



KEY PRINTING INDICATORS – ALL IN ONE VIEW.

CMYK Density | Dot area | Dot gain | Trapping

The PS530 is a spectro-densitometer designed for fine printing measurement, built as a professional-grade quality control device for industries with stringent precision requirements, such as high-end printing, precision electronics, and film plate-making. The instrument adopts a 45/0 annular uniform illumination optical system combined with high-precision nano-spectrophotometric components, enabling precise measurement of key printing indicators including CMYK optical density, dot area, dot gain, and trapping. It also supports the Netmetric network calibration function to ensure measurement data consistency across multiple machines and production lines.



1

A general-purpose spectro-densitometer, suitable for measurement and quality control of optical density, dot gain, and other key indicators in ink printing.

2

Density repeatability $\leq 0.01D$, colorimetric repeatability $\Delta E^*_{ab} \leq 0.02$, ensuring consistent quality control standards for high-end products.

3

7 measurement apertures in one instrument — covering every measurement need, from routine to extreme.

HIGH PRECISION AND FULL-SCENARIO COVERAGE

The PS530's greatest advantages lie in "high precision and full-scenario coverage": equipped with 7 measurement apertures (minimum $\Phi 1.5\text{mm}$) to meet measurement needs ranging from large color patches to micro fine details, with an inter-instrument agreement of 0.20 ensuring data uniformity across multiple devices. Whether for high-end packaging printing, precision electronic screen printing, or micro-component inspection, the PS530 delivers professional-grade precision measurement data, making it the preferred device for quality upgrading in high-end manufacturing enterprises.

1. Professional Printing Indicators — Full Coverage

Supports complete printing parameter measurement including density value, density difference, dot area, dot gain, trapping, print contrast, hue error, and grayness, providing comprehensive data-driven quality control for printing production.

2. Multiple Measurement Apertures — Flexible Adaptation

Equipped with seven measurement apertures: $\Phi 11\text{mm}$, $\Phi 10\text{mm}$, $\Phi 6\text{mm}$, $\Phi 5\text{mm}$, $\Phi 3\text{mm}$, $\Phi 2\text{mm}$, and $\Phi 1.5\text{mm}$. The smallest 1.5mm aperture can precisely measure fine details, narrow lines, micro color patches, and other special samples, meeting the micro-area measurement needs of high-end printing, precision electronics, and fine component industries. One instrument covers all measurement scenarios from routine to extreme.

3. High Precision Measurement — Stable and Reliable

Density repeatability $\leq 0.01D$, colorimetric repeatability $\Delta E_{ab} \leq 0.02$, avoiding misjudgment due to instrument fluctuations and ensuring unified quality control standards for high-end products. Inter-instrument agreement $\Delta E_{ab} \leq 0.20$, minimal measurement differences across multiple devices, ensuring unified quality standards across different production lines and workshops, avoiding quality disputes caused by device variations.

4. Multiple Light Source Conditions

Supports ISO 13655 measurement conditions (M0/M1/M2/M3), covering ISO Status T, E, A, I, M density standards, adapting to different printing processes and inspection specifications.

5. Rich Colorimetric Indices — Powerful Functionality

Supports multiple color spaces including CIE LAB, XYZ, Yxy, LCh, Munsell, etc., covering various color difference formulas such as ΔE_{ab} , ΔE_{94} , ΔE_{cmc} , ΔE_{00} , and provides diversified colorimetric indices including whiteness, yellowness, metamerism index, strength, hiding power, blackness, etc.



