

# Focuslight Corporate Overview

© Focuslight Technologies Inc.

# **Focuslight Overview**



- Founded in 2007 by Dr. Victor X. Liu, headquartered in Xi'an, China.
- A fast-growing company that develops and manufactures:
  - **High-power diode laser components and materials** (Photon Generation)
  - Laser optics components (Photon Control)
  - Photonics module and system solutions (Application Solutions) focusing on optical communication, consumer electronics, pan-semiconductor, automotive, and medical and health applications.
- A **global photonics foundry** offering process development and manufacturing services to the global photonics community.
- Publicly listed in the Shanghai Stock Exchange (Ticker Symbol: 688167).











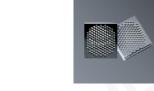
### Milestones





2025

MLA for automotive projection awarded nomination from **European Tier 1** 



2013

**FOCUSLIGHT** World's first monograph on packaging of HPDL published



2017

Technology breakthrough of gold-tin film deposition



2018

UV-L750 Ultraviolet Line Laser System won Prism Award



2019

Automotive LiDAR transmitter project awarded from international Tier 1



2019

Production of microoptics on world's largest glass wafer (300 x 300 mm<sup>2</sup>)



2023

Line Beam LiDAR **Transmitter Module** awarded nomination from European Tier 1



**%**HEPTAGON

2024

Acquisition of ams OSRAM's optical component assets;

Relaunch of



2024

Shaoguan Base officially in operation

**IPO** 

2021

Successful IPO at Shanghai Stock Market



2024

Acquisition of SUSS MicroOptics



2017

Acquisition of LIMO;

Started providing photon control and photonics application solutions



2018

Dongguan delivery and high-volume manufacturing center officially in operation



2019

Global branding identity upgrade



Heptagon brand



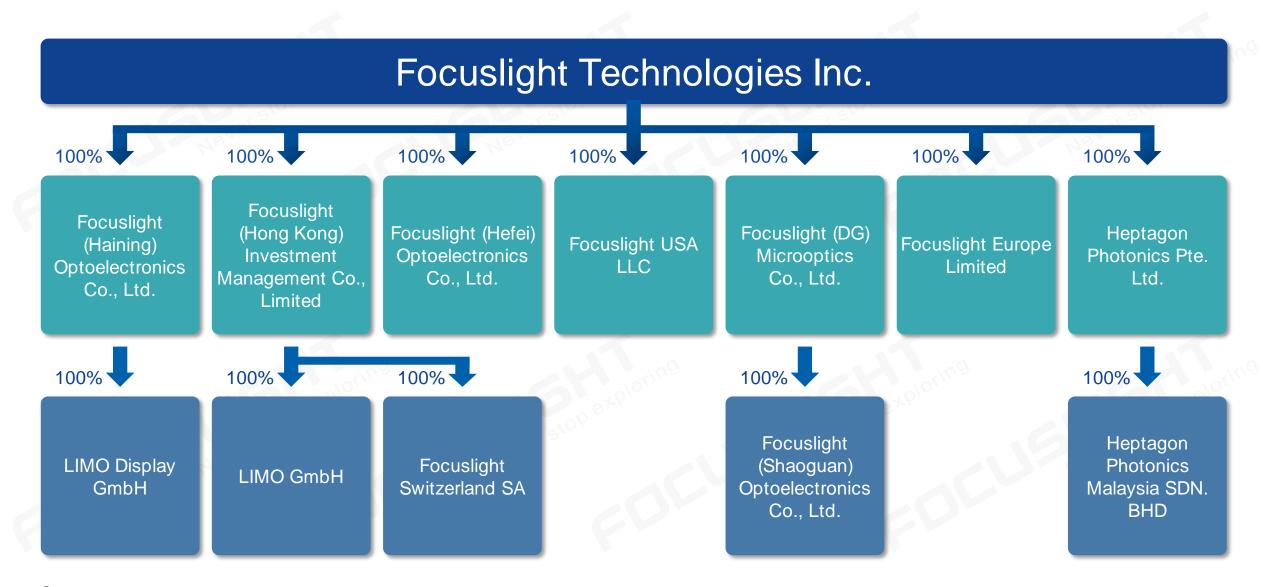
2007

Founding of

Focuslight

# **Focuslight Corporate and Subsidiaries**





# **Focuslight Global Operations System**



Leverage the strengths and capabilities of each location to cater to specific customer demands and optimize operational efficiency.

Through centralized decisionmaking, integrated operations, and lean management, a highefficiency, low-cost global operations system is established.



Zurich, Switzerland R&D Office



Neuchâtel, Switzerland Operations Center



Dortmund, Germany
Operations Center



Xi'an, China Focuslight HQ, Operations Center





Malaysia (being expanded)
Operations Center



Shaoguan, China Operations Center



Dongguan, China Operation Center



Haining, China
Operations Center



Hefei, China Operations Center (being constructed)

# **Further Expanding Flexibility**



- Strong International Presence: Focuslight has strong presences in China, Germany, Switzerland, Singapore, and other global regions. We can leverage our existing manufacturing capabilities in these locations to meet customer demand efficiently.
- Flexibility in Manufacturing: As demand grows, we are exploring additional manufacturing capacity in Malaysia to complement our global operations. This flexibility allows us to adapt to the evolving needs of customers worldwide.



