

# ColorLite sph9i

Online-Spectrophotometer



## 100% Production quality control

- Reduces waste, saves time and costs
- Very high repeatability thanks to high resolution spectral measurement
- Long-lasting and balanced high-power LED light source
- Different probe heads for various applications - reflection and transmission
- Easy communication to your process control system - ProfiNet, ProfiBus, Ethernet

Colour is an important quality attribute of almost all products in production. The ColorLite sph9i is complemented by various probe heads variants and a wide range of accessories. Therefore the ColorLite sph9i system ensures colour control in different areas such as plastics, paper, textile and food industries. Permanent quality control minimizes waste in the production plant, effect increasing productivity by reducing time and costs.

## Measurement principle:

Spectral colour measurement is the most accurate measurement method to achieve consistent and best-reproducible measurement results. The samples are illuminated with homogeneous, white light of high power LEDs. The surface of the product is scanned spectrally in 3.5 nm steps. The wavelength coordinates of 400 to 700 nm are shown in the desired colour scale. The ColorLite sph9i takes into account the appropriate type of light and the observer angle of the selected probe head variant.



MKi6010 with 45°/0° Geometry  
Measurement area 9mm  
Measurement distance 30mm

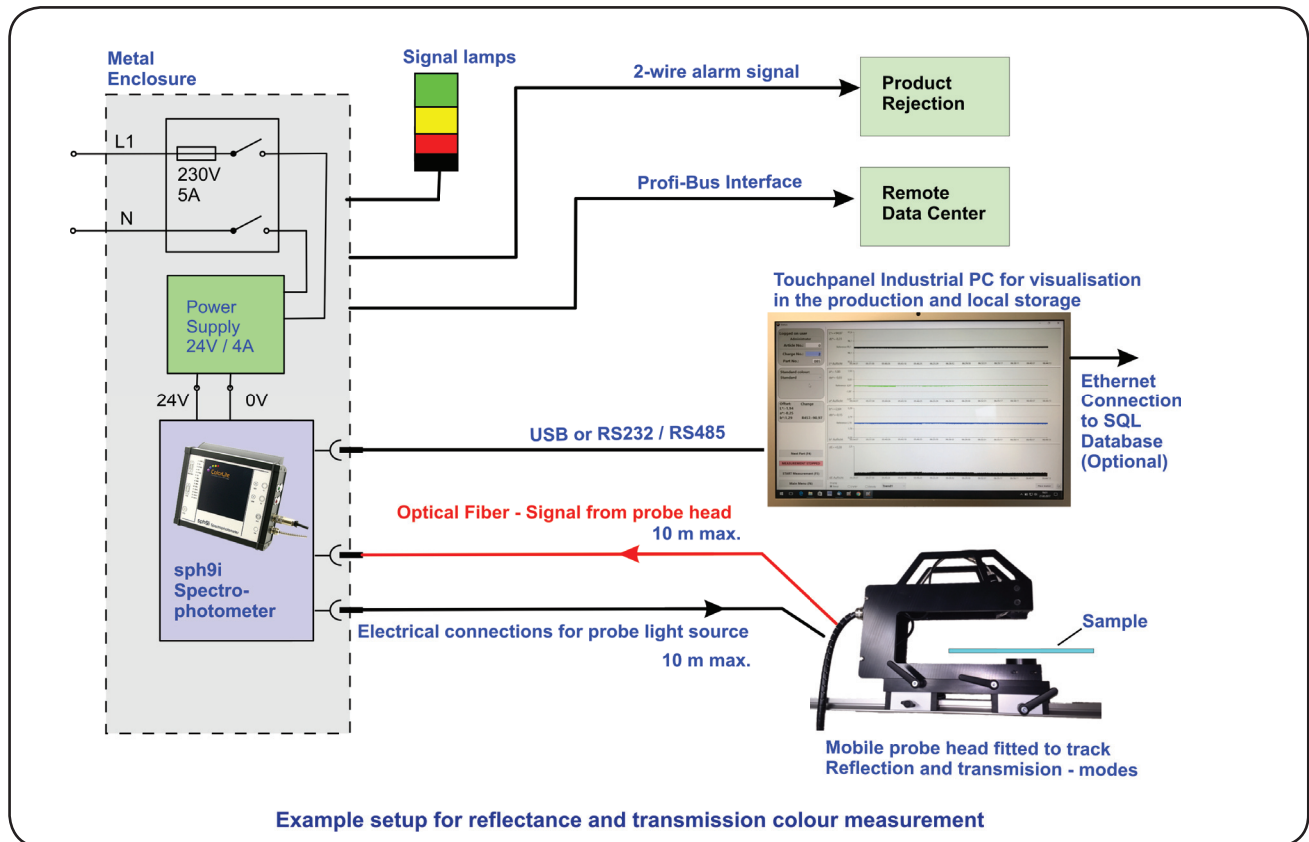


MK MA38 with d/0° Geometry  
Measurement area till 38mm  
Measurement distance 0mm



MKi020 with 20°/0° Geometry  
Measurement area 10mm  
Measurement distance 80mm

## Schematic chart



## Optional accessories

- **Linear track systems**

*Individual design according to customer requirements such as automatic height adjustment, Fixtures and holders for reflection and transmission measurement*

- **Automatic calibration unit**

*With certified calibration standards (BAM/PTB) for continuous production process – 24 hours a day*

