AOI
光学自动检测
Automated Optical Inspection
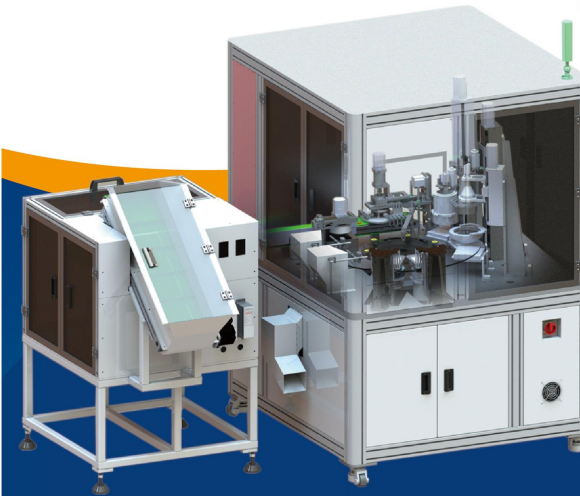
一键闪测仪
One-Touch Flash Tester
&
AOI检测标准机
AOI Standard Machine

将非标检测设备模块化/标准化
Modularization/Standardization of Custom Inspection Equipment

厦门博视源机器视觉技术有限公司
XIAMEN BOSHIYUAN MACHINE VISION TECHNOLOGY CO.,LTD

什么是AOI自动光学检测
What is Automated Optical Inspection?

当下生产制造业的质检环节中，如要配置自动化质检，AOI自动光学检测是较为常见的方式。尤其在精密电子配件领域更为盛行。

In today's manufacturing quality inspection processes, AOI (Automated Optical Inspection) is a widely adopted solution for configuring automated quality control. It is particularly prevalent in the field of precision electronic components.

AOI优势
Advantages of AOI:

高效快速，适合大批量生产
High Efficiency & Speed – Ideal for Mass Production

高速检测 High-speed inspection

24/7连续工作 24/7 continuous operation

高精度&一致性
High Precision & Consistency

微米级检测 Micron-level detection accuracy

无疲劳误差 No fatigue-related errors

早期缺陷预防，降低报废成本
Early Defect Prevention – Reduces Scrap Costs

实时反馈 Real-time feedback

数据可追溯 Traceable data records

灵活适应多种产品
Flexible Adaptation to Various Products

可编程调整 Programmable adjustments

3D AOI可测高度 3D AOI capable of height measurement

质检方式 Inspection Method	AOI优势 AOI Advantages
人工目检 Manual Visual Inspection	更快、更准、无疲劳，适合复杂元件 Faster, more accurate, fatigue-free operation; ideal for complex components
ICT (针床测试) In-Circuit Test	无需物理接触，可检测外观缺陷 (如焊锡、极性错误)，而 ICT 仅能测电气性能 Contactless inspection capable of detecting visual defects (e.g., soldering issues, polarity errors), while ICT only tests electrical functionality
功能测试 (FCT) Functional Test	AOI 能在组装早期发现问题，避免功能测试时的高成本返工 AOI can detect problems in the early stages of assembly, avoiding high cost rework during functional testing
X-ray 检测 X-ray Inspection	AOI 成本更低，且无需辐射防护，适合表面缺陷检测 AOI has lower costs and does not require radiation protection, making it suitable for surface defect detection

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关于我们 About us

走进智能自动化 Entering Intelligent Automation

厦门总部

无锡分公司

博视源是专业从事机器视觉系统**研发**、**集成**和服务的高新技术企业。我司自主研发并销售了**多相机一体智能模具监视器**、**多种视野的一键闪测仪**、**CCD算法通用平台**、**智能AOI全检标准机**、**医疗器械毛发异物检测非标机**、**晶圆半导体检测机**等机器视觉系统，致力于为制造型企业提供更智能更精准的机器视觉解决方案。

公司在细分领域模具监视系统目前已实现年销量**10000**台以上，销售和服务网络已覆盖国内**34**个省区，同时也在海外的**日本**、**西班牙**、**越南**、**泰国**、**印度**等国家逐步扩张中。我司在厦门、无锡均建有工厂，现在拥有全职代理商**30**家，合作经销商**50**家以上，售后服务同步覆盖，为客户设备维护提供了优质保障。

Boshiyuan is a high-tech enterprise specializing in the R&D, integration, and service of machine vision systems. We independently develop and sell a range of machine vision products, including:Multi-phase integrated intelligent mold monitors,One-click flash measuring instruments with various FOVs (fields of view),Universal CCD algorithm platforms,Intelligent AOI (Automated Optical Inspection) standard machines,Customized medical device hair/foreign object detection systems,Wafer/semiconductor inspection equipment,Committed to innovation, we provide manufacturing enterprises with smarter and more precise machine vision solutions.

Boshiyuan has established itself as a leader in the niche market of mold monitoring systems, with an annual sales volume exceeding 8,000 units.
Our sales and service network covers all 34 Chinese provinces and is expanding globally, including Japan, Spain, Vietnam, Thailand, and India. With factories in Xiamen and Wuxi, we have 30 authorized agents and 50+ distributors, supported by comprehensive after-sales service to ensure reliable equipment maintenance.

西班牙
日本
印度
泰国
越南

博视源重视技术自主创新，设立多个核心技术研发部，其核心成员多在2D/3D机器视觉、AI深度学习、精密机械控制、高精密光学等有足够的经验积累，拥有机器视觉领域相关经验8年以上，整体团队配置在同领域中处于行业中上水准。

Boshiyuan prioritizes independent technological innovation, with dedicated R&D divisions focusing on core technologies. Our key team members possess 8+ years of experience in critical fields such as:2D/3D machine vision,AI and deep learning,Precision motion control,High-accuracy optical systems,With this expertise, our cross-disciplinary team ranks among the upper tier of industry standards, ensuring cutting-edge solutions in machine vision.

博视源AOI检测设备

Boshiyuan AOI Equipment

生产线产品全检+自动化设备

Production Line Full Inspection + Automated Equipment

AOI智能全检系列设备
AOI Intelligent Full Inspection Series Equipment

● 案例:继电器外壳AOI检测机 Case Study: Relay Housing AOI Inspection Machine

● 其他案例 Other Case Studies

快速抽检设备
Rapid Sampling Inspection Equipment

● 拼接视野闪测仪 Stitched FOV Flash Tester

● 其他视野闪测仪 Other FOV Flash Testers

客户设备制作 Customer equipment manufacturing	=	收集需求 Collect Requirements	方案评估 Scheme evaluation	报价 Quotation	签署合同 Sign the contract	下单生产设备 Order production equipment

方案评估实力
Program evaluation strength

博视源基于市场上客户的检测需求，制作了多个评估工具，组装成多款集成工具设备，可对打光拍摄质量和效率进行实际演练，且该工具通用于市面上 90% 以上的产品视觉检测环境。通过质量与效率双维度的硬件评估与数据计算，即可得出实现度极高的方案评估结果。

Based on the testing needs of customers in the market, boshiyuan has made a number of evaluation tools and assembled three integrated tools and equipment, which can carry out practical exercises on the quality and efficiency of lighting and shooting, and the tools are universal in the marketMore than 90% of the product visual inspection environment. Through the hardware evaluation and data calculation of the two dimensions of quality and efficiency, the scheme evaluation results with high degree of realization can be obtained.