In a world of evolving market dynamics, we provide the solutions you need to stay ahead – flexible, efficient, and forward-thinking.

# **Key Facts & Figures**





**Employees** 

>900



Revenue Proportion Invested into R&D (2025H1)

~24%



Yearly Revenue (2024)

**620M** RMB



Patents Valid Worldwide

>570



**Facility Worldwide** 

>49,000m<sup>2</sup>

Clean Room Worldwide

>17,000m<sup>2</sup>



ISO 9001 ISO 14001

ISO 45001

IATF 16949

Certified

# **Corporate Management Team**





Dr. Xingsheng Liu (Victor)

Chairman, CEO

Research and management experience in the US, with 100+ publications. 300+ patents, 30+ invited papers internationally

Committee Member of SPIE and IEEE









Dr. Chung-En Zah

CTO

30+ years of research experience in the US, with 300+ publications, 50+ patents in optoelectronics and telecommunication

IEEE Fellow, OSA Fellow, 2x R&D 100 award winner









### Mr. Sinclair Vass

Corporate SVP of International Sales & Business Development

35+ years experience in international photonics markets, having held technical, commercial and general management leadership roles at major multinational companies











Mr. Guowei Zhu (Gavin)

Corporate VP of Quality, President of Automotive BU

20+ years in international automotive companies, rich experience in IATF QMS and plant operations management by World Class Manufacturing (WCM) & Lean manufacturing









Mr. Tan Chee Huo (Michael)

Corporate SVP of Business Process and IT

25+ years in IT leadership, specializes in digital business transformation, global project management, multicultural team leadership in fast-paced international industries, and strategic decision-making





NOKIA Thermofisher Tupperware EVIDENT



### Mr. Ye Dai (Robert)

Corporate VP of Global Sales

Excellent track record in worldwide sales, product line and business unit management leadership roles

20+ patents granted







Board Director, CFO

Over 15 years management experience and multi-field business practices

In-depth understanding in LTC, IPD, intercultural cooperation and rich operational experience in market development, project operation and business Hanerov management



### Mr. Qichuan Yu

Chief Product/Process Officer

Over 25 years of experience in wafer-level optics, optical sensor and camera packaging, SAW/BAW filter R&D, and NPD execution, with a strong focus on mastering, tooling, and wafer-level processes









# **Corporate Management Team**





Ms. Xuefeng Zhang (Jennifer)

Board Director, Board Secretary, Marketing Director

14 years photonics industry international business experience, in-depth understanding and rich experience in sales, marketing and business development







Mr. Hong Wang

Corporate R&D Director

PhD in physics and Master in computer science. 20+ years in quantitative analytics, capital market risk modeling and architecting. Expert in building analytic infrastructure and system. Rich experience in multinational team management.









Mr. Lucas Zhang

Global Operations Vice President

20 years of global supply chain management experience at multiple Fortune 500 companies, with strong expertise in in supply chain planning and management within the consumer electronics industry









Mr. Jinchao Qu

President of Laser Source BU. President of Medical & Health BU

Extensive years of product marketing and sales management experience

Outstanding track record in previous roles as Asia Sales Director and Head of the Application Systems Special Task Force







### Mr. Dirk Walter Bogs

President of Laser Optics BU

Over 25 years' experience in ultra-precision tooling, optic manufacturing, engineering & project management, and operational management

Very deep knowledge of technology development and optimization





Mr. Yong Tian (York)

VP of Laser Optics BU

20+ years of operation & R&D management, very deep knowledge with organic optical materials and optical coating technology, published SCI articles and owns patented technologies. Experienced in Lean Manufacturing & Industry 4.0









President of Pan-Semiconductor Solutions BU

12 years experience in photonics R&D and product management, with rich track records of leaderships in developing and delivering system solutions for pan-semiconductor and industrial applications





### Dr. Tobias Senn

President of Strategic Growth Division

15+ years of experience in micro-optical component development for the consumer market. Expert in design for manufacturing and process development, with a strong focus on high-volume production and yield improvement









### Mr. Hongyuan Liu (Tom)

President of Global Photonics Foundry BU

20+ years in R&D and operations management, specializing in optical imaging and non-imaging system design, WLO process & integration, and optical component manufacturing. Proven track record in new

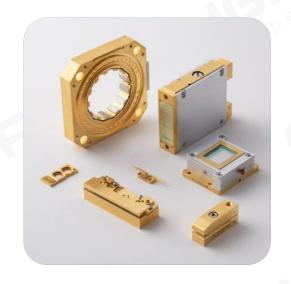




BU: Business Unit

# **Products and Businesses**











Photon Generation



Photon Control



Photonics Application Solutions



Global Photonics Foundry

# **Markets**



3%

revenue



revenue

revenue

revenue



32%

revenue

revenue

revenue

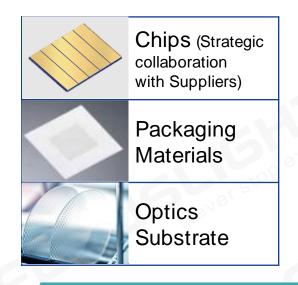
<sup>\*</sup> Based on accumulated revenue data from 2025 H1 (figures unaudited)

