Select from three different operations using just one device!

NIPPON DENSHOKU
Advanced Technology In Color and Brightness.

- Three different operation methods can be selected from one device. Expand your capability by being able to measure a variety of samples !
- Both color and density can be measured using just one device. Can be used for a wide-range of activities from offset printing to color management.
- This compact device can display the spectral reflection rate, polarized color criteria chart, and various color systems.

Quick Spectrophotometer

NF 333

Pen type

Stapler type

Mouse type

Patent Pending
Condensing method
0/45°

LED type

Clearly displays the numerical value for minute color differences.

JQA-QM7364 091-A

ISO9001:2000 CERTIFIED

Pen type

Features a movable optical sensor that is optimal for measuring in recessed and confined areas.

Stapler type

Allows the target position to be confirmed making is optimal for partial measurement of printed matter, etc.

Mouse type

The optical sensor and body are combined into one unit to allow measurements to be taken with just one hand on flat and vertical surfaces.

Quick

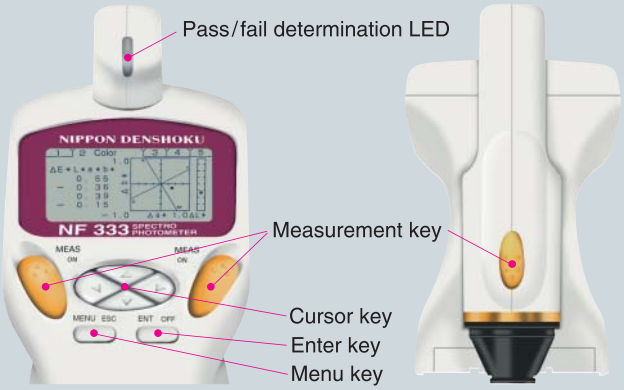
Spectrophotometer NF 333

(with Color Management Software)

LED type

Clearly displays the numerical value for minute color differences.

*This unit is traced by the National Institute of Standards and Technology (NIST) in U. S. A.



Can be easily operated with either the right or left hand, and measurement keys are also positioned near the two sensor areas on the body.

Measurement keys	Used to turn on the power and to take measurements.
Menu key	Used to turn menus on an off.
Enter key	Used to select menu items and turn the power off.
Cursor key	Used to change the screens and more the cursor.
Pass/fail determination LED	Green light: Within the tolerance range of the set reference color (good)
	Red light : Outside the tolerance range of the set reference color (no good)

Specifications

Device type and model	LED type, Quick Spectrophotometer NF 333
Dimensions	Approx. 170mm L ×95mm D ×145mm H
Weight	Body: approx. 420g (including batteries), sensor, approx. 110g
Supported standards	Complies with JIS Z 8722, ISO 7724, DIN 5033, ASTM D 2244, E 308, JIS K 7654, ISO 5/4, ANSI PH 2.17, DIN 16536, etc,
Light source	Multicolored LED (10-year life)
Photoreceptor	Photo diode
Measurement wavelength range	400 nm to 700 nm
Wavelength interval	20 nm
Measurement diameters	8 mmϕ (standard), 4mmϕ
Meter configurations	Three different configurations (pen, mouse, stapler type) are offered.
Illumination conditions	A, B, C, D_{50}, D_{55}, D_{65}, D_{75}, F2, F5, F6, F7, F8, F10, F11, F12
Visual field angle conditions	2° and 10°
Reflection angle response	ISO status, T, E, I, DIN (wide and narrow)
Measurement range	Reflection rate: 0 to 150%, Display output resolution: 0.01%
Measuring time	Approx, 1 sec
Measurement reproducibility	⊿E*= 0.02 or less (dia, 8mm), ⊿E*= 0.05 or less (dia, 4mm) (Standard color deviation based on the average when measuring the white color board 20 times.)
Measurement items	Spectral reflection rate (value and graph), polarized light criteria chart, L*a*b* chromaticity coordinates, XYZ, Yxy, L*a*b*, L*c*h*, L*u*v*, Hunter Lab, WI-Tw (CIE No, 15.2/ISO 105-J02), WI (ASTM E 313), WI (ISO 2470), W, WB, YI (ASTM E 313), YI (ASTM D 1925/JIS K 7103), Munsell value (equivalent to HV/C C/2* & D_{65}/2*), MI, pass/fail determination, reflection density (CMYK), ⊿XYZ, ⊿Yxy, ⊿L*a*b*, ⊿L*c*h*, ⊿L*u*v*, Hunter ⊿Lab, ⊿WI (three kinds), ⊿W, ⊿WB, ⊿YI (two kinds), ⊿reflected density (CMYK)
Color difference formula	⊿E*ab, ⊿E^*_{CMC} (coefficient random setting), ⊿E^*_{94} (coefficient random setting), ⊿E*uv, ⊿E
Density calculation function	CMYK density, density difference
Graphic display	Spectral reflection rate (value & graph) polarized color criteria chart (changeable range)
Average measurement	Up to a maximum of 20 points can be freely set and measured.
Data compensation function	Reference values can be input from the spectral reflection rate or XYZ.
Data save quantity	400 data pieces (saved as spectral data)
Reference date quantity	40 data pieces (Can be input from measurements, spectral reflection rate, or XYZ.)
Display	128×64 dots with backlit, high-contrast black & white graphic LCD
Diaplay area size	Approx, 55×44mm
Displayed languages	Japanese and English (interchangeable)
Operation keys	4 cursor keys, 2 function keys, 3 measurement keys
Power	Four AA batteries or AC adapter
Battery measurement life	Approx, 20,000 measurements (when the pass/fail LED and LCD backlighting are not used when battery powered)
Low battery warning	A warning is displayed on the LCD during measurement when the batteries are low.
Buzzer	Standard feature (The buzzer can be turned off.)
Warmup	Unnecessary
Auto power off	Provides 6 settings (off, 1, 5, 10, 20, 30 min) for the time after which the power is automatically turned off when the meter is not in use.
Data communication	RS-232C, maximum 38,400 bps, Data can be exchanged with a personal computer using the color management software.
Operating temperature/humidity	5 to 40°C, 20 to 80% RH (no condensation)
Temperature sensor	Built in (with function for re-calibration)
Warning message display	Displays various warnings to facilitate better data reliability,
Options	Printer, printer AC adapter, RS-232C cable (for connecting with the printer), thermal sensitive paper (10 rolls), AC adapter (100V, 120V, 220- 240V), target plate (for curved surfaces) O-ring sensor (10 units), sponge ring, etc.

※These specifications may be changed without notice.

Color Management Software

For RS-232C communications

- Display of various graphs and colors by numerical values
- Data collection using statistic and management records
- Easy management using data entry and a good assortment of function
- Text output
- Copying of graphs to a printer port
- Data criteria function

Operating system: Supports Windows (95, 98. 2000)

Computer: PC AT compatible (Macintosh not supported)

Printer

OPTION

Standard accessories

- Body
- Sensor
- Reference calibration boards (white board, black board)
- Four AA batteries
- Color management software
- AC adapter
- Plate for stapler type model
- Cable for connecting the body and sensor
- Target plate
- RS-232C cable (D-sub 9pin)
- Instruction manual
- Carrying case

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