01 厦门总实验室 | Xiamen General Laboratory

02 无锡实验室 | Wuxi Laboratory

03 东莞实验室 | Dongguan Laboratory

04 宁波实验室 | Ningbo Laboratory

05 青岛实验室 | Qingdao Laboratory

在多个省份组建打光实验室，设备齐全，确保精准且高效评估

Establishing lighting laboratories in multiple provinces with complete equipment to ensure accurate and efficient evaluation

评估设备所含机构
Institutions included in the evaluation equipment

线扫相机机构
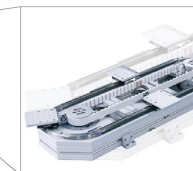### Line scan camera mechanism

2D线扫、3D线扫
2D line scan, 3D line scan

2D线扫:用于大体积产品检测的方案评估。
2D line scan: scheme evaluation for large volume product detection.

3D线扫:用于产品有高度、平整度、曲面度检测的方案评估。
3D line scan: it is used to evaluate the scheme of product height, flatness and camber detection.

(Accuracy)精度:3200points

环形检测机机构
Ring detector mechanism

检测效率:1s/圈
Detection efficiency: 1s / cycle
用于确定打光方案后的效率评估。
Used for efficiency evaluation after determining the lighting scheme.

可检测产品:150mm*150mm
Detectable products: 150mm * 150mm

滚轮检测机机构
Roller detector mechanism

可检测圆柱直径:5mm-60mm
Detectable cylinder diameter: 5mm-60mm 用于圆轴状物体外观检测评估，通常与线扫相机配合。
It is used for the appearance inspection and evaluation of circular and axial objects, and is usually matched with a line scan camera.

可检测产品:150mm*150mm
Detectable products: 150mm * 150mm
检测效率:调速盒-调速0-1400(T)/min
Detection efficiency: speed control box

光学测试台
Optical test bench

设备作用:
Quipment includes:
用于静态视觉方案测试
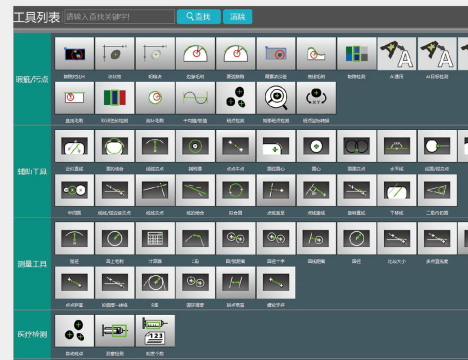Used for static vision scheme test

支持物料
Supporting materials
(L)长：1mm-1500mm
(W)宽：1mm-1500mm
(T)高：1mm-500mm

软件模块
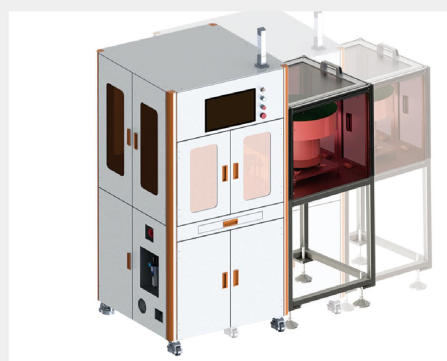### Software Module

尺寸测量丨精准定位丨异物检测丨输入
输出丨预处理丨外观缺陷检测

Size measurement丨precise positioning丨
foreign object detection丨input/output丨
preprocessing丨appearance defect detection

外形模块
Appearance module

上料区丨检测区丨下料区

Loading area | Testing area | Unloading area

提出四大模块概念
Propose the concept of four major modules
将非标设备标准化
Standardize non-standard equipment

推出AOI智能全检平台
Launching AOI Intelligent Full Inspection Platform

视觉模块
Vision Module

传统视觉:正面尺寸检测丨侧面尺寸检测丨上表
面外观缺陷检测丨下表面外观缺陷检测丨上侧
面外观缺陷检测丨下侧面外观缺陷检测
线扫相机模块:2D线扫丨3D线扫

Traditional Vision: Front Size Detection | Side Size
Detection | Upper Surface Appearance Defect Detection |
Lower Surface Appearance Defect Detection | Upper Side
Appearance Defect Detection | Lower Side Appearance
Defect Detection
Line scanning camera module: 2D line scanning | 3D line
scanning

上下料模块
Loading and unloadingmodule

柔性振动盘+PPU机械手

振动盘+直振盘

皮平带

Flexible vibration disk+PPU robotic arm

Vibration disk+straight vibration disk

Leather flat belt

软件模块 Software module ▶▶

市面上的非标设备使用系统多使用C-SHARP为客户独立开发的操作系统,而C-Sharp语言程序需运行在虚拟机上,所以主机性能无法完全释放,运行效率被限制;且功能封装,运行无法直达底层,运行效率进一步被限制;程序仅可适用于Win系统,且二次扩展硬件匹配度低,市面上可兼容的硬件少。

Non standard devices on the market often use operating systems independently developed by C-SHARP for customers, and C-Sharp language programs need to run on virtual machines, so host performance cannot be fully released, and running efficiency is limited; And the functionality is encapsulated, making it impossible to run directly to the underlying layer, further limiting the efficiency of operation; The program is only applicable to Win systems and has low hardware compatibility for secondary expansion, with few compatible hardware available on the market.

| 运行慢 Slow operation | 操作复杂 Complex operation | 兼容性差 Poor compatibility |

我们的软件则规避了这些缺点
Our software avoids these drawbacks

V21

功能强大 powerful function

280%↗
采用c++编译型语言,直达底层,运行效率至少提高280%
Using C++compiled language, directly reaching the bottom layer, improving running efficiency by at least 280%

采用一键测量仪的视觉检测程序,精度高
Visual inspection program using a one click measuring instrument with high accuracy

3D定位引导 3D positioning guidance
新增3D定位引导,支持机器手3D无序抓取
Added 3D positioning guidance, supporting 3D unordered grabbing by robotic hands

集成算法库 Integrated algorithm library
经过多年积累和市场验证.组建了专属算法库。视觉功能多样,有视觉需求无需再次开发,可直接调用
After years of accumulation and market validation, a dedicated algorithm library has been established.Visual functions are diverse, and there is no need for further development if there are visual needs, which can be directly called

