



Probes for online nitrate measurement: the NITRATAX sc family

- **Reagent-free method**
- **No sampling or sample preparation**
- **Measurement in activated sludge and water**
- **Automatic self-cleaning**

The key to nitrogen elimination

NITRATAX probes determine the concentration of nitrate directly in activated sludge, wastewater and surface water. The measurement is advantageous wherever nitrate has to be eliminated or consistently monitored: for process optimisation and for documentation of limiting values.

Application-specific variants

In many process steps, direct measurement of the nitrate concentration is highly advantageous for nitrate elimination and monitoring. With their application-specific features, the NITRATAX plus sc, NITRATAX eco sc and NITRATAX clear sc models are ideally configured to meet the different requirements.



LANGE 

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Comparison of NITRATAX sc variants: plus, clear and eco

NITRATAX plus sc

Precise, self-cleaning process probe for immediate measurement of the nitrate content of water, wastewater and activated sludge. Turbidity compensation through reference measurement. Reagent-free method, requiring no sampling, for direct measurement in the fluid. Evaluation by SC 100 or SC 1000 controller.

NITRATAX clear sc

Precise, self-cleaning process probe for immediate measurement of the nitrate content of water and wastewater (sewage treatment plant outflow). Reagent-free method, requiring no sampling, for direct measurement in clear fluids. Evaluation by SC 100 or SC 1000 controller.

NITRATAX eco sc

Affordable, self-cleaning process probe for immediate measurement of nitrate content, especially in sewage treatment plants with intermittent aeration technology. Turbidity compensation through reference measurement. Reagent-free method, requiring no sampling, for direct measurement in the fluid. Evaluation by SC 100 or SC 1000 controller.

Comparison of variants

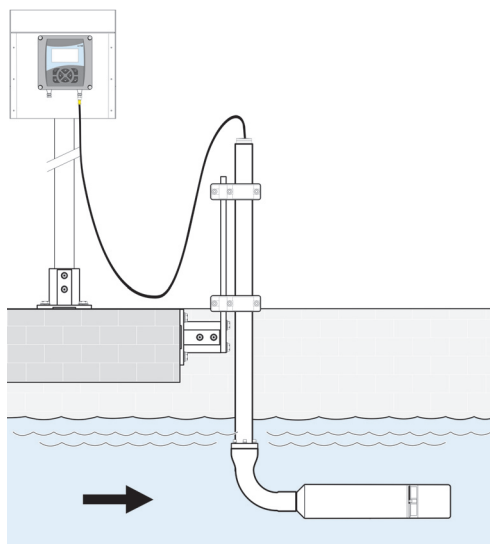
	NITRATAX plus sc	NITRATAX clear sc	NITRATAX eco sc
APPLICATION			
Upstream denitrification	●	-	-
Aeration basin/Aeration basin outflow	●	-	○
Plant outflow	●	●	-
Intermittent process	●	-	●
Cascade	●	-	○
TECHNICAL DATA			
Lower detection limit (mg/l) NO ₃ -N	0.1	0.5	1
Upper detection limit (mg/l) NO ₃ -N	100	20	20
Measurement uncertainty (mg/l) NO ₃ -N	±3 % of MV ±0.5	±5 % of MV ±0.5	±5 % of MV ±1.0
Resolution (mg/l)	0.1	0.1	0.5
Sludge compensation	Yes	-	Yes
Measurement interval (≥min)	1	1	5
T100 response time (min)	1	1	15
Can be used as a flow-through unit	Yes	Yes	Not available
Precision optics with adjustment feature	Yes	-	-
MATERIAL			
Rugged stainless steel housing with double seal	Yes	-	-
stainless steel housing with single seal	-	Yes	Yes
INSPECTION & MAINTENANCE			
Guarantee for light source	5 years	1 year	1 year
Maintenance per month	1 h	1 h	2 h
Checking of the total compensation	Once per month	Once per month	Once per week
Inspection interval	6 months	6 months	6 months

