xylem
Let's Solve Water

Chemical-free measurement: COD, NO_3 and NO_2

THE WTW SPECTRAL SENSORS

WTW
a xylem brand

Reagent-free measurement directly in the process

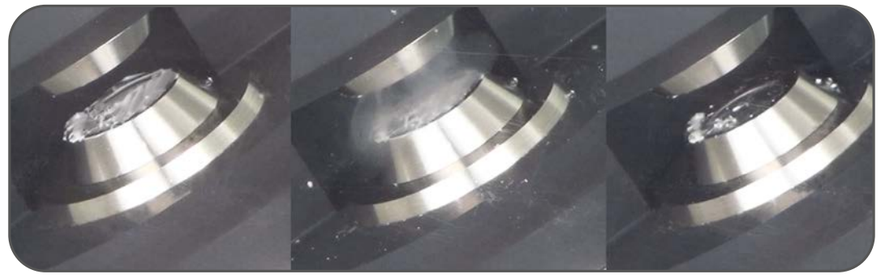
Innovative spectral measurement technique ...

The optical method of the sensors enables a continuous measurement of carbon- and nitrogen-parameters directly in the medium. For simultaneous measurement of several parameters the information of the whole spectrum is evaluated during the process. At the same time cross-sensitivities of single parameters and interferences such as turbidity are eliminated.

... with the unique WTW ultrasonic cleaning system

The integrated ultrasonic source induces oscillation of the measurement windows. The resulting movement of the surface prevents the attachment of dirt and fouling right from the start. This guarantees comparable and reliable measuring results during continuous operation.

AutoClean® TECHNOLOGY



Cleaning effect of the WTW ultrasonic cleaning technology

... extremely resistant

- Robust materials such as Titanium and Peek down to the last screw
- Integrated shock protection
- Usage even in corrosive media

Easy handling

- No sample taking and preparation
- No reaction times
- Minimal cleaning effort

Minimal operational costs

- No routine service necessary
- No use of reagents
- No spare parts such as wipers
- Integrated, maintenance-free ultrasonic cleaning

High measuring accuracy

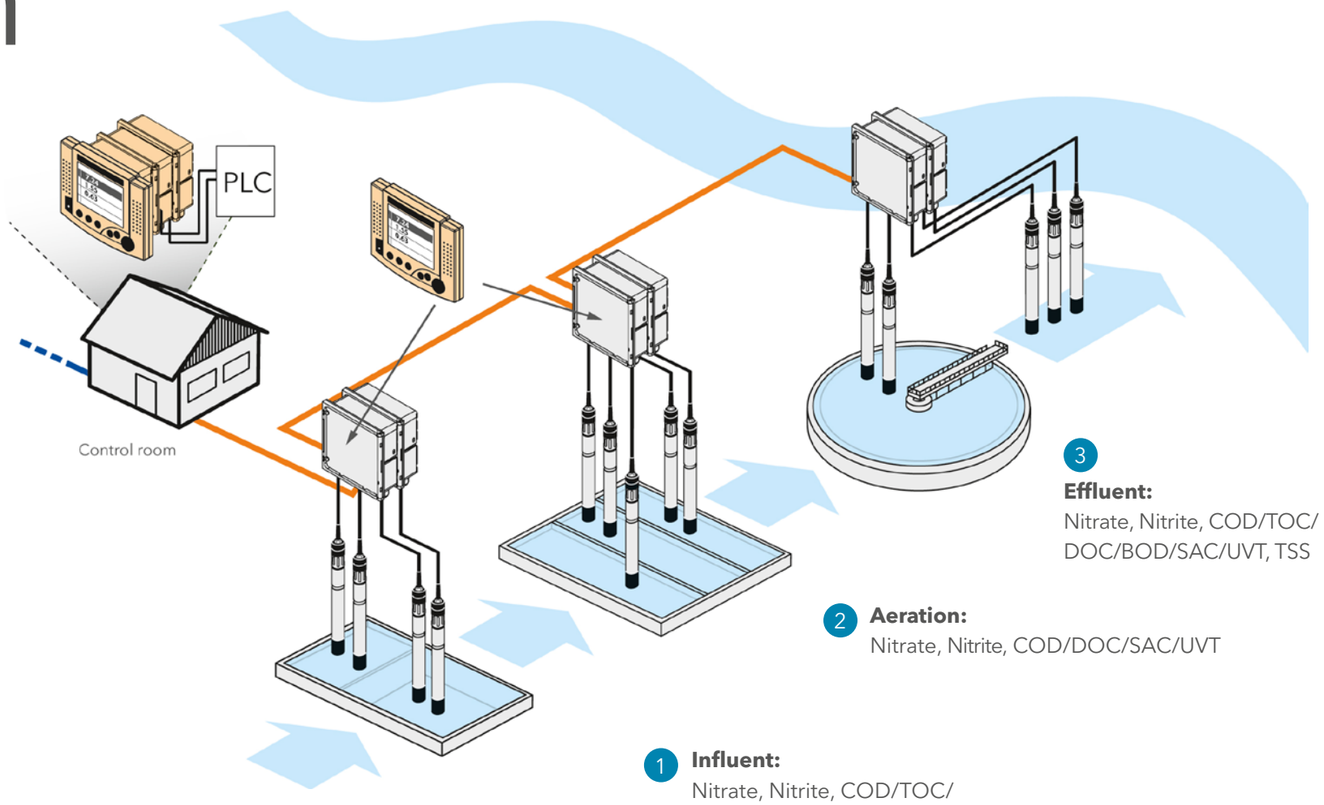
- Continuous measurement directly in the process
- Optimized referencing for excellent zero point and long term stability
- Compensation of interferences by evaluation of the whole measured spectrum

