RICHBEAM
DEDICATED TO LIDAR

锐驰智光 — 致力于激光雷达

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Software Copyrights 20+

100+ 专利布局
Patent Portfolios 100+

500+ 服务企业
Service Companies 500+

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.

投资背景
INVESTMENT BACKGROUND
—

TusSeed 启迪种子

翼丰投资

京信供销基金
JINGXIN GONGXIAO FUND

中金资本
CICC CAPITAL

马力创投

NAVIAR
納維資本

richbeam

清华大学
苏州汽车研究院
Tsinghua University
Suzhou Automotive Research Institute

mjh 满京华

泰有
TAIYOU

清控银杏
THG Ventures

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.

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.

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.
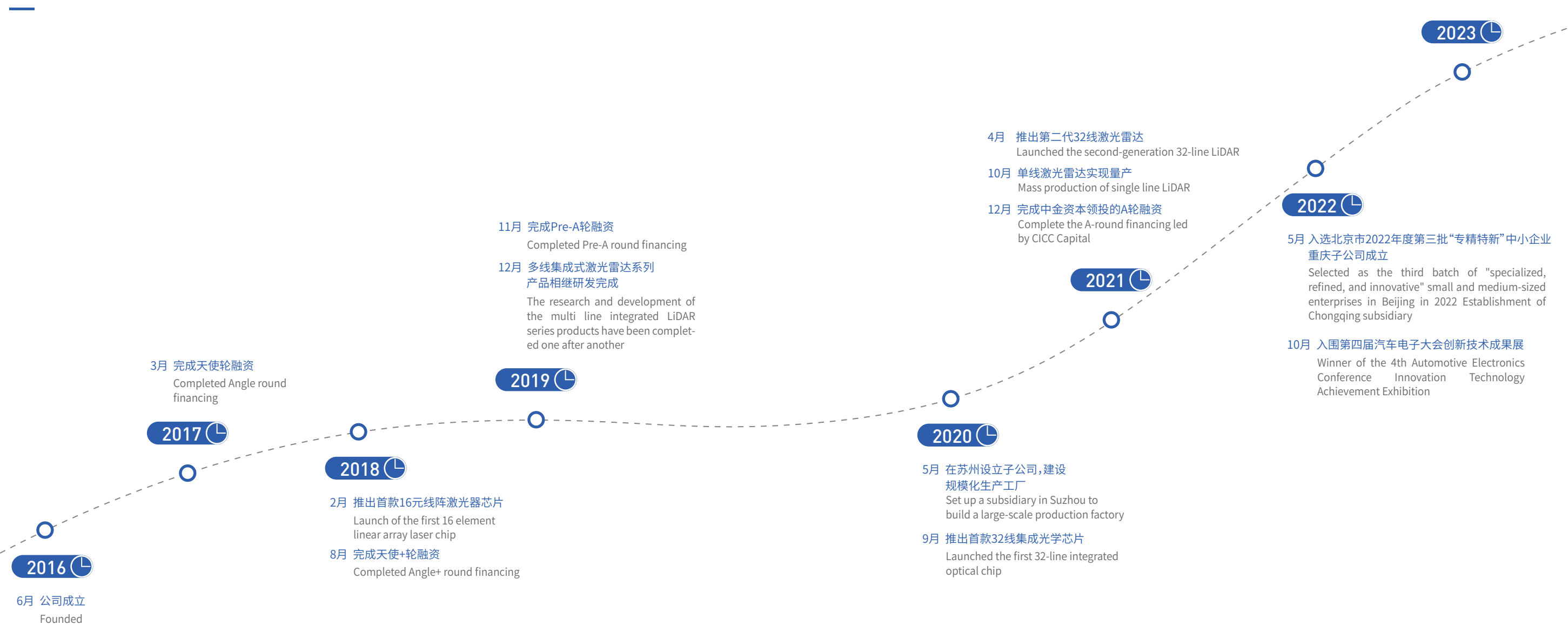
生产副总
寇银波 / Kou Yinbo

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。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

2月 服务客户突破500+
Serving customers exceeding 500+

7月 推出新一代工业级激光雷达系列产品
Launch of a new generation of industrial grade LiDAR series products

