



# RICHBEAM DEDICATED TO LIDAR

## 锐驰智光—致力于激光雷达



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锐驰智光

[www.richbeam.com](http://www.richbeam.com)



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# 01

## 企业介绍

锐驰智光创立于2016年，是一家集成式激光雷达服务商。

RichBeam was founded in 2016 and is an integrated LiDAR service provider.



## COMPANY PROFILE

## 企业简介

### COMPANY PROFILE



锐驰智光成立于2016年，是一家持续创新的激光传感器及解决方案供应商。我们专注于研发更好的激光传感器产品和解决方案，为人工智能提供强大的感知能力和丰富的数据支持。

锐驰智光深入洞察激光传感技术在不同行业所面临的复杂挑战和多样需求，以集成芯片等专利技术为基础，不断突破技术边界，开发了广泛应用于自动驾驶、智慧交通、机器人、工业自动化、测绘等领域的激光雷达产品和创新解决方案，创造更多价值，助力行业发展。

Richbeam, founded in 2016, is an innovative supplier of laser sensors and solutions. We focus on developing advanced laser sensor products and solutions that provide powerful perception capabilities and rich data support for artificial intelligence.

Richbeam deeply understands the complex challenges and diverse requirements faced by laser sensing technology in various industries. Based on integrated chips and other patented technologies, we continuously push the boundaries of technology and provide a wide range of LiDAR products and innovative solutions that have extensive applications in autonomous driving, intelligent transportation, robotics, industrial automation, and surveying. As a result, we create more value and contribute to the development of the industry.

**20+** 软著  
Software Copyrights 20+

**100+** 专利布局  
Patent Portfolios 100+

**500+** 服务企业  
Service Companies 500+

## 投资背景

INVESTMENT BACKGROUND



## 核心团队

CORE TEAM



CEO  
姜波 / Jiang Bo

清华大学硕士，曾就职于电子科技集团和中国科学院，负责激光传感器等产品的设计和研发工作。

Graduated from Tsinghua University with a master's degree. He once worked in the Electronic Technology Group and the Chinese Academy of Sciences, responsible for the design and research and development of laser sensors and other products.



CTO  
赵忠尧 / Zhao Zhongyao

毕业于哈尔滨工业大学，曾就职于新科以仁，负责多款激光类产品的设计开发以及相应软件研发工作。

Graduated from Harbin Institute of Technology and worked in Beijing Xinke Yiren Technology Development Co., Ltd. During his tenure, he was responsible for the design and development of various laser products and corresponding software development.



首席科学家  
金元浩 / Jin Yuanhao

清华大学博士，曾就职于清华-富士康纳米科技中心，负责激光光电子产品研发工作。

Graduated from Tsinghua University with a Ph.D. degree. He once worked in Tsinghua Foxconn nanotechnology center and was responsible for the research and development of laser optoelectronic products.