● suitable ○ suitable within limits MV = measured value

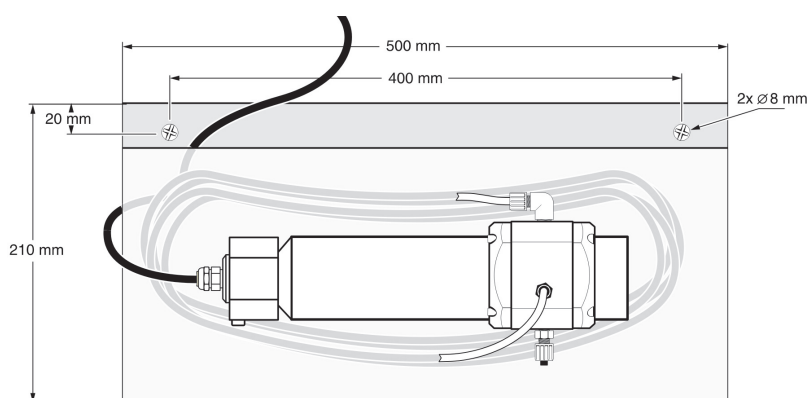


NITRATAX eco sc

Example of an installed immersion probe



NITRATAX sc in the flow-through unit



Technical data

	NITRATAX plus sc	NITRATAX clear sc	NITRATAX eco sc
Measurement method	UV absorption measurement, reagent-free, patented 2-beam method		
Measuring range with NO ₃ -N standard solutions	0.1–100.0 mg/l NO ₂₊₃ -N (1 mm) 0.1–50.0 mg/l NO ₂₊₃ -N (2 mm) 0.1–25.0 mg/l NO ₂₊₃ -N (5 mm)	0.5–20.0 mg/l NO ₂₊₃ -N	1.0–20.0 mg/l NO ₂₊₃ -N
Integration	>2 min, adjustable	>2 min, adjustable	15–30 min, adjustable
Path length	1, 2 and 5 mm	5 mm	1 mm
Measurement interval	>1 min		
Cable length	10 m		
Pressure resistance of probe	Max. 0.5 bar		
Ambient temperature	+2 °C to +40 °C		
Cleaning	Automatic wiper cleaning system		
Materials	Probe housing of stainless steel 1.4571		
Weight	Approx. 3.6 kg	Approx. 3.3 kg	Approx. 3.3 kg
Dimensions (Dia. x L)	Approx. 70 mm x 333 mm	Approx. 75 mm x 323 mm	Approx. 70 mm x 327 mm
Sample flow	At least 0.5 l/h sample in the flow-through unit		Not available
Sample connection	Flexible tube (ID 4 mm/OD 6 mm) in the flow-through unit		Not available
Dimensions of flow-through unit	210 mm x 500 mm x 170 mm (H x L x D)		Not available
Display unit	SC 100 controller (model LXV401) or SC 1000 controller (model LXV400 and model LXV402)		
Control function	PID, timing, 2-position controller (with SC 100 or SC 1000)		

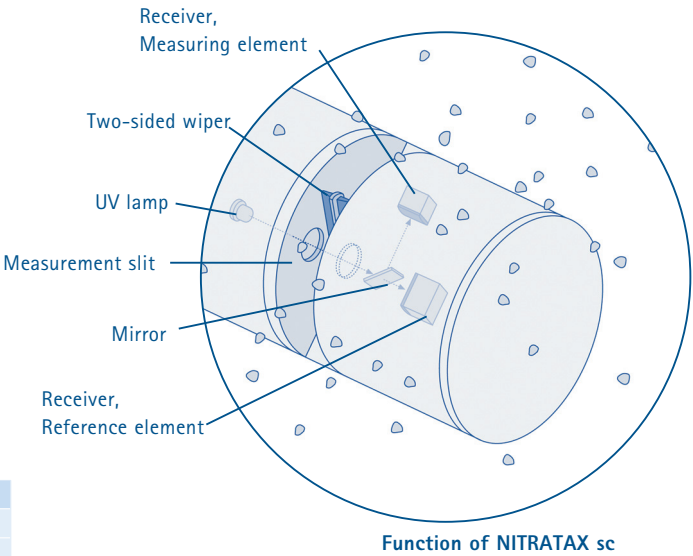
The NITRATAX sc principle

Ingeniously simple

When dissolved in water, nitrate absorbs UV light. This means that the nitrate concentration can be determined photometrically in the fluid, without reagents, sampling or delays. NITRATAX probes are also characterised by low-maintenance operation and automatic turbidity compensation.

Ordering information

DESCRIPTION	ART. NO.
NITRATAX plus sc	
- 1 mm path length	LXV417.99.10001
- 2 mm path length	LXV417.99.20001
- 5 mm path length	LXV417.99.50001
NITRATAX eco sc, 1 mm path length	LXV415.99.10001
NITRATAX clear sc, 5 mm path length	LXV420.99.50001
ACCESSORIES	
Tank rim mounting	LZX414.00.10000
Flow-through unit	
- 2 mm NITRATAX plus sc probe	LZX869
- 5 mm NITRATAX plus sc probe	LZX867
- 5 mm NITRATAX clear sc probe	LZX866
Control standard	
- 25 mg/l NO ₃ (5,56 mg/l NO ₃ -N)	LCW828
- 50 mg/l NO ₃ (11,3 mg/l NO ₃ -N)	LCW825
- 100 mg/l NO ₃ (22,6 mg/l NO ₃ -N)	LCW826
- 200 mg/l NO ₃ (45,2 mg/l NO ₃ -N)	LCW827
- 400 mg/l NO ₃ (90,4 mg/l NO ₃ -N)	LCW863
SC 100 controller	LXV401
SC 1000 controller	LXV400, LXV402
SPARE PARTS AND CONSUMABLES	
Wiper profiles	
- 1 mm (5/pkg.)	LZX148
- 2 mm (5/pkg.)	LZX012
- 5 mm (5/pkg.)	LZX117



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