Professional printing
indicators



High-precision
measurement



1-second data
output



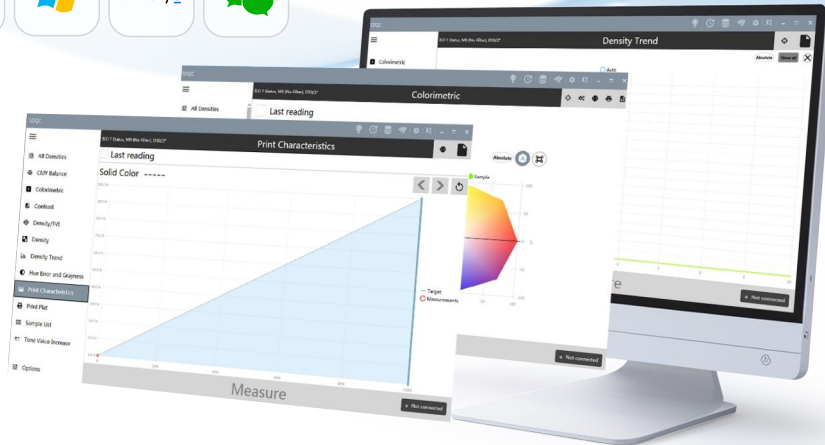
7 measurement
apertures



International standard
compliance

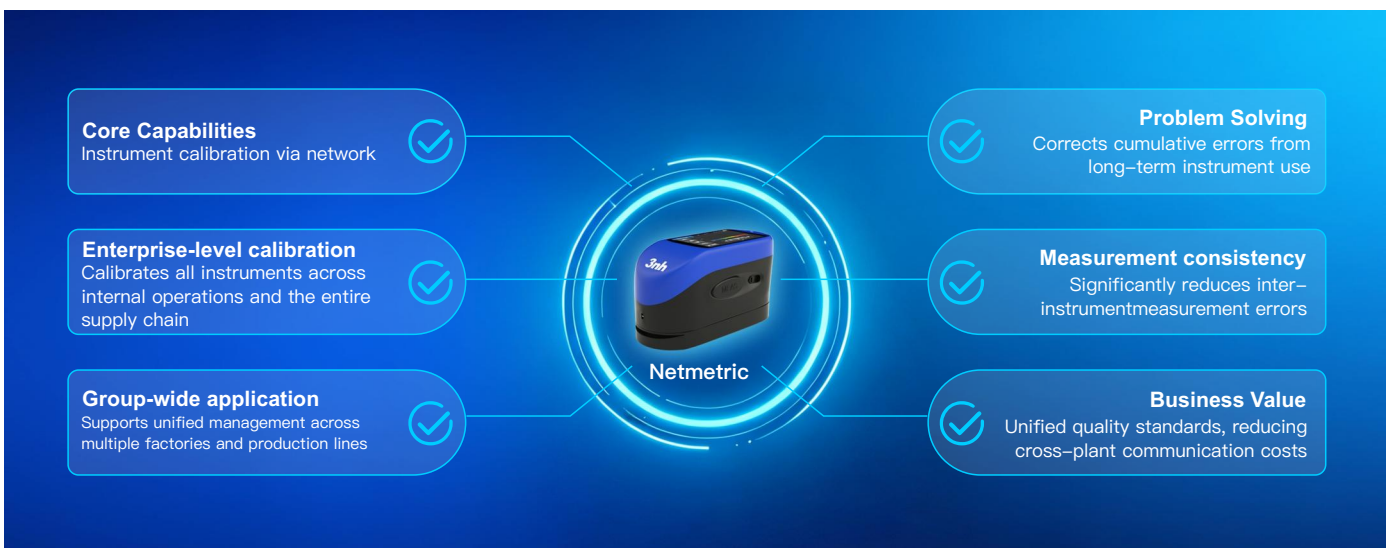
Multi-Platform Software Support – Convenient Data Management

Supports multi-platform synchronization across Android, iOS, Windows, WeChat Mini Programs, and HarmonyOS. Automatically generates reports, simplifies data analysis, and allows one-click report export.



Network Calibration – Ensuring Data Consistency

Supports Netmetric network calibration, allowing users to correct cumulative errors from long-term instrument use, as well as systematically calibrate all instrument groups within the enterprise and across the supply chain — significantly reducing inter-instrument measurement errors. For group enterprises with multiple factories and production lines, this enables unified quality standards management and significantly reduces communication costs and quality risks in cross-plant collaboration.



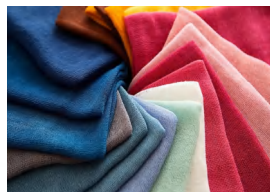
APPLICATION INDUSTRIES



- **High-End Printing:**
Density and dot measurement for fine prints, fine details, and fine-line plates



- **Precision Electronics:** Color inspection of small plastic parts and electronic components



- **Textile Dyeing & Printing:** Color measurement and fastness evaluation of yarns and fine patterns; printing quality inspection



- **Group Enterprises:** Unified quality standard management across multiple factories and production lines



- **Film Processing:** High-precision film density inspection and plate quality control

