sigrist photometer

VisGuard

Reliable visibility measurement

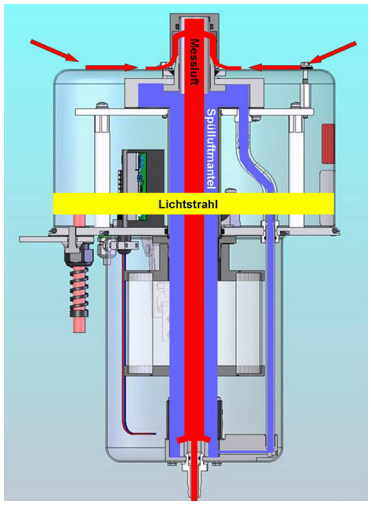
Applications

- Visibility measurement
- Ventilation control
- Early fire/smoke detection in road and rail tunnels
- Dust concentration in air
- Detection of oil mist

Advantages

- High precision and long-term stable visibility measurement
- Fog elimination by optional heating elements
- Compact design
- Simple mounting
- Flexible system integration
- LED light source, very low power consumption
- Permanent instrument monitoring in the background
- Simple recalibration with checking unit
- Few consumables
- Low maintenance costs

Innovations with tangible benefits

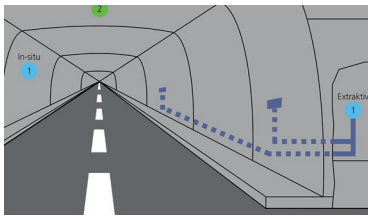


Purge air shroud

The use of a purge air shroud allows the optical components to be effectively protected from contaminations, which guarantees an exact measurement without drift.

Active extraction

Active extraction of the air to be measured ensures that the measurement is a representative value even at low or no flow velocities.



Different types of installations are available

The VisGuard 2 is available in different types of installations including In-situ, Extractive and multiple sampling systems. Extraction lengths of 500m max. are possible.
The advantage of extractive systems is that the instruments are accessible at any time. Maintenance work or repairs do not affect traffic flow.

Checking unit

A solid reference to check the correct operation of the instrument is provided. This allows simple checking and, if need be, recalibration of the instrument.

Sample heater

VisGuard 2 In-situ as well as Extractive is available with an optional heater.

Minimal maintenance

No special tools are neccessary for maintenance. Maintenance requirements are very low. As a rule, an annual checking is sufficient, which only takes about 10 minutes. An economical LED is used as light source. Replacement of the purge air filter depends on the traffic load and is necessary every 1 to 5 years.

Main technical details

Measuring principle / wavelength:	30° scattered light / 880 nm
Measuring span:	0 .. 100 PLA or 0 .. 3000 mE/m
Resolution:	0.001 mE/m
Conformity:	ASTRA «Guideline – Ventilation in road tunnels (2008)», RABT (2006), RVS 09.02.22
Ambient temperature:	–30 °C .. +55 °C
Ambient humidity:	0..100% rel. humidity
Protection class:	IP66 (only with mounted protection caps)
Supply voltage:	24 VDC
Power input:	7 W (In-situ), 1 W (Extractive) + 10 W (heater, optional)

Full details and technical data:

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VisGuard

Technical data

Sensor	
Measuring principle:	30° scattered light
Wavelength:	880 nm
Measuring span:	0 .. 100 PLA or 0 .. 3000 mE/m
Resolution:	0.001 mE/m
Conformity:	ASTRA «Guideline – Ventilation in road tunnels (2008)», RABT (2006), RVS 09.02.22
Material of housing:	Stainless steel 1.4435 / 1.4571
Ambient temperature:	–30 °C .. +55 °C
Ambient humidity:	0..100% rel. humidity
Protection class:	IP66 (only with mounted protection caps)
Supply voltage:	24 VDC
Power input:	7 W (In-situ), 1 W (Extractive) + 10 W (heater, optional)
Weight:	6.5 kg (In-situ), 5.0 kg (Extractive)
Dimensions:	approx. Ø 209 x 366 mm (In-situ) approx. Ø 209 x 254 mm (Extractive)

Connection box SIPORT 2	
Power supply:	100 .. 240 VAC; 47 .. 63 Hz
Power input max:	25 W / 45VA
Protection class:	IP66
Enclosure:	Polyester, fibre glass reinforced
Weight:	1.3 kg
Dimensions:	220 x 155 x 91 mm

Modules for SIPORT 2	
Module Profibus DP:	Interface Profibus DP
Module Modbus RTU:	Interface Modbus RTU with repeater
Module StromRel:	2 x 0/4 .. 20 mA, max. 500 Ω galv. isolated. 3 x semiconductor relays max. 30V, max. 0.12A, Ron max. 25 Ω

Handheld control unit SICON-C for SIPORT 2	
Display:	3.5″ Graphics TFT with touch operation

Control unit SICON (M)	
Power supply:	24 VDC
Power input:	Max. 5 W + photometer
Display:	3.5″ Graphics TFT with touch operation
Ambient temperature:	–10 .. +50 °C
Ambient humidity:	0 .. 100% rel. humidity
Protection class:	IP66
Dimensions:	160 x 157x 60 mm
Weight:	0.6 kg
Output:	4 × 0/4 .. 20 mA, galv. isolated 7 × digital
Input:	5 × digital
Digital interfaces:	Ethernet, microSD card, Modbus TCP
Optional modules (max. 2):	Profibus DP, Modbus RTU, HART, 4 × 0/4 .. 20 mA output, galv. isolated 4 × 0/4 .. 20 mA input

Sampling systems	
In-situ:	In-situ instrument for direct mounting in the tunnel
Mini-Extractive:	In-situ instrument with tube extension of up to 2.5m
Extractive 0–5m:	sampling system 0 .. 5m
Extractive 5–30m:	sampling system 5 .. 30m
Extractive 30–500m:	sampling system 30 .. 500m
Multiple sampling:	multiple sampling of up to 8 ducts

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