The appropriate sensor for your application

- Influent measurement
- Detection of influent peaks
- Control/regulation of recirculation
- Process optimization of the aeration
- Effluent control

IQ SENSOR NET

for Systems 2020 and 282/284



1 **Influent:**
Nitrate, Nitrite, COD/TOC/DOC/BOD/SAC/UVT, TSS

2 **Aeration:**
Nitrate, Nitrite, COD/DOC/SAC/UVT

3 **Effluent:**
Nitrate, Nitrite, COD/TOC/DOC/BOD/SAC/UVT, TSS

The spectral sensors at a glance:

CarboVis: 1 2 3

Measuring parameters: COD/TOC/DOC/BOD/SAC/UVT, optional TSS

NitraVis NI: 1 2 3

Measuring parameters: Nitrate, Nitrite

NiCaVis: 3

Measuring parameters: Nitrate, COD/TOC/DOC/BOD/SAC/UVT, optional TSS

NiCaVis NI: 1 2 3

Measuring parameters: Nitrate, Nitrite, COD/TOC/DOC/BOD/SAC/UVT

In wastewater treatment plants increased Nitrite values can be a sign for an optimization demand of the biological processes. With NitraVis NI and NiCaVis NI sensors processes in the aeration can be completely monitored and optimized.

For additional applications please contact our Technical Support.

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E-Mail: TechInfo.WTW@Xyleminc.com

Integration in your IQ Sensor Net*

*With the IQ Sensor Net several additional parameters can be measured - visit our website **www.xylemanalytics.com/en/landingpages/iq-sensor-net** *(For convenience use our QR code).*

Two spectral sensor types for distinct parameters:

UV-VIS sensors (200-720 nm)

With these sensors C-parameters, Nitrate and optional TSS can be measured.

- Nitrate
- COD/TOC/DOC/BOD/SAC/UVT
- **TSS**

UV-sensors (200-390 nm)

To distinguish between Nitrate and Nitrite these sensors with a higher resolution are required.

