

NICKEL COLORIMETRIC ANALYZER

Compact online analyzer for measurement of nickel in water

APPLICATION FIELDS

- Wastewater
- Process water
- Industrial sewage treatment plants
- Boiler feed and cooling water
- Automotive

ADVANTAGES / FEATURES

• Different compartments

To ensure complete separation between the electronics (upper case) and the wet part (lower case).

• Low reagents consumption

Minimum operating cost by small reagent consumption, only 1 L (0.26 US.gal) R1, R2 and R3 for the 16 mm cell, 2 L (0.53 US.gal) R1, R2 and R3 for the 26 mm cell of each reagent every 30 days with 15 minute analysis frequency.

• Automatic calibration / validation / cleaning

Validation, cleaning and calibration are standard features which significantly reduce downtime and operator intervention ensuring the most accurate results are obtained. Free selectable validation, cleaning and calibration intervals.

• Wide measuring range

The determination ranges of the Nickel Analyzer vary from trace $\mu\text{g/L}$ to 200 mg/L using internal dilution module.



• Large color touchscreen

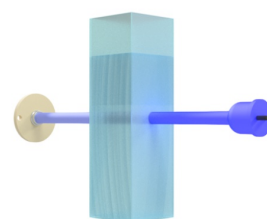
The colorimeter is equipped with a graphic touchscreen interface showing measured values and status information. Easy access to menus and functions. Multiple languages. Integrated datalogger with USB download.

• Factory tested, ready for installation and operation

Just connect the power, sample, and reagent lines and the analyzer is fully operational.

• Measurement principle

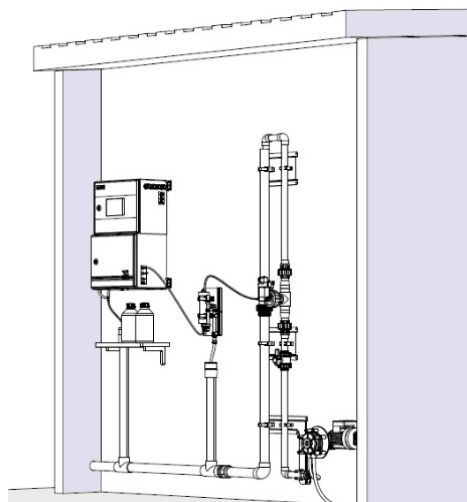
In the presence of an oxidizing agent, nickel ions react with dimethylglyoxime in an alkaline solution to form an orange-brown colored complex. The absorbance intensity is proportional to the nickel concentration in the sample and is determined at 470 nm.



TECHNICAL SPECIFICATIONS

Measured parameter	Ni ²⁺ (ppb, ppm, mg/l).
Measuring principle	Differential colorimetric absorbance. Dimethylglyoxime method.
Measuring range	0.01 to 3 mg/L (26 mm cell) 0.02 to 6 mg/L (16 mm cell) Up to 200 mg/L with internal dilution.
Reproducibility	± 10 ppb or ± 5%, whichever is greater (26 mm cell) ± 30 ppb or ± 5%, whichever is greater (16 mm cell)
Analysis Frequency	Freely programmable, batch near-continuous analysis.
Cycle time	8-10 minutes, including conditioning before analysis cycle and rinsing after measuring.
Reaction cell	Temperature heated
Sample	Pressure-free vessel Temperature: 5 - 50 °C (41 - 122 °F) Flow Rate: 80 to 500 mL/min Connection: 6 mm (¼-in.)
Drain	Pressure-free, atmospheric drain Connection: 12 mm (½-in.)
N° of streams	1, 2 with integrated switching valve 3, 4 with external sequencer
Dimensions (H x W x D)	604 x 380 x 242 mm (23.6 x 14.8 x 9.4 in)
Weight	Approx. 20 Kg (44 lbs)
Power Supply	Voltage: 100 - 240 VAC 50/60 Hz standard or 24 VDC (option) Power consumption: max. 80 VA
Outputs	2 x 4-20 mA outputs for measured data Modbus RTU RS485
Alarms	2 SPDT programmable potential free relays
Digital Input	Remote start/stop, start extra cycle, skip idle time, emergency stop
Working Temperature	5 - 45 °C (41 - 113 °F)
Humidity	10 to 90% RH (indoor use only)
Installation	Wall mount (standard), bench top support or panel mount (options).
Protection Grade	IP54

INSTALLATION EXAMPLE



The analyzer is easily installed in a minimum amount of wall space.

