

## COLOR CHECKER

## NR-12A



NR-12A is a handy type color meter, which is compact, light weight and portable. It allows to measure and display the color systems and color difference formulae (Hunter  $\Delta E$ ,  $\Delta E^*$ ,  $\Delta E_{00}$  and  $\Delta E_{94}$ ) that are usually necessary for color management. Functions of decision to pass or fail and data compensation are also available for use. On the color liquid crystal display, reference color and measured approximate color can be comparatively shown. Color management software and an exclusive printer are available in option, and  $\phi 3\text{mm}$  or  $\phi 10\text{mm}$  measuring aperture can be selected. This model is really an innovative instrument.

## ■ Features

- 1 This is a portable, compact and light weight handy type color meter.
- 2 Basic color systems and color difference formulae to be measured will be enough for usual color management.
- 3 Reference color and measured approximate color are comparatively shown on a large color LCD.
- 4 Functions of data compensation and decision to pass or fail are available for use.
- 5 40 pieces of reference value data and 400 pieces of measurement value data can be saved into the built-in memory.
- 6 Measured data can be quickly printed out when an exclusive printer (option) is connected to this model.
- 7 Using color management software (option), analysis by measurement data and various color graphs is possible on the display of your personal computer.

## ■ Normal measurement



## ■ Target mark



## ■ Hard case



## ■ Exclusive printer (Printy2)



## COLOR CHECKER / DENSITOMETER

## NR-12B



NR-12B is a handy type color meter/densitometer upgraded from NR-12A. Measuring aperture can be switched over between  $\phi 3\text{mm}$  and  $\phi 10\text{mm}$ , enabling your easy measurement according to sample sizes. In addition to the measurements of colors systems and color difference formulae, you can also measure color density. This model has all the same functions adopted to NR-12A, such as decision to pass or fail, data compensation, display of measured approximate color, etc. Color management software is attached to this model as standard configuration, by which measured data can be transferred to your personal computer for display and analysis. It is indeed a highly functional instrument.

## ■ Features

- 1 Color density can be measured in addition to the basic color systems and color difference formulae.
- 2 Depending on sample sizes, you can easily set the measuring aperture to  $\phi 3\text{mm}$  or  $\phi 10\text{mm}$ .
- 3 Using the annexed color management software, analysis by measurement data and various color graphs is possible on the display of your personal computer.

## ■ Specifications

Model	NR-12A	NR-12B
Illumination/Light reception	45°C : 0° (45° multiple illumination, 0° light receiving)	
Measuring method	Diffraction grating, Back end spectroscopy method	
Measuring aperture	$\phi 3\text{mm}$ or $\phi 10\text{mm}$ (to be selected)	$\phi 3\text{mm}$ or $\phi 10\text{mm}$ (switchable)
Light source	LED	
Measuring accuracy	Color difference ( $\Delta E^*ab$ ): Standard deviation within 0.05, where 20 measurements were continuously made using a standard white plate.	Color difference ( $\Delta E^*ab$ ): Standard deviation within 0.05, where 20 measurements were continuously made using a standard white plate (measuring aperture at $\phi 3\text{mm}$ and $\phi 10\text{mm}$ ).
Illuminant/observer	A, C, D50 and D65	
Observation condition	2° and 10° field of view for various illuminant/observers	
Measuring items	XYZ, $\Delta XYZ$ , $L^*a^*b^*$ , $\Delta L^*a^*b^*$ , $L^*C^*h^*$ , $\Delta L^*C^*h^*$ , Hunter Lab, Hunter $\Delta LabE$ , $\Delta E_{00}$ & $\Delta E_{94}$	XYZ, $\Delta XYZ$ , $L^*a^*b^*$ , $\Delta L^*a^*b^*$ , $L^*C^*h^*$ , $\Delta L^*C^*h^*$ , Hunter Lab, Hunter $\Delta LabE$ , $Y_{xy}$ , $\Delta Y_{xy}$ , $YI(E313, D1925)$ , $\Delta YI(E313, D1925)$ , W CIE, WB, W(E313), Tw, $WL^*a^*b^*$ , WLab, Munsell HV/C, $\Delta E_{00}$ , $\Delta E_{94}$ , $\Delta E_{CMC}$ , $L^*u^*v^*$ , CMYK density, Density difference, Dot%, Dot gain, etc.
Related standards	JIS Z8701, JIS Z8722, JIS Z8781-4, JIS Z8730, ASTM E308, ASTM E1164, ISO 7724, DIN 5033, etc	JIS Z8722, JIS Z8781-4, JIS Z8730, JIS K7654, ISO 5/4, ASTM PH2.17, DIN 16536, ASTM E308, ASTM E1164, ISO 7724, DIN 5033, etc
Power supply	Li-ion battery (3.7V - 3240 mAh); to be charged by AC adapter (5V - 2A), 10VA	
Dimensions & weight	204(L) x 80(D) x 80(H) mm, Approx. 650g (including battery)	
Option	Color management software (Color Mate 5 or Color Mate Pro), Exclusive printer (Printy2), etc.	Color management software (Color Mate Pro), Exclusive printer (Printy2), etc.

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**NIPON DENSHOKU INDUSTRIES CO.,LTD.**

SENGOKU HASEGAWA BLDG. 4-45-17 SENGOKU, BUNKYO-KU, TOKYO 112-0011 JAPAN

PHONE : 81-3-3946-4392(MAIN LINE) FAX : 81-3-3946-1690

E-mail : kaigai@nippondenshoku.co.jp

URL : <http://www.nippondenshoku.co.jp>