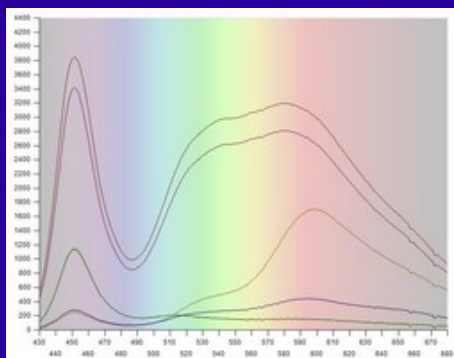
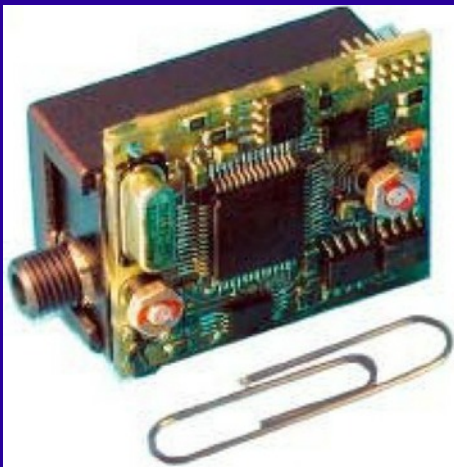


MSU-003

Stand Alone High Resolution Spectrophotometer

!!! NEW !!!
Optical resolution
down to 5 nm



We want to give our customers the expanded capabilities that they need for accurate colorimetric measurements. This product features a state of the art spectrograph design and delivers a high level of measurement performances.

Built from a variety of technological components, the MSU-003 enables us to create systems tailored entirely to the needs of our customers.

Studies show that image has an increasing amount of influence over the commercial success of a product.

Our goal is to offer this product as an OEM bricks as well as to develop fully integrated solution integrated into production flows through innovative remote measurement technology. Routine inspection keeps manufacturing processes on track.

To help our customers face the challenges of globalisation, we provide them with support for all of their colour issue.

Contents	
Optical System	Aberration corrected type IV concave holographic grating
Spectral Sensor	CMOS linear array sensor 128 to 1024 pixels, selectable Visible range, 380—830 nm
Electronic	Embedded A/D converter and communication card
Interface	USB communication Ethernet or RS232 available (contact us)
Power	USB powered (100 mA at 5 VDC)
Dimensions / Weight	30 x 20 x 35 mm / 35 g (OEM) 91 x 63 x 30 mm / 210 g (box)

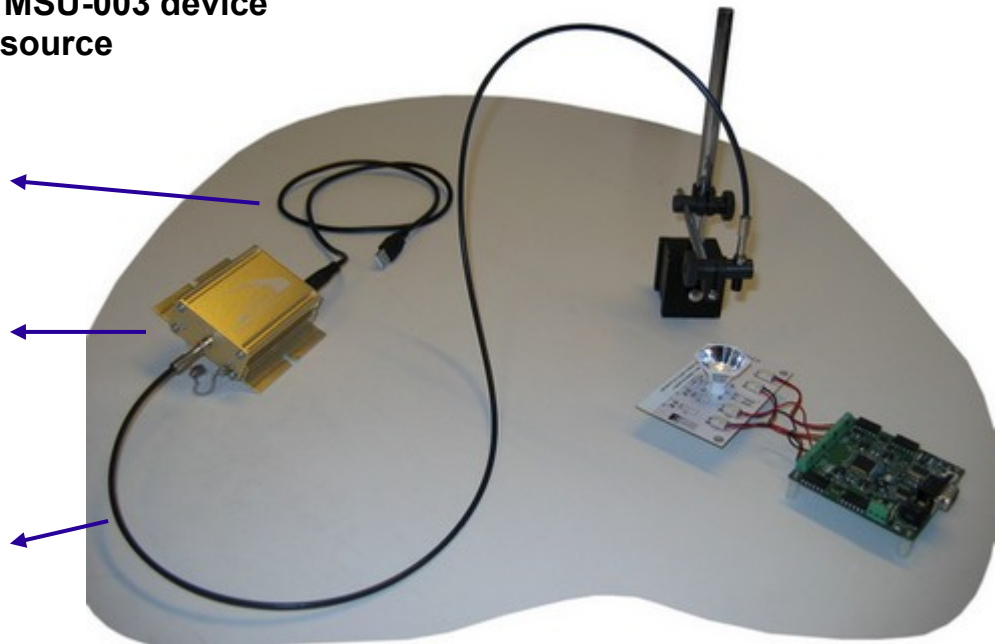
Stand Alone High Resolution Spectrophotometer