2023

4月 推出第二代32线激光雷达
Launched the second-generation 32-line LiDAR

10月 单线激光雷达实现量产
Mass production of single line LiDAR

12月 完成中金资本领投的A轮融资
Complete the A-round financing led by CICC Capital

2022

5月 入选北京市2022年度第三批"专精特新"中小企业重庆子公司成立
Selected as the third batch of "specialized, refined, and innovative" small and medium-sized enterprises in Beijing in 2022 Establishment of Chongqing subsidiary

10月 入围第四届汽车电子大会创新技术成果展
Winner of the 4th Automotive Electronics Conference Innovation Technology Achievement Exhibition

11月 完成Pre-A轮融资
Completed Pre-A round financing

12月 多线集成式激光雷达系列产品相继研发完成
The research and development of the multi line integrated LiDAR series products have been completed one after another

2021

3月 完成天使轮融资
Completed Angle round financing

2019

2017

2018

2月 推出首款16元线阵激光器芯片
Launch of the first 16 element linear array laser chip

8月 完成天使+轮融资
Completed Angle+ round financing

2020

5月 在苏州设立子公司,建设规模化生产工厂
Set up a subsidiary in Suzhou to build a large-scale production factory

9月 推出首款32线集成光学芯片
Launched the first 32-line integrated optical chip

2016

6月 公司成立
Founded

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 successfully launched a number of industry-leading LiDAR integrated optical chip technologies.
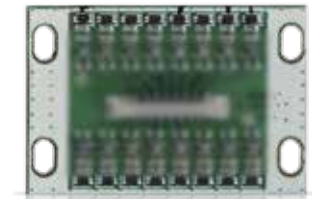
TECHNICAL INNOVATION

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

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

16线集成接收模组
16-line integrated receiving module

激光雷达降本的关键在于:光学芯片的集成

—

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

2%
5%
8%
60%
25%

■ 测时模组
Time measurement module

■ 控制模组
Control module

■ 机械装置等其他部件
Machinery and other parts

■ 人工调试
Manual debugging

■ 分立激光收、发模组
Discrete laser receiving and emitting module
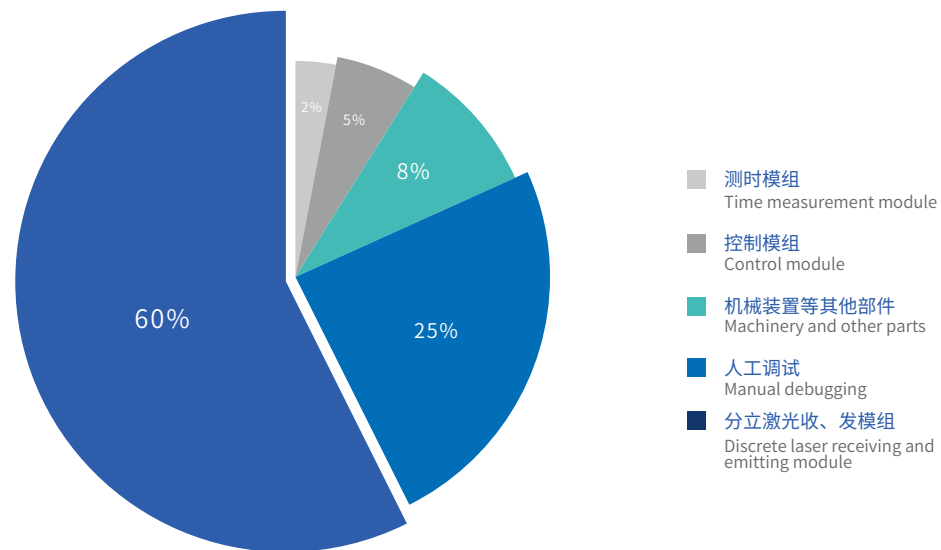
由公开数据整理而成
Compiled from public data

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系列

±2cm测量精度 ± 2cm Range Accuracy | 工业级 Industrial grade | 3D扫描 3D Scan

工业级多线激光雷达,最远260m探测距离

Industrial grade multi line LiDAR with a maximum detection distance of 260m

■ 产品简介 Product Introduction

MetaBeam系列产品是锐驰智光面向自动驾驶、AMR/AGV、中低速无人小车等场景研发的多线激光雷达。MetaBeam系列产品内置锐驰智光自主研发的集成光学芯片,成本更低,性能更高,具备重量轻、体积小的产品特性,拥有±2cm的测量精度,单回波点频最高可达480,000pts/s。

The MetaBeam series of products is a multi line LiDAR developed by Ruichi Zhiguang for scenarios such as autonomous driving, AMR/AGV, and medium to low speed unmanned cars. The MetaBeam series products are equipped with integrated optical chips independently developed by Ruichi Zhiguang, which have lower costs and higher performance. They have the characteristics of light weight and small size, with a measurement accuracy of ± 2cm, and a single echo point frequency of up to 480000pts/s.