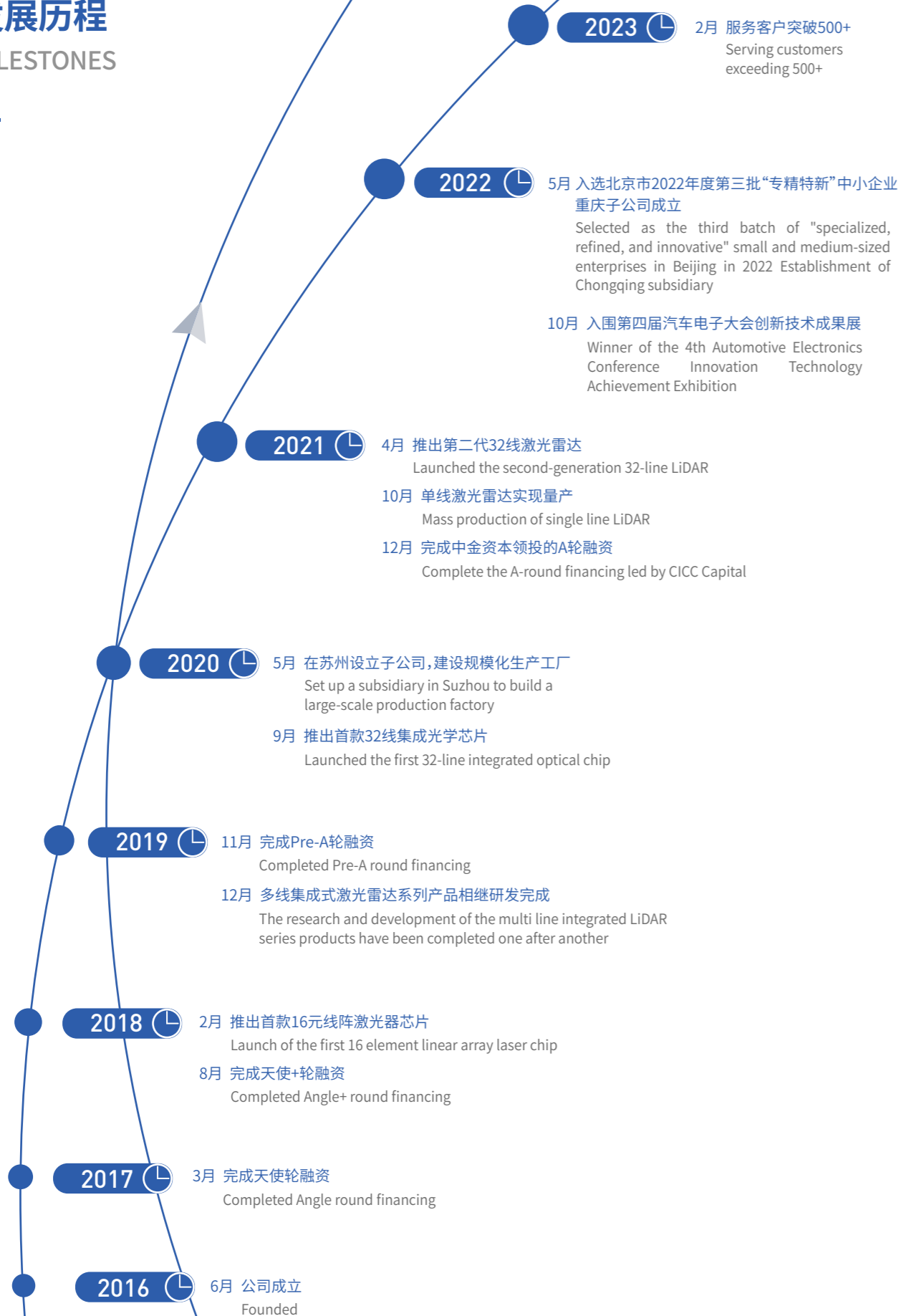
生产副总  
寇银波 / Kou Yinbo

曾就职于北京新科以仁科技发展有限公司，负责多项激光类产品设计开发及生产管理工作经验。具备10余年精密仪器规模化生产管理经验，获得多项发明专利和实用新型及外观专利。

worked in Beijing Xinke Yiren Technology Development Co., Ltd. Responsible for the design, development, and production management of multiple laser products. With over 10 years of experience in large-scale production management of precision instruments, I have obtained multiple invention patents, utility models, and appearance patents.

# 发展历程

## MILESTONES



# 02

## 技术创新

锐驰智光创始团队深耕激光雷达行业近20年，坚持自主创新，相继推出多项业内领先的激光雷达集成光学芯片技术。

The founding team of Richbeam has been deeply engaged in the lidar industry for nearly 20 years. Adhering to independent innovation, Richbeam has successively launched a number of industry-leading LiDAR integrated optical chip technologies.

