



HIGH-PRECISION SPECTROPHOTOMETER PS808CT SPECIALLY DESIGNED FOR COFFEE AND TOMATO

PS808CT is a high-precision Spectrophotometer dedicated to coffee and tomato. Its $\Phi 50$ mm large aperture is suitable for granules, pastes, and liquids, enabling one-stop accurate detection of core parameters including coffee roast degree (SCAA/HCCI/coffee roast degree), bread bake degree (BCU), and tomato color indices (a/b ratio, FTCl, TPS, TSS, TCS, TJS, Lycopene). It is suitable for food processing measurements such as coffee color, tomato index, bread baking, etc. It is also used for precise color measurement and quality control in industries including plastics & electronics, paints & inks, textile & apparel dyeing, printing, and ceramics.



Testing Parameters

- Coffee Roast Degree (SCAA / HCCI / Coffee Roast Degree)
- Bread Baking Degree (BCU)
- Tomato Color Indices (a/b ratio, FTCl, TPS, TSS, TCS, TJS, Lycopene)

Applicable Scenarios

- Food Processing Measurements (coffee color, tomato index, bread baking)
- Plastics & Electronics, Paints & Inks, Printing, Ceramics

Φ50MM LARGE MEASUREMENT APERTURE, SPECIALLY DESIGNED FOR NON-UNIFORM SAMPLES SUCH AS COFFEE POWDER AND TOMATO PASTE.

FEATURE HIGHLIGHTS

I. Customized for Coffee & Tomato Food Testing Scenarios

1. Coffee Color Index Testing

Built-in professional coffee testing indices including SCAA (Specialty Coffee Association of America), HCCI (Hot Coffee Color Index), and coffee roast degree, accurately quantifying the color change of coffee beans from light roast to dark roast throughout the roasting process, providing standardized data support for coffee roast quality control and batch consistency management.



2. Bread Baking Index Testing

Supports BCU (Bread Color Unit), suitable for quantitative evaluation of bread crust color and baking degree, helping the baking industry achieve product color standardization and process optimization.



3. Tomato Quality Index Testing

In addition to conventional color space and color difference calculations, the instrument is equipped with tomato-specific color indices, directly outputting core parameters such as tomato a/b ratio, fresh tomato color index (FTCI), TPS, TSS, TCS, TJS, and lycopene index, meeting the quality rating and testing needs of the entire tomato chain from cultivation and harvesting to processing production and laboratory R&D.



4. Food-grade Large Aperture Design

Φ50 mm measurement aperture, adapted to different forms of food samples such as coffee beans, whole tomatoes, tomato paste, tomato juice, and bread crust, greatly reducing measurement errors caused by sample non-uniformity and ensuring data stability and representativeness.



0.03 ΔE ultra-high repeatability, safeguarding the quality benchmark of food color values

Accurately quantifies the color change of coffee from light roast to dark roast, ensuring consistent color data for every batch.

III. Efficient and Convenient Operation & Data Management – Suited for Industrial Applications



1. Fast Measurement

Single measurement takes only about 1 second. Supports single measurement and average measurement modes (2–99 times), enabling rapid batch sampling or full inspection, greatly improving testing efficiency on production lines and in laboratories.



2. Intuitive Visual Operation

Equipped with a 7-inch TFT true-color capacitive touchscreen, directly displaying spectral graph/data, sample color values, color difference values/graph, pass/fail results, and color deviation – intuitive interpretation without external devices.



3. Large Storage Capacity

Stores up to 1,000 standard sample data and 30,000 test sample data, fully meeting the data storage and traceability needs of large-scale industrial production.



4. Full-Platform Software Compatibility

Comes with professional quality management software (download from official website) supporting in-depth data analysis, batch management, remote transmission, and report export, facilitating the establishment of a digital color management system.



5. Multi-Language Support

Built-in languages include Simplified Chinese, English, Traditional Chinese, Russian, and others, adapting to global application scenarios.



6. Intelligent Color Card Matching

Comes with a general electronic color card library, automatically matching similar color card colors based on the target color. (Conditions to be met simultaneously: SCI mode, D65 illuminant, 10° observer angle, and valid measurement data.)

II. Laboratory-Grade High Precision – Reliable Data

1. High Repeatability

After warm-up and calibration, 30 consecutive measurements of a standard white plate at 5-second intervals give color value repeatability ΔE^*_{ab} within 0.03; spectral reflectance standard deviation $\leq 0.07\%$ ($\leq 0.2\%$ for 400–700 nm band). Suitable for high-precision laboratory analysis and micro color difference identification.

2. Good Inter-Instrument Agreement

Average value of measurements on 12 BCRA Series II standard color tiles gives inter-instrument agreement ΔE^*_{ab} within 0.35, ensuring consistent color data transfer and alignment across multiple devices, laboratories, and production sites, achieving standardized cross-regional quality control.

3. Full-Band Accurate Acquisition

Measurement wavelength range covers the full visible band 400–700 nm, wavelength interval 10 nm, half-bandwidth 10 nm, reflectance range 0–200%, achieving precise capture of sample spectral information without blind spots.