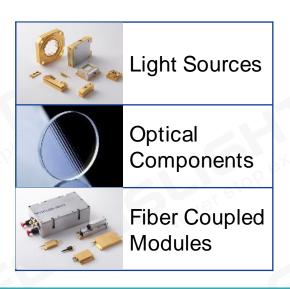
# **Value Proposition**

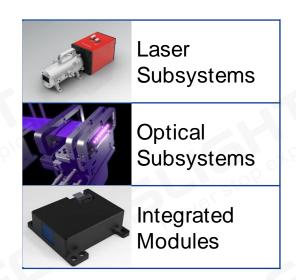


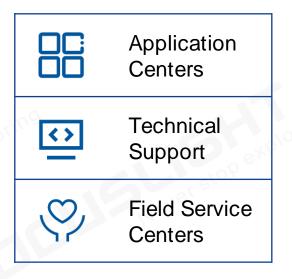
### Total Solution and Service in Full Value Chain











Industry Leader + Strong Financial Backing + Healthy Stable Company + Invest in the Future

# **Value Proposition**





Do what we do best

Offer the best value

Optimize to the extreme

Achieve the best performance / quality-to-price ratio

### **Commitment to Customers**

- Lowest cost manufacturing for high volume products
- Willing to take technical risk, but request customer commit market share in return
- Willing to take investment risk in R&D and capital including M&A for customer but request customer commit market share in return
- Collaboration transparency, fast response, IP protection and long-term partnership



### What we don't do

Take high market risk

Be greedy

Be too aggressive

Compete against our customers



# Mission





Be the global trusted photonics solution provider through innovation, manufacturing excellence and fast response

# **Branding**





The corporate/parent brand that offers innovation-driving photonics solutions, covering all available businesses except WLO, WLS, WLI, and related fields.



A brand focused on business around the technologies of WLO, WLS, WLI, and related fields, ultimately aiming for volume production.

# **Company Organization**



# **Focuslight Technologies**

Laser Source Business Unit

Laser Optics Business Unit

**Automotive Business Unit** 

Pan-Semiconductor Solutions Business Unit

Medical & Health Business Unit

Strategic Growth Division

Global Photonics Foundry Business Unit

Centralized Corporate Functions + Shared Service Center

# **Products – Diode Laser Components**

FOCUSLIGHT

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Under Focuslight Brand



### **Advanced Materials**

- AuSn Pre-Deposited AIN Ceramic Submounts
- AuSn Pre-Deposited CuW Submounts
- Thin Film Metallization Service



### **Active Devices**

- Single Emitter Components
- Single Bar Components
- Micro-Channel Cooled Stacks
- Conduction Cooled Stacks
- Pumped Modules



### **Fiber Coupled Modules**

- Emitter-Based FCM
- Bar-Based FCM



# **Professional Medical Application Components**

• Laser Hair Removal Engines

# **Products – Laser Optics Components**



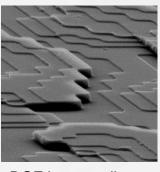
**Under Focuslight Brand** 

# Single Lenses and Linear Lens Arrays FAC SAC SAC array BTS Fiber coupler and collimator Collimating DOE





Homogenizer and diffuser



DOE beam splitter, dot or line generator



Shack-Hartmann array

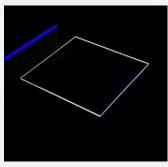


Pinhole array

### **Plano Optics and Coatings**



Micro prism



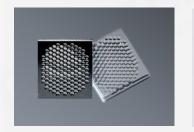
Window

# **Products – Automotive Application Solutions**



**Under Focuslight Brand** 

### **Projected Lighting**

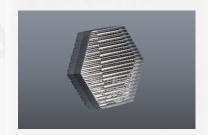


Microlens Arrays for Projection



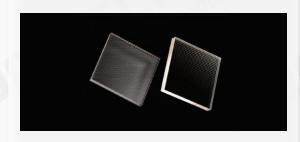
MLA-Based Dot Projectors

### **Smart Headlights**



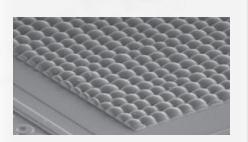
Microlens Arrays

### **Driver Monitoring System**



Homogenizers / Diffusers for Illuminators

### **AR HUD**



Homogenizers / Diffusers

### LiDAR

### **EEL / VCSEL Based LiDAR Transmitter Modules**



VCSEL Flash Transmitter 700W

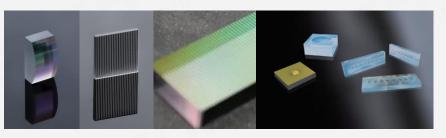


905nm 700W EEL Line Beam Transmitter



VCSEL Line Transmitter 1000W

### **Beam Shaping Optics**



Fast Axis Collimators, Diffusers, Homogenizers, Collimators and Arrays in Glass, Polymer and Silicon

# Products – Pan-Semiconductor Application Solutions FOCUSLIGHT



**Under Focuslight Brand** 



Solid-State Laser Lift-Off (LLO) System

### **Advanced Display Manufacturing**



Solid-State Laser Annealing (SLA) System



Variable Beam Laser System (Mini and Micro LED Processing)

### **IC Manufacturing**



IC Wafer Annealing System



Variable Beam Laser System (Advanced Chip Packaging)

