



for  
REFLECTIVE LCD



## Multispectral imager and Spectrophotometer

### MSColor 32's benefits

Turnkey portable solution

High spatial & spectral resolution

1.2M pixels High Resolution 2D CMOS Sensor

Complete solution for reflectance measurement and analysis

Optional LED illumination ring in the visible or UV

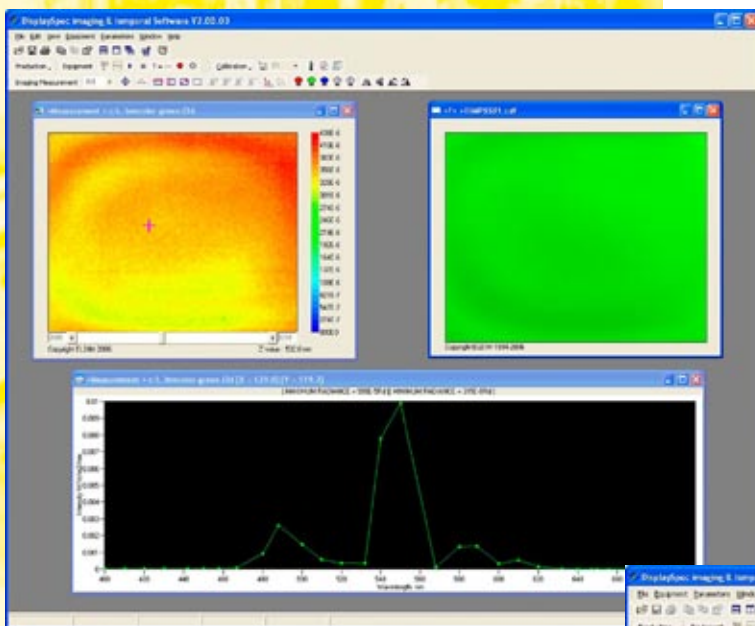
## MSColor 32 DESCRIPTION

The MSColor 32 series delivers a high resolution 2D-Multi spectral measurement. Based on 31 interferential filters, MSColor 32 provides discrete spectral radiance between 400 and 700nm. Its Peltier cooled 1.2M pixels CMOS sensor enables sensitive measurements. MSColor 32 is easy to use and to set up, including a real time acquisition for focusing.

Measurements conditions include:

- Selection of the wavelength resolution (10 or 20nm)
- Fixed or automated integration times
- Optional integrated illumination for reflectance measurements (reference white sample provided)

## SOFTWARE

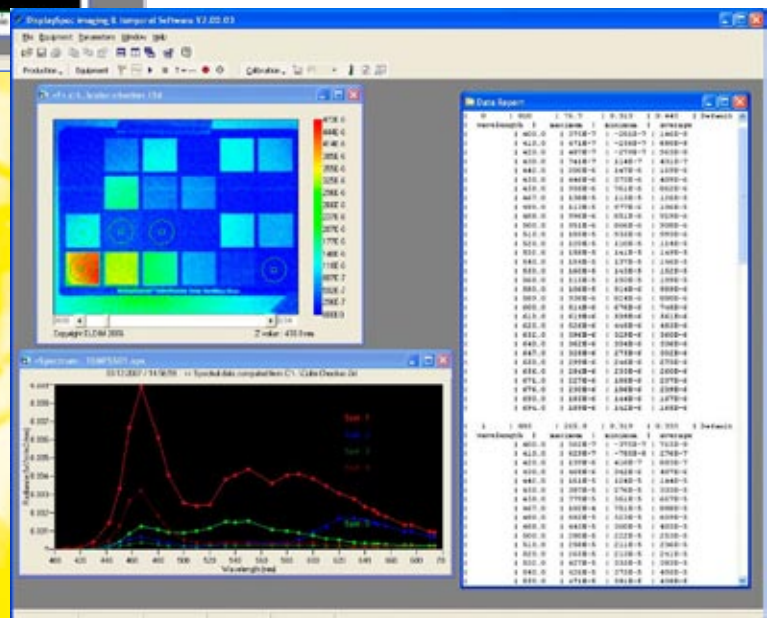


DisplaySpec software features

- Auto-Range
- Automatic sensitivity
- Dynamic optimization
- Binning

DisplaySpec software analysis

- Luminance and Color computation
- Spectral/Space cross-sections
- Isocurves
- Measurement Spots available
- False color representation
- Chart and Data Report



A 32 bit and user-friendly software DisplaySpec

DisplaySpec is compatible with Windows systems\*. Through an ActiveX interface, full remote control can be realized on software such as LabView, Matlab, VBA, VBScript, Javascript, C, C++. With the ActiveX technology, build your own custom sequence.