IV . Professional Optical System Design – Adaptable to Various Measurement Scenarios

1. Standard 45/0 Optical Geometry

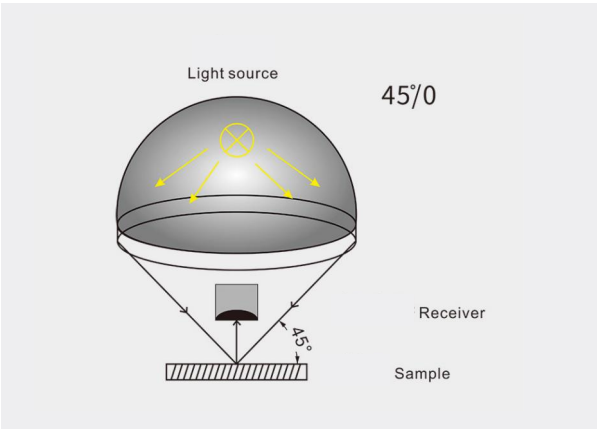
45° annular uniform illumination and 0° reception, fully matching human visual characteristics, avoiding the influence of sample surface texture and gloss on measurement results. Measured data is highly consistent with visual evaluation, especially suitable for color testing of food, granular, and textured samples.

2. Advanced Spectrophotometric Technology

Uses a nano-integrated spectral device combined with a dual-row 20-set silicon photodiode array, achieving high-speed, high-sensitivity acquisition of spectral signals, ensuring high-fidelity measurement results. Measurement time only about 1 second.

3. Selected Observation Light Sources

Built-in D65, A, and C standard light sources, meeting routine color evaluation needs of the food industry, ensuring measurement conditions are consistent with international general standards.



V. Industrial-Grade Durability & Strong Environmental Adaptability – Stable Under Complex Conditions



1. Long-Life Light Source

Combined LED light source with a service life of up to 10 years or >2 million measurements, greatly reducing equipment maintenance costs.

2. Broad Environmental Adaptability

Operating temperature range 0–40°C, humidity 0–85% RH (non-condensing), altitude below 2000 m, suitable for most production and testing scenarios. Storage temperature range –20 to 50°C, ensuring safe storage when not in use.

3. Stable Power Supply

Powered by a 24 V DC, 3 A power adapter, ensuring stable operation during long-term continuous use, ideal for fixed installation in laboratories and production lines.

APPLICATION FIELDS

The PS808CT is widely used in food processing measurements, such as coffee color, tomato index, and bread baking; as well as for precise color measurement and quality control in industries including plastics & electronics, paints & inks, textile & apparel dyeing, printing, and ceramics.



OPTIONAL ACCESSORIES

Product Name	Material Code	Image	Function
Micro Printer	1.609.01.0020		Portable, allowing you to print various measurement parameters without connecting to a computer.

TECHNICAL SPECIFICATIONS

Product Model	PS808CT
Geometry	45/0 (45° annular uniform illumination, 0° reception)
Compliant Standards	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724-1, ASTM E1164, DIN 5033 Teil 7
Features	The PS808CT coffee & tomato Spectrocolorimeter adopts 45/0 optical geometry and is equipped with a Φ50 mm large aperture. It is used for food processing measurements such as coffee color, tomato index, bread baking, etc.; and for precise color measurement and quality control in industries including plastics & electronics, paints & inks, textile & apparel dyeing, printing, and ceramics.
Integrating sphere size	/
Light Source	Combined LED light source
Spectroscopy	Nano-integrated spectral device
Sensor	Silicon photodiode array (dual-row 20 sets)
Wavelength Range	400-700nm
Wavelength Interval	10nm
Half Bandwidth	10nm
Reflectance Range	0-200%
Measurement Aperture	Φ50
Color Space	CIE LAB, HunterLab
Color Difference Formulas	ΔE^*ab , $\Delta E(Hunter)$
Other chromaticity index	SCAA, $\downarrow CCI$, coffee roast degree, BCU, tomato a/b ratio, fresh tomato color index (FTCI), TPS, TSS, TCS, TJS, Lycopene
Observer Angle	2°/10°
Illuminant	D65, A, C
Display	Spectral graph, sample colorimetric values, color difference values/graph, chromaticity diagram, color simulation, pass/fail results
Measuring Time	Approx. 1.5 s
Repeatability	Spectral reflectance: standard deviation $\leq 0.07\%$ ($\leq 0.2\%$ for 400-700 nm) Colorimetric values: $\Delta E^*ab \leq 0.03$ (after warm-up and calibration, 30 measurements of white plate at 5 s intervals)
Inter-Instrument Agreement	$\Delta E^*ab \leq 0.35$ (average of measurements on 12 BCRA Series II color tiles)
Measurement Time	Approx. 1 s
Measurement Modes	Single measurement, average measurement (2-99 times)
Dimensions	210 x 245 x 188 mm
Weight	3.1 kg
Power Supply	24 V DC, 3 A power adapter
Light Source Lifespan	10 years or >2 million measurements
Display	TFT true color 7-inch capacitive touchscreen
Interfaces	USB, Bluetooth
Data Storage	1,000 standard samples, 30,000 test samples
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)
Standard Accessories	Power adapter, data cable, user manual, quality management software (Download URL: http://www.3nh.com/en/client_en_14.html), white plate, Petri dishes x2
Optional Accessories	Micro printer



Spectrophotometers



Colorimeters



Haze Meters



Gloss Meters



Test Charts



Light Booths