### **Industrial Solutions**



IR Line System



Industrial Laser Module

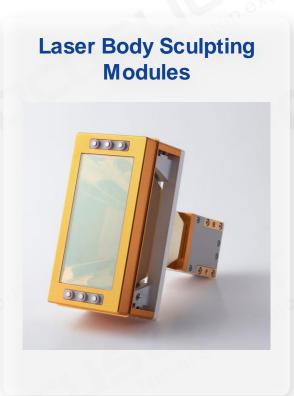
# **Products – Medical and Health Application Solutions**



**Under Focuslight Brand** 









## Products and Services – Based on WLO and WLS



**Under Heptagon Brand** 

# Polymer on Glass (PoG) Optics



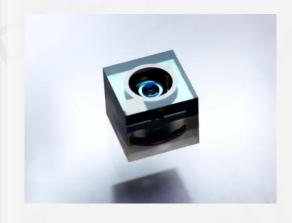
Micro lens arrays, diffusers, DOEs, Fresnel lenses

# Semiconductor Wafer Foundry Service



Imprinting of optical components or lens modules on silicon wafers (e.g., for sensors, VCSELs, MicroLEDs)

### **Imaging Lens Modules**



Stacked imaging lens modules compatible with CMOS

# Sensor Module Packaging Service

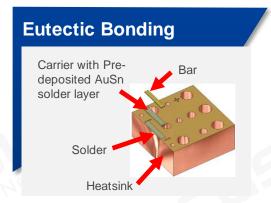


Packaging service for sensor modules

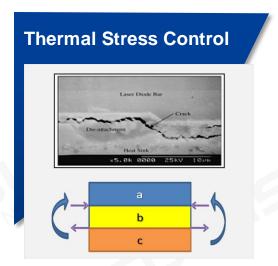


Diode Laser



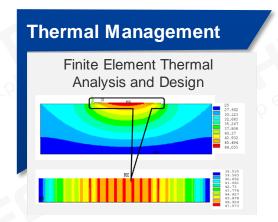


Significantly enhances thermal conductivity, reducing thermal stress, and thus improving the products' performance and lifetime

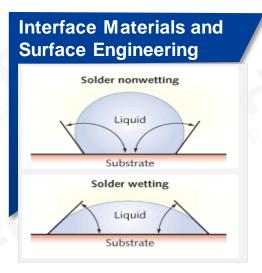


Lowers and homogenizes the thermal stress, and improve the device performance





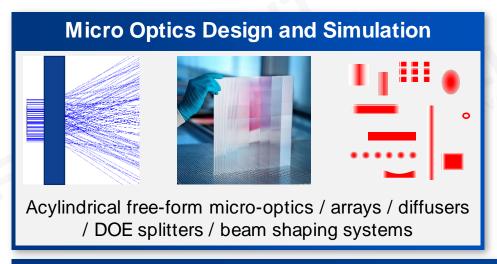
Effectively improves the ability of heat dissipation to ensure a higher output power

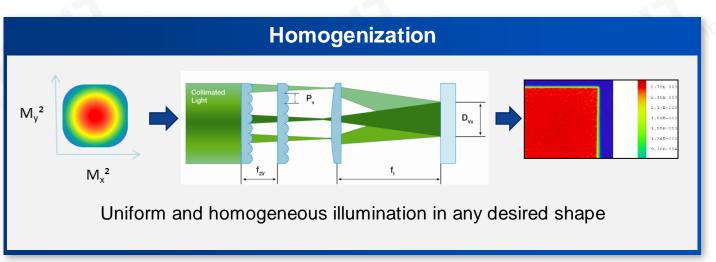


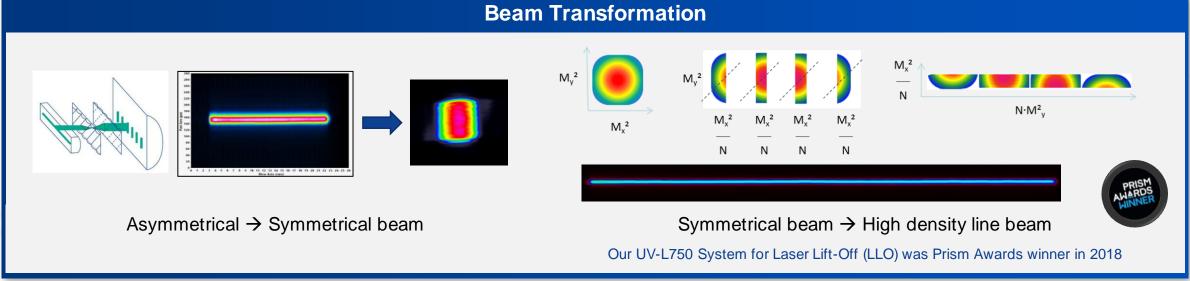
Greatly improves wettability and bonding strength of packaging materials, enhancing long-term reliability



Beam Shaping – The Right Photon at the Right Place and Time!