- Nitrate
- **Nitrite**
- COD/TOC/DOC/BOD/SAC/UVT

Two gap sizes for higher and lower parameter concentrations:

Variant 701

1 mm

Optimal for
influent and aeration
(higher concentrations)

Variant 705

5 mm

Optimal for
effluent
(lower concentrations)

Technical Data

Measuring principle	Spectral Measurement in the UV-VIS range (200 - 720 nm) / UV range (200 - 390 nm)						
	CarboVis 701 IQ (TS)	**CarboVis 705 IQ (TS)**	**NitraVis 701 IQ NI**	**NitraVis 705 IQ NI**	**NiCaVis® 705 IQ (TS)**	**NiCaVis 701 IQ NI**	**NiCaVis 705 IQ NI**
Applications (municipal wastewater)	influent, aeration, effluent	effluent	influent, aeration, effluent	effluent	effluent	influent, aeration, effluent	effluent
Measuring range (total) *	COD: 0 ... 20,000 mg/l TOC: 0 ... 20,000 mg/l SAC: 0 ... 5,000 m^{-1} DOC: 0 ... 12,500 mg/l BOD: 0 ... 8,000 mg/l UVT: 0.0 ... 100.0 %	COD: 0.0 ... 800.0 mg/l TOC: 0.0 ... 500.0 mg/l SAC: 0.0 ... 600.0 m^{-1} DOC: 0.0 ... 500.0 mg/l BOD: 0.0 ... 500.0 mg/l UVT: 0.0 ... 100.0 %	NO_3-N: 0.0 ... 150.0 mg/l NO_2-N: 0.00 ... 75.00 mg/l	NO_3-N: 0.00 ... 50.00 mg/l NO_2-N: 0.00 ... 25.00 mg/l	NO_3-N: 0.00 ... 50.00 mg/l COD: 0.0 ... 800.0 mg/l TOC: 0.0 ... 500.0 mg/l SAC: 0.0 ... 600.0 m^{-1} DOC: 0.0 ... 500.0 mg/l BOD: 0.0 ... 500.0 mg/l UVT: 0.0 ... 100.0 %	NO_3-N: 0.0 ... 150.0 mg/l NO_2-N: 0.00 ... 75.00 mg/l COD: 0 ... 20,000 mg/l TOC: 0 ... 20,000 mg/l SAC: 0 ... 5,000 m^{-1} DOC: 0 ... 12,500 mg/l BOD: 0 ... 8,000 mg/l UVT: 0.0 ... 100.0 %	NO_3-N: 0.00 ... 50.00 mg/l NO_2-N: 0.00 ... 25.00 mg/l COD: 0.0 ... 800.0 mg/l TOC: 0.0 ... 500.0 mg/l SAC: 0.0 ... 600.0 m^{-1} DOC: 0.0 ... 500.0 mg/l BOD: 0.0 ... 500.0 mg/l UVT: 0.0 ... 100.0 %
Measuring range suspended solids (optional)	influent: 0.00 ... 15.00 g/l TSS effluent: 0 ... 4,500 mg/l TSS	effluent: 0.0 ... 900.0 mg/l TSS	–	–	effluent: 0.0 ... 900.0 mg/l TSS	–	–
Materials	Housing: Titanium 3.7035, PEEK Window: Sapphire glass						
Pressure Resistance	≤1 bar						
Ambient Conditions	Operating temperature: 32 °F … 113 °F (0 °C … +45 °C) Storage temperature: 14 °F … 122 °F (-10 °C … +50 °C)						
Flow velocity	≤3 m/s						
pH range	pH 4 ... pH 12						
Dimensions	31.57 x 2.36 in. (802 x 59.9 mm length x diameter)						
Weight	Approx. 4.8 kg (with shock protectors but without sensor connection cable)						
Warranty	2 years for defects in quality						

** The quoted measuring ranges are theoretically possible. In practice, real measuring ranges exist that are given by the limits of photometric determination. The limits are significantly influenced by the light scattering due to solids and the absorption of accompanying substances (sample matrix).*

Ordering information

All sensors with integrated WTW ultrasonic cleaning system, multifunctional slide and shock-absorption-rings, without connection cable (SACIQ order separately).

