

PM 5639/06, PM 5639/26 & PM 5639/94 LCD Colour Analyser

Supplement to: PM 5639/01/20/21/25

Reference: Manual no. 9499 493 09011

Supplement to: PM 5639/00

Reference: Manual no. 9499 491 00711

Subject:

This package contains information, which upgrades your Operating manual for the LCD sensor versions.

Please insert the pages included at the front of the manual

The LCD Colour Sensor series consists of:

PM 5639/06	9449 056 39061	LCD Colour Analyser with handheld display unit
PM 5639/26	9449 056 39261	LCD Colour Analyser for Industrial and PC-use
PM 5639/94	9449 056 39941	LCD Colour Sensor

Compared to the Small Colour sensor, the LCD version is equipped with an optical front end. This enables measurements on FPD (Flat Panel Displays), i.e. LCDs and ELDs.

The operation is similar to the other versions, i.e. display structure, commands, etc.
Only specific differences are listed in this supplement.

Important note:

**When using the LCD sensor in a PC-based solution, note that the s/w supplied is a DOS program.
For more details, please read appropriate chapter at then end of this supplement**

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Product Data

LCD Sensor Head PM 5639/94

Measurement Range

- Luminance 0.5 to 1000 Cd/m²
(0.15 to 300 FtL)
- x and y values 0.000 to 0.800
- Correlated Colour Temperature:
1900 K CCT to 12,000 K CCT
- Angle of aperture: $\pm 10^\circ$
- Measuring distance:
calibrated at 130mm.
Luminance within ± 2 Cd/m² in range 5 to 200mm

Accuracy

The following specifications apply to a measurement with an illuminant D6500 standard monitor¹⁾ at a luminance level of 80 Cd/m² (23.3 FtL) and at a distance of 130mm and at an ambient temperature of 15°C to 30°C (59°F to 86°F)

- Chromaticity (measured on white):
Accuracy: ± 0.002
Repeatability: ± 0.002
- Luminance
Accuracy at reference distance:
 $\pm 2\% \pm 1$ digit
Repeatability: $\pm 0.3\% \pm 1$ digit
- XYZ/RGB bars: $\pm 1\%$
Repeatability: $\pm 1\%$
Luminance(Y): $\pm 2\% \pm 1$ digit
- Measuring rate:
When used with the display software:
3 and 10 measurements/second.
When used with the communication modules: up to 15 measurements/second programmable
- Correlated colour temperature:
 ± 50 K CCT

For measurements at low level (< 20 Cd/m²) typical performance is:

Chromaticity:

Accuracy:

0.2 to 5 Cd/m²: ± 0.005

5 to 20 Cd/m²: ± 0.004

Repeatability:

0.2 to 5 Cd/m²: ± 0.010

5 to 20 Cd/m²: ± 0.005

Scan Rates

The PM 5639/94 automatically adjusts itself to the field-scanning rate including HDTV and graphical systems

1) Calibration of the standard monitor is traceable to NIST, USA with respect to chromaticity, and to BIPM, France with respect to luminance

LCD Colour Analyser PM 5639/06 with display unit PM 5639/80.

Handheld LCD Colour Analyser

This stand-alone system consists of the LCD Colour Sensor, Display Unit plus necessary accessories. For the basic measurement specification, refer to chapter above.

Note: the PM5639/94 sensor will not give correct luminance readings for display units with s/w version below 2.5. If the PM5639/80 has a lower s/w revision, the firmware has to be updated.

To find the s/w version: keep button "FUNCT" pressed when powering ON. The TEST menu is now displayed and choosing VERSION displays the s/w date and version.

To obtain a s/w upgrade, please contact the factory.

For operating the instrument, please refer to the PM56396/00 Operating manual.

IMPORTANT NOTE:

If the PM5639/94 Sensor head has been set to 9600 Baud, it is necessary to reset it to 4800 Baud as the display unit operates in 4800 Baud only.

Use a suitable communication program. Below is shown a few of the available commands:

Please note that commands should be terminated with a semicolon ";" or a comma "," (the commands is given to the Colour Sensor as an abbreviation):

Command	Abbreviation	Function
Identity request	I?	The Colour Sensor transmits the identity information, ie. Company: ie. "DK-AUDIO" NC: ie. "400810978930" Ku No: eg. "Ku000000" Soft Ware Rev: eg. "02.0"
Set baud rate	SB n	Sets the baud rate in the connected sensor. n = 48 selects 4800 baud; n = 96 selects 9600 baud

Accessories	Order number
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The PM 5639/06 package includes:

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|--------------------------------------|----------------|
| • PM 5639/94 LCD Colour Sensor | 9449 056 39941 |
| • PM 5639/80 Display Unit | 9449 056 39801 |
| • Interconnection Cable | 4008 105 04810 |
| • Rechargeable Battery Pack | 4008 109 81770 |
| • 110V AC or 230V AC Battery Charger | |
| – European type | 4008 105 90700 |
| – American type | 4008 105 90690 |
| – British type | 4008 105 90740 |
| • Operating Manual | 9499 491 00711 |
| This supplement | |
| • Carrying Case | 4008 108 42260 |

Additions to PM5639/00 Operating manual.

Using the PM5639/80 Display unit version information can be read in the following way: Also

Keep “**FUNCT**” key pressed while powering ON. This enables a window where e.g. s/w versions can be read.

LCD colour Analyser PM 5639/26 for PC-solutions

This stand-alone system consists of the LCD Colour Sensor, Power Supply, PC-Software plus necessary accessories. For the basic measurement specification, refer to chapter above.

The software package for PM5639/25 is used without changes.

NOTE:

This s/w package is a DOS based program, which also runs in a DOS-window under Win98 or prior. However, a few drivers for the graphical display may not work properly (even in a pure DOS environment).

END OF DOCUMENT