- **Stainless steel housing and PC modules**

*For use in industrial production process*

- **Thermochromism compensation**

*With thermal infrared sensor for colour compensation of injection moulding parts*

- **Alarm signal**

*Warning signals and warning lights*

- **Interfaces**

*Connection with ProfiBus, ProfiNet, Ethernet, USB, RS232) to production control system*

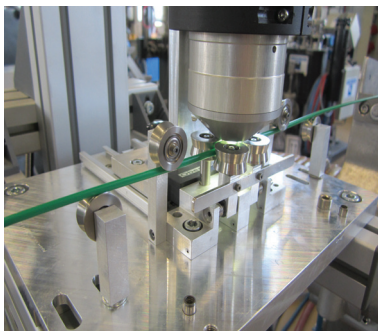
# Application field

## Measurement granules



- Reflectance measurement of granules, recycled pellets and mill material
- Automatic adaption of colour additives, masterbatches
- Immediate lock out of waste compounds
- Automatic calibration

## Measurement extrudate /cables



- Reflectance measurement of extrudate during compounding and extrusion, cable
- Very small measurement area possible < 3 mm
- Infra-Red temperature sensor
- Geometric deviations are detected and corrected with height sensors.

## Transmission Measurement films



- Transmission measurement of films, PET packaging
- Free positionable probe heads with automatic positioning unit
- Combination with dosing system for liquid colours
- System controlled adaption of film width

## Measurement injection moulding parts



- Reflectance measurement of coloured plastic parts
- Non-contact measurement with a distance of 30mm
- Compensation of temperature and light influences
- Sorting out defective parts and good parts

## Measurement fabrics



- Reflectance and transmission measurement of textile fabrics
- Automatic tracker to adapt the bandwidth
- Alarm signal for colour deviations and information to process control system
- Height adjustment for customer-specific adaption

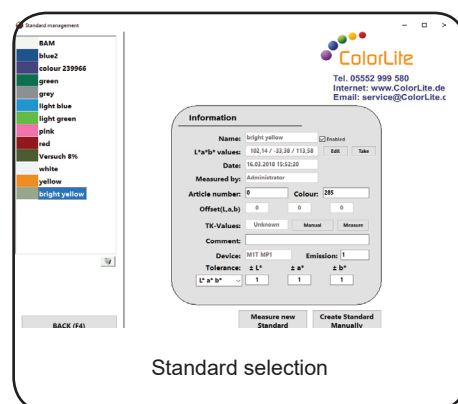
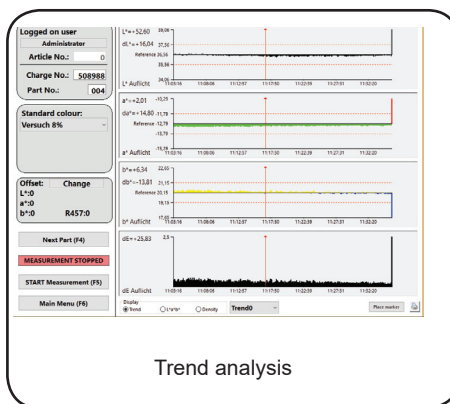
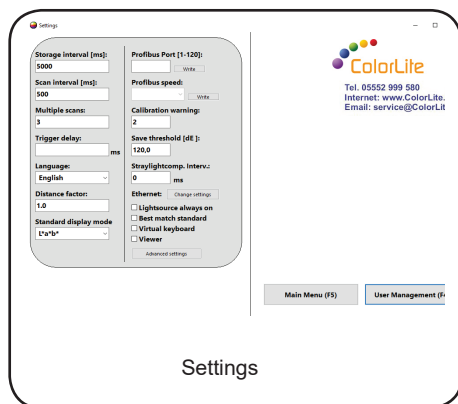
## Measurement paper



- Reflectance measurement of paper webs
- Automatic calibration unit for 24h continuous process
- Alarm signal for colour deviations and information for the process control system

## Database software IPM

The powerful and easy-to-use software supports quality assurance in all matters. The measurement data are not only quickly and precisely recorded, they can also be managed by the software, evaluated and analysed in different colour space representations. All your relevant information can then be quickly and easily summarised by the professional reporting function. If required, customer adjustments can be made according to your individual needs.



## Technical Data

Measurement geometries	45°/0°; 20°/0°; d/0° - measurement area of 2 mm to 80 mm
Standard observer	2° (1931) and 10° (1964)
Illuminants	D65, D55, F11, A, C
Colour values	XYZ; Yxy; dE CIE L*a*b*; L*C*h*, L*u*v*; dE CIE94, dE CMC, dL*,da*,db*, dE 2000
Spectral resolution	Holographic grating-spectrometer FWHM @ 500nm < 10nm - VIS Range Scanning in 3.5 nm steps 115 x 16-Bit values per scan
Light source	White and blue LED's - extrem long lasting LED's
Dimension	210 mm x 110 mm x 45 mm (Basic unit)
Repeatability	< 0.05 dE*lab (measurement on a white surface)
Memory	FRAM, Memory of 1000 standard colours and 200 standards
Calibration	With white certified standard
Power Supply	24 VDC
Climatic conditions	15° bis 55° C
Moisture content	max. 85%, non-condensing
PC-interfaces	Serially: USB, RS232 (isolated) Optional: CAN; Profibus; Profinet, Ethernet (all isolated)
Digital input-/ and output	4/4-Kanal digital I/O for status of process control system 4 isolated input 0-30V 4 isolated output 0-30V, Power current load 0,7A / channel