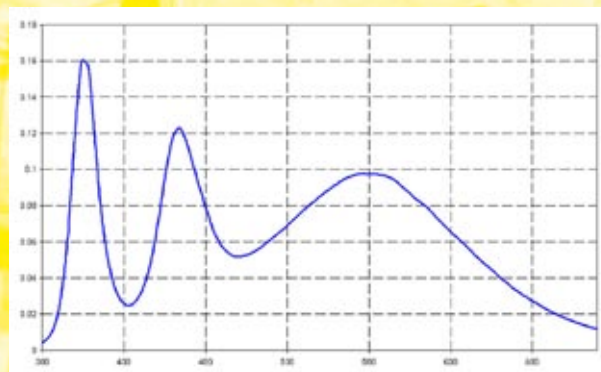
\* Ask for specifications

**OPTIONS**

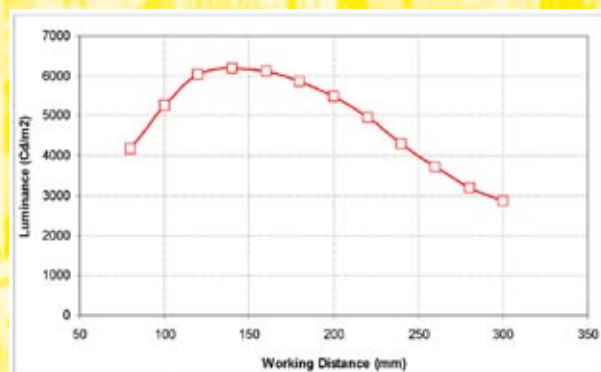
Absolute reflective measurement toolkit.

LED ring illumination

- spectrum covering 400-700nm range
- stabilized source (intensity regulation)
- Computer controlled
- 10 to 25cm working distance



LED ring wide spectrum



LED ring luminance as a function of working distance

Lighting option allows a full absolute reflectance computation based on a white reference measurement.

The screenshot displays the DisplaySpec software interface with several windows open:

- Measurement Window:** Shows a color calibration chart with a central target. A color scale on the right ranges from 6.91E-5 to 1.12E-4.
- Reference Window:** Shows a white reference target. A color scale on the right ranges from 0.00E0 to 2.17E-4.
- Spectrum - measured reflectance.spe:** A line graph of Radiance (W/m²/nm) vs. Wavelength (nm) from 440 to 700 nm. The curve shows peaks at approximately 460 nm and 620 nm.
- Spectrum - absolute reflectance.spe:** A line graph of Reflectance vs. Wavelength (nm) from 440 to 700 nm. The curve shows a broad, smooth curve starting near 0 at 440 nm and rising to approximately 0.65 at 700 nm.

## MSColor 32 Hardware Specifications

<b>CMOS Sensor</b>	10 bits monochrome CMOS Sensor (1024x1280) 6µm square pixel size 7.68mm x 6.14mm active image area Auto-ranging and offset adjustment
<b>Cooling</b>	Double stage peltier cooling -15°C
<b>Objective</b>	F-mount format Lens 50mm f/2.8
<b>Filters</b>	Standard configuration: 31 interferential filters from 400 to 700nm with 10nm bandwidth (400, 410, 420, 430, 442, 450, 458, 467, 480, 488, 500, 510, 520, 532, 540, 550, 568, 580, 589, 600, 610, 620, 632, 640, 647, 650, 656, 671, 676, 690, 694) Optional near infrared filters
<b>Working Distance</b>	10cm – Infinity (5.5cm x 4cm at 25cm)
<b>Performances</b>	±4% between 400 and 700nm for the spectral irradiance ±3% on luminance in the range 200-4000Cd/cm <sup>2</sup> ±0.005 on x,y color coordinates
<b>Connection</b>	USB 2.0
<b>Voltage &amp; Power</b>	110/220V, external power supply
<b>Size &amp; Weight</b>	Weight: 5kg Size (L x W x H): 176mm x 188mm x 205mm

## MSColor 32 Software Specifications

<b>Features</b>	Auto-range, Automatic sensitivity / Dynamic optimization, Binning.
<b>Analysis</b>	Luminance & Color computation, Spectral cross-sections (1D or 2D), Isocurves, False color representation, Chart & Report printing.
<b>Mathematical function</b>	Add, Subtract measurements, Multiply or add by a constant, Measurement rotation or flip, Zoom (x4), Copy/Paste Pictures, Charts and Data.
<b>Measurement spots tool</b>	Define any type of measurement spot, Export predefined configuration. Compute average on spot for Luminance, Color & Spectrum.

## MSColor 32 Options Specifications

<b>LED ring</b>	120mm Diameter Self powered and computer controlled through MSColor 60 LEDs for a wide spectrum illumination (400-700nm) ±1% stabilized after 10 minutes warming
<b>White reference sample</b>	For absolute reflectance measurement.