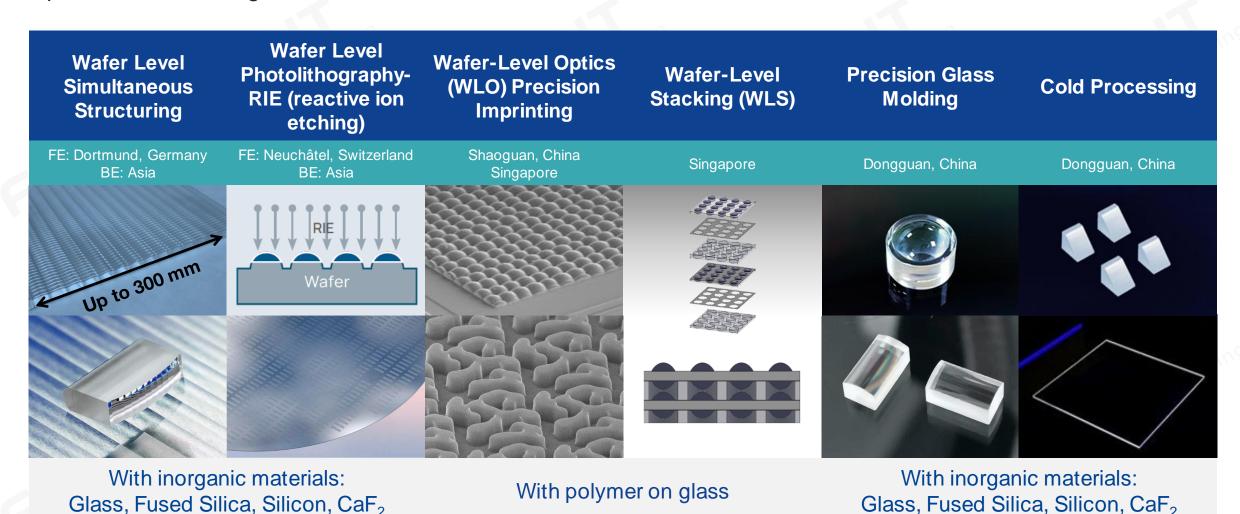








**Optics Manufacturing** 



High LIDT Optical Coating: Anti-reflection, high-reflection, beam splitter, band filter, and various customization (UV, VIS, IR)

FOCUSUGHT

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Test, Analysis and Diagnosis

### **Test and Characterization of High-Power Diode Laser**

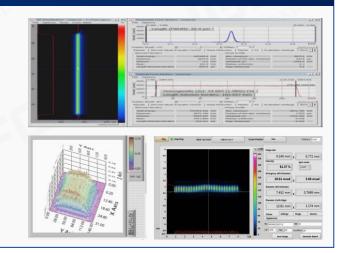
A comprehensive physical diagnostic model allows full characterization of a set of key parameters, such as:

LIV

Far-field / Near-field

- Spectrum
- Polarization
- Spatial spectrum
- Spatial polarization

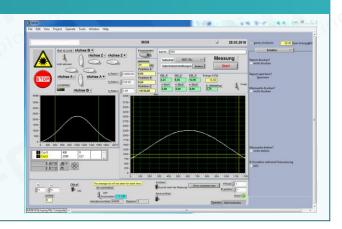
- Spatial beam profile
- Smile effect
- Lifetime



### **Metrology and Analysis of Optical Components**

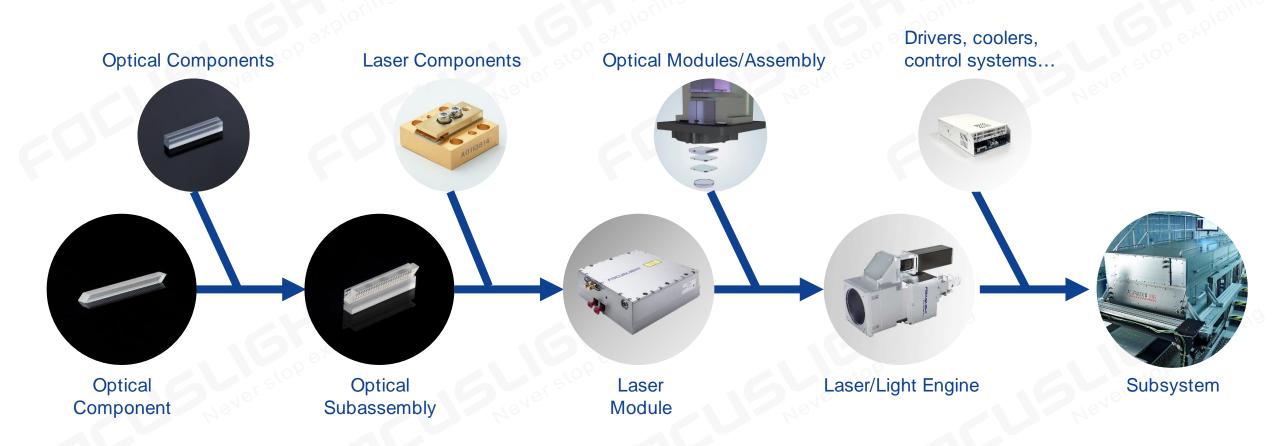
Wave optics models are used in conjunction with tactile surface measurements for precise analysis of optical functions such as:

- Focusing
- Collimation quality
- Beam uniformity





High Precision Optical Assembling Process and In-house Equipment: From Components to Subsystems



