Guangdong Threenh Technology Co., ltd.

NON-CONTACT COLOR INSPECTION, ACCURATELY EMPOWERING UNMANNED PRODUCTION LINES

Achieve Non-Contact Measurement for Special Samples: Liquids, Pastes, Powders, and Delicate Surfaces



Non-Contact Spectrophotometer YL70

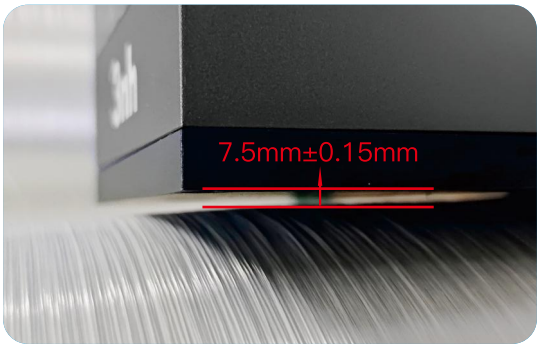
The YL70 non-contact spectrophotometer features a 45/0 optical structure, enabling non-contact precision color measurement of special samples such as liquids and powders. Specifically designed for precise color measurement in automated production lines, it supports 485 or USB communication and multi-device collaboration. With compatible upper computer software, it can be integrated into assembly lines or robotic arms for installation, providing real-time color data monitoring and synchronous feedback. This solution delivers efficient quality control for a wide range of industries.

- Non-contact measurement distance: 7.5mm
- Fastest measurement time: 0.11 seconds
- Designed specifically for automated production lines
- Repeatability: ΔE*ab ⩽ 0.015

Own the core tech: Top performance, budget price.

ISO9001 CE RoHS

I. PRODUCT FEATURES



Non-contact Precision Color Measurement

Non-contact measurement

It addresses the challenges of inspecting special samples such as liquids, powders, and easily scratched surfaces, enabling contamination-free and non-destructive color measurement. With a precise measurement distance of 7.5mm ±0.15mm and no sample thickness limitations, it adapts to diverse online inspection needs in automated production lines.

Dual Breakthroughs in Speed and Precision

High Repeatability in Chromatic Values

Featuring a high-performance hardware configuration with nano-integrated spectral components and a silicon photodiode array (dual-row, 20 sets), the device achieves a dual breakthrough in both measurement speed and precision.

Ultra-Fast Response for High-Speed Production

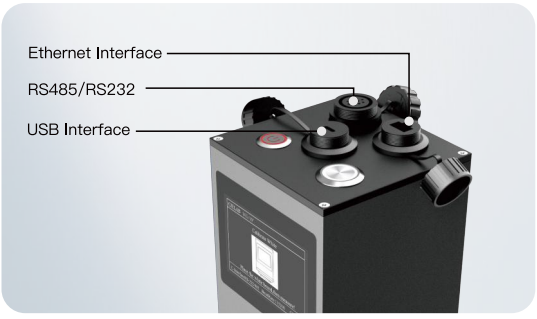
Capable of measurements in as fast as 0.11 seconds (typically 0.2 seconds), with a measurement interval of just 1 second, meeting the demands of high-speed production lines.

High Repeatability in Chromatic Values

Achieves ΔE*ab ⩽ 0.05, with a display accuracy of 0.01, complying with Grade 1 metrology standards to ensure long-term accuracy.









Versatile interfaces for seamless integration

Versatile Interfaces Enable Collaborative Control

Equipped with comprehensive interfaces including USB, RS485, RS232, and Ethernet, the device supports external triggering and analog signal output. It seamlessly integrates with production line control systems for real-time data exchange and coordinated control, facilitating the construction of a closed-loop automated inspection process.

PC Software for Data Management

The accompanying PC software further extends data processing capabilities, supporting data management, trend analysis, pass/fail judgment, and historical traceability. This helps enterprises establish a digital quality management system, enhancing both data utilization value and operational efficiency.

Industrial–Grade Reliability & Ease of Use

Environmental Adaptability

Wide–temperature design (e.g., –20°C to 50°C) and IP66–rated dust and water resistance provide industrial–grade protection, ensuring long–term stable operation in industrial environments.

Quick Deployment

The modular design enables compatibility with robotic arm and production line integration, supports one–touch calibration and remote firmware upgrades, and reduces maintenance costs.



II. APPLICATION FIELDS

It is suitable for automated production line needs across various industries such as food and beverage, cosmetics, printing, anodizing, coatings, papermaking, automotive painting lines, textile production lines, and plastic production lines. It can be directly installed on conveyor belts or robotic arms to monitor product color in real time, synchronously transmit data back, and provide immediate feedback on product quality.



III. PRODUCT SPECIFICATIONS

Product Model	YL70
Illumination Method	45/0 (45° annular uniform illumination, 0° reception)
Compliance Standards	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724–1, ASTM E1164, DIN 5033 Teil 7
Features	Non–contact measurement between probe and sample, enabling precise color measurement of liquids, pastes, powders, and delicate surfaces. Primarily used for accurate color measurement and quality control on automated production lines. Fastest measurement time: 0.11 seconds. Supports communication via 485 or USB with other systems, and includes PC software.
Light Source	Combined full–spectrum LED light source
Sensor	Silicon photodiode array (dual–row, 20 sets)
Measurement Wavelength Range	400—700 nm, 10 nm output
Display Precision	0.01
Reflectance Resolution	0.01%
Reflectance Measurement Range	0—200%
Measurement Aperture	Φ8 mm
Non–contact Distance	7.5 mm (±0.15 mm)
Sample Height	No thickness limit, uses only the test probe
Measurement Viewing Method	Visual observation
Measurement Interval	1 s
Measurement Mode	Instrument trigger or online control trigger
Color Space	CIE LAB, XYZ, LCh, CIE LUV
Color Difference Formula	ΔE*ab
Other Chromaticity Metrics	/
Observer Angle	2°/10°
Illuminants	A, C, D50, D65, D75
Display	Data, sample chromaticity values, color difference value/graph, color simulation, pass/fail results, adjustable tolerance display
Measurement Time	Fastest 0.11 seconds (typically around 0.2 seconds)
Calibration	Intelligent automatic calibration
Waterproof Rating	Ip66
Repeatability	Under optimal test mode (single measurement time 1.0 s): Chromaticity value: ΔE*ab within 0.05 (after warm–up, average of 30 measurements on white tile at 5–second intervals)
Inter–instrument Agreement	/
Accuracy Assurance	Compliant with Grade 1 metrology qualification
Measurement Modes	Single measurement, average measurement (2—99 times)
Weight	Approximately 1400g
Dimensions	100*100*140mm
Power Supply	24V DC, 3A power adapter
Light Source Lifetime	>3 million measurements within 5 years
Illuminant Life Span	More than 1.2 million measurements over 10 years
Interfaces	USB, RS485, RS232, Ethernet, external trigger, analog signal output
Display	TFT true–color 3.5–inch screen
Languages	Simplified Chinese, Traditional Chinese, English
Operating Environment	0~40℃, 0~85%RH (no condensing),Altitude < 2000m
Storage Environment	–20~50℃, 0~85%RH (no condensing)
Standard Accessories	Power adapter, user manual, USB cable, RJ45 Ethernet cable, RS485 multi–unit communication cable, RS232 communication cable, standard calibration plate, black calibration box