HCT-99 Hand-held Luminous Color Meter

- **Compact Luminous Color Meter for**
 - **Correlated Color Temperature**
 - x,y and u',v' Chromaticity Coordinates
 - Illuminance
 - **Optional Luminance, Luminous Flux and Luminous Intensity**
- © Tristimulus Detector with Real X_{short}, X_{lona}, Y and Z Spectral Functions
- © Field Service and Laboratory Use
- © USB Interface for Remote Control Operation
- © Economical Price
- © OEM Labeling
- © Battery Operation

Luminous color

Color is defined as the attribute of visual perception consisting of any combination of chromatic and achromatic content. This attribute can be described by chromatic color names such as yellow, orange, brown, red, pink, green, blue, purple, etc., or by achromatic color names such as white, gray, black, etc., and qualified by bright, dim, light, dark or by combinations of such names.

Perceived color depends on the spectral distribution of the color stimulus, on the size, shape, structure and surroundings of the stimulus area, on the state of adaptation of the observer's visual system, and on the person's experience of prevailing and similar situations of observation

Illuminance and Color

It has been known for many years and prescribed that high illumination levels will have positive effects on spiritual and physical performance. In comparison, low illumination levels can cause depression and even physical illness.

The classical photometric evalu-



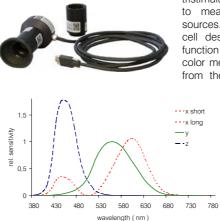
is not the only factor for a healthy physical-biological home or work environment. Well balanced illumination and light-colors are necessary and conducive to a long term healthy life. A life surrounded by optical radiation. So new generation light meters

should also measure color since it is a significant part of the total visual sensation Luminous Flux and Color

Light source manufacturers and other users need to know the luminous flux and color temperature they are work-



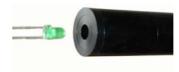
ing with. Typically integrating spheres are used to measure these quantites



Luminance and Color

Besides illuminance, luminance is one of the most important light measurement quantities used to specify the contrast situation on work stations and monitors. Luminous Intensity and Color

Spot lamps, like LED's for example, are very often qualified by their directional light intensity.



HCT-99 Color Meter

The HCT-99 is a compact portable light-meter for general lighting applications which also measures chromaticity coordinates x,y and u',v' as well as correlated color temperature. The ergonomically designed meter is simple to use for the benefit of inexperienced users.

CT-4501 Detector Head

A compact design, 20 mm flat tristimulus detector is designed to measure broad-band light sources. Precisely corrected four cell design including the X_{short} function ensure precise luminous color measurement independent from the light source emission

spectrum.

Optional Components To extend the unit's light measurement application range beyond luminous color, add:

 Integrating Spheres: luminous flux (calibration in Im)

• Front lens: luminance (calibration in cd/m²)

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HCT-99

Gigahertz-Optik

• Steradian front tube: luminous intensity (calibration in cd)

Traceable Calibration

Calibration is traceable to the ISO EN 17025 accredited part of Gigahertz-Optik's Calibration Laboratory for Optical Radiation Quantities and NIST standards. Calibration of detector sensitivity as well as an individually measured plot of spectral sensitivity is included as part of the calibration certificate.

Custom Labeling:

The HCT-99 is ready made for custom design and labeling. Customization may include the meter front panel, function/mode set-up, detector heads, manuals and calibration certificates. Contact the factory for details and application assistance.

Operation

The HCT-99 is simple to operate To measure, connect the detector and switch on the meter.

CW Measurement

CW mode is used to measure continuous DC or AC signals. Color temperature, x/y or u'/v' and illuminance are displayed all at once

Stop/Run Function

Current reading can be 'frozen' on display by pressing 'stop' button.

Calibration Selection

To re-set the measurement application add the attachment to the CT-4501 and select the calibration in the menu mode.

HCT-99 Specifications & Ordering Information

Specifications: HCT-99 Meter

| Signal Inpu | ıt | | | | | |
|--|---|--|--|--|--|---|
| Detector Input Signal Processing | | 4 photocurrent signal inputs with multiplex electronic function to one photocurrent to voltage converter amplifier with following voltage to voltage amplifier (x10). 6 decade stepped gain ranges with max. gain signal values from 20.0 μA to 200.0 pA. Automatic range switching. 12 bit ADC with up to 14 bits at longer integration times. A/D converter with 1 ms time interval. Variable integration time through averaging of multiple measurements. | | | | |
| | | Selectable from 1 ms to 1 s per channel. | | | | |
| Measureme | | | es the selected in | 0 0 | | |
| Frequency F | <u> </u> | - | | 0.166 Hz to >300 M | | |
| Detector Co | | | MDSM9 socket, 4 | 4 measurement input | ts | |
| Range Spec | 1 | | | | | |
| Range Max. (A/V) Val | | | Slew-Rate (10 - 90%) | | | Permitted Detector Capacitance |
| 1x10-5 | | | 3 ms | | 0.2 % + 0.05 % | 2 nF |
| 1x10-6 | | ,000 µA 3 ms | | 0.2 % + 0.05 % 2 nF | | |
| 1x10-7 | 200, | 0,0 A 3 ms | | 0.2 % + 0.05 % 10 nF | | 10 nF |
| 1x10-8 | 8 20,00 nA | | 3 ms | 0.2 % + 0.05 % | | 10 nF |
| 1x10-9 2,00 | |) nA | 30 ms | 0.2 % + 0.05 % | | 10 nF |
| 1x10-10 | 200,0 |) pA | 30 ms | | 0.2 % + 0.05 % | 10 nF |
| Functions | | | | | | |
| Parameter S | Settings | Ret | ention of the last | settings in continuou | us memory. 3 function buttons. | |
| Measureme | nt Quant | | | vith DKD calibrated on measurement quantit | current source. Current signal multiplied wi | th calibration correction factor to dis- |
| General | | pia | y in the different f | | uco. | |
| Display | | LC | D graphic displa | y (97 x 32 pixel). Text | t: 4 rows each 14 characters. LED backgrou | Ind illumination (switchable) |
| Operating Temperat | | | | | | |
| Dimensions/Weight | | | | | | |
| Power | weigilt | | | | consumption: 6mA + 30mA (display illumina | tion) USB: bus powered |
| | | 27 | DULLOIV SIZE AA L | | | |
| | | | , | 2.2 - 3.2 v). Guiterii G | | , , |
| Interface | | | | | | |
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