连接稳定快速 High precision
新增柔性振动盘集成功能,视觉直通振动盘,连接更快更稳定
New flexible vibration disc integration function added, visually connecting to the vibration disc for faster and more stable connection

AI算法深度学习 AI algorithm deep learning
可匹配AI深度学习,通过模型不断训练,持续提高检测精度并降低误检率
Matchable AI deep learning, continuously training models to improve detection accuracy and reduce false detection rates

操作简便 easy to operate

品标定功能的运行逻辑简便且清晰,一键完成,调试更快
The operation logic of the product calibration function is simple and clear, completed with one click, and debugging is faster

将运动控制写入程序,自动化(如上料/删除)功能与视觉程序无需多系统连接,同一平台设置更稳定、通讯速度更快,工程切换更便捷
Write motion control into the program, and the automation (such as material removal) function and visual program do not require multiple system connections. The same platform settings are more stable, communication speed is faster, and engineering switching is more convenient

UI
匹配联网功能,工程师可远程售后调试和持续训练模型
Matching the networking function, engineers can remotely debug and continuously train the model

UI深度优化,人机交互更便捷,用户可自行设定与修改视觉检测工程
UI deep optimization for more convenient human-computer interaction, allowing users to set and modify visual inspection projects on their own

兼容性强 easy to operate

程序底层逻辑优化,支持标准通讯协议。基于C++语言的二次开发优势,主机系统与第三方硬件程序的兼容性更好
Optimize the underlying logic of the program and support standard communication protocols. The advantage of secondary development based on C++language is better compatibility between host systems and third-party hardware programs

使用Qt开发,可根据客户的需求和限制,轻松选择移植到安卓/win/嵌入式Linux等多种平台
Developed using Qt, users can easily choose to port to various platforms such as Android/Windows/embedded Linux based on their needs and limitations
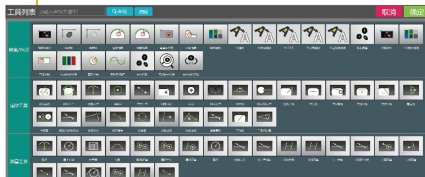

AI深度学习算法-模型训练
AI Deep Learning Algorithm - Model Training

可提升类目 Improvable Categories		AI深度学习训练模型 AI Deep Learning Training Models
缺陷检测 Defect Detection	精准度 Precision	通过大量数据训练,识别细微/复杂缺陷 Identifies subtle/complex defects via extensive data training
	适应性 Adaptability	自动适应光照/背景变化 Adapts to lighting/background changes automatically
尺寸测量 Dimension Measurement	灵活性 Measurement - Flexibility	训练后快速切换测量不同产品 Switches between measuring different products quickly after training
	精度稳定性 Accuracy Stability	不同角度/光照下保持高精度 Maintains high accuracy under various angles/lighting
产品分类与识别 Product Classification	复杂特征识别 Complex Feature Recognition	学习多维度特征,精准区分相似产品 Learns multi - dimensional features for accurate similar - product recognition
	学习更新 Learning & Updating	通过数据更新学习新产品特征 Updates new product features via data iteration
异常检测与预警 Anomaly Detection	数据挖掘 Data Mining	处理海量数据,发现隐藏异常模式 Processes massive data to identify hidden anomalies
	智能化 Intelligence	自动学习异常判断逻辑 Auto - learns anomaly judgment logic
数据驱动的优化 Data - Driven Optimization	深度分析 Deep Analysis	深度分析多源数据,挖掘非线性关联 Deeply analyzes multi - source data to uncover non - linear correlations
	优化策略 Strategy Generation	直接生成参数优化策略 Generates parameter optimization strategies directly
多模态信息融合 Multi - Modal Fusion	融合能力 Fusion Capability	自然融合图像/声音/振动等多模态数据 Naturally fuses multi - modal data (image/sound/vibration)
	综合决策 Comprehensive Decision	通过多模态融合做更全面准确的决策 Enables comprehensive/accurate decisions via multi - modal fusion

视觉模块 Visual module ▶▶
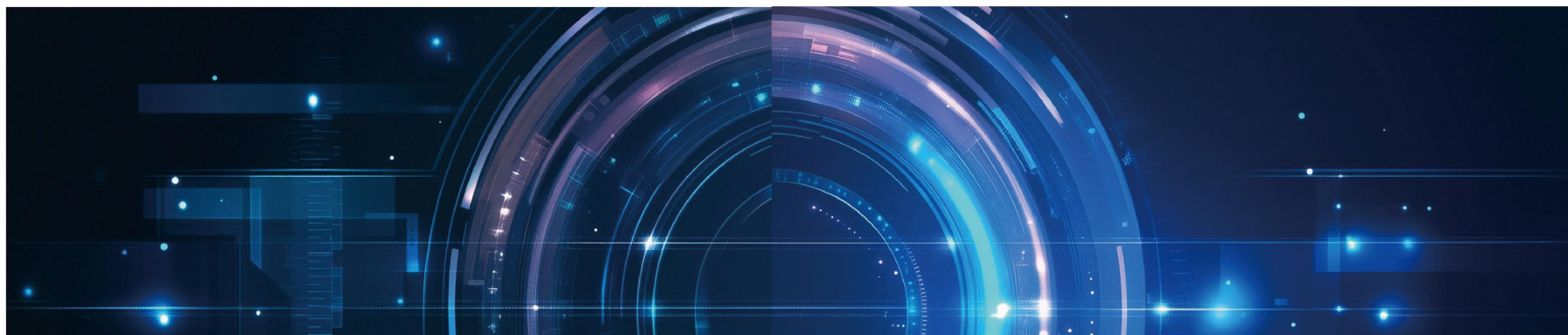
线扫成像-线扫相机
Line Scan Imaging - Line Scan Camera
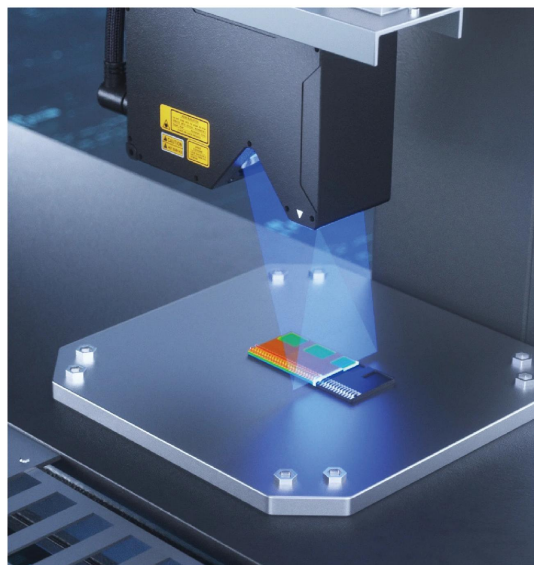
优势1:在2D检测上,可去除因反射率、形状不同而发生的干扰部分。依据稳定的形状进行检测。

优势2:在3D检测时,可根据稳定的轮廓测量角度、R角等各种尺寸。

优势3:只需三步即可完成测量、检测所需的设定。

Advantage 1: In 2D detection, interference caused by different reflectivity and shape can be removed. Detect based on stable shape.