■ 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

■ 功能亮点 Feature Highlights

最远260m探测距离
Detection distance up to 260m

防护等级IP67
Protection grade IP67

±2cm超高精度
± 2cm ultra high accuracy

扫描频率2档可调节
Scan frequency adjustable in 2nd gear

中国芯
Self-developed Chip

接近零盲区
Close to zero blind zone

■ 核心参数 Core parameters

产品型号 Model	MetaBeam16	MetaBeam32	MetaBeam64
线数 lines	16	32	64
探测距离 Range	≥120m(70%反射率) ≥80m(10%反射率) ≥120m(70%reflectivity) ≥80m(10%reflectivity)		≥260m(70%反射率) ≥120m(10%反射率) ≥260m(70%reflectivity) ≥120m(10%reflectivity)
测量精度 Range Accuracy	±5cm(0.05~1m) ±2cm(1~120m) ±5cm(0.05~1m) ±2cm(1~120m)		±5cm(0.05~1m) ±2cm(1~260m) ±5cm(0.05~1m) ±2cm(1~260m)
水平视场角 Horizontal FOV	360° 360°		
水平角分辨率 Horizontal Resolution	0.24°, 0.48° 0.24°, 0.48°		0.48°, 0.96° 0.48°, 0.96°
垂直视场角 Vertical FOV	30°(-16°~+14°) 30°(-16°~+14°)	31°(-16°~+15°) 31°(-16°~+15°)	31.5°(-15.75°~+15.75°) 31.5°(-15.75°~+15.75°)
垂直角分辨率 Vertical Resolution	2° 2°	1° 1°	0.5° 0.5°
扫描频率 Scan Frequency	10Hz, 20Hz 10Hz, 20Hz		
点频 Data Sample Rate	单回波:240,000pts/s 单回波: 240,000pts/s	单回波:480,000pts/s 单回波: 480,000pts/s	单回波:480,000pts/s 双回波:960,000pts/s 单回波: 480,000pts/s 双回波: 960,000pts/s
数据传输方式 Data Transmission	百兆以太网(UDP) Ethernet 100 Mbps (UDP)		
数据输出 Data Output	距离、角度、回波强度、时间戳 Distance, Angle, RSSI, Time Stamp		
时间同步 Time Synchronization	GPS/PTP GPS/PTP		
PTP同步准度 PTP Clock Accuracy	≤1μs ≤1μs		
PTP时钟漂移 PTP Clock Drift	≤1μs/s ≤1μs/s		
激光器安全等级 Laser Class	Class1人眼安全 Class 1 Eye Safe		
波长 Wavelength	905nm 905nm		
工作电压 Operating Voltage	9~36V 9~36V		
功耗 Power Consumption	8W 8W		15W 15W
工作温度 Operating Temperature	-25℃~60℃ -25℃~60℃		
存储温度 Storage Temperature	-40℃~85℃ -40℃~85℃		
防护等级 Environmental Protection	IP67 IP67		
尺寸 Dimension	直径65mm,高106mm Φ65mm*106mm		
重量 Weight	700g 700g		

METABEAM S系列

迷你型 MiNi | **±2cm测量精度** ± 2cm Range Accuracy | **3D扫描** 3D Scan

工业级多线激光雷达，扫描频率4档可调节

Industrial grade multi line LiDAR with adjustable scanning frequency of 4 gears

■ 产品简介　Product Introduction

MetaBeamS系列产品是锐驰智光面向自动驾驶、AMR/AGV、中低速无人小车等场景研发的迷你型多线激光雷达，重量仅450g，满足空天场景对激光雷达传感器的重量需求。MetaBeamS系列产品内置锐驰智光自主研发的集成光学芯片，成本更低，性能更高，扫描频率4档可调节，适配多场景应用。

MetaBeamS series of products is a mini multi line LiDAR developed by RichBeam for scenarios such as autonomous driving, AMR/AGV, and medium to low speed unmanned cars. The weight is only 450g, meeting the weight requirements of LiDAR sensors in aerospace scenarios. MetaBeamS series products are equipped with integrated optical chips independently developed by RichBeam, which have lower costs and higher performance. The scanning frequency can be adjusted in four gears, and it is suitable for multi scene applications.