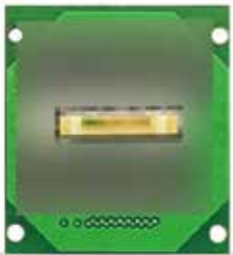
## TECHNICAL INNOVATION

## 32线集成光学芯片

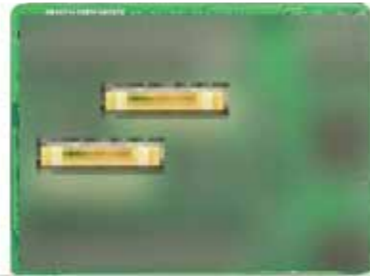
### 32-LINE INTEGRATED OPTICAL CHIP



一元硬币及32线集成光学发射芯片  
One yuan coin and 32-line integrated optical emitting chip



32线集成发射模组  
32-line integrated emitting module



64线集成发射模组  
64-line integrated emitting module



32线集成光学发射芯片  
32-line integrated optical emitting chip



集成光学接收芯片  
integrated optical receiving chip



32线集成接收模组  
32-line integrated receiving module



64线集成接收模组  
64-line integrated receiving module

## 激光雷达降本的关键在于:光学芯片的集成

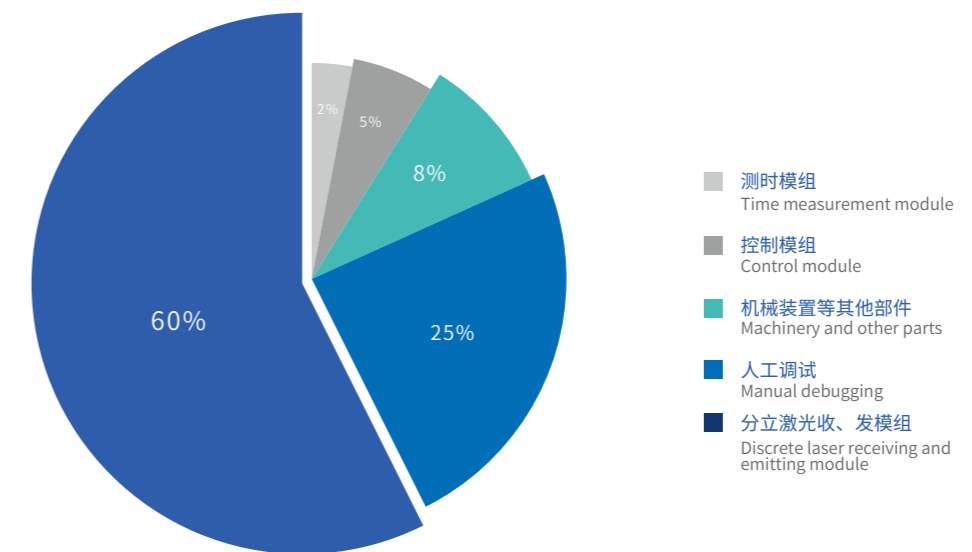
### THE KEY TO REDUCING THE COST OF LIDAR IS: THE INTEGRATION OF THE OPTICAL CHIPS

激光雷达本质上是由多种部件构成的复杂光机电系统，其中，基于光学芯片的激光发射模组和接收模组要占到整机成本的60%以上，光学芯片层面的集成芯片不仅可以替代分立式芯片，提升性能，同时可改变生产工艺，让生产过程极大的去人工化，从而减少器件和用工成本。所以，激光雷达降本的关键在于对光学芯片的集成。

LiDAR is essentially a complex opto-electromechanical system composed of a variety of components. Among them, the laser emitting module and receiving module based on the optical chip account for more than 60% of the cost of the whole machine. The integration chip of the optical chip level can not only replace the discrete chip and improve the performance, but also can change the production process, making the production process greatly demanualized, thereby reducing the device and labor costs. Therefore, the key to reducing the cost of LiDAR lies in the integration of optical chips.

## 传统分立式激光雷达成本分布

### COST DISTRIBUTION OF TRADITIONAL DISCRETE LIDAR



由公开数据整理而成  
Compiled from public data

# 03

## 产品介绍

锐驰智光基于近20年的顶尖院校科研经验，已研发16元、32元集成光学芯片，由此核心技术不断创新，研发了多款产品，产品可广泛应用于自动驾驶、智慧交通、机器人、工业自动化、智能家居等领域。

Based on nearly 20 years of research experience in top universities, Richbeam has developed 16 yuan and 32 yuan integrated optical chips. Through continuous innovation in core technology, it has developed multiple products that can be widely used in fields such as autonomous driving, intelligent transportation, robotics, industrial automation, and smart home.

## PRODUCT INTRODUCTION



## METABEAM 64

64线集成式激光雷达，搭载自研32元集成光学芯片，15W超低功耗

64-channel integrated LiDAR, with self-developed 32 unit integrated optical chip, has 15W ultra low power consumption

### 产品应用场景 Application scenarios

- 轮式、履带、足式、轮足、无人机等广义机器人**  
 Generalized robots such as wheeled, tracked, footed, wheeled, unmanned aerial vehicle, etc.
- 无人矿卡、无人小巴、无人配送等中速场景**  
 Medium-speed scenarios such as unmanned mining cards, unmanned minibuses, and unmanned delivery
- 车路协同、智能工厂等静止场景**  
 Static scenes such as V2R (Vehicle-to-Road) and Intelligent factory
- 客车、货车等商用车场景**  
 Commercial vehicle scenes such as passenger cars and trucks

### 核心参数 Core parameter

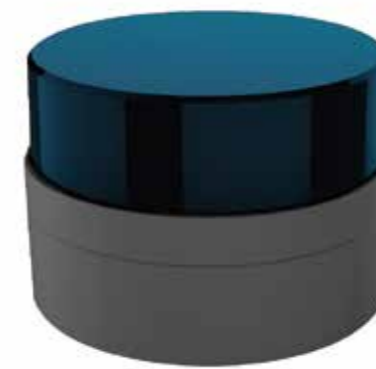
传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	测量精度 Range Accuracy	±5cm(0-1m); ±2cm(1-200m) ±5cm(0-1m); ±2cm(1-200m)
线数 Lines	64线 64-line	垂直视场角 Vertical FOV	31.5°(-15.75°~+15.75°) 31.5°(-15.75°~+15.75°)
水平视场角 Horizontal FOV	360° 360°	垂直角分辨率 Vertical Resolution	0.5° 0.5°
探测距离 Range	0-120m(10%); 0-260m(80%) 0-120m(10%); 0-260m(80%)	回波模式 Returns	单回波; 双回波 Single Return; Double Returns
旋转频率 Rotation Rate	10Hz; 20Hz 10Hz; 20Hz	水平分辨率 Horizontal Resolution	0.1° (10Hz); 0.2° (20Hz) 0.1° (10Hz); 0.2° (20Hz)
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	时间同步 Time Synchronization	\$GPRMC with 1 PPS \$GPRMC with 1 PPS
PTP 同步精度 PTP Clock Accuracy	≤1us ≤1us	PTP 断开偏移 PTP Clock Drift	≤1us/s ≤1us/s
数据输出格式 Data Output	UDP 数据包(包含角度、距离、反射率、同步的时间标签) UDP: azimuth angle, distance, intensity, synchronized time stamp	点频 Date Points	单回波: 480,000 点/秒 双回波: 3,456,000 点/秒 Single Return: 480,000 points/sec Double Returns: 3,456,000 points/sec
物理参数 Physical Parameters			
波长 Wavelength	905nm 905nm	尺寸 Dimension	高65mm, 直径106mm H65mm * φ106mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP67 IP67
存储温度 Storage Temperature	-40°C~85°C -40°C~85°C	工作电压 Operating Voltage	9~36V 9~36V
重量 Weight	700g 700g	功耗 Power Consumption	15W 15W