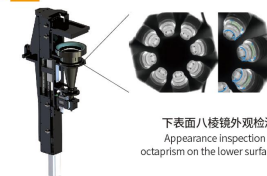Advantage 2: In 3D detection, various dimensions such as angles and R angles can be measured based on stable contours.

Advantage 3: Only three steps are required to complete the measurement and detection settings.

2D光学成像-工业相机模组
2D Optical Imaging - Industrial Camera Module

可实现自动调节相机参数,可以根据成像效果自动调节光源高度,切换相机和光源更便捷,检测多面缺陷。

Can automatically adjust camera parameters, adjust the height of the light source according to the imaging effect, switch between camera and light source more conveniently, and detect multiple defects

下表面八棱镜外观检测
Appearance inspection of octaprism on the lower surface

正面外观缺陷检测
重复精度:±5px   最大视野:100mm
最高高度:100mm
Front appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 100mm
Maximum height: 100mm

上侧面外观缺陷检测
重复精度:±5px   最大视野:80mm
最高高度:30mm
Upper Side appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 80mm
Maximum height: 30mm

上表面外观缺陷检测
重复精度:±5px   最大视野:80mm
最高高度:30mm
Upper surface appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 80mm
Maximum height: 30mm

侧面外观缺陷检测
重复精度:±5px   最大视野:80mm
最高高度:30mm
Side appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 80mm
Maximum height: 30mm

下表面外观缺陷检测
重复精度:±5px   最大视野:80mm
最高高度:30mm
Lower surface appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 80mm
Maximum height: 30mm

下侧面外观缺陷检测
重复精度:±5px   最大视野:80mm
最高高度:30mm
Low side appearance defect detection
Repetitive accuracy: ± 5px
Maximum field of view: 80mm
Maximum height: 30mm

# 上下料模块 Loading and unloading module ▶▶

振动盘

功能:用于设备上的物料平稳运输,通常与直振、过渡转盘配合上料。

优势:将产品以一定的角度或位置上料。

适用领域:5mm-30mm左右的产品。

Vibration plate

Function: Used for smooth transportation of materials on equipment, usually in conjunction with direct vibration and transitional turntables for loading.

Advantage: Load the product at a certain angle or position.

Applicable field: Products with a size of around 5mm-30mm.

过渡盘
Transitional Disk
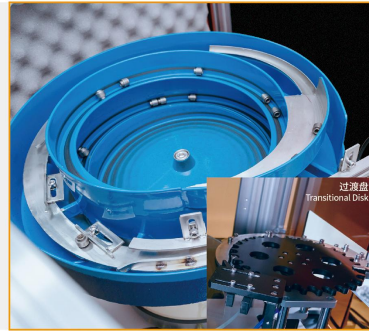
视觉定位→柔性振动盘+机器手

功能:配合机器人抓取,将细小物料按照要求平铺展示或检测平台。

优势:①对物料损伤小;②摆料位置精度0.1mm。

适用领域:尺寸较小且检测精度要求较高的产品的上下料和摆料。

Visual positioning → Flexible vibrating disc+robotic arm

Function: In conjunction with robot grabbing, it can display or detect small materials on a flat platform according to requirements.

Advantages: ① minimal damage to materials; ② The accuracy of the material placement position is 0.1mm.

Applicable field: Loading, unloading, and placement of products with small dimensions and high detection accuracy requirements.

运输皮平带

功能:用于设备上的物料平稳运输,通常与振动盘或机械手、机器人,生产线,人工对接配合上料。

优势:①造价实惠②输送效率高。

适用领域:上下料、摆料、做移动检测平台(适合对检测精度要求不高的产品。)

Transport leather flat belt

Function: Used for smooth transportation of materials on equipment, usually in coordination with vibrating discs or robotic arms, robots, production lines, and manual loading.

Advantages: ① Affordable cost ② High conveying efficiency.

Applicable fields: loading and unloading, material placement, and mobile detection platform (suitable for products with low requirements for detection accuracy)
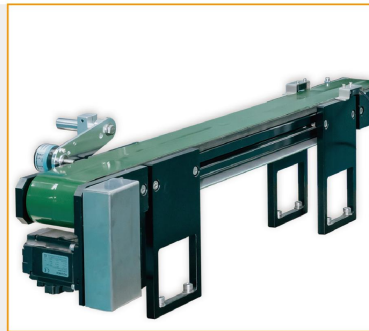
外形模块 Appearance module ▶▶

我司针对客户的生产定制方案,提供标准机外形和全检机外形进行选择。不同的机型,所能包含的机构套组也不相同,可自行选择搭配。

Our company provides customized production solutions for customers, offering a selection of standard machine shapes and full inspection machine shapes. Different models can contain different sets of mechanisms, and can be matched and chosen by oneself.

AOI标准机 AOI standard machine

型号:BSY-AM-2

尺寸:1700mm*1200mm*1800mm

检测效率:75pcs/min

Model: BSY-AM-2

Size: 1700mm * 1200mm * 1800mm

Detection efficiency: 75pcs/min

剔除机构
Excluding institutions | 视觉机构
Visual institutions | 上料机构
Feed mechanism

AOI全检机 AOI full inspection machine

型号: BSY-AH-5

尺寸: 2400mm*1400mm*1900mm

检测效率: 80pcs/min

Model: BSY-AH-5

Size: 2400mm * 1400mm * 1900mm

Detection efficiency: 80pcs/min

剔除机构
Excluding institutions | 视觉机构
Visual institutions | 上料机构
Feed mechanism
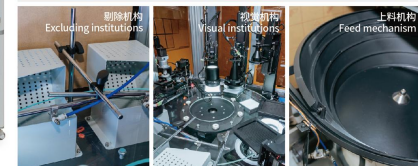
这样一台AOI智能检测设备就完成了,从方案定制到设备出货调试,我们都严格一手抓,为客户降低成本,缩短交期,提高生产效率,是我们做AOI智能全检设备一直以来的宗旨。

This AOI intelligent detection device has been completed. From scheme customization to equipment shipment debugging, we strictly grasp it from the beginning, reducing costs, shortening delivery time, and improving production efficiency for customers. This has always been our goal in making AOI intelligent full inspection equipment.
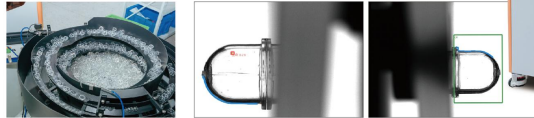
案例详解
Case Explanation

