CHROMA METER CR-221/CR-221b

Illuminating system of the CR-221/CR-221b, using 45° illumination angle, 0° viewing angle geometry, is identical to that used by densitometers in the printing industry, allowing users to measure color from printed matter and other glossy surfaces. In addition, its 3mm diameter measuring area enables precise targeting for spot color readings.

Main features

CR-221

- **Precise readings with high repeatability**
- **Built-in data processor and thermal-dot printer**
- **Choice of color notations**
  Chromaticity displayed in Yxy, L*a*b*, L*C*H°, or Munsell; color difference in Δ(Yxy), Δ(L*a*b*), or Δ(L*C*H*). Chromatic reflection density can also be measured.
- **Choice of calibration standards**
  Standard white plate or user-selected reference.
- **Data storage with memory backup**
  Memory for 20 calibration standards, 20 target colors and 300 sets of measured color values.
- **Statistical calculations**
  Maximum, minimum, mean, and standard deviation values of data in memory.
- **Alarm and timer functions**
  Alarm to warn users when the color difference is outside preset limits; built-in timer for automatically taking measurements at selected intervals.
- **Choice of two illuminants**
  CIE Illuminant C or D_{65}.
- **RS-232C format data-output terminal**

CR-221b

- **Compact, handheld, battery-powered unit**
- **Readings displayed in Yxy or L*a*b***
- **Built-in memory for measuring color difference**
  Color difference measurements in Δ(Yxy), Δ(L*a*b*), or ΔE^*_{ab}.
- **Choice of calibration standards**
  Calibration can be done using the white plate supplied or another reference selected by the user.
- **Choice of two illuminants**
  CIE illuminant C or D_{65}.
- **Interfacing with peripheral units**
  Remote-control socket and 1-bit serial data-output terminal for connection to a separate computer.

Applications

- **Manufacturing:**
  Color control of painted and coated surfaces
- **Printing:**
  Control of color density, ink characteristics, etc.

Illuminating/measuring system

Light from the pulsed xenon arc lamp is guided by 30 optical fibers (ϕ1mm) and projected onto the sample at a controlled angle of 45° (a). These fibers are distributed in a circle so that the sample surface is illuminated uniformly (b).

The light reflected vertically from the sample is collected by the optical fiber and sent to the silicon photocells for color evaluation. Specularly reflected light is blocked from reaching the optical fiber, enabling more accurate measurements of glossy surfaces.