CIE 170-2: 2015 is a chromaticity diagram with physiological axes defined by CIE and announced in 2015. This probe has color-matching functions conforming to the CIE 170-2: 2015 definition, and provides luminance and chromaticity data that have high correlation with visual results even when adjusting wide color gamut displays.

### Display Color Analyzer CA-410

#### CIE 170-2:2015 Compliant Probe

- **CA-P427C/P410C**
- **Model:** CA-P427C/P410C
- **Measurement area:** Φ 27 mm / Φ 10 mm
- **Acceptance angle:** ± 2.5° / ± 5°
- **Accuracy guaranteed measurement distance:** 30 ± 10 mm / 30 ± 5 mm
- **Display range**
  - **Luminance:** Displayed in 4 digits
  - **Chromaticity:** Displayed in 4 digits
- **Accuracy guaranteed range**
  - **Luminance:** ± 0.002 / ± 0.003
  - **Chromaticity:** ± 0.002 / ± 0.003
- **Accuracy (for white)**
  - **Luminance:** ± 0.4% / ± 0.7%
  - **Chromaticity:** ± 0.4% / ± 0.7%
- **Repeatability (2σ)**
  - **Luminance:** ± 0.35dB / ± 0.4dB
  - **Chromaticity:** ± 0.35dB / ± 0.4dB
- **Weight:** 270 g (including mount) / 280 g (including mount)
- **Power supply:** DC 5 V (input from USB bus power line or RS communication connector)
- **Operation temperature/humidity range:**
  - 10 to 35°C, relative humidity 85% or less with no condensation
- **Storage temperature/humidity range:**
  - 0 to 45°C, relative humidity 85% or less (at 35°C)
- **Accessories**
  - Standard: PC Software for Color Analyzer Ver. 1.0 CA-S40, USB Cable for Probe-PC (Type B) IF-A29, Hood for Probe, Lens Cap for Probe
  - Optional: Conversion Cable IF-A35, BNC Conversion Cable IF-A35

#### Flicker (JEITA)
- **Accuracy:** ± 0.4% / ± 0.7%
- **Repeatability (2σ):** ± 0.35dB / ± 0.4dB

#### Chromaticity
- **Accuracy guaranteed range:**
  - **Luminance:** ± 0.002 / ± 0.003
  - **Chromaticity:** ± 0.002 / ± 0.003
- **Accuracy (for white)**
  - **Luminance:** ± 0.4% / ± 0.7%
  - **Chromaticity:** ± 0.4% / ± 0.7%
- **Repeatability (2σ)**
  - **Luminance:** ± 0.35dB / ± 0.4dB
  - **Chromaticity:** ± 0.35dB / ± 0.4dB

#### Operations
- **Measurement target (Flicker frequency):** 0.25 to 50 Hz / 8 kHz
- **Flicker (Contrast):** 3% sine wave, 30 Hz, AC/DC
- **Measurement synchronization mode:** NTSC, PAL, EXT, INT, MANU (4ms to 4s)
- **User calibration memory channel:** 99 channels / 99 channels
- **Interface:** USB2, RS-232C
- **Trigger:** In & Out [5V]
- **Size (mm):** 42 x 42 x 139.7 / 42 x 42 x 173.5
- **Weight:** 270 g (including mount) / 280 g (including mount)

#### Specifications
- **Measurement range**
  - **Luminance:** 0.001 to 5,000 cd/m²
  - **Chromaticity:** CIE 170-2:2015
- **Accuracy (for white):** ± 0.4% / ± 0.7%
- **Repeatability (2σ):** ± 0.35dB / ± 0.4dB

#### Notes
1. Measured under Konica Minolta's standard light source (6,500K).
2. Luminance for monochrome is measured when reading of luminance for white is 100 cd/m².
3. Temperature 23°C±2°C, relative humidity 40%±10%.
4. In NTSC synchronization mode using USB with one probe.
5. Reading fluctuation (compared to reference reading at 23°C, 40% RH) luminance ±2% for white, Chromaticity (at 100 cd/m²): ±0.002 for white, ±0.003 for monochrome.
6. The probe corresponding to CIE 170-2:2015 can not be used under Ver. 1.30 or earlier.
Merits of using a CIE 170-2:2015-compliant probe

When adjusting color of conventional displays using our color analyzer probe conforming to CIE 1931

Conventional display

Wide color gamut display

No visual difference was detected between conventional displays.

Differences are visually evident even though measured values are matched to displays of wide color gamut.

Issue

Because of the advanced color technologies used with OLED, quantum dot, laser and other advanced displays, colors need to be adjusted between displays of differing spectral characteristics. However, even when measured values are matched, colors do not always look the same.

Improvements made using CIE 170-2:2015

When adjusting color of wide color gamut displays using our CIE 170-2:2015-compliant probe

Wide color gamut display

Colors can be adjusted to look the same even with displays of wide color gamut.

SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument.

Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

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The specifications and appearance shown herein are subject to change without notice.

Some lighting control methods may make accurate measurements difficult. For details, please contact your nearest Konica Minolta sales office or dealer.

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