## METABEAM 32

32线集成式激光雷达，稳定性高，单回波点频最高可达480,000点/秒

32-line integrated LiDAR, high stability, single return data points up to 480,000 points/sec



## METABEAM 16S

16线集成式激光雷达，超小体积、超轻质量、稳定性高、性价比之王

16 line integrated LiDAR, Ultra small size, ultra light weight, high stability, and High Quality-price Ratio

### 产品应用场景 Application scenarios

- 轮式、履带、足式、轮足、无人机等广义机器人  
Generalized robots such as wheeled, tracked, footed, wheeled, unmanned aerial vehicle, etc.
- 无人矿卡、无人小巴、无人配送等中速场景  
Medium-speed scenarios such as unmanned mining cards, unmanned minibuses, and unmanned delivery
- 车路协同、智能工厂等静止场景  
Static scenes such as V2R( Vehicle-to-Road) and Intelligent factory
- 客车、货车等商用车场景  
Commercial vehicle scenes such as passenger cars and trucks

### 核心参数 Core parameter

传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	测量精度 Range Accuracy	±5cm(0.05-1m); ±2cm(1-120m) ±5cm(0.05-1m); ±2cm(1-120m)
线数 Lines	32线 32-line	垂直视场角 Vertical FOV	31°(-16°~+15°) 31°(-16°~+15°)
水平视场角 Horizontal FOV	360° 360°	垂直角分辨率 Vertical Resolution	1° 1°
探测距离 Range	80m(10%); 120m(80%) 80m(10%); 120m(80%)	回波模式 Returns	单回波 Single Return
旋转频率 Rotation Rate	10Hz;20Hz 10Hz;20Hz	水平分辨率 Horizontal Resolution	0.24° 10Hz; 0.48° 20Hz 0.24° 10Hz; 0.48° 20Hz
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	时间同步 Time Synchronization	\$GPRMC with 1 PPS \$GPRMC with 1 PPS
PTP 同步精度 PTP Clock Accuracy	≤1us ≤1us	PTP 断开偏移 PTP Clock Drift	≤1us/s ≤1us/s
数据输出格式 Data Output	UDP数据包(包含角度、距离、反射率、同步的时间标签) UDP: azimuth angle, distance, intensity, synchronized time stamp	点频 Date Points	单回波:480,000点/秒 Single Return: 480,000points/sec
物理参数 Physical Parameters			
波长 Wavelength	905nm 905nm	尺寸 Dimension	高65mm, 直径106mm H65mm*φ106mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP67 IP67
存储温度 Storage Temperature	-40°C~85°C -40°C~85°C	工作电压 Operating Voltage	12~24V 12~24V
重量 Weight	700g 700g	功耗 Power Consumption	8W 8W

### 产品应用场景 Application scenarios

- 清洁、巡检、安防等室内外商用机器人  
Cleaning, inspection, security and other indoor and outdoor commercial robot scenarios
- 无人小巴、物流配送、矿山卡车等商用车  
Unmanned minibuses, logistics distribution, mining trucks, and other commercial vehicles

### 核心参数 Core parameter

传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	测量精度 Range Accuracy	±2cm ±2cm
线数 Lines	16线 16线	垂直视场角 Vertical FOV	31°(-16°~+15°) 31°(-16°~+15°)
水平视场角 Horizontal FOV	360° 360°	垂直角分辨率 Vertical Resolution	2° 2°
探测距离 Range	80m(70%);40m(10%) 80m(70%);40m(10%)	扫描频率 Scan Frequency	5Hz;10Hz;15Hz;20Hz 5Hz;10Hz;15Hz;20Hz
水平分辨率 Horizontal Resolution	0.1° (5Hz);0.2° (10Hz);0.3° (15Hz);0.4° (20Hz) 0.1° (5Hz);0.2° (10Hz);0.3° (15Hz);0.4° (20Hz)		
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	时间同步 Time Synchronization	\$GPRMC with 1 PPS \$GPRMC with 1 PPS
PTP 同步精度 PTP Clock Accuracy	≤1us ≤1us	PTP 断开偏移 PTP Clock Drift	≤1us/s ≤1us/s
数据输出格式 Data Output	UDP数据包(包含角度、距离、反射率、同步的时间标签) UDP: azimuth angle, distance, intensity, synchronized time stamp	点频 Date Points	单回波:288,000点/秒 Single Return: 288,000 points/sec
物理参数 Physical Parameters			
波长 Wavelength	905nm 905nm	尺寸 Dimension	高50mm, 直径75mm H50mm*φ75mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP67 IP67
存储温度 Storage Temperature	-40°C~85°C -40°C~85°C	工作电压 Operating Voltage	12~24V 12~24V
功耗 Power Consumption	5W 5W		