油杯AOI检测机
Oil cup AOI detection machine

检测内容：①边缘缺料②顶部黑点/底部黑点/侧面黑点③毛刺④高度测量

检测效率：2个/秒

Detection content: ① Edge shortage ② Top black spot/bottom black spot/side black spot ③ Burr ④ Height measurement
Detection efficiency: 2 pieces/second

*已加入AI算法
*Added AI algorithm

喷油阀AOI检测机
Injection valve AOI detection machine

检测内容：①铜管直径检测②产品混料判断③模接线有无毛刺检测

检测效率：100个/分钟

Detection content: ① Copper tube diameter detection ② Product mixing judgment ③ Mold wiring burr detection
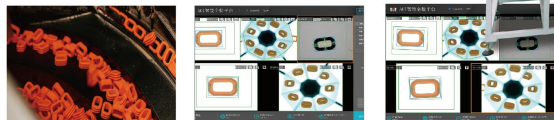Detection efficiency: 100 pieces/minutes

液态硅胶缺陷检测机
Plastic ring AOI testing machine

检测内容：①外观尺寸检测②脏污、黑点、毛刺

检测效率：80个/分钟

Detection content: ① Appearance and size inspection ;② Dirty, black spots, and burrs
Detection efficiency: 80 pieces/minute

*已加入AI算法
*Added AI algorithm

圆橡胶件AOI外观检测机
AOI appearance inspection machine for round rubber parts

检测内容：①台阶直径测量②物料圆柱侧边缺料/开裂检测③底面缺料检测④顶面开裂检测

检测效率：140个/分钟

Detection content: ① Step diameter measurement ② Material cylinder side missing/cracking detection ③ Bottom missing material detection ④ Top cracking detection
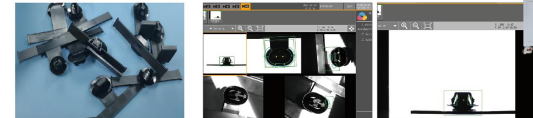
Detection efficiency:140 pieces/minutes

*已加入AI算法
*Added AI algorithm

汽车卡扣检测包装机
Plastic ring AOI testing machine

检测内容：五个面的缺陷检测①侧面缺胶；②堵孔；③混料

检测效率：100个/分钟

Detection content: Defect detection on five surfaces: ① Lack of adhesive on the side; ② Blocking holes; ③ Mixing materials
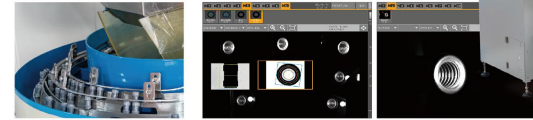Detection efficiency: 100 pieces/minutes

*已加入AI算法
*Added AI algorithm

螺纹柱内螺纹检测机
### Thread detection machine for internal threads

检测内容：①牙峰缺失②外轮廓尺寸③牙峰毛刺④牙峰异物

检测效率：400个/分钟

Detection content: ① Tooth peak missing ② Outer contour size ③ Tooth peak burrs ④ Tooth peak foreign body
Detection efficiency: 400 pieces/minutes

AOI视觉检测
在各行业的应用

The application of AOI visual inspection
in various industries

医疗针筒 / Medical syringe — 检测图 / Detection diagram
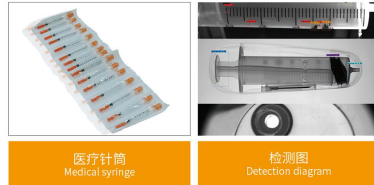
检测内容：①检测注射器筒内有无异物 ②检测有无胶塞，胶塞缺陷③检测是否缺针、缺护套

Detection content:① Check whether there is any foreign matter in the syringe barrel ;② Check whether there is a rubber plug and the rubber plug is defective;③ Check whether the needle and sheath are missing

铝件 / Aluminum parts — 检测图 / Detection diagram

检测内容：①检测尖尖包铝、膨胀、缺损、磨铝、破损、变色②检测圆弧面疤痕 ③检测斜边疤痕 ④尺寸检测

Detection content:① Detect the aluminum coating, expansion, defect, aluminum grinding, damage and discoloration of the tip；② Detection of arc surface scar ;③ Detection of bevel scar; ④ Size detection

塑料工件 / Plastic workpiece — 检测图 / Detection diagram

检测内容：①检测是否缺料 ②检测是否有毛边

Detection content:① Check whether there is material shortage ;② Check whether there is burr

金属钥匙 / Metal key — 检测图 / Detection diagram

检测内容：①检测鼻头尺寸 ②检测外径尺寸 ③检测平行度 ④检测表面划伤、露铜发黄、压伤

Detection content:① Check the nose size; ② Check the outer diameter size; ③ Check the parallelism;④ Detect surface scratch, exposed copper yellowing and crush

塑料汽车件 / Plastic auto parts — 检测图 / Detection diagram

检测内容：①检测卡子有无

Detection content:① Check if the clip is present

塑料花篮配件 / Plastic flower basket accessories — 检测图 / Detection diagram

检测内容：①检测是否压伤②检测是否划伤

Detection content:① Check whether it is crushed ;② heck whether it is scratched

AOI视觉检测
在各行业的应用

The application of AOI visual inspection
in various industries

电子手柄 / Electronic handle — 检测图 / Detection diagram

检测内容：①检测是否缺角②检测焊锡连接是否异常

Detection content:① Check whether the angle is missing；② check whether the solder connection is abnormal

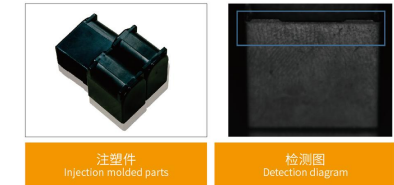### 注塑件 / Injection molded parts — 检测图 / Detection diagram

检测内容：①检测外表面缺陷

Detection content:① Detection of external surface defects

塑料圈 / Plastic ring — 检测图 / Detection diagram

检测内容：①检测是否缺料 ②检测是否有毛边

Detection content:① Check whether there is material shortage ;② Check whether there is burr

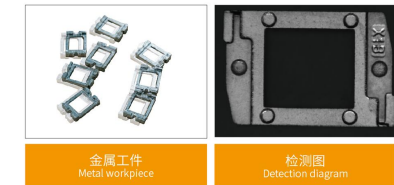### 金属工件 / Metal workpiece — 检测图 / Detection diagram

检测内容：①检测凸点、凹坑、压、伤、缺损 ②检测内孔夹针、变形、鼓包、断裂 ③检测碰伤、混料、凹陷、定位孔异常

Detection content:① Detect bumps, pits, pressure, damage and defects; ② detect the pinch pin,deformation, bulge and fracture of the inner hole; ③ detect the bumps, mixed materials, dents and positioning hole abnormalities.