# A Unified QM System in the Corporate Ensures Reliable and Premium Products



ISO9001 Certified Quality Management System (QMS)

ISO14001 Certified Environmental Management System (EMS)

IATF16949 Certified Automotive Quality Management System

ISO45001 Certified Occupational Health and Safety Management System

Failure Mode and Effect Analysis (FMEA)

Statistical Process Control (SPC)

**Production Traceability Database** 

Control Plan (CP)



# **Quality Assurance System**



	Built-in Qua	ality to Meet Customer's Needs		
Assurance of Design Quality	Design of the Optimal Design Quality to Meet Customer Needs	Assurance of Manufacturing Quality	Built-in Optimal Design Quality	Assurance of Service Quality
NPI / APQP		Mass Production	RMA / Warranty	
Planning	Research & Development Production Eng	gineering		
		Manufacture		
		•	After	Service

Promotion of Consistent Quality Assurance Activities						
Quality Control System of Design	Quality Control System of Manufacture		Quality Control Evaluation System			
<ul> <li>QFD</li> <li>Critical Characteristic, Special Characteristics</li> <li>Tolerance Chain Design</li> <li>FMEA, FTA</li> <li>Design Validation</li> <li>Design Review</li> </ul>	<ul> <li>Parameter design</li> <li>Process FMEA</li> <li>Process Capability Study</li> <li>Automatic Inspection,</li> <li>Poka Yoke / Error Proof</li> <li>Measurement System Analysis</li> </ul>	<ul> <li>QA Network</li> <li>Supplier Quality Management</li> <li>Production Validation</li> <li>Control Plan</li> <li>QC Circles</li> <li>Production Part Approval Process</li> </ul>	<ul> <li>QC diagnosis</li> <li>Quality assurance Meeting</li> <li>Quality Auditing Improvement Meeting</li> </ul>			

# Focuslight Manufacturing System (FLMS)



# **FLMS**

Continually exceed customer's increasing expectations

Manufacting Excellence in Safety, Quality, Cost and Delivery

Just-in-Time Production Adaptable to High Safety, Morale & Productivity Zero Defects Produced Demand Six Sigma Product Quality Lean Material Flow People Human Error **Andon Real Time Error Proofing** Pull Systems **Balanced Line** Visual Control "Poke-yoke" "Kanban" One Piece Flow Management Control Flexible Workforce **Build in Quality Production Levelling Process** Recognition **Total Productive** Flow Flexible Standardized Multi Skill Capability 6 Systems Maintenance Work Layout Sigma Methods Minimize Material Handling Manufacturing Training System **Automation** 

Gemba, Challenge, Continuous Improvement

**Leadership** Driving, Teamwork, Respect

**Philosophy** Absolute Customer Focus, Quality First, Zero Tolerance for Waste

# **Manufacturing Excellence**



- Apply the lean manufacturing practices to all production lines, including automotive, diode laser and laser optics business
- Absolute customer focus, zero tolerance of waste, and continuous improvement philosophy
- Significantly reduced cycle time, improved manufacturing efficiency, and lowered RMA yield and manufacturing cost.
- Adopting automation and advanced production management system
- SOP of the first LiDAR transmitter project with an international automotive tier 1 customer
- IATF 16949 certified and VDA 6.3 audited





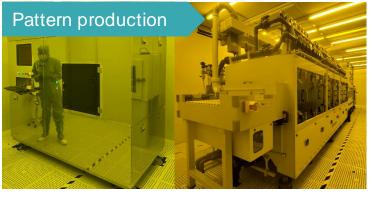
**Advanced Materials** 

### 10+ years high-volume manufacturing experiences + self-owned core technologies



















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**Diode Laser Components** 









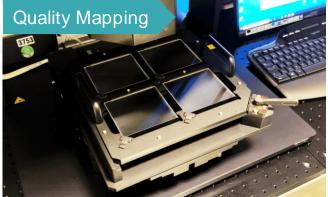


Diode Laser Manufacturing Capacity > 500K pcs / year Burn-in Capacity 600K pcs / year

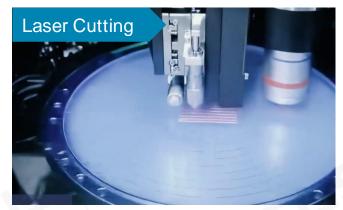


Laser Optics Components: Wafer-Level Simultaneous Structuring Processing









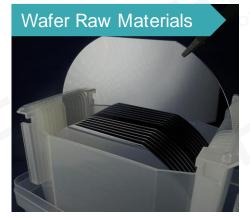




Wafer-Level Simultaneous Structuring Processing:
Manufacturing Capacity > 2K wafers / month or > 5M pcs lenses / month



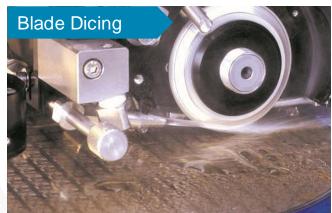
Laser Optics Components: Photolithography-Reactive-Ion-Etching Processing













Photolithography-Reactive-Ion-Etching Processing: Manufacturing Capacity > 300 wafers / month

## **Manufacturing Capacity**

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Laser Optics Components: Imprinting Processing











Imprinting Processing:

Manufacturing Capacity > 15K wafers / year or > 30M pcs lenses / year

## **Global Photonics Foundry Services**



From Concept to Mass Production



#### **DFM**\* Stage

fleshed Design for WLO-Technology, Manufacturability and Risk Analysis

\*DFM: Design For Manufacturing

#### Design **Feasibility Study**

Outcome: Concept & prelim. Design (fulfilling requirements, dimensions, est. cost),

Outcome: Full-

## Design Verification / **POC Stage**

Outcome: 1st Gen **Working Samples** manufactured, testing data results for e.g. yield analysis

## **Product Validation** & Qualification (

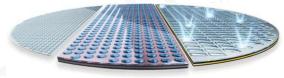
Outcome: 2nd or xth Gen working samples, Creation of Product Documentation (e.g. delivery req. specifications, drawings, technical datasheets etc.), cost analysis

#### **Mass Production**

WLO Components fully compliant according to **Product Requirements** and Test Specs.

#### Ramp-Up

Wafer Level Optics (WLO)

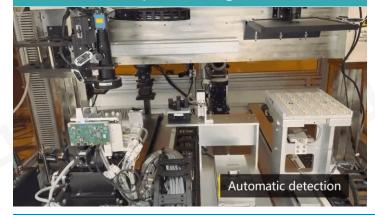




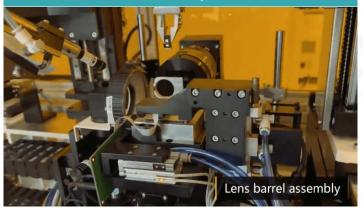
## **Automation Powered Manufacturing Excellence**



#### **Automatic Optical Alignment**



#### **Automatic Assembly**



## **Automated Optical Inspection**



#### **Laser Optics Production Line**



#### **LiDAR Transmitter Production Line**

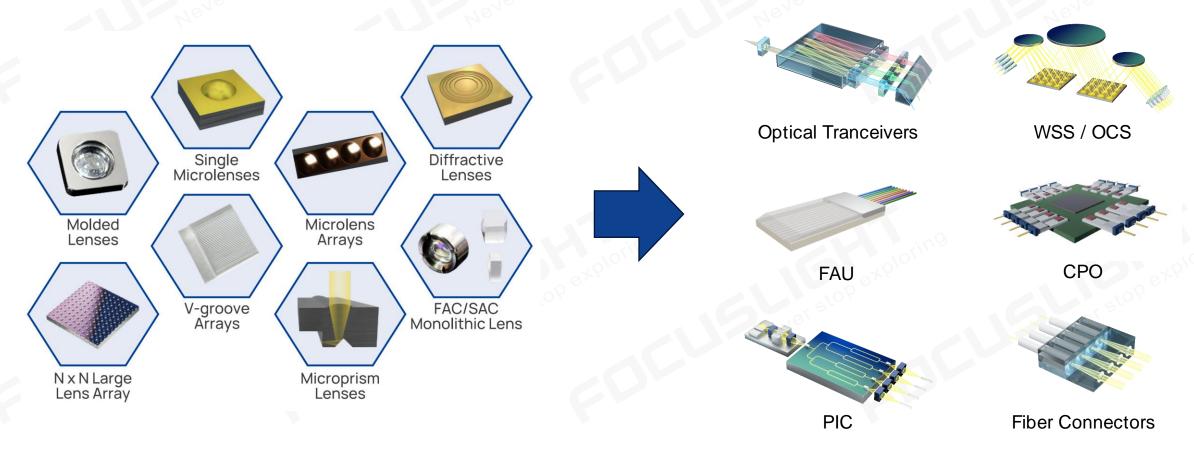


Video Link: <a href="https://www.focuslight.com/news-events/newslist/focuslight-autonomation-powered-manufacturing-excellence/">https://www.focuslight.com/news-events/newslist/focuslight-autonomation-powered-manufacturing-excellence/</a>

## FOCUSLIGHT Never stop exploring

## **Optical Communication**

- High precision micro-optics are at the heart of optical communication systems.
- They support efficient data transfer between key optical components.



## **FOCUSLIGHT**

#### Consumer Electronics



## **Optical Sensing, Empowering AR/VR and AI to See**

Multi-aperture wafer-level optical lens for AR-Light **Engine** 

Vis & NiR solutions with

fully reflowable and thus

mass manufacturable

multiple FoV options

Micro-optics Modules for

Wafer level stacking that is

Leading thermal performance, ensuring simple thermal design

Face recognition, underdisplay face recognition

Complex micro dot projectors optics

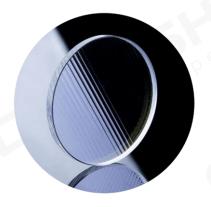
Multi-Zone 3D sensor solutions, including dToF, Proximity sensor optics

Leading thermal performance, ensuring simple thermal design



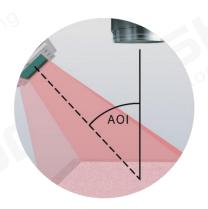
## FOCUSLIGHT Never stop exploring

#### Semiconductor









- Beam homogenization technology powers the illumination system – key optical component in pansemiconductor systems
- > 15 years supply to the major manufacturer of semiconductor lithography tools
- Laser system solutions with high power density and different beam profiles, designed for various laserbased wafer annealing processes including IGBT backside annealing and SiC annealing
- Based on 976nm diode laser with adjustable beam output and >95% homogenization in energy distribution
- Ideal for advanced chip packaging processes, e.g. laser-assisted bonding
- Off-axis beam shaping technology powers laser surface treatment as well as surface inspection
- Typically used in solar cell industry