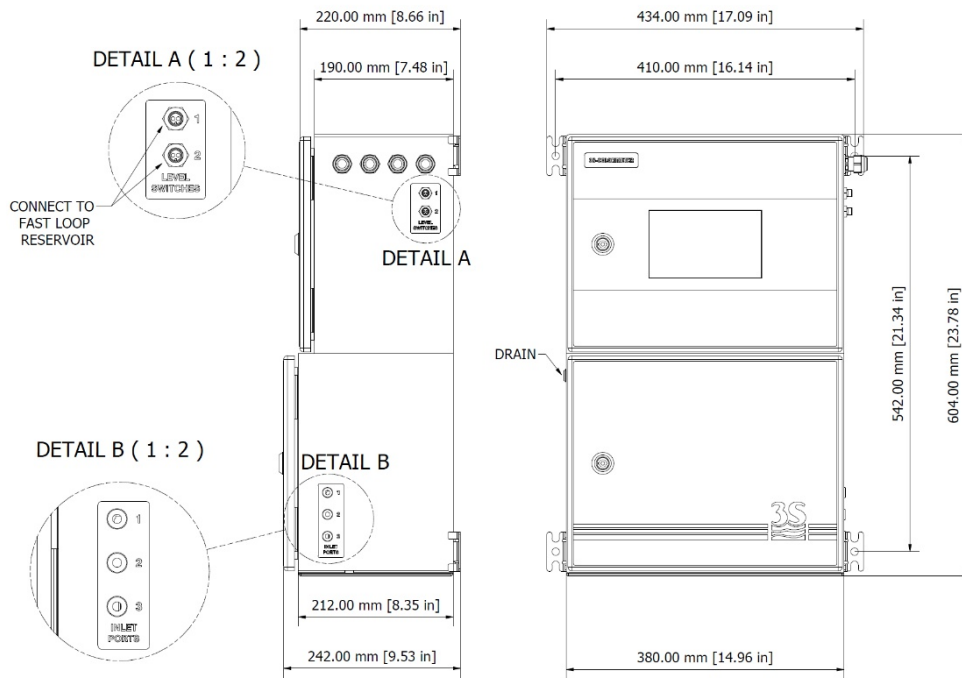
In the picture are included the optional accessories:

- a) A46ERLS000 - Fast Loop external reservoir with level switch
- b) A46SF10020 - Filtration unit 100 micron 230 VAC (other mesh size and input voltages available)
- c) A46SPP0000 - Sampling Pump

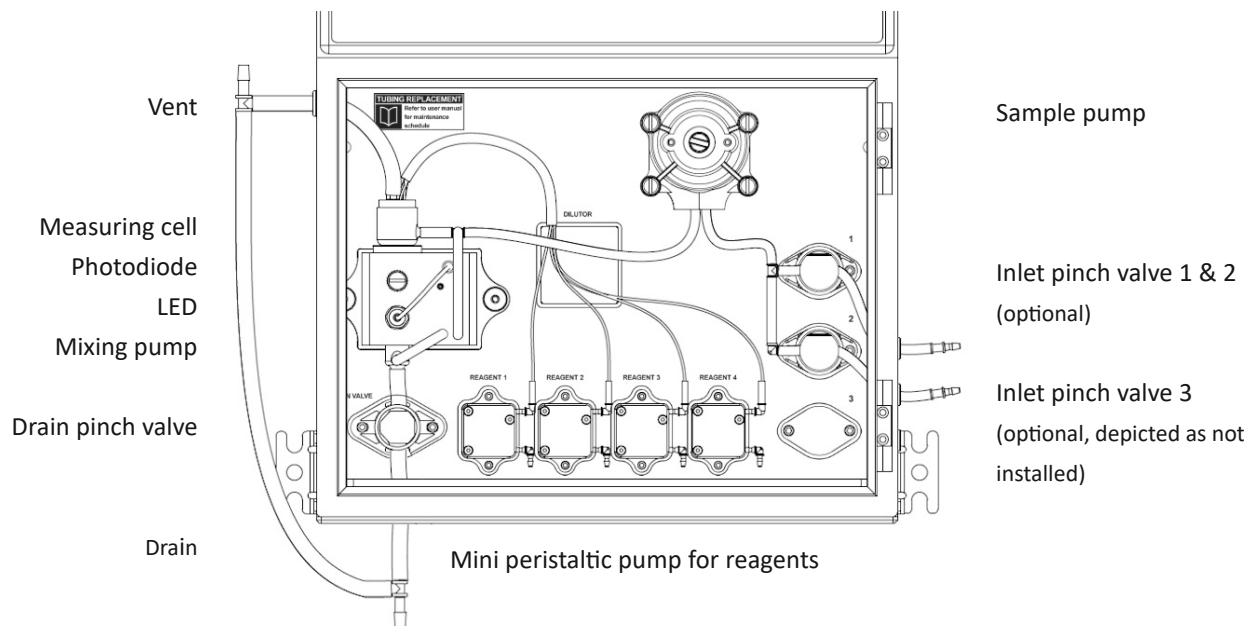
Other accessories, including external dilutors to increase the analyzer range and different kind of sample reservoirs are also available. See our website for more info.



TECHNICAL DRAWING



HYDRAULIC COMPARTMENT VIEW



PRODUCT CODES

CL-3-470-0-16-NI	Nickel Colorimeter, one inlet port, 16 mm cell
CL-3-470-2-16-NI	Nickel Colorimeter, two inlet ports, 16 mm cell
CL-3-470-3-16-NI	Nickel Colorimeter, three inlet ports, 16 mm cell
CL-3-470-0-26-NI	Nickel Colorimeter, one inlet port, 26 mm cell
CL-3-470-2-26-NI	Nickel Colorimeter, two inlet ports, 26 mm cell
CL-3-470-3-26-NI	Nickel Colorimeter, three inlet ports, 26 mm cell