机器视觉

LS20系列线激光轮廓仪

LS20 Series Laser Profile Sensor

知它视觉 ZT VISION TECH



LS20系列线激光轮廓传感器是一款面向高精度三维测量应用的工业级传感器。该传感器集成先进处理算法与高品质激光投射光学组件，可输出高分辨率、实时三维点云数据。

LS20系列广泛应用于光伏制造、锂电池生产、3C 电子、汽车制造等工业自动化领域。

传感器支持通过专用上位机软件连接，用户也可使用原厂提供的SDK开发定制化应用，实现传感器控制与高速数据通信。

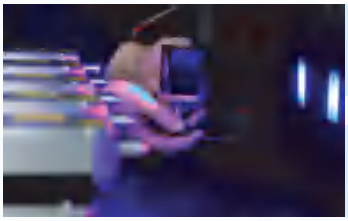
The LS20 Series Line Laser Profile Sensor is an industrial-grade sensor designed for high-precision 3D measurement applications. It delivers high-resolution, real-time 3D point cloud data through integrated advanced processing algorithms and high-quality laser projection optics.

The LS20 Series is widely used in photovoltaic manufacturing, lithium battery production, 3C electronics, automotive manufacturing, and other industrial automation fields.

The sensor supports connection via dedicated host computer software. Users may also develop custom applications using the OEM-provided SDK for sensor control and high-speed data communication.

产品特点

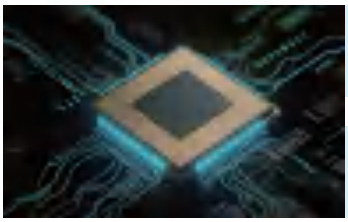
Z轴微米级精度 Micrometer-level precision along the Z-axis



X方向2K物理分辨率，清晰呈现物体3D轮廓；
The system provides a 2K physical resolution along the X-axis, en-abling clear visualization of the 3D profile of objects;

Z轴重复精度最高可实现0.3μm。
The repeatability positioning accuracy along the Z-axis can reach up to 0.3μm.

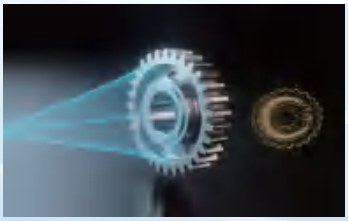
高速扫描与实时处理 High-speed scanning combined with real-time data processing



单次扫描可获取整条轮廓线数据，效率远超点激光逐点扫描；
A single scan can obtain the data of the entire profile, with efficiency far exceeding that of point-by-point laser scanning;

结合FPGA加速算法，可实现μs级数据处理，最高可实现15000Hz刷新频率。
FPGA-accelerated algorithms can achieve microsecond-level data processing, with the maximum refresh frequency reaching up to 15,000Hz.

非接触精密检测 Non-contact precision detection



无需接触被测物体（如软性材料、精密电子元件）避免划伤或变形；
The testing process does not require physical contact with the object under evaluation (e.g.,soft materials, precision electronic components), thereby preventing potential scratches or deformation;

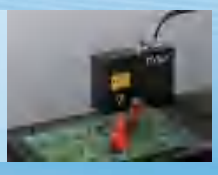
适应复杂表面，可测量高温、易碎或动态目标。
Suitable for measurement on complex surfaces, this system is capable of accurately capturing data from high-temperature objects, fragile materials, or dynamic targets.

应用场景

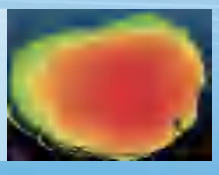
工业零部件三维检测
Industrial Parts 3D Inspection



PCB行业检测
PCB Industry Inspection



首饰焊接引导
Jewelry Welding Guidance



产品系列

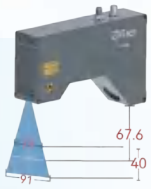
LS2010



LS2003



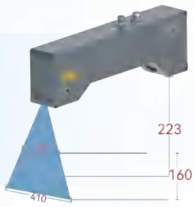
LS2008



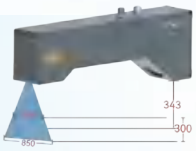
LS2012



LS2030



LS2070



产品参数

技术参数 Technical Data	LS2010	LS2003	LS2008	LS2012	LS2030	LS2070
测试范围-Z(mm) Measurement Range(Z-axis)	±2	±5	±14	±20	±60	±100
视场(近/中/远)(mm) FOV(Nea|Mid|Far)	14.0|14.3|14.6	33.1|34.3|35.7	74.0|80.0|86.3	107.6|116.7|125.3	307.1|307.1|350.0	543.4|657.0|783.0
分辨率-X轴(μm) Lateral Resolution (X-axis)	6.9	16	39	58	161	322
Z轴重复性(μm) Z-Repeatability	0.2	0.5	0.8	1	4	6
Z轴线性度 Z-Linearity	0.015%of F.S	0.012%of F.S	0.012%of F.S	0.010%of F.S	0.010%of F.S	0.010%of F.S
采样率(Hz) Scan Rate	229-1600					
波长(nm) Laser Wavelength	405/650	405	405	405	650	650
最大点数(Pts) Maximum Points	2048					
工作距离(mm) Working Distance	21	78	76	109	223	343.5
重量(g) Weight	610	720	795	894	1590	1750
产品尺寸(mm) Size(LxWxT)	123.5*92*42.25	146*93*41.5	164*93.5*46.5	204.9*93.4*46.5	322*101.8*52	351*114.3*59
防护等级 Enclosure Rating	IP67, IEC 60529-2013					
冲击 Shock(3Axis)	15G, IEC 60068-2-27					
振动 Vibration	2G, 20-500Hz, IEC 60068-2-6					
工作温度 Operating Temperature	0-45℃					
工作湿度 Operating Humidity	10-85%RH					
电器安全标准 Electrical Safety	EN61010-1					
环境光 Maximum Ambient Light	10,000 lx					

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