---Testing EFL、R、Centering Error、Wedge Angle、BFL、MTF



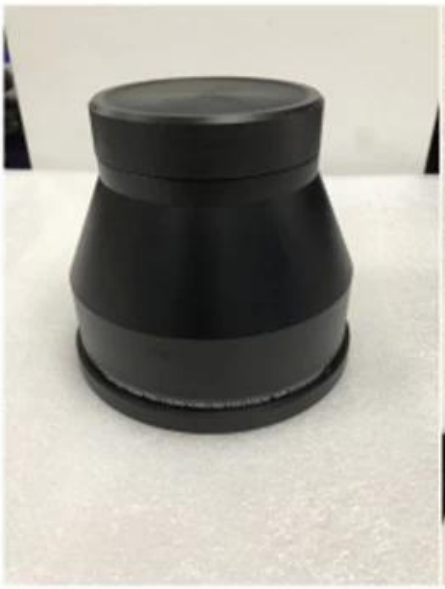
PerkinElmer Lambda 950---Testing Transmission and Reflectivity

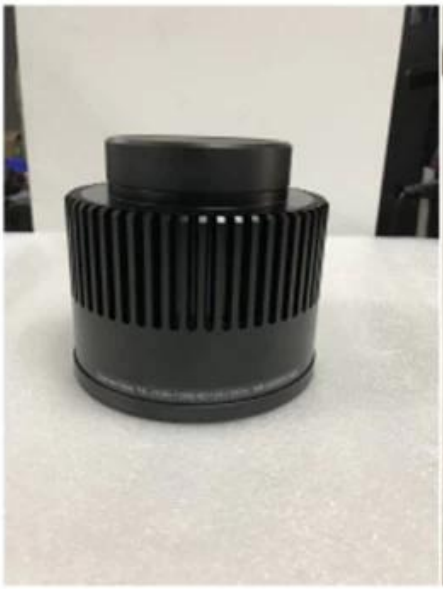
Carmanhaas Coating Machine

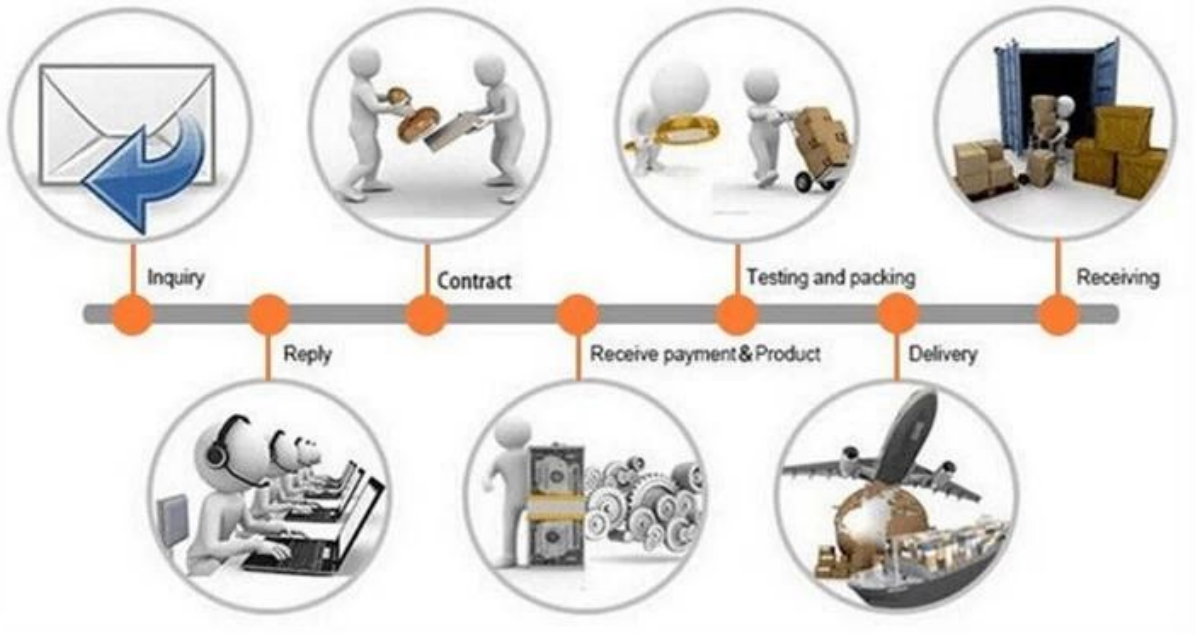
Certificate&Exhibition

Packing List

Packaging & Shipping







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 etc
(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

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.