Example of a setup using the MSU-003 device for characterization of a light source

Interface is USB for both power and data communication

The spectrophotometer may be provided in a small metallic case (ruggedised) or without any protection (OEM)

The light input connector is SMA905 type, which enables to mount any fiber optics linked to an integrated sphere



- The MSU-003 is powered via its USB interface. There is no external power supply required. The device is thus a true stand alone unit for maximum of flexibility.
- The device features a miniaturized design while keeping the performance and the reliability of a scientific grade spectrophotometer.
- The light analysis is achieved using an aberration corrected type IV concave holographic grating. This technology involves no moving parts. The grating is directly set onto a concave mirror. The device may be introduced in industrial environments and does not requires any specific maintenance.
- High acquisition speed (down to 1 ms) is the perfect match for a fast-paced production flow, while ensuring routine inspection of produced parts.
- The MSU-003 interface is USB which enables an easy integration in any environments. 4 embedded input/ouput hardware ports are available for synchronizing the sensor with the production flow..
- The MSU-003 parameters are available through its Windows Software Graphical User Interface. At the same time, the user may watch the spectral and colorimetric results in various formats for a quick evaluation.
- Our company can develop a Human-Machine interface. We offer our customers the option of maintaining control over this environment by providing them with a completely documented "task" library on a .NET database (Microsoft). This can also be done through tools such as Excel, LabView, etc....



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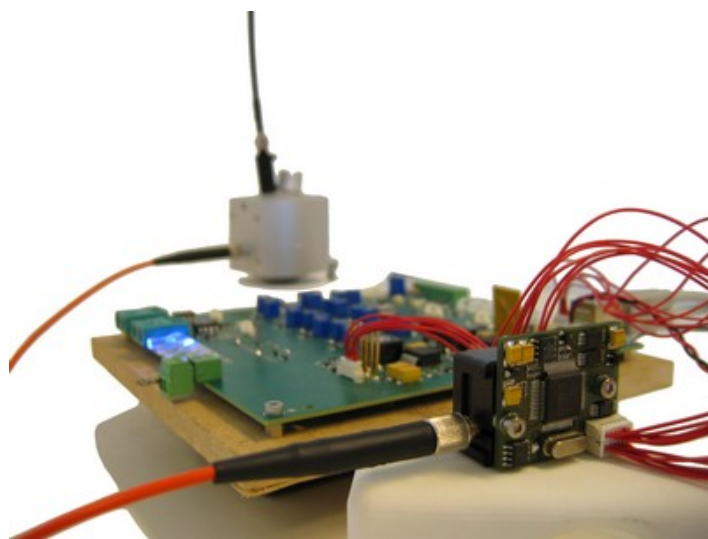
MSU-003

Stand Alone High Resolution Spectrophotometer

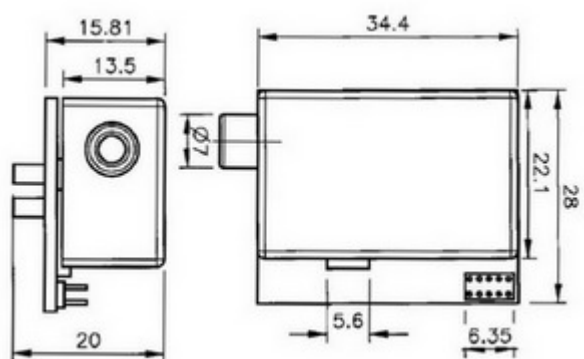
The MSU-003 spectrophotometer is suitable for various applications where the dimensions and the performances are critical key parameters.

The device may be used either as a turn key solution or customized for integration into a subsystem for analysis in the field of analytical chemistry, medical diagnostics, colorimetry, process monitoring, food, lighting, semiconductors and many others.

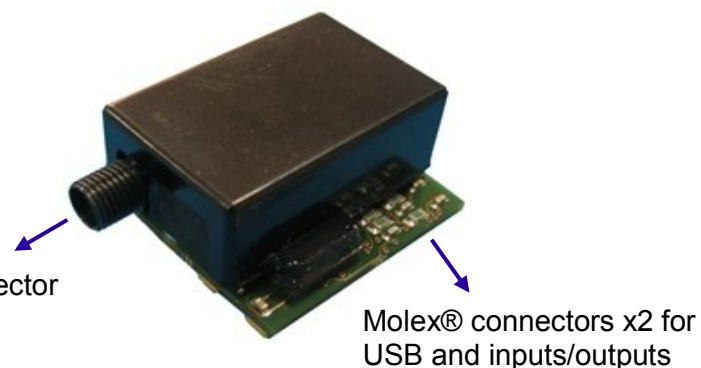
Contact us for more details about the compatibility with your OEM design solutions.