■ 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

■ 功能亮点　Feature Highlights

450g超轻重量
450g ultra light weight

防护等级IP67
Protection grade IP67

±2cm超高精度
± 2cm ultra high accuracy

扫描频率4档可调节
Scan frequency adjustable in 4nd gear

中国芯
Self-developed Chip

接近零盲区
Close to zero blind zone

■ 核心参数　Core parameters

产品型号 Model	MetaBeam16S	MetaBeam32S
线数 lines	16	32
探测距离 Range	≥80m(70%反射率) ≥40m(10%反射率) ≥80m(70%reflectivity) ≥40m(10%reflectivity)	
测量精度 Range Accuracy	±5cm(0.05~1m) ±2cm(1~80m) ±5cm(0.05~1m) ±2cm(1~80m)	
水平视场角 Horizontal FOV	360° 360°	
水平角分辨率 Horizontal Resolution	0.08°、0.16°、0.24°、0.32° 0.08°、0.16°、0.24°、0.32°	
垂直视场角 Vertical FOV	30°(-16°~+14°) 30°(-16°~+14°)	31°(-16°~+15°) 31°(-16°~+15°)
垂直角分辨率 Vertical Resolution	2° 2°	1° 1°
扫描频率 Scan Frequency	5Hz、10Hz、15Hz、20Hz 5Hz、10Hz、15Hz、20Hz	
点频 Data Sample Rate	单回波：360,000pts/s 单回波：360,000pts/s	单回波：720,000pts/s 单回波：720,000pts/s
数据传输方式 Data Transmission	百兆以太网(UDP) Ethernet 100 Mbps (UDP)	
数据输出 Data Output	距离、角度、回波强度、时间戳 Distance, Angle, RSSI, Time Stamp	
时间同步 Time Synchronization	GPS/PTP GPS/PTP	
PTP同步准度 PTP Clock Accuracy	≤1μs ≤1μs	
PTP时钟漂移 PTP Clock Drift	≤1μs/s ≤1μs/s	
激光器安全等级 Laser Class	Class1人眼安全 Class 1 Eye Safe	
波长 Wavelength	905nm 905nm	
工作电压 Operating Voltage	12~24V 12~24V	
功耗 Power Consumption	5W 5W	
工作温度 Operating Temperature	-25℃~60℃ -25℃~60℃	
存储温度 Storage Temperature	-40℃~85℃ -40℃~85℃	
防护等级 Environmental Protection	IP67 IP67	
尺寸 Dimension	直径50mm，高75mm Φ50mm*75mm	
重量 Weight	450g 450g	

LAKIBEAM系列

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

■ 产品简介　Product Introduction

LakiBeam系列是锐驰智光面向中低速场景研发的单线激光雷达产品,工业设计精巧紧凑,使得产品体积小、重量轻、性能高,支持超高频采样和角分辨率可选择,探测距离内实现零盲区。可用于工业自动化、港口自动化等自动化领域。

LakiBeam series is a single-line LiDAR developed by Richbeam for medium and low-speed scenarios. The industrial design is exquisite and compact, making the product small in size, light in weight, and high in performance. It supports ultra-high frequency sampling and optional angular resolution, and achieves zero blind spot within the detection range.It can be used in industrial automation, port automation.