塑料电脑壳 / Plastic computer case — 检测图 / Detection diagram

检测内容：①检测螺钉异常种类

Detection content:① Detect types of abnormal screws

树脂电阻 / Resin resistance — 检测图 / Detection diagram
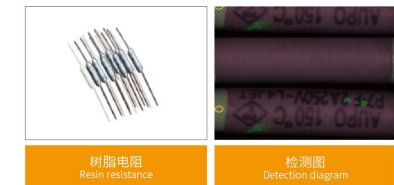
检测内容：①检测缺陷异常种类

Detection content:①Types of detected defects

一键闪测仪
One button measuring instrument

在产品生产中，由于产品使用性质和生产线工艺质量的不同，部分产品仅需进行抽检即可。而人工去检测有诸多不便，因此就有了方便快速抽检的一键闪测仪。

In product production, due to differences in the nature of product use and the quality of production line processes, some products only require sampling inspection. However, manual testing has many inconveniences, so there is a one click flash tester that is convenient and fast for sampling.

全新一代一键闪测仪 New generation One button measuring instrument	替代传统测量遗器 Replace traditional measuring instrumentsmeasuring instrument

测量操作简便 易上手 Simple measurement operation(Easy to use)	大批量同时测量 效率提升 Mass simultaneous measurement (Efficiency improvement)
标准化测量 避免人为操作失误 Standardized measurement (Avoid human error)	数据自动统计与分析 便于产品质量管理 Automatic data statistics and analysis （convenient for product quality management)

双视野-100&25(mm)
拼接大视野-300*200(mm)

Dual vision-100&25(mm)
Splicing a large field of view-300*200(mm)
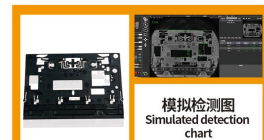
测量物件多样化
Diversity of measuring objects

测量电子、模具、注塑、五金、精密五金、精密冲压、接插件、连接器、钟表、仪器仪表零件等。

Measuring electronics, molds, injection molding, hardware,precision hardware,precision stamping, connectors,connectors,clocks,instrument parts,etc.
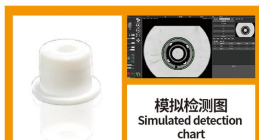
测量多样化
Diversified measurement methods

模拟检测图 Simulated detection chart	模拟检测图 Simulated detection chart	模拟检测图 Simulated detection chart
背光轮廓测量 Backlight profile measurement	上光特征捕捉测量 Glazing feature capture measurement	多图层测量 Multi-layer survey

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优势对比
Advantage comparison

传统工具进行质检
Traditional tools for quality inspection

难以高精度测量
Difficult to measure with high accuracy

个人主观概念差异导致所选测量点不同
Individual subjective concept difference leads to different measurement points

照明方式容易受影响导致数值变化
The lighting mode is easily affected, resulting in numerical changes

个人主观概念差异导致对焦位置选择不同
Differences in personal subjective concepts lead to different focus positions

难以设定
Difficult to set

可观察范围小，识别不精准
Small observable range and inaccurate identificationSmall observable range and inaccurate identification

毛刺和缺陷容易导致误检
Burrs and defects easily lead to false inspection

没经过系统培训则无法使用测量
Measurement cannot be used without systematic training

测量费时
Time consuming measurement

XY轴调整基准耗时大
It takes a lot of time to adjust the reference of XY axis

测量时间随测量部位增加而增加
The measurement time increases with the increase of measurement position

多个相同的目标物需逐一测量
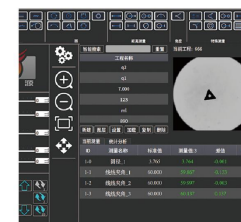Multiple identical targets need to be measured one by one

测量快速
Fast measurement

无需任何目标物定位
No target positioning is required

可同时测量100个目标物
100 targets can be measured simultaneously

自动照明，自动对焦，自动识别工程
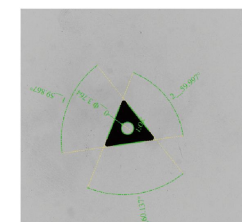Automatic lighting, automatic focusing, automatic recognition engineering

设定便捷
Convenient setting

单次成像&拼接成像方便快速
Single-shot & Stitched Imaging: Fast & Convenient

可保存数百个工件工程，随时切换
Storage for 100+ Workpiece Programs with Instant Switching

程序操作图形化，简单易操作
Graphical Program Interface: User-Friendly

测量精度高
High measurement accuracy

集成复合光源，识别产品多类特征
Integrated composite light source to identify multiple features of products

双视野成像&拼接视野成像，无惧产品尺寸差异
Dual view imaging&splicing view imaging, fearless of product size differences

自研强大视觉算法，稳定精准
Self-developed powerful vision algorithm, stable and accurate

双成像一键闪测仪
Double field imaging one button flash tester

测量小工件时，可切换小视野相机，使成像更为清晰，数据更为准确；测量大工件时，切换大视野相机，使测量范围更广。

When measuring small workpieces, small field camera can be switched to make imaging clearer and data more accurate; When measuring large workpieces, switch the large field camera to make the measurement range wider.

重复精度
Repeatability Accuracy

±2μm

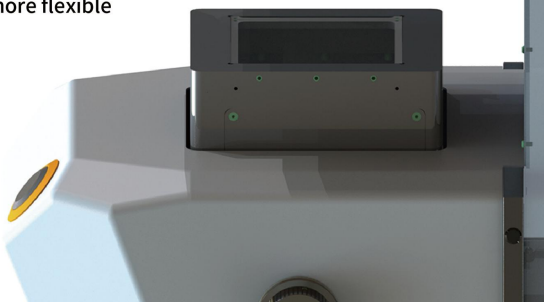小视野（25mm）
Small field of vision (20mm)

±4μm

大视野（100mm）
Large field of vision (96mm)

组合型复合光源
Combined Hybrid Lighting System

双相机，双视野，测量工件更灵活
Double cameras, double vision, more flexible measurement of workpiece

拼接款一键闪测仪
Splicing measuring instrument

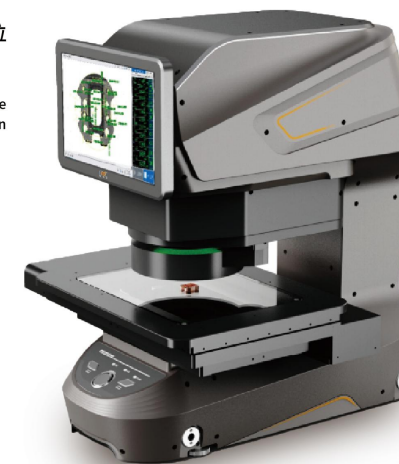一键闪测仪拼接款，可对大物件进行多方位拍摄，继而拼接成像，实现高精度检测。

One button measuring instrument splicing model can take pictures of large objects in multiple directions, and then image splicing to achieve high-precision detection.