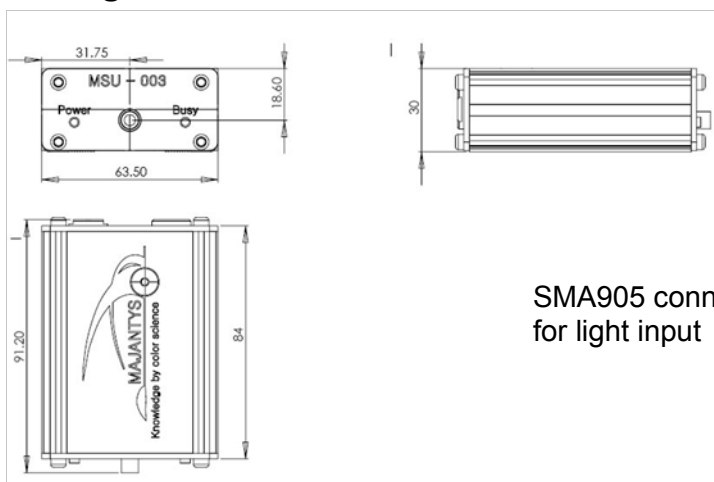
Configuration 1 — OEM , without housing



SMA905 connector for light input



Configuration 2 — Stand alone, aluminium housing



SMA905 connector for light input

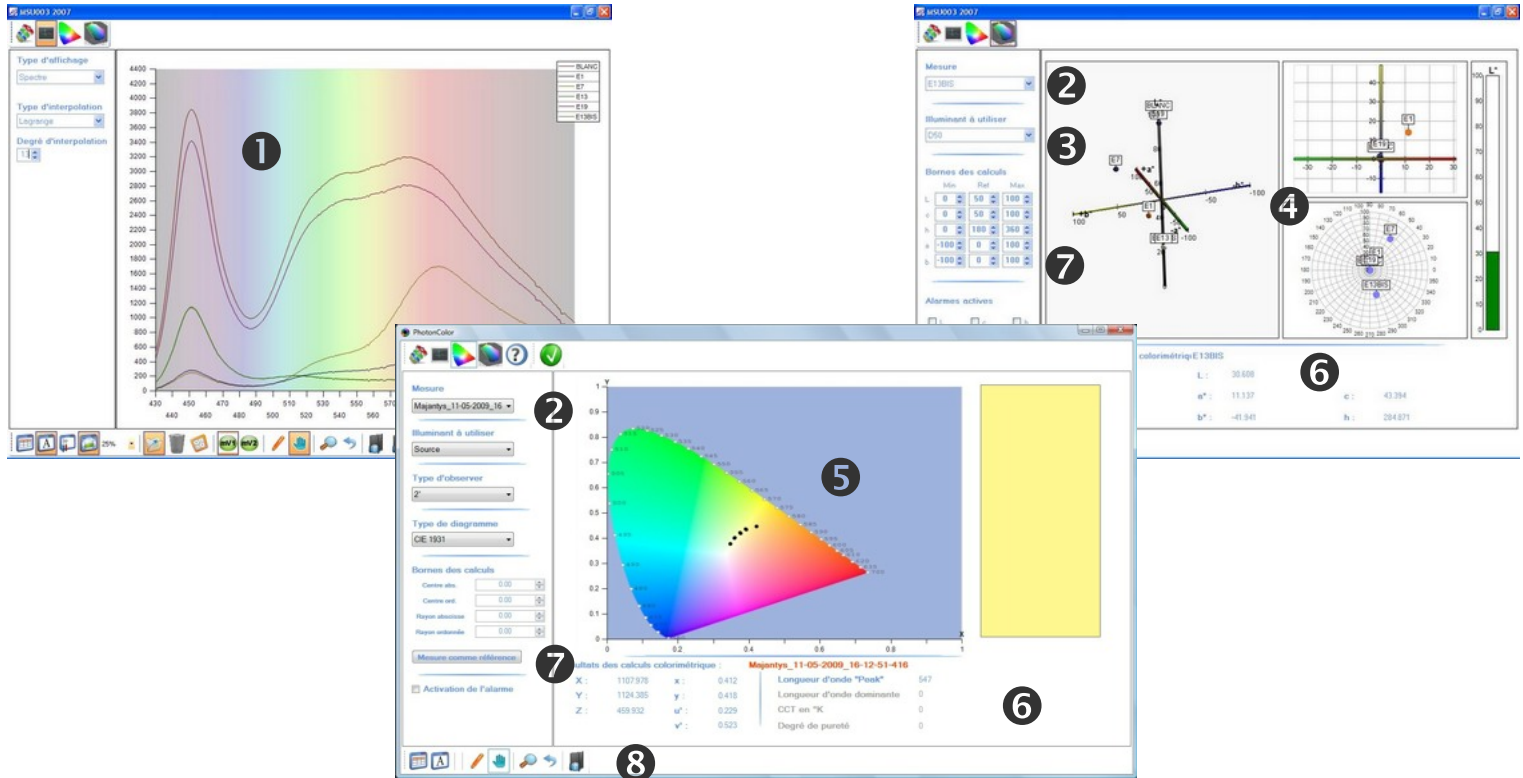


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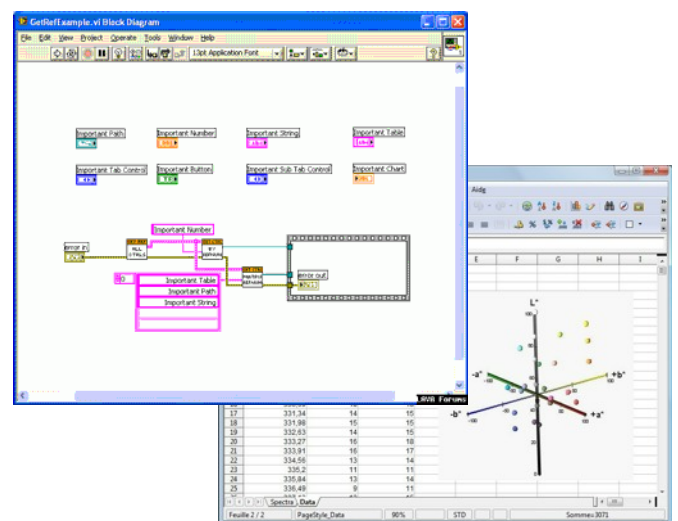
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Stand Alone High Resolution Spectrophotometer

- 1 Measured spectrum
- 2 Sample selection pop-up menu
- 3 Selection of reference light source
- 4 2D and 3D graphs for Lab and Lch representations
- 5 CIE 1931 and UCS 1976 color diagrams
- 6 Color measurement results in numerical formats
- 7 Color difference and alarm set-up
- 8 Tools for data analysis and visualisation



Software Management	
Tools	Fully documented DLL providing spectral and colorimetric coordinates data
Possibilities	Customized software interface
	Customer can develop is own dedicated Software
	Automatic synchronisation with the production process
	Support database storage (long term)



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Stand Alone High Resolution Spectrophotometer

Mechanical Properties	
Dimensions	30 x 20 x 35 mm (OEM) 91 x 63 x 30 mm (box)
Weight	35 g (OEM) 210 g (box)