## FULL

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Display



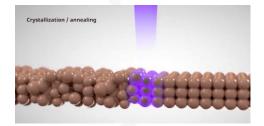




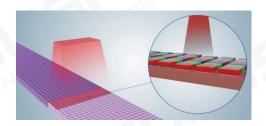


#### Solid-State Laser Lift-Off (LLO) for Flexible Displays

- Several tens of beam shapers (plasma display pixel structuring)
- Several green 100 mm line beam systems (laser lift-off)
- > 600 mm UV line beam production system (laser lift-off)



#### **Next-gen LTPS Solid-state Laser Annealing Process**





#### Mini and Micro LED Processing

- Laser Mass Transfer and Laser Mass Soldering
- Laser Chip Repair

#### Automotive

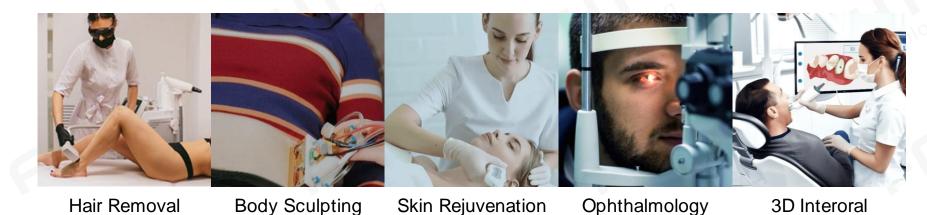




Microscopy

#### Medical and Health





Optical Components; Laser Components



Scanning

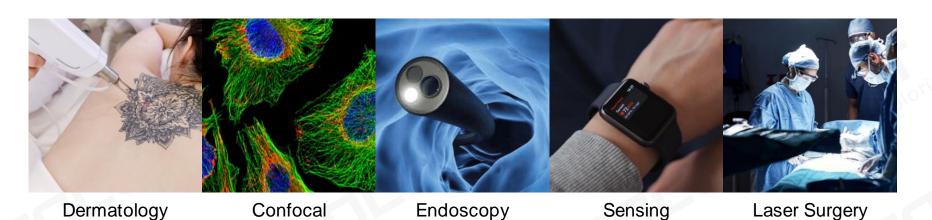
Optical Solutions; Laser+Optics Assembly; Application Handpiece



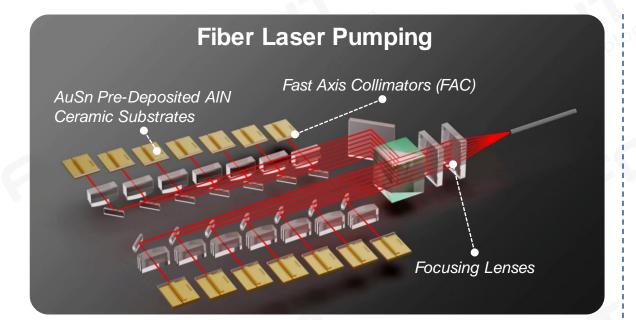
Contract Manufacturing Services



Focuslight does not produce medical or health equipment

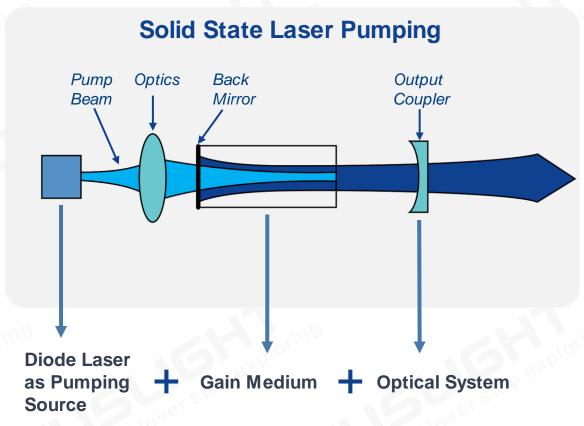


#### Industrial



- AuSn pre-deposited ceramic substrates stable and reliable thanks to the high thermal conductivity and suitable thermal expansion coefficient;
- Fast axis collimators (FAC) fundamental and efficient solutions for shaping the beam emitted by the pumping sources;
- Focusing lenses coupling the collimated laser beam precisely into the output fiber;







## **Sales Network**





- Worldwide established distributors
- Direct sales offices in China, Switzerland and US
- Manufacturing site in Xi'an, Dortmund, Dongguan, Haining, Shaoguan, Neuchâtel, and Singapore

## Summary



# Your committed and reliable long-term partner in photonics components and solutions



Diode laser light source leader and beam shaping expert with strong IP position



One-stop-shop provider of micro-optics choosing from five process technologies best matching customer needs



Global photonics foundry that convert customers' ideas and designs into their own products and solutions



Total solution, versatile customization service and field service provider



Strong RDE capability, high volume production capacity and low-cost manufacturing



Financially healthy and strong financial backing from investors for long term growth

## THANK YOU