TECHNICAL SPECIFICATIONS

Product Model	PS530
Illumination Geometry	45/0 (45° annular uniform illumination, 0° reception); Compliant with ISO 5–4, CIE No.15
Features	General-purpose spectro-densitometer, widely used for color measurement and quality control in ink printing, film processing, textile dyeing & printing, plastics & electronics, and other industries. Especially suitable for optical density, dot gain, and other indicator measurement in ink printing.
Illumination Light Source	Combined LED light source + UV light source
Spectrophotometry Method	High-precision nano-spectrophotometric device
Sensor	Silicon photodiode array (dual-array 16 sets)
Measurement Wavelength Range	400nm–700nm
Wavelength Interval	10nm
Half Bandwidth	0–200%
Reflectance Measurement Range	10nm
Reflectance Resolution	0.01%
Measurement Conditions	Complies with ISO 13655: M0 (CIE Illuminant A), M1 (CIE Illuminant D50), M2 (UV-excluded illumination), M3 (M2 + polarizing filter)
Density Standards	ISO Status T、E、A、I、M
Density Range	0.0 D – 3.0 D
Density Indices	CMYK Density value, density difference, dot area, dot gain, trapping, print characteristics, print contrast, hue error and grayness, plate inspection
Measurement Apertures	Φ11mm, Φ10mm, Φ6mm, Φ5mm, Φ3mm, Φ2mm, Φ1.5mm
Color Spaces	CIE LAB, XYZ, Yxy, LCh, CIE LUV, HunterLAB, s-RGB, βxy, DIN Lab99, Munsell
Color Difference Formulas	ΔEab, ΔEuv, ΔE94, ΔEcmc(2:1), ΔEcmc(1:1), ΔEcmc(1:c), ΔE*00, DINΔE99, ΔE(Hunter)
Other Colorimetric Indices	Spectral reflectance; Whiteness (ASTM E313–00, ASTM E313–73, CIE, ISO2470/R457, AATCC, Hunter, Taube, Berger, Stensby); Yellowness (ASTM D1925, ASTM E313–00, ASTM E313–73); Tint (ASTM E313–00); Metamerism Index MI; Staining fastness; Color change fastness; Strength (dye strength, tinting strength); Hiding power; 555 Hue Classification; Blackness (My, dM)
Observer Angle	2°/10°
Observation Light Sources	D65, A, C, D50, D55, D75, F1, F2(CWF), F3, F4, F5, F6, F7(DLF), F8, F9, F10(TPL5), F11(TL84), F12(TL83/U30), B, U35, NBF, ID50, ID65, LED–B1, LED–B2, LED–B3, LED–B4, LED–B5, LED–BH1, LED–RGB1, LED–V1, LED–V2, LED–C2, LED–C3, LED–C5
Measurement Time	Approx. 1 s
Display Precision	Density: 0.001; Colorimetric: 0.01
Repeatability	Density: within 0.01D; Colorimetric: ΔE*ab within 0.02 (after warm-up and calibration, average of 30 measurements of white plate at 5-second intervals — except M3)
Inter-instrument Agreement	ΔE*ab within 0.20 (average of BCRA Series II 14 color tiles — except M3)
Measurement Modes	Single measurement, average measurement (2–99 times)
Positioning Method	Integrated physical positioning hole
Dimensions (L×W×H)	170 × 75 × 91.7 mm
Weight	Approx. 600 g
Battery	Lithium battery, 5,000 measurements within 8 hours
Light Source Lifespan	5 years or >3 million measurements
Display	TFT true color 3.5-inch capacitive touchscreen
Interfaces	USB, Bluetooth
Data Storage	10,000 records
Software Support	Android, iOS, Windows, WeChat Mini Program, HarmonyOS
Languages	Simplified Chinese, English, Traditional Chinese, Russian
Operating Temperature Range	0–40°C, 0–85% RH (non-condensing), altitude below 2000 m
Storage Temperature Range	–20 to 50°C, 0–85% RH (non-condensing)
Network Calibration	Supports Netmetric
Accuracy Assurance	Guaranteed metrology compliance
Standard Accessories	Power adapter, data cable, built-in lithium battery, user manual, quality management software (download website: http://www.3nh.com/en/client_en_14.html), black/white calibration box, protective cover, polarization filter box
Optional Accessories	Micro printer, Netmetric

GUANGDONG THREENH TECHNOLOGY CO., LTD.



Spectrophotometers



Colorimeters



Haze Meters



Gloss Meters



Test Charts



Light Booths

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