## LAKIBEAM 1

工业级二维激光雷达，超小体积、超轻质量、零盲区、性价比之王  
 Industry-grade 2D LiDAR, Small Size, Light Weight, Zero Blind Spot, High Quality-price Ratio



## LAKIBEAM 1L

工业级二维激光雷达，超小体积、超轻质量、零盲区、性价比之王  
 Industry-grade 2D LiDAR, Small Size, Light Weight, Zero Blind Spot, High Quality-price Ratio

### 产品应用场景 Application scenarios

- 工业自动化、港口自动化等自动化领域  
Automation fields such as industrial automation, port automation and so on
- 室外机器人的斜激光  
Outdoor robots
- 室内机器人的主激光  
Main laser for indoor robots
- 可用于建图和AGV避障  
It can be used for mapping and AGV obstacle avoidance

### 核心参数 Core parameter

传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	水平角分辨率 Horizontal Resolution	0.1°; 0.25°; 0.25°; 0.25° 0.1°; 0.25°; 0.25°; 0.25°
测距原理 Range Principle	脉冲TOF TOF	水平视场角 Horizontal FOV	270° 270°
探测距离 Range	≥25m@70%反射率 ≥15m@10%反射率 ≥25m@70%reflectivity ≥15m@10%reflectivity	数据采样率 Data Sample Rate	36KHz; 28.8KHz 36KHz; 43.2KHz 36kHz; 28.8kHz 36kHz; 43.2kHz
旋转频率 Rotating Frequency	10Hz; 20Hz; 25Hz; 30Hz 10Hz; 20Hz; 25Hz; 30Hz	测量精度 Range Accuracy	±2cm ±2cm
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	数据输出格式 Data Output Format	UDP/USB UDP/USB
时间来源 Time Source	内部时间戳 Internal Timestamp	数据输出 Data Output	距离、角度、回波强度、时间 Distance, Angle, Echo Intensity, Time
物理参数 Physical Parameters			
波长 Wavelength	940nm 940nm	尺寸 Dimension	长60mm, 宽60mm, 高80mm 60mm*60mm*80mm(D*W*H)
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP65 IP65
存储温度 Storage Temperature	-40°C~75°C -40°C~75°C	工作电压 Operating Voltage	9~36V 9~36V
重量 Weight	160g 160g	功耗 Power Consumption	≤2W ≤2W

### 产品应用场景 Application scenarios

- 工业自动化、港口自动化等自动化领域  
Automation fields such as industrial automation, port automation and so on
- 室外机器人的斜激光  
Outdoor robots
- 室内机器人的主激光  
Main laser for indoor robots
- 可用于建图和AGV避障  
It can be used for mapping and AGV obstacle avoidance

### 核心参数 Core parameter

传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	水平角分辨率 Horizontal Resolution	0.1°; 0.25°; 0.25°; 0.25° 0.1°; 0.25°; 0.25°; 0.25°
测距原理 Range Principle	脉冲TOF TOF	水平视场角 Horizontal FOV	270° 270°
探测距离 Range	≥40m@70%反射率 ≥20m@10%反射率 ≥40m@70%reflectivity ≥20m@10%reflectivity	数据采样率 Data Sample Rate	43.2kHz 43.2kHz
旋转频率 Rotating Frequency	10Hz; 20Hz; 25Hz; 30Hz 10Hz; 20Hz; 25Hz; 30Hz	测量精度 Range Accuracy	±2cm ±2cm
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	数据输出格式 Data Output Format	UDP/USB UDP/USB
时间来源 Time Source	内部时间戳 Internal Timestamp	数据输出 Data Output	距离、角度、回波强度、时间 Distance, Angle, Echo Intensity, Time
物理参数 Physical Parameters			
波长 Wavelength	940nm 940nm	尺寸 Dimension	长60mm, 宽60mm, 高80mm 60mm*60mm*80mm(D*W*H)
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP65 IP65
存储温度 Storage Temperature	-40°C~75°C -40°C~75°C	工作电压 Operating Voltage	9~36V 9~36V
重量 Weight	160g 160g	功耗 Power Consumption	≤2W ≤2W



