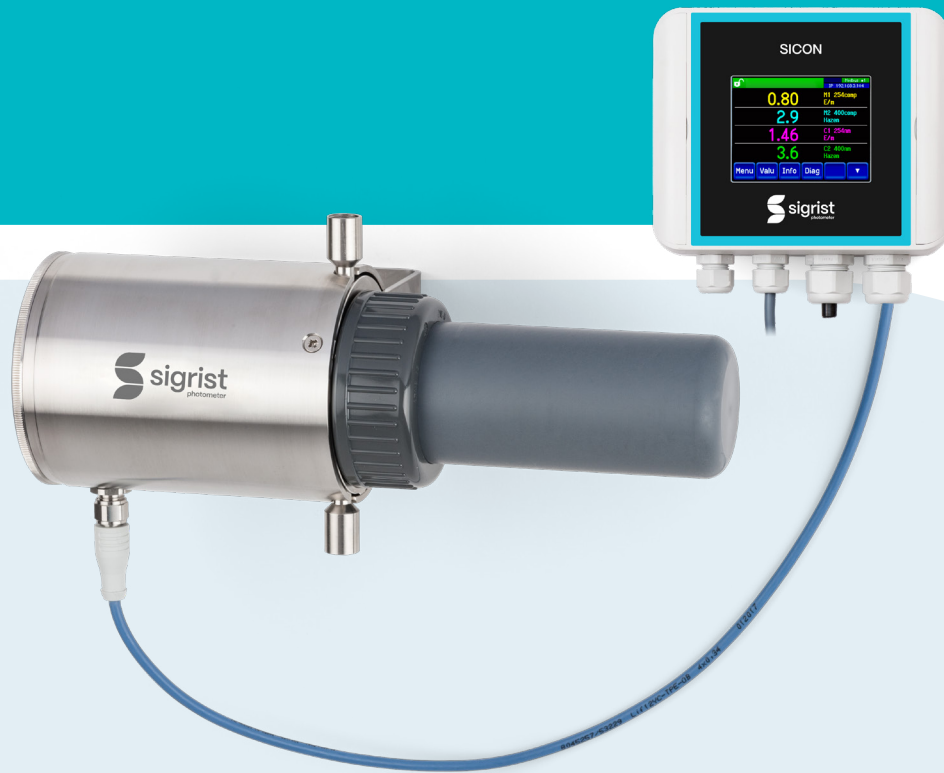


ColorPlus 3 SAK254

On-line DOC monitoring in water treatment



Properties

- On-line measurement of DOC (UV absorption) with colour (Hazen) option
- Integrated compensation of window fouling with cleaning request
- Automatic instrument verification
- Flow cell easy to clean without tools

Applications

- Measurement of dissolved organic compounds (DOC)
- SAK / SSK 254 (UV absorption) measurement
- Colour (Hazen) measurement

Industries

- Treatment of drinking water

Innovations with tangible benefits



Multiple device configurations

The instrument is equipped with different optical filters, depending on the application:

- Filter for DOC (UV absorption) measurement
- 2 filters for automatic instrument verification
- 2 optional filter can be installed (turbidity compensation, color measurement)



The measuring cell

- The PVC cover can be opened without any tools
- Cover removal allows free access for cleaning



Window fouling

The window fouling is determined with the use of two different optical path lengths. The influence is calculated:

- The measured values are automatically corrected
- The instrument informs the user when the fouling compensation is out of range and the cell needs to be cleaned

Wall mounting-set

Device to fit all components of the system (Instrument, SICON, filtration unit, measuring cell drainage, flow meter & pressure valve):

- Compact measuring station
- Simple & fast installation and commissioning



Intelligent control system

The SICON control unit with state-of-the-art touch screen technology and colour display:

- Values, graphs, alarm and status messages can be presented
- An internal data logger allows recalling and displaying measured data of the last 32 days



Main technical details

Measuring principle:	Absorption
Wavelengths:	254 nm
Measuring span:	0 .. 3 E
UV absorption:	100 mm 0 .. 30 E/m, 50 mm 0 .. 60 E/m
Resolution:	0.001 E
Units:	E, E/m, Hazen, GOST, mg/l
Sample temperature:	0 .. 50 °C
Sample flow:	0.5 .. 1 l/min
Protection degree:	IP 66

Full details and technical data:



ColorPlus 3 SAK254

Technical data

Device

Measuring principle:	Absorption
Wavelengths:	254 nm
Measuring span:	0 .. 3 E
UV absorption:	100 mm 0 .. 30 E/m 50 mm 0 .. 60 E/m
Resolution:	0.001 E
Measuring ranges:	8, freely configurable
Units:	E, E/m, Hazen, GOST, mg/l
Ambient temperature:	-20 °C .. +50 °C
Enclosure material:	Stainless steel 1.4301
Protection degree:	IP 67
Weight:	3.4 kg

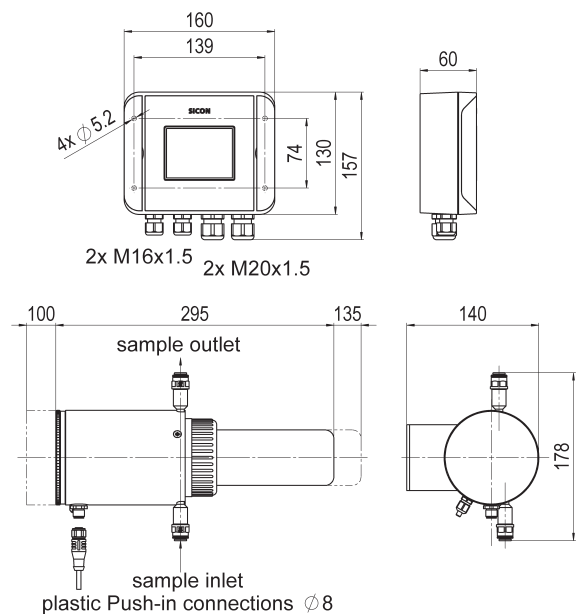
Measuring cell

Material:	PVC housing, stainless steel 1.4435
Path lengths Nitrate:	5/1.5 mm
Path lengths UV absorption:	50/10 mm, 100/10 mm
Window material:	Quarz
Seals:	EPDM
Sample temperature:	0 .. 50 °C
Sample pressure:	600 kPA (6 bar)
Sample flow:	0.5 .. 1 l/min
Connections:	Push fit 8 mm / G 1/4" thread

Control unit SICON

Power supply:	24 VDC +/- 10%
Power consumption:	8 W, including sensor
Display:	1/4 VGA, 3.5"
Operation:	Touchscreen
Ambient temperature:	-20 °C .. +50 °C
Ambient humidity:	0 .. 100% RH
Protection degree:	IP 66
Outputs:	4 x 0/4 .. 20 mA galv. separated 7 x digital, freely configurable
Inputs:	5 x digital, freely configurable

Digital interfaces:	Ethernet, micro-SD card, Modbus TCP
Optional modules (max. 2):	Profibus DP, Modbus RTU, Profinet IO, 4 x 0/4 .. 20mA outputs, galv. separated 4 x 0/4 .. 20 mA inputs



ColorPlus 3 SAK254

Determination of derived quantities

Model substance: Potassium hydrogen phthalate (Abbreviation: KHP, CAS-Nr.: 877-24-7)

The absorption characteristics of KHP at 254 nm is explained in EPA-method 4153. The parameters are only valid for this substance. For other substances absorbing at 254 nm the given values can strongly deviate and we recommend a substance-specific calibration

$$m(\text{KHP}) [\text{mg/L}] = 1.48 \cdot \text{SAK254} [\text{E/m}] - 0.266 [\text{mg/L}]$$

$$\text{BOD} = 1.136 \cdot m(\text{KHP}) [\text{mg/L}] = 1.68 \cdot \text{SAK254} [\text{E/m}] - 0.30 [\text{mg/L}]$$

$$\text{COD} = 1.136 \cdot m(\text{KHP}) [\text{mg/L}] = 1.68 \cdot \text{SAK254} [\text{E/m}] - 0.30 [\text{mg/L}]$$

$$\text{DOC} = 0.47 \cdot m(\text{KHP}) [\text{mg/L}] = 0.70 \cdot \text{SAK254} [\text{E/m}] - 0.13 [\text{mg/L}]$$

$$\text{TOC} = 0.47 \cdot m(\text{KHP}) [\text{mg/L}] = 0.70 \cdot \text{SAK254} [\text{E/m}] - 0.13 [\text{mg/L}]$$