重复精度
Repeatability Accuracy

高精度拼接模式：±2+L/50μm
High precision splicing mode: ±2+L/50μm

广视野拼接模式：±4+L/50μm
Wide field splicing mode: ±4+L/50μm

最大视野可支持
Maximum field of view can support
300*200mm

双远心镜头 | Dual telecentric lens
搭载了1200万像素CMOS的双远心镜头，超高清成像。
Equipped with a 12 megapixel CMOS dual telephoto lens for ultra high definition imaging.

可移动载物台 | Movable stage
配置可移动载物台，实现拼接成像，测量大物件无压力。
Configure a movable stage to achieve seamless imaging and measurement of large objects without pressure.

UI界面优化 | UI interface optimization
系统沿用简约UI界面，增添功能指引，便于操作。
The system adopts a simple UI interface and adds functional guidance for easy operation.

测量快速
Fast measurement

为传统机型2倍的测量数据速度
Twice the measurement data speed of traditional models

自动照明，自动对焦，自动识别工程
Automatic lighting, automatic focusing, automatic recognition engineering

③调整XY的基准
Adjust the datum of XY

②对焦距
Focusing distance

①将目标物放置在坐标台
Place the target on the coordinate table

复杂的测量方法
Complex measurement methods

④调整镜头和照明便于观察目标物边缘
Adjust the lens and lighting to observe the edge of the targetAdjust the datum of XY

⑤通过坐标台移动量计算测量结果
Calculate the measurement results through the movement of the coordinate table

⑥得出复杂的虚拟线或虚拟点进行计算
Get complex virtual lines or virtual points for calculation

得出测量数据
Get measurement data

博视源闪测仪测量方法
BOSHIYUAN measuring method of measuring instrument

①任意位置放入目标物后，设备进行打光成像
After the target is placed at any position, the equipment will light and image

②图像导航功能进行计算
Image navigation function for calculation

测绘步骤缩减2/3
Mapping steps reduced by 2/3

最多可同时测量100个工件
Up to 100 workpieces can be measured simultaneously

可一次性测量坐标台视野内的多个目标物，无需逐个进行相同的测量步骤，亦无需任何排列夹具及定位。
Multiple objects in the field of view of the coordinate station can be measured at one time, without the need to carry out the same measurement step by step one by one, and without any arrangement fixture and positioning.
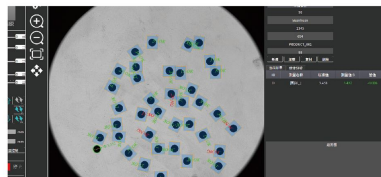
设定便捷
Convenient setting

便捷的设定，任何人都能轻松操作
Convenient setting, easy operation for anyone

分组及具象化的菜单图标设计便于理解功能并设定
Grouping and representational menu icons are designed to facilitate understanding and setting of functions

分类清晰的点线圆测绘辅助工具，与尺寸、坐标、形位公差等测量工具配合，轻松操作。
The auxiliary tools for point, line and circle surveying and mapping with clear classification are easy to operate with the measurement tools such as size, coordinate, form and location tolerance.

点	圆	线	坐标│形位公差	特殊测量
点工具 Point tool	圆工具 Round tool	线工具 Line tool	坐标│形位公差工具 Geometric tolerance tools	特殊测量工具 Special measuring tools

双2000万像素相机
Dual 20MP Cameras

大小视野皆2000万像素，搭配最新的边缘检测算法，实现表面光自动测量

The system features two 20MP cameras covering both wide and narrow fields of view. By incorporating the latest edge detection algorithms, it achieves automated surface light measurement.

可调节光源
Adjustable Lighting System

内置亮度感应器，自动调节灯光达到最佳视觉效果

Adjustable Lighting System

双倍率、高远心度双远心镜头
Dual-Magnification,High-Telecentricity, Double Telecentric Lens

载低畸变，有段差及边缘位置视野，图形不变形，无需担心测量位置

The system features ultra-low distortion performance, maintaining image integrity even for stepped surfaces and edge positions. Measurement position accuracy is consistently guaranteed.

稳定大型载物移动平台
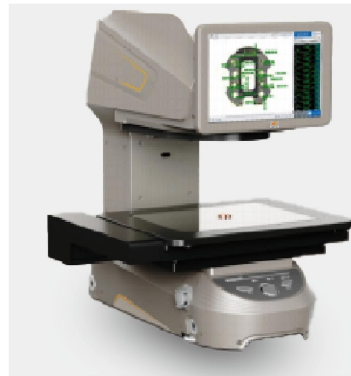### Stable Large-Stage Motion Platform

载物移动平台可测范围可达300*200*75（mm）

Measuring range: 300×200×75mm (L×W×H)

一键快速测量
One click quick measurement

放置后一键可完成测量

After placement, one click measurement can be completed

台式设计
Desktop Design Solution

小巧的桌上型架构，搬运方便，能够适应各种环境，适合产线线边尺寸快速测量

Features a compact benchtop structure that is easy to move and adapts to various environments, suitable for dimensional inspection alongside production lines.

一键操作快速出数据
One-Touch Operation for Instant Results

通过定位功能 自动识别产品位置及方向，产品随机放置在平台上，仅按一键即可测量，也可搭配客户IO信号实现全自动测量。

The system automatically identifies product position and orientation through its positioning function. Simply place the product randomly on the platform and press one button to initiate measurement. It can also integrate with customer IO signals for fully automated measurement.
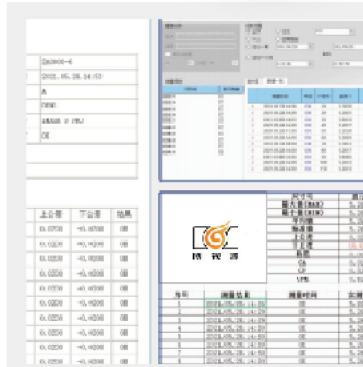
报告输出形式多样
可输出至客户指定数据库
Flexible Report Output Options

检测报告及统计报告都可通过一键完成制作，无需数据传输及电脑输入等繁琐的过程，支持多种格式。也可自动上传至客户数据管理系统。

The system exports data in multiple formats to specified databases. It generates inspection/statistical reports with one button press, removing manual data transfer needs. Reports can auto-upload to client DMS.