## LAKIBEAM 1S

TOF工业级单线激光雷达，超小体积、VCSEL激光器  
ToF industry-grade single 2D LiDAR, Ultra-small volume, VCSEL laser

### 产品应用场景 Application scenarios

- 工业自动化、港口自动化等自动化领域  
Automation fields such as industrial automation, port automation and so on
- 室外机器人的斜激光  
Outdoor robots
- 室内机器人的主激光  
Main laser for indoor robots
- 可用于建图和AGV避障  
It can be used for mapping and AGV obstacle avoidance

### 核心参数 Core parameter

传感器 Sensor			
激光安全等级 Laser Class	Class1 人眼安全 Class 1 Eye Safe	水平角分辨率 Horizontal Resolution	0.2°; 0.5° 0.2°; 0.5°
测距原理 Range Principle	脉冲TOF TOF	水平视场角 Horizontal FOV	270° 270°
探测距离 Range	≥15m@70%反射率 ≥10m@10%反射率 ≥15m@70%reflectivity ≥10m@10%reflectivity	数据采样率 Data Sample Rate	18kHz(10Hz); 14.4kHz(20Hz) 18kHz(10Hz); 14.4kHz(20Hz)
旋转频率 Rotating Frequency	10Hz; 20Hz 10Hz; 20Hz	测量精度 Range Accuracy	±2cm ±2cm
数据输出 Output			
数据传输方式 Data Transmission	UDP/IP(千兆以太网) UDP/IP Ethernet (100 Mbps)	数据输出格式 Data Output Format	RJ45/USB RJ45/USB
时间来源 Time Source	内部时间戳 Internal Timestamp	数据输出 Data Output	距离、角度、回波强度、时间 Distance, Angle, Echo Intensity, Time
物理参数 Physical Parameters			
波长 Wavelength	940nm 940nm	尺寸 Dimension	长60mm, 宽60mm, 高80mm 60mm*60mm*80mm(D*W*H)
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP65 IP65
存储温度 Storage Temperature	-40°C~75°C -40°C~75°C	工作电压 Operating Voltage	6~36V 6~36V
重量 Weight	160g 160g	功耗 Power Consumption	≤2.5W ≤2.5W



## LORABEAM 1

工业级导航激光雷达，测量点频高达45kHz,性价比极高  
Industrial grade navigation LiDAR, Measurement point frequency up to 45kHz, with extremely high cost-effectiveness

### 产品应用场景 Application scenarios

- 商业机器人：送餐、接待、清洁机器人等  
Commercial robots: Delivery, reception, cleaning robots, etc
- 静止场景：周界安防、多媒体互动、安全光幕、ETC等  
Still scene: Perimeter security, multimedia interaction, security light curtain, ETC, etc
- 工业机器人：AGV/AMR, 托运小车等  
Industrial robots: AGV/AMR, shipping carts, etc
- 测绘：无人机测绘、手持测绘等  
Survey and draw: Drone surveying, handheld surveying, etc

### 核心参数 Core parameter

传感器 Sensor			
测量精度 Range Accuracy	±2cm ±2cm	角分辨率 Angular Resolution	0.08°, 0.12°, 0.16°, 0.2°, 0.24° 0.08°, 0.12°, 0.16°, 0.2°, 0.24°
扫描频率 Scan Frequency	10~30Hz 10~30Hz	扫描范围 Scan Range	270° 270°
探测距离 Range	≥50m@90%反射率 ≥20m@10%反射率 ≥50m@90%reflectivity ≥20m@10%reflectivity	测量点频 Point Frequency	45kHz 45kHz
数据输出 Output			
数据接口 Data Interface	以太网 (TCP/UDP, 可供用户自由配置) Ethernet (TCP/UDP, freely configurable by users)		
物理参数 Physical Parameters			
功耗 Power Consumption	≤2W ≤2W	尺寸 Dimension	55*55*51mm 55*55*51mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP66 IP66
供电 Power Supply	9V~36V 9V~36V	抗环境光 Resistance to ambient light	100000Lux 100000Lux
重量 Weight	200g 200g		



## LORABEAM 1H

高速型工业级导航激光雷达,扫描频率最高可达60Hz  
High speed industrial grade navigation LiDAR, Scanning frequency up to 60Hz

### 产品应用场景 Application scenarios

- 商业机器人: 送餐、接待、清洁机器人等  
Commercial robots: Delivery, reception, cleaning robots, etc
- 工业机器人: AGV/AMR, 托运小车等  
Industrial robots: AGV/AMR, shipping carts, etc
- 静止场景: 周界安防、多媒体互动、安全光幕、ETC等  
Still scene: Perimeter security, multimedia interaction, security light curtain, ETC, etc
- 测绘: 无人机测绘、手持测绘等  
Survey and draw: Drone surveying, handheld surveying, etc

