

# CM 10 Tristimulus Colorimeter

## Application

Tristimulus colorimeter for color measurement on primary light sources; e.g., lamps, luminaries, light signals, flares, monitors, displays, glasses, and filters.

Colorimeter of highest precision for absolute measurements with the tristimulus method according to DIN 5033 section 6 and CIE Publ. No. 15.2 (1966), respectively.



CM 10 Colorimeter

## Characteristics

Microprocessor-controlled tristimulus colorimeter with 4 spectrally matched silicon detectors equipped with graphic LC display with backlight illumination

- Precision colorimeter heads with superior approximation to the CIE color matching functions  $\bar{x}(\lambda)$ ,  $\bar{y}(\lambda)$ , and  $\bar{z}(\lambda)$
- 6 measuring ranges in decades, higher sensitivity for lower illuminance 200 mlx
- Highest displayed value: 600,000 lx
- Resolution (last digit) 0.0001 lx in Y-channel (most sensitive range)
- 4-digit displays: Display modes: X-Y-Z (CIE-LAB), x-y-Y (CIE-LAB), u v Y (CIE-UCS 1960), u' v' Y (CIE-UCS 1976), color temperature  $T_{cp}$
- Measurement of luminous flux in lm (with integrating sphere) (factor specification for freely selectable lumen calibration).
- Measurement of intensity in cd
- Representation of color coordinates in CIE color diagram on LC display
- Automatic range switching
- Automatic average value calculation
- Highest accuracy class L (in Y-channel) according to DIN 5032 ( $f_{1y} < 1.5\%$ )
- Light sensitive surface 14 mm diameter, built-in thermostatic stabilization 35°C
- 19-inch 3 height units housing for rack mounting
- Calibration, traceable to PTB standard, with calibration certificate
- Individual test report on spectral sensitivity
- Rated voltage: 230 V  $\pm 10\%$
- Power usage: < 50 VA
- Rated frequency: 50 Hz
- Operating temperature: 10...50°C
- Storage temperature: 0...70°C
- Dimensions : 450 x 325 x 135 mm
- Detector connecting cable 3 m (longer if desired)
- Weight: Display device approx. 8 kg; detector approx. 0.9 kg
- V.24 (RS232) interface

## Options

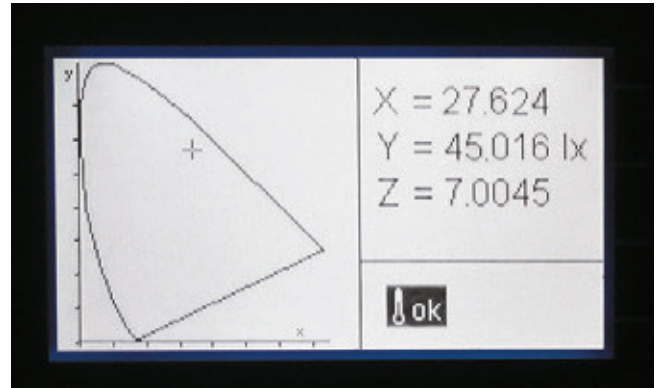
- Separate 19" benchtop housing
- TÜV or PTB certificate available optionally
- Cable extensions
- Tube for stray light reduction
- Tripod
- FMS software for PC control, test report generation, data storage and processing, graphical representation (isocolor diagrams, CIE tri-chromatic diagram, etc.)

## Feature

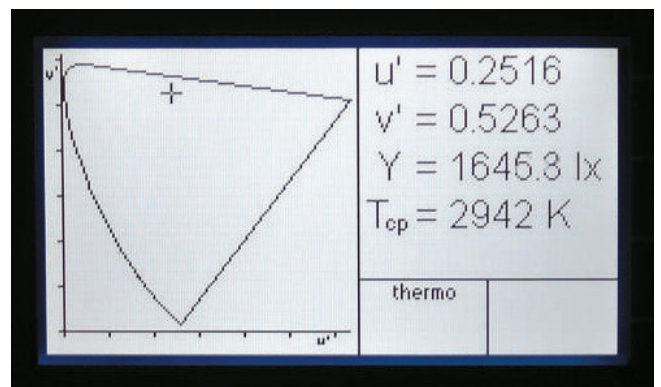
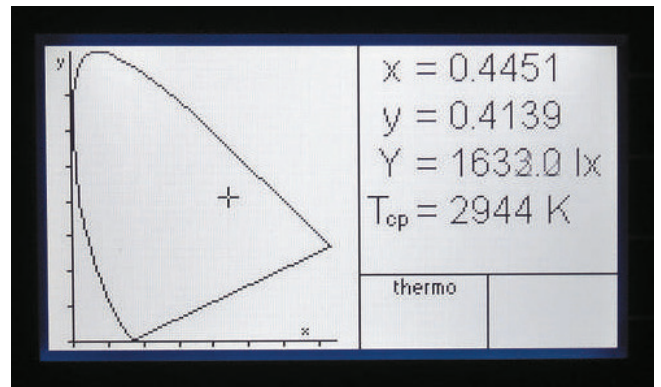
New CM 10: Small light sensitive surface of just 14 mm available with remaining sensitivity for measuring directional light sources with uneven light distribution; this offers the unique advantage of ensuring that detector is fully illuminated, thus guaranteeing correct measurement results.



New design of colorimeter head with 14 mm aperture and improved sensitivity for low illuminance levels



Graphic LC display with CIE color diagram



Typical display modes of CM 10