UV-VIS sensors	Description	Order No.
CarboVis 701 IQ	UV-VIS sensor for in-situ measurement of COD, TOC, DOC, BOD, SAC and UVT in the influent, aeration and effluent. Optimized for municipal wastewater treatment plants.	481 048
CarboVis 701 IQ TS	UV-VIS sensor for in-situ measurement of COD, TOC, DOC, BOD, SAC, UVT and TSS in the influent, aeration and effluent. Optimized for municipal wastewater treatment plants.	481 049
CarboVis 705 IQ	UV-VIS sensor for in-situ measurement of COD, TOC, DOC, BOD, SAC and UVT in the effluent. Optimized for municipal wastewater treatment plants.	481 050
CarboVis 705 IQ TS	UV-VIS sensor for in-situ measurement of COD, TOC, DOC, BOD, SAC, UVT and TSS in the effluent. Optimized for municipal wastewater treatment plants.	481 051
NiCaVis 705 IQ	UV-VIS sensor for in-situ measurement of Nitrate, COD, TOC, DOC, BOD, SAC and UVT in the effluent. Optimized for municipal wastewater treatment plants.	481 052
NiCaVis® 705 IQ TS	UV-VIS sensor for in-situ measurement of Nitrate, COD, TOC, DOC, BOD, SAC, UVT and TSS in the effluent. Optimized for municipal wastewater treatment plants.	481 053
UV sensors		
NitraVis 701 IQ NI	UV sensor for in-situ measurement of Nitrate and Nitrite in the influent, aeration and effluent. Optimized for municipal wastewater treatment plants.	481 056
NitraVis 705 IQ NI	UV sensor for in-situ measurement of Nitrate and Nitrite in the effluent. Optimized for municipal wastewater treatment plants.	481 057
NiCaVis 701 IQ NI	UV sensor for in-situ measurement of Nitrate, Nitrite, COD, TOC, DOC, BOD, SAC and UVT in the influent, aeration and effluent. Optimized for municipal wastewater treatment plants.	481 054
NiCaVis 705 IQ NI	UV sensor for in-situ measurement of Nitrate, Nitrite, COD, TOC, DOC, BOD, SAC and UVT in the effluent. Optimized for municipal wastewater treatment plants.	481 055

Accessories for ...

... the vertical installation

(Sensor holder EH/U 170 in combination with swing mounting assembly EH/F 170-1,5)

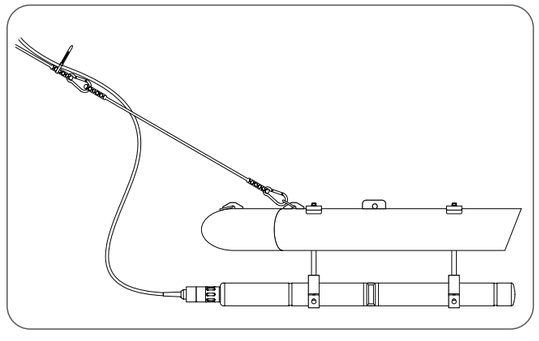
Model	Order No.
EH/F 170-1,5	109 272
EH/U 170	109 320

... the horizontal installation

(Supplement kit Vis Set/EH in combination with swing mounting assembly EH/F 170-1,5)

Model	Order No.
EH/F 170-1,5	109 272
Vis Set/EH	481 073

... for widely fluctuating water levels



(Float S200 with supplement kit VIS Set-F)

Model	Order No.
S 200	108 540
VIS Set-F	481 080

... for flow-through measurement

(Flow-through vessel VIS FT-1)

Model	Order No.
VIS FT-1	480 080

For additional accessories see our brochure **"Product Details"** for Process Instrumentation or go to **www.xylemanalytics.com/en/products/accessories/accessories**.

Xylem |ˈzīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to **www.xylem.com**

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