### 核心参数 Core parameter

传感器 Sensor			
测量精度 Range Accuracy	±2cm	角分辨率 Angular Resolution	0.32°, 0.4°, 0.48° 0.32°, 0.4°, 0.48°
扫描频率 Scan Frequency	40~60Hz	扫描范围 Scan Range	270° 270°
探测距离 Range	≥50m@90%反射率 ≥20m@10%反射率 ≥50m@90%reflectivity ≥20m@10%reflectivity	测量点频 Point Frequency	45kHz 45kHz
数据输出 Output			
数据接口 Data Interface	以太网 (TCP/UDP,可供用户自由配置) Ethernet (TCP/UDP, freely configurable by users)		
物理参数 Physical Parameters			
功耗 Power Consumption	≤2W	尺寸 Dimension	55*55*51mm 55*55*51mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP66 IP66
供电 Power Supply	9V~36V 9V~36V	抗环境光 Resistance to ambient light	100000Lux 100000Lux
重量 Weight	200g 200g		



## LORABEAM 1S

经济型工业级导航激光雷达,探测距离可达25m  
Economical industrial grade navigation LiDAR, Detection distance up to 25m

### 产品应用场景 Application scenarios

- 商业机器人: 送餐、接待、清洁机器人等  
Commercial robots: Delivery, reception, cleaning robots, etc
- 工业机器人: AGV/AMR, 托运小车等  
Industrial robots: AGV/AMR, shipping carts, etc
- 静止场景: 周界安防、多媒体互动、安全光幕、ETC等  
Still scene: Perimeter security, multimedia interaction, security light curtain, ETC, etc
- 测绘: 无人机测绘、手持测绘等  
Survey and draw: Drone surveying, handheld surveying, etc

### 核心参数 Core parameter

传感器 Sensor			
测量精度 Range Accuracy	±2cm	角分辨率 Angular Resolution	0.24°, 0.36°, 0.48° 0.24°, 0.36°, 0.48°
扫描频率 Scan Frequency	10~20Hz	扫描范围 Scan Range	270° 270°
探测距离 Range	≥25m@90%反射率 ≥10m@10%反射率 ≥25m@90%reflectivity ≥10m@10%reflectivity	测量点频 Point Frequency	15kHz 15kHz
数据输出 Output			
数据接口 Data Interface	UART UART		
物理参数 Physical Parameters			
功耗 Power Consumption	≤2W	尺寸 Dimension	55*55*51mm 55*55*51mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP66 IP66
供电 Power Supply	9V~36V 9V~36V	抗环境光 Resistance to ambient light	100000Lux 100000Lux
重量 Weight	200g 200g		



## KORABEAM 1

经济型、工业级避障激光雷达，扫描频率最高可达30Hz

Economic and industrial level obstacle avoidance lidar,  
Scanning frequency up to 30Hz



## KORABEAM 1S

灵敏型工业级避障激光雷达，扫描频率最高可达30Hz

Sensitive industrial level obstacle avoidance lidar,  
Scanning frequency up to 30Hz

### 产品应用场景 Application scenarios

- 静止场景：道闸系统、周界安防、堆料测量等  
Still scene: Gate system, perimeter security, stacking measurement, etc
- 工业机器人：AGV/AMR，托运小车等  
Industrial robots: AGV/AMR, shipping carts, etc

### 核心参数 Core parameter

传感器 Sensor			
探测距离 Range	≥20m@70%反射率 ≥8m@10%反射率 ≥4m@2%反射率 ≥20m@70% reflectivity ≥8m@10% reflectivity ≥4m@2% reflectivity	角分辨率 Angular Resolution	0.16°, 0.24°, 0.32°, 0.4°, 0.48° 0.16°, 0.24°, 0.32°, 0.4°, 0.48°
测量点频 Point Frequency	22.5kHz 22.5kHz	测量精度 Range Accuracy	±2cm ±2cm
扫描范围 Scan Range	270° 270°	扫描频率 Scan Frequency	10~30Hz 10~30Hz
数据输出 Output			
数据协议 Data Protocol	RS485(Modbus协议可接PLC或直接输出点云) RS485 (Modbus protocol can be connected to PLC or directly output point cloud)		
开关量输出 Switching Output	4路NPN/PNP信号 (3个检测信号, 1个故障信号) 4 NPN/PNP signals (3 detection signals, 1 fault signal)		
数据接口 Data Interface	4输入通道, 4输出通道 4 input channels, 4 output channels	区域组 Regional Group	64个区域组 X 每组8个区域 64 regional groups x 8 regions per group
响应时间 Response Time	33ms (30Hz) 33ms (30Hz)	启动时间 Start Time	<15秒 <15s
检测输出延时 Detection output delay	0-1000ms 0-1000ms	检测保持延时 Detection Hold Delay	0-1000ms 0-1000ms
物理参数 Physical Parameters			
供电 Power Supply	9V~36V 9V~36V	尺寸 Dimension	55*55*51mm 55*55*51mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP66 IP66
抗环境光 Resistance to ambient light	100000Lux 100000Lux	功耗 Power Consumption	2.5W 2.5W
重量 Weight	220g 220g		