产品规格
Product Specifications

设备型号 ｜ Module number		BSY-VD25/100
测量范围 Measurement Specifications	广视野模式 ｜ Wide-FOV Mode	φ100
	高精度模式 ｜ High precision mode	25x18mm
	测量高度 ｜ Gauge altitude	50mm
镜头视野范围 Lens Fov	高精度测量模式 ｜ High-Accuracy Measurement Mode	25x18mm
	广视野测量模式 ｜ Wide-FOV Measurement Mode	φ100
重复精度 Repeatability	高精度测量模式 ｜ High-Accuracy Measurement Mode	±2μm
	广视野测量模式 ｜ Wide-FOV Measurement Mode	±4μm
最小显示单位 ｜ Minimum Display Unit		0.1μm
测量精度 Measurement Accuracy	高精度测量模式 ｜ High-Accuracy Measurement Mode	±2μm
	广视野测量模式 ｜ Wide-FOV Measurement Mode	±4μm
仪器重量 ｜ Instrument Weight		55KG
光学系统 Optical System	相机 Camera	1" 2000万 黑白相机 ,1" 1200万 黑白相机20MP 1" Monochrome Camera & 1" 12MP Monochrome Camera
	镜头 Lens	双倍率双侧远心光学镜头 Dual-Magnification Bilateral Telecentric Optical Lens
	表面光 Surface LightLens	两环可升降光源 Dual-Ring Adjustable Height Light Source
	轮廓光 Contour LightLens	绿色平行底光 Green Parallel Backlight
工作台承重 ｜ Stage Load Capacity		5KG
量测系统 ｜ Measurement System		BSYMVision
供应电源 ｜ Power Supply		220V±10% ,50Hz
工作环境 ｜ Operating Environment		温度Temperature:20±3 ℃；湿度 Humidity::30-80%(无结凝) 振动Vibration: <0.002g 15HZ
外型尺寸(L*W*H)mm		330×480×730mm

产品规格
Product Specifications
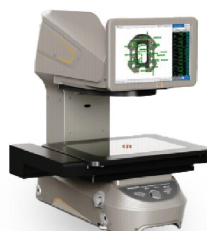
| 设备型号｜Module number			BSY-VD25/100	BSY-VD25/100
测量范围 Measurement Specifications	广视野模式｜Wide-FOV Mode	单次成像｜Single imaging	26*18mm	
		拼接成像｜Splicing imaging	100*100mm	200*120mm
	高精度模式｜High precision mode	单次成像｜Single imaging	φ100	φ100
		拼接成像｜Splicing imaging	200*200mm	300*200mm
	测量高度｜Gauge altitude		75mm	75mm
镜头视野范围 Lens Fov	广视野模式 Wide-FOV Mode / 广视野模式 Wide-FOV Mode / 广视野模式 Wide-FOV Mode		26mm X 18mm	
	高精度模式 High precision mode / 高精度模式 High precision mode / 高精度模式 High precision mode		φ100	
重复精度 Repeatability	广视野模式 Wide-FOV Mode / 广视野模式 Wide-FOV Mode / 广视野模式 Wide-FOV Mode		±2μm	
	高精度模式 High precision mode / 高精度模式 High precision mode / 高精度模式 High precision mode		±4μm	
最小显示单位｜Minimum Display Unit			0.1μm	
测量精度 Measurement Accuracy	广视野模式 Wide-FOV Mode	单次成像｜Single imaging	±2μm	
		拼接成像｜Splicing imaging	±2+L/50μm	±2+L/50μm
	高精度模式 High precision mode	单次成像 Single imaging / 单次成像 Single imaging	±4μm	
		拼接成像 Splicing imaging / 拼接成像 Splicing imaging	±4+L/50μm	±4+L/50μm
仪器重量｜Instrument Weight			45KG	50KG
光学系统 Optical System	相机 Camera		1" 2000万 黑白相机，1" 1200万 黑白相机20MP 1" Monochrome Camera & 1" 12MP Monochrome Camera	
	镜头 Lens		双倍率双侧远心光学镜头 Dual-Magnification Bilateral Telecentric Optical Lens	
	表面光 Surface LightLens		两环可升降光源 Dual-Ring Adjustable Height Light Source	
	轮廓光 Contour LightLens		绿色平行底光 Green Parallel Backlight	
工作台承重｜Stage Load Capacity			5KG	
量测系统｜Measurement System			BSYMVision	
供应电源｜Power Supply			220V±10% ,50Hz	
工作环境｜Operating Environment			温度Temperature:20±3℃; 湿度 Humidity::30-80% (无结凝) 振动Vibration: <0.002g 15HZ	
外型尺寸 (L*W*H)mm			600*410*650mm	600*510*650mm

应用案例｜Application Cases
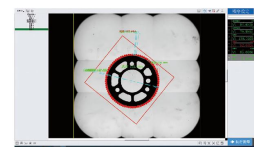
广视野模式拼接成像-齿轮零件
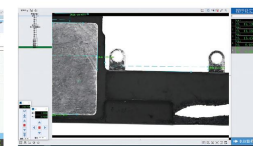Image Stitching-Gear Parts
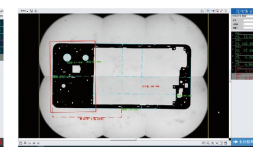
广视野模式拼接成像-手机中框
Wide-FOV Mode Image Stitching-Phone Midframes

高精度模式拼接成像-塑料盖
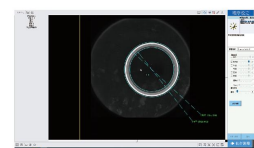High-Accuracy Mode Image Stitching-Plastic Covers
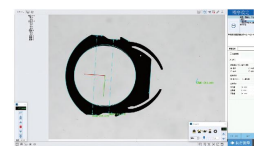
单视野成像-塑料配件
Single-FOV Imaging-Plastic Covers

高精度模式拼接成像-3C电子配件
High-Accuracy Mode Image Stitching-3C Electronic Components

单视野成像-金属配件
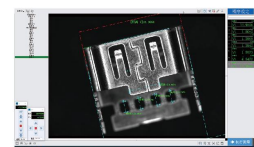Single-FOV Imaging-Metal Components
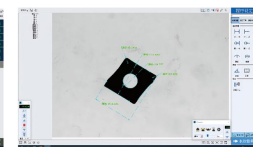

单视野成像-塑料圆环
Single-FOV Imaging-Plastic Rings
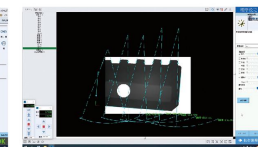

单视野成像-柔性板
Single-shot Imaging-Flexible Circuits

广视野模式拼接成像-PBC面板
Wide-FOV Mode Image Stitching-PCB Panels

高精度模式拼接成像-塑料配件
High-Accuracy Mode Image Stitching-Plastic Covers

单视野成像-硬质合金刀具
Single-FOV Imaging-Carbide Cutting Tools

高精度模式拼接成像-硬质合金刀具
High-Accuracy Mode Image Stitching-Carbide Cutting Tools

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