

# 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  $\text{mg/L}$  using internal dilution module.



### • Large color touchscreen

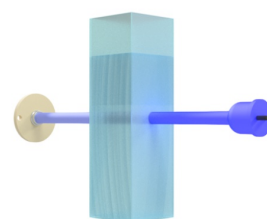
The colorimeter is equipped with a graphic touchscreen interface showing measured values and status information. Easy access to menus and functions. Multiple languages. Integrated datalogger with USB download.

### • Factory tested, ready for installation and operation

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

### • Measurement principle

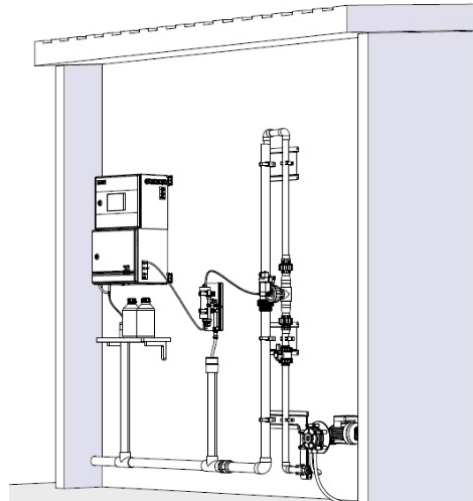
In the presence of an oxidizing agent, nickel ions react with dimethylglyoxime in an alkaline solution to form an orange-brown colored complex. The absorbance intensity is proportional to the nickel concentration in the sample and is determined at 470 nm.



## TECHNICAL SPECIFICATIONS

|                        |                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Measured parameter     | Ni <sup>2+</sup> (ppb, ppm, mg/l).                                                                                      |
| Measuring principle    | Differential colorimetric absorbance.<br>Dimethylglyoxime method.                                                       |
| Measuring range        | 0.01 to 3 mg/L (26 mm cell)<br>0.02 to 6 mg/L (16 mm cell)<br>Up to 200 mg/L with internal dilution.                    |
| Reproducibility        | ± 10 ppb or ± 5%, whichever is greater (26 mm cell)<br>± 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<br>Temperature: 5 - 50 °C (41 - 122 °F)<br>Flow Rate: 80 to 500 mL/min<br>Connection: 6 mm (¼-in.) |
| Drain                  | Pressure-free, atmospheric drain<br>Connection: 12 mm (½-in.)                                                           |
| N° of streams          | 1, 2 with integrated switching valve                                                                                    |
| 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)<br>Power consumption: max. 80 VA                            |
| Outputs                | 2 x 4-20 mA outputs for measured data<br>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.

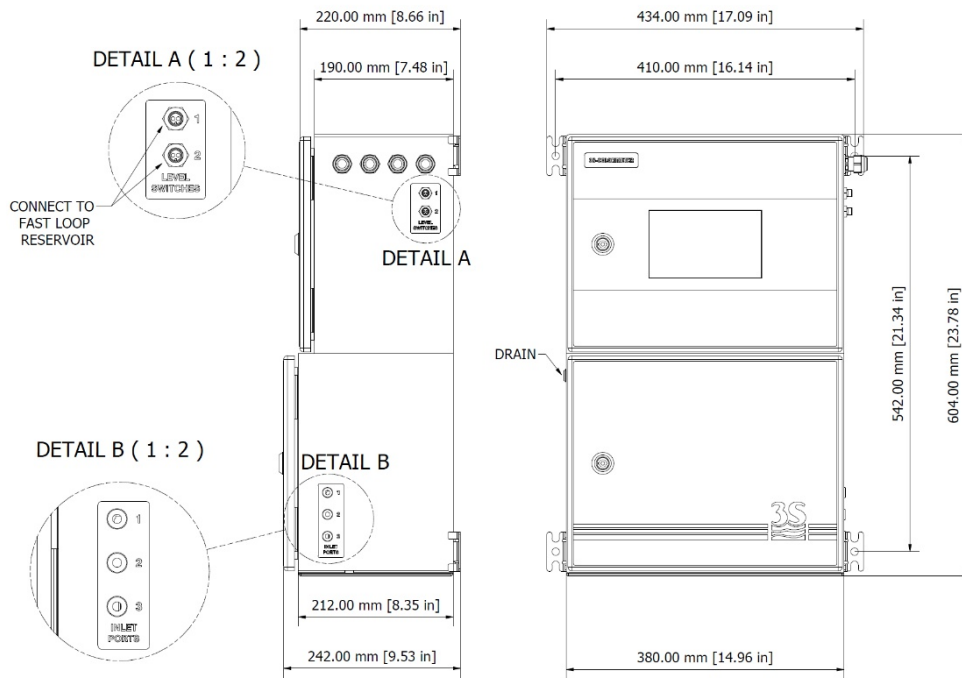
In the picture are included the optional accessories:

- 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

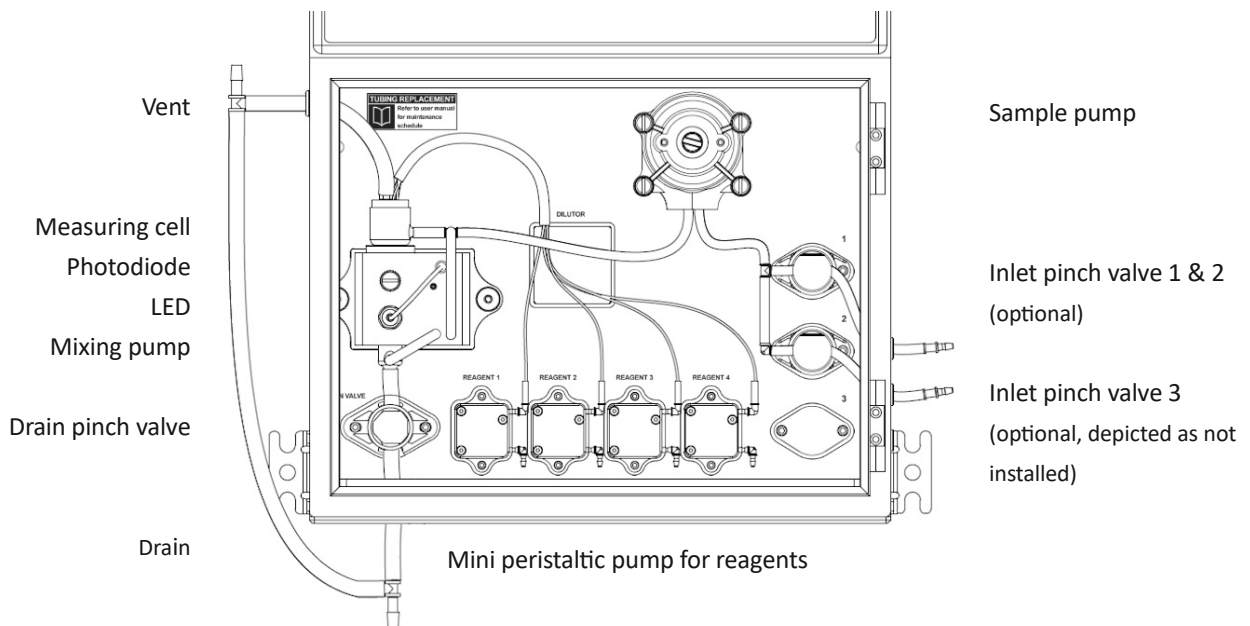
Other accessories, including external dilutors to increase the analyzer range and different kind of sample reservoirs are also available. See our website for more info.



## TECHNICAL DRAWING



## HYDRAULIC COMPARTMENT VIEW



## PRODUCT CODES

|                   |                                                   |
|-------------------|---------------------------------------------------|
| CL3-3-470-0-16-NI | Nickel Colorimeter, one inlet port, 16 mm cell    |
| CL3-3-470-2-16-NI | Nickel Colorimeter, two inlet ports, 16 mm cell   |
| CL3-3-470-3-16-NI | Nickel Colorimeter, three inlet ports, 16 mm cell |
| CL3-3-470-0-26-NI | Nickel Colorimeter, one inlet port, 26 mm cell    |
| CL3-3-470-2-26-NI | Nickel Colorimeter, two inlet ports, 26 mm cell   |
| CL3-3-470-3-26-NI | Nickel Colorimeter, three inlet ports, 26 mm cell |