

COPPER COLORIMETRIC ANALYZER

Compact online analyzer for measurement of copper in water

APPLICATION FIELDS

- Wastewater
- Process water
- Industrial sewage treatment plants
- Ultrapure water treatment

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 2L (0.53 US.gal) R3 for the 16 mm cell / 2 L (0.53 US.gal) R1, R2 and 4L (1.06 US.gal) 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 Copper Analyzer vary from trace $\mu\text{g/L}$ to 150 mg/L using internal dilution module.



• Color touchscreen user interface

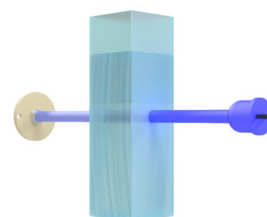
The colorimeter is equipped with a graphic touchscreen interface showing measured values and status information. Easy access to menus and functions. Integrated datalogger with USB download.

• Factory tested, ready for installation and operation

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

• Measurement principle

