PM 5639/00
Color Analyzer

Supplement to: PM 5639/00 **Reference: Manual no. 9499 491 00711**

Subject:
New features introduced in Series 02 of PM 5639/00.

The following changes are introduced in instruments with serial numbers higher than 020600, except for instruments with serial numbers between 521000 and 569000.

The PM 5639/00 Series 2 consists of:
1. PM 5639/80 Display Unit
2. PM 5639/90 CRT Color Sensor
3. Accessories

New features introduced in the PM 5639/00 series 02 are:
1. Difference displays: δx δy, and $\delta u'$ $\delta v'$ displays.
2. Absolute level RGB bar graph display.
3. Toggle function between set-up #1 and set-up # 2.
4. Correlated Color Temperature (CCT).
5. The number of user-defined White References has been increased from two to seven.

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Description of the New Features:

1. Chromaticity unit, CIE displays

The chrominance unit selection makes it possible to choose between a number of CIE Standardized displays:

CIE 1931 xy display:	The display that was previously called the xy Y display. The display is in accordance with the CIE 1931 chromaticity coordinate definition. The xy values are shown at the bottom of the display.
CIE 1931 δx δy display:	The display is the same as the one above, except that instead of the xy values of the actual light only, the deviation between the white reference light coordinates and the measured coordinates are shown at the bottom of the display. The "color" of the monitor equals the white reference when $\delta x = 0$ and $\delta y = 0$.
CIE 1976 u'v' display:	This display is also called u-prime v-prime or u*v* display. It is a linear transformation of the original xy Y display. The display is more color-uniform, meaning that a change in this display more closely reflects what the human eye perceives as a change than in the original xy display. The u'v' values are stated at the bottom of the display.
CIE 1976 $\delta u'$ $\delta v'$ display:	This display is the same as the CIE 1931 δx δy display, except that the values have been changed to CIE 1976 $\delta u'$ $\delta v'$ differences.

2. Absolute level RGB bar graph display

The RGB bar graph display allows the user to operate relative to an absolute luminance level. The absolute level is indicated to the right of the display. When all three bars are at the center line levels, the color of the screen equals the white reference and the luminance level equals the absolute reference level.

3. Toggle function between set-up # 1 and set-up # 2

Typically, when monitors are adjusted the cut off RGB color balance is adjusted by means of a low-level window signal and the high level RGB color balance are adjusted by use of a high level window signal. Adjustments at cut-off and high levels must usually be performed more than once. If the absolute level mode has been selected, the toggle function may be used to switch between two set-ups with different absolute levels.

4. Correlated Color Temperature

A correlated color temperature read-out has been added to the CIE displays. The correlated color temperature is calculated as the temperature of the black body that would emit light, which most closely corresponds to the measured light. The display shows "...." when the distance to the black body curve is too great. The Correlated Color Temperature is stated in the bottom at the CIE displays.

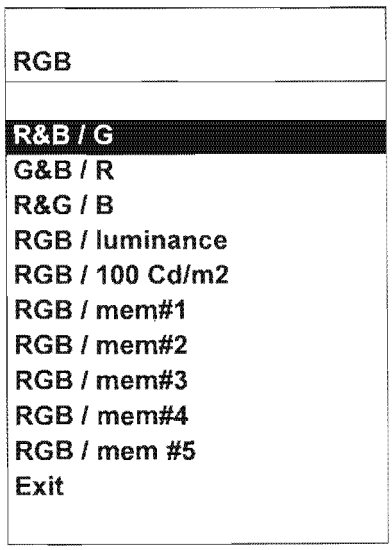
Changes to the Operating Manual:

General

On the Series 02 display unit the text plate has been change so that the **"xy Y"** button is now labeled **"CIE"**.

Section 6.3.5 (page 6-6)

If the instrument is in RGB measuring mode when the RGB button is pressed, it will show the RGB main menu. The previous selection is highlighted.



Use the ▲ , ▼ or [RGB] button to select the desired mode of operation and press [ENTER] (Please note: the text after the "/" may be changed to another value and unit due to previous programming). The instrument will then go into the desired RGB measuring mode.

If "Exit" is selected, the instrument returns to the measuring display changing anything.

The display feature "Absolute level RGB mode" has been added to the RGB menu.

"Absolute level RGB mode":
The center line now equals the luminance value shown to the right of the bars. To change this value, press the [RGB] and the ▲ or ▼ buttons simultaneously.

Section 6.3.8 (page 6-7)

The function main menu has been changed The menu-item "Measuring Unit" has been replaced by the menu selections "Luminance Unit" and "Chromaticity Unit".

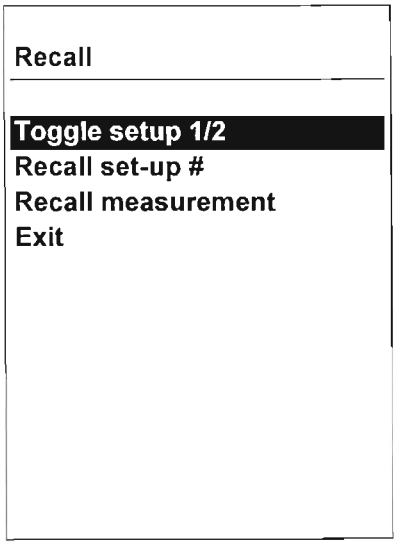
Section 6.3.10 (page 6-9)

"RECALLL"-Button
Pressing this button calls the Recall menu onto the display, "Toggle setup 1/2" will be highlighted.

Use of the toggle function:
Pressing the [RECALL] button again activates measuring set-up # 1 or #2. To change measuring set-up press [RECALL] twice. The activated measuring set-up is indicated in the display. Before the toggle function can be used, the measuring set-ups must be stored in set-ups #1 and #2.

Use the ▲ or ▼ button to select whether it is a measurement or a set-up you wish to recall and then press [ENTER]. A sub-menu will now be displayed.

If "Exit" is selected, the instrument returns to the previous measuring display.



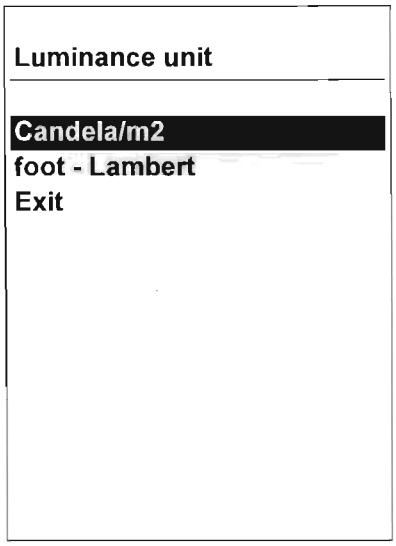
Section 6.4.3 (page 6-12)

This section is replaced by the following two menus:

A. Luminance Unit (a "Function" sub-menu)
If "Luminance unit" is selected from the Function menu, the "Luminance unit" sub-menu will appear. The measuring unit in use is highlighted.

Use the ▲ or ▼ button to find your selection and then press [ENTER].
The measurements will now be shown in the unit selected, and the display then returns to measuring mode.

If "Exit" is selected, the instrument returns to the Function menu without changing anything.



B. Chromaticity Unit (a "Function" sub-menu)
If "Chromaticity unit" is selected from the Function menu, the "Chromaticity unit" sub-menu will appear. The chromaticity unit in use is highlighted.

Use the ▲ or ▼ button to find your selection and then press [ENTER].
The measurements will now be shown in the unit selected, and the display then returns to measuring mode.

If "Exit" is selected, the instrument returns to the Function menu without changing anything.