### 产品应用场景 Application scenarios

- 静止场景：道闸系统、周界安防、堆料测量等  
Still scene: Gate system, perimeter security, stacking measurement, etc
- 工业机器人：AGV/AMR，托运小车等  
Industrial robots: AGV/AMR, shipping carts, etc

### 核心参数 Core parameter

传感器 Sensor			
探测距离 Range	≥10m@70%反射率 ≥4m@10%反射率 ≥2m@2%反射率 ≥10m@70% reflectivity ≥4m@10% reflectivity ≥2m@2% reflectivity	角分辨率 Angular Resolution	0.16°, 0.24°, 0.32°, 0.4°, 0.48° 0.16°, 0.24°, 0.32°, 0.4°, 0.48°
测量点频 Point Frequency	22.5kHz 22.5kHz	测量精度 Range Accuracy	±2cm ±2cm
扫描范围 Scan Range	270° 270°	扫描频率 Scan Frequency	10~30Hz 10~30Hz
数据输出 Output			
数据协议 Data Protocol	RS485(Modbus协议可接PLC或直接输出点云) RS485 (Modbus protocol can be connected to PLC or directly output point cloud)		
开关量输出 Switching Output	4路NPN/PNP信号 (3个检测信号, 1个故障信号) 4 NPN/PNP signals (3 detection signals, 1 fault signal)		
数据接口 Data Interface	4输入通道, 4输出通道 4 input channels, 4 output channels	区域组 Regional Group	64个区域组 X 每组8个区域 64 regional groups x 8 regions per group
响应时间 Response Time	33ms (30Hz) 33ms (30Hz)	启动时间 Start Time	<15秒 <15s
检测输出延时 Detection output delay	0-1000ms 0-1000ms	检测保持延时 Detection Hold Delay	0-1000ms 0-1000ms
物理参数 Physical Parameters			
供电 Power Supply	9V~36V 9V~36V	尺寸 Dimension	55*55*51mm 55*55*51mm
工作温度 Operating Temperature	-25°C~60°C -25°C~60°C	防护等级 Environmental Protection	IP66 IP66
抗环境光 Resistance to ambient light	100000Lux 100000Lux	功耗 Power Consumption	2.5W 2.5W
重量 Weight	220g 220g		

# 04

## 生产研发

锐驰智光苏州子公司致力于激光雷达研发及生产，下设5个研究室，包括激光雷达测试实验室、激光器封装、精密光学组装洁净室以及快速成型实验室。锐驰智光苏州拥有4条生产线，生产线由专业的工艺工程师设计生产流程和操作检验规范。

The Suzhou subsidiary of Richbeam is committed to the R&D and production of laser radar, and has five research rooms, including the laser radar test laboratory, laser packaging, precision optical assembly clean room and Rapid prototyping laboratory. Richbeam Suzhou has 4 production lines, which are designed by professional process engineers for production processes and operational inspection standards.



## R&D

## 生产研发实力

### THE STRENGTH OF R&D



#### ■ 自主创新 Independent Innovation

我们建立了内部创新激励制度，设立创新创造奖项对于创新创造持积极鼓励态度。

We have established an internal innovation incentive system, set up innovation and creation awards, and actively encourage innovation and creation.

#### ■ 规范生产 Standard Production

专业的（光机电一体化）工艺工程师设计的生产流程和操作检验规范，精细化的科学管控落实到生产线的每一个质控点。

Professional (opto Mechatronics) process engineers design the production process and operation inspection specification, and implement the fine scientific management and control to every quality control point of the production line.

#### ■ 专业培训 Professional Training

我们对生产人员进行专业的上岗培训，定期考核作业能力，规范生产人员的专业素养，进一步保证产品质量。

We have professional training for production personnel, regular assessment of operation ability, standardize the professional quality of production personnel, and further ensure the quality of products.

#### ■ 出库标准 Delivery Standard

我们用专业的检测设备对每个出库产品进行严格检验，符合国家法律法规和强制性标准要求，为产品质量把关。

We use professional testing equipment for strict inspection of each product, in line with national laws and regulations and mandatory standards, for product quality control.

## 资质及软著专利

### CERTIFICATION & SOFTWARE COPYRIGHT

# 05

## 荣誉资质

锐驰智光现已布局专利100余项，其中发明专利40余项，获得多项布图设计登记证书。目前已服务数字绿土、新石器、行深智能、MOMENTA等500+企业。

Richbeam has now laid out over 100 patents, including more than 40 invention patents and obtained multiple layout design registration certificates. Currently, we have served over 500 enterprises such as Digital Green Earth, Neolithic, Xingshen Intelligence, and Momenta.

## HONOR





## 创新创造奖项

INNOVATION AWARD



## 投资价值奖

INVESTMENT VALUE AWARD

