

PM 5639 LCD Colour Analysers

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 probes are delivered in various combinations:

PM 5639 Kit LCD	LCD Colour probe with display unit in flight case
PM 5639 Kit CRT/LCD	CRT & LCD Colour probes with display unit in flight case
PM 5639 Update to LCD	Upgrade kit from CRT to LCD in flight case
PM 5639 LCD probe	LCD probe with cable

Important Note:

The PM5639 Update kit is delivered with a new PROM for the display unit.

Please read page 3.

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

The sensor is calibrated for use on LCD monitors, and might therefore show different results on CRT based monitors.

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Product Data

PM539 LCD Sensor Head

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 D65 LCD monitor at a luminance level of 120Cd/m² (35 FtL) and at a distance of 130mm and at an ambient temperature of 15°C to 30°C (59°F to 86°F)

The sensor is calibrated on a reference LCD monitor

- Chromaticity (measured on white):
Accuracy: ± 0.003
Repeatability: ± 0.002
- Luminance
Accuracy at reference distance:
 $\pm 2\% \pm 1$ digit
Repeatability: $\pm 0.3\% \pm 1$ digit
- XYZ/RGB bars: $\pm 2\%$
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:
 ± 100 K CCT

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

Chromaticity:
Accuracy:
0.2 to 5 Cd/m²: ± 0.008
5 to 20 Cd/m²: ± 0.006
Repeatability:
0.2 to 5 Cd/m²: ± 0.010
5 to 20 Cd/m²: ± 0.005

Scan Rates

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

PM 5639 Kits with LCD probe

Handheld LCD Colour Analyser

These systems consist of the LCD Colour Sensor plus necessary accessories. For the basic measurement specification, refer to chapter above.

Note: the PM5639 LCD 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.

The lower limit of readings is 1 NIT with the display unit.

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.

The PROM is accessible in following way:

- Remove battery
- Remove screws in battery compartment and on the top of the unit
- Remove the screws fixing the main PCB and disassemble from display board
- Exchange PROM and carefully assemble in reverse order.

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

Note when using the LCD probe in a PC-based system:

If the PM5639 LCD 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 kit LCD package includes:

•PM 5639 LCD Colour Sensor	9449 056 39941
•PM 5639/80 Display Unit	9449 056 39801
•Interconnection Cable	
• Rechargeable Battery Pack	4008 109 81770
• Universal 110V- 230V AC Battery Charger	
• Operating Manual	9499 491 00711
This supplement	
•Wheeled flight case	4008 108 60110

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 for PC-solutions

When a special power supply is ordered with necessary cables and software the LCD Colour Sensor the LCD probe can be used in a PC-solution, using the PC control and display of results.

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