■ 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

■ 功能亮点　Feature Highlights

光斑极小	探测距离远	工业级设计
Tiny light spot	Long detection distance	Industrial grade design

■ 核心参数　Core parameters

产品型号 Model	LakiBeam1	LakiBeam1L	LakiBeam1S
探测距离 Range	≥25m(70%反射率) ≥15m(10%反射率) ≥25m(70%reflectivity) ≥15m(10%reflectivity)	≥40m(70%反射率) ≥20m(10%反射率) ≥40m(70%reflectivity) ≥20m(10%reflectivity)	≥15m(70%反射率) ≥10m(10%反射率) ≥15m(70%reflectivity) ≥10m(10%reflectivity)
扫描原理 Scanning Principle	转镜式机械旋转 Rotating mirror mechanical rotation		
测距原理 Range Principle	脉冲飞行时间法 dTOF		
测量精度 Range Accuracy	±2cm ±2cm		
水平视场角 Horizontal FOV	270° 270°		
水平角分辨率 Horizontal Resolution	0.1°, 0.25°, 0.25°, 0.25° 0.1°, 0.25°, 0.25°, 0.25°		0.2°, 0.5° 0.2°, 0.5°
扫描频率 Scan Frequency	10Hz, 20Hz, 25Hz, 30Hz 10Hz, 20Hz, 25Hz, 30Hz		10Hz, 20Hz 10Hz, 20Hz
点频 Data Sample Rate	36KHz, 28.8KHz, 36KHz, 43.2KHz 36KHz, 28.8KHz, 36KHz, 43.2KHz	43.2KHz 43.2KHz	18KHz, 14.4KHz 18KHz, 14.4KHz
数据传输方式 Data Transmission	百兆以太网(UDP) Ethernet 100 Mbps (UDP)		
数据输出 Data Output	距离、角度、回波强度、时间戳 Distance, Angle, RSSI, Time Stamp		
激光器安全等级 Laser Class	Class1人眼安全 Class 1 Eye Safe		
波长 Wavelength	940nm 940nm		
工作电压 Operating Voltage	9~36V 9~36V		
功耗 Power Consumption	≤2W ≤2W		
抗环境光 Resistance to Ambient Light	100000Lux 100000Lux		
工作温度 Operating Temperature	-25℃~60℃ -25℃~60℃		
存储温度 Storage Temperature	-40℃~75℃ -40℃~75℃		
防护等级 Environmental Protection	IP65 IP65		
尺寸 Dimension	长60mm,宽60mm,高80mm 60mm*60mm*80mm(D*W*H)		
重量 Weight	160g 160g		

LORABEAM系列

导航 Navigation　工业级 Industrial grade　数据扫描 Data scanning

工业级二维导航激光雷达，性价比极高

Industry-grade 2D obstacle navigation lidar, High Quality-price Ratio

产品简介　Product Introduction

LoraBeam系列是锐驰智光自主研发的工业级单线导航激光雷达,主要应用于工业AGV、室内外机器人等中低速自动驾驶场景,以及测绘、智慧港口、智慧矿山、周界安防等静止场景。

LoraBeam series is an industrial grade single line navigation laser radar independently developed by RichBeam, which is mainly used in industrial AGV, indoor and outdoor robots and other low and medium speed automatic driving scenes, as well as static scenes such as surveying and mapping, Smart port, smart mine and perimeter security.

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

功能亮点　Feature Highlights

| 六边形性能参数配置 | 防护等级IP67 | 可靠性、一致性更高 |
| Hexagon performance parameter configuration | Protection grade IP67 | Higher reliability and consistency |

| 角分辨率可调节 | 探测距离远 | 体积小巧重量轻 |
| Angular resolution adjustable | Long detection distance | Small size and light weight |

核心参数　Core parameters

产品型号 Model	LoraBeam1	LoraBeam1H	LoraBeam1S
探测距离 Range	≥50m(90%反射率) ≥20m(10%反射率) ≥50m(90%reflectivity) ≥20m(10%reflectivity)		≥25m(90%反射率) ≥10m(10%反射率) ≥25m(90%reflectivity) ≥10m(10%reflectivity)
扫描原理 Scanning Principle	转镜式机械旋转 Rotating mirror mechanical rotation		
测距原理 Range Principle	脉冲飞行时间法 dTOF		
测量精度 Range Accuracy	±2cm ±2cm		
水平视场角 Horizontal FOV	270° 270°		
水平角分辨率 Horizontal Resolution	0.08°、0.12°、0.16°、0.2°、0.24° 0.08°、0.12°、0.16°、0.2°、0.24°	0.32°、0.4°、0.48° 0.32°、0.4°、0.48°	0.24°、0.36°、0.48° 0.24°、0.36°、0.48°
扫描频率 Scan Frequency	10Hz、15Hz、20Hz、25Hz、30Hz 10Hz、15Hz、20Hz、25Hz、30Hz	40Hz、50Hz、60Hz 40Hz、50Hz、60Hz	10Hz、15Hz、20Hz 10Hz、15Hz、20Hz
点频 Data Sample Rate	45kHz 45kHz		15kHz 15kHz
数据传输方式 Data Transmission	百兆以太网 (TCP/UDP,可供用户自由配置) Ethernet 100 Mbps (TCP/UDP, freely configurable by users)		UART UART
数据输出 Data Output	距离、角度、回波强度、时间戳 Distance, Angle, RSSI, Time Stamp		
激光器安全等级 Laser Class	Class1人眼安全 Class 1 Eye Safe		
波长 Wavelength	905nm 905nm		
工作电压 Operating Voltage	9~36V 9~36V		
功耗 Power Consumption	≤2W ≤2W		
抗环境光 Resistance to Ambient Light	100000Lux 100000Lux		
工作温度 Operating Temperature	-25℃~60℃ -25℃~60℃		
存储温度 Storage Temperature	-40℃~75℃ -40℃~75℃		
防护等级 Environmental Protection	IP67 IP67		
尺寸 Dimension	长55mm,宽55mm,高51mm 55mm*55mm*51mm(D*W*H)		
重量 Weight	85g 85g		

KORABEAM系列

避障 Obstacle avoidance　工业级 Industrial grade　区域监控 Area monitoring

工业级二维避障激光雷达，扫描频率最高可达30Hz

Industry-grade 2D obstacle avoidance lidar,Scanning frequency up to 30Hz

■ 产品简介　Product Introduction

KoraBeam系列是锐驰智光自主研发的工业级单线避障激光雷达，主要应用于工业AGV、室内外机器人等中低速自动驾驶场景，以及测绘、智慧港口、智慧矿山、周界安防等静止场景。

The KoraBeam series is an industrial grade single line obstacle avoidance laser radar independently developed by RichBeam, which is mainly used in industrial AGV, indoor and outdoor robots and other low-speed automatic driving scenes, as well as static scenes such as surveying and mapping, Smart port, smart mine, perimeter security and so on.

■ 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

■ 功能亮点　Feature Highlights

支持Modbus协议
Supports Modbus protocol

防护等级IP67
Protection grade IP67

可靠性、一致性更高
Higher reliability and consistency

角分辨率可调节
Angular resolution adjustable

探测距离远
Long detection distance

体积小巧重量轻
Small size and light weight

■ 核心参数　Core parameters

产品型号 Model	KoraBeam1	KoraBeam1S
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)	≥10m(70%反射率) ≥4m(10%反射率) ≥2m(2%反射率) ≥10m(70%reflectivity) ≥4m(10%reflectivity) ≥2m(2%reflectivity)
扫描原理 Scanning Principle	转镜式机械旋转 Rotating mirror mechanical rotation	
测距原理 Range Principle	脉冲飞行时间法 dTOF	
测量精度 Range Accuracy	±2cm ±2cm	
水平视场角 Horizontal FOV	270° 270°	
水平角分辨率 Horizontal Resolution	0.16°、0.24°、0.32°、0.4°、0.48° 0.16°、0.24°、0.32°、0.4°、0.48°	
扫描频率 Scan Frequency	10Hz、15Hz、20Hz、25Hz、30Hz 10Hz、15Hz、20Hz、25Hz、30Hz	
点频 Data Sample Rate	22.5KHz 22.5KHz	
数据传输方式 Data Transmission	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)	
输入输出通道数量 Digital Output Number	4输入通道,4输出通道 4 input channels, 4 output channels	
开关量输出 Digital 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)	
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 Time	0-1000ms 0-1000ms	
检测保持延时 Detection Holding Time	0-1000ms 0-1000ms	
区域组 Regional Group	16个区域组 x 每组4个区域 16 fields set x 4 fields per set	
激光器安全等级 Laser Class	Class1人眼安全 Class 1 Eye Safe	
波长 Wavelength	905nm 905nm	
工作电压 Operating Voltage	9~36V 9~36V	
功耗 Power Consumption	2.5W 2.5W	
工作温度 Operating Temperature	-25℃~60℃ -25℃~60℃	
存储温度 Storage Temperature	-40℃~75℃ -40℃~75℃	
抗环境光 Resistance to Ambient Light	100000Lux 100000Lux	
防护等级 Environmental Protection	IP67 IP67	
尺寸 Dimension	55*55*51mm 55*55*51mm	
重量 Weight	85g 85g	

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.

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

资质及软著专利
CERTIFICATION & SOFTWARE COPYRIGHT

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| 高新技术企业 | ISO9001:2015 质量管理体系认证 | 北京市 "专精特新" 企业 | 低速无人驾驶产业联盟 会员单位 | ROHS认证 | CE认证 |

·《车载激光雷达检测方法》起草单位　　·　汽车电子产业联盟会员单位　　·　苏州市机器人产业协会会员单位

创新创造奖项
INNOVATION AWARD

投资价值奖
INVESTMENT VALUE AWARD