Material	Stiff aluminium (box)
Optical Properties	
Focal Length	20 mm
Aperture	f/2.7
Diffraction Grating	Aberration corrected type IV concave holographic grating
Entrance Aperture	100µm width – 500µm height
Resolution	10 nm FWHM with 100 µm width slit 5 nm as option — NEW
Stray Light	<0.1% at 415nm with RG630
Dispersion	100 nm/mm
Fiber Optic Connector	SMA905 – 0.22 numerical aperture optical fiber
Sensor specifications	
Detector	CMOS linear sensor
Detector Range	200 — 1100 nm
Pixels Resolution	Selectable 128,256,512,1024
Dynamic Range	71 dB
Absolute QE at peak	60% at 675 nm
A/D Resolution	12-Bit conversion
Integration Time	1 ms to 1 sec. (adjustable)
Features	Non Destructive Read Capable High sensitivity



System Performances	
Spectral Range	360 — 830 nm
Integration Time	1 ms to 1 sec.
Computer	
Operating System	Windows XP and Vista NI LabView 8.2 driver
Interface (standard)	USB 2.0, one port
Interface (option)	Asynchronous Serial RS232/ RS485 Modbus — Ethernet — SDIO Other (please contact us)
Software	Windows software graphical user interface .NET controls available
Electronics	
Power Consumption	Max. 100 mA @ 5V Self powered, no external power supply
Input/Output	3 hardware ports available
Trigger	Yes

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