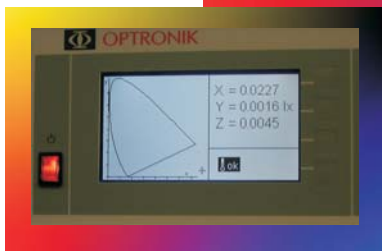
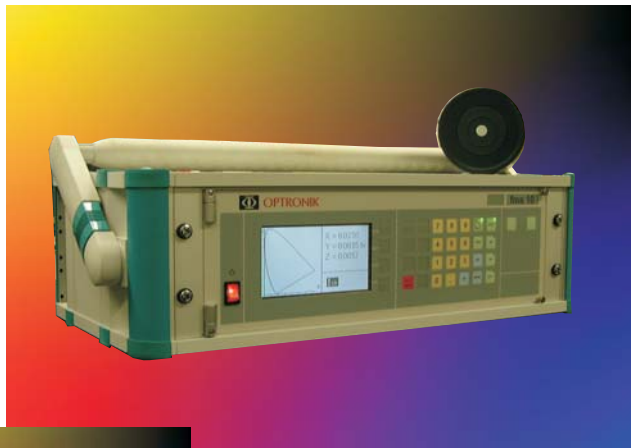


Experience

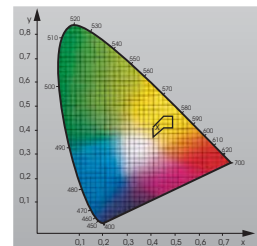
the measurable light difference.



xrite.com



fms 10
Tristimulus Colorimeter



The fms10 tristimulus colorimeter is the result of over 30 years of OPTRONIK's experience and know-how in color and light measurement. Colorimeters are essential for analyzing and classifying color in various fields such as research & development, quality and manufacturing control. In the color industry, their contribution to the standards of acceptance is indispensable. Tristimulus colorimeters enable absolute color values to be measured. They are especially suited for measuring light sources of a great variety of types - lamps, luminaries, monitors etc.

The fms 10 tristimulus colorimeter sets standards in all aspects of accuracy of measurement, operational reliability, user friendliness, and price/performance ratio. Latest photoreceptor technology and advanced electronic components is used in its design and construction. High quality components coupled with conscientious assembly guarantee first-rate, long-term consistent and outstanding sensitivity.

The functional principle of the fms 10 (according to the tristimulus colorimetric principle) is that of using optically filtered photo-electronic receivers according to the standard color matching functions $\bar{x}(\lambda)$, $\bar{y}(\lambda)$ and $\bar{z}(\lambda)$. This process determines the tristimulus values X, Y and Z directly, without requiring additional calculation. Measurement of the x-channel values by two separate photocells guarantees higher spectral accuracy than can be achieved by the conventional method using only one photocell. The receivers are thermostabilized in order to ensure constant offset and sensitivity at changing ambient temperatures.

The fms 10 tristimulus colorimeter consists of two units, a color measuring head and an evaluation/display unit.

The evaluation display unit is equipped with a high resolution graphic LC display with backlight illumination. A comfortable keypad serves to control the instrument's functions. In addition, the hardware solution offers the following features:

- On-line calculation and indication of **x, y, u, v, u', v'** color co-ordinates
- On-line calculation and indication of **correlated color temperature**
- **Direct indication of luminous flux, if used with integrating sphere**

The instrument's functionality can be supplemented with an optional PC-program. This program enables you to represent color measurement results in other co-ordinate systems (for instance $L^* a^* b^*/CIE\text{LAB}$), to make differential measurements, to use a database, and to output test certificates in accordance with all relevant international standards.



optronik.de

fms 10

OPTRONIK

X = 123,4
Y = 234,5
Z = 135,7

Indication of X, Y, Z. A resolution of 0.001 lx of Y is OPTRONIK's standard

OPTRONIK

x = 0,341
y = 0,427
Y = 234,5

Cutover of the indication modes by pushing the button.

OPTRONIK

x = 0,341
y = 0,427
Y = 234,5
T_{cp} = 2856 K

Direct indication of the color temperature

TECHNICAL DATA in accordance with German Industrial Standard (DIN) 5032, part 8

Applications:

Laboratory and precision measurements of primary light sources, determining tristimulus values X-Y-Z and chromaticity co-ordinates in various color co-ordinate systems
Tristimulus colorimeter suitable for applications with goniophotometer or integrating sphere.

Application fields: laboratory and high precision measurements on primary light sources of different types and dimension: lamps luminaries, fluorescent materials, monitors etc. Measurement of absolute color values.

Features:

Tristimulus color measurement head; silicon photo element with spectral approximation to the standard spectral value functions $x(\lambda)$, $y(\lambda)$ and $z(\lambda)$.
Measurement and display of standard color values X, Y, Z.

Measurement range (Y-channel)

- smallest indicated value: 0.001 lx
- highest indicated value: 600,000 lx
- number of measurement range: 6, decade graded
- overdrive protected
- automatic range selection

Additional characteristics

- Measurement of X-channel by two separate receivers.
- Measurement of illuminance and luminous flux.
- Calibration in cd available.
- Indication of standard color values x, y, u, v, u', v'.
- Calculation and indication of correlated color temperature T_{cp} .
- Thermostatic stabilization (35° C)
- Aperture: 14 mm 60 mm
- Graphical representation of color location as standard color value diagram
- High contrast LC-graphic-display backlight illuminate
- Individual recording of measurements

Delivery extent:

- 1 Color measurement photo element
- 1 Display and evaluating unit. (prepared for integration into 19 inch (48.26 cm) electronic rack/switching cabinet.)
- 1 Instruction manual
- 1 X-Rite® OPTRONIK calibration certificate
- 1 Set connecting cables and power cord

OPTIONS

- Software program OPTO FMS (Windows® - based)
- 19 inch (48.26 cm) Housing with carrying handle.
- PTB Test report (Federal Institute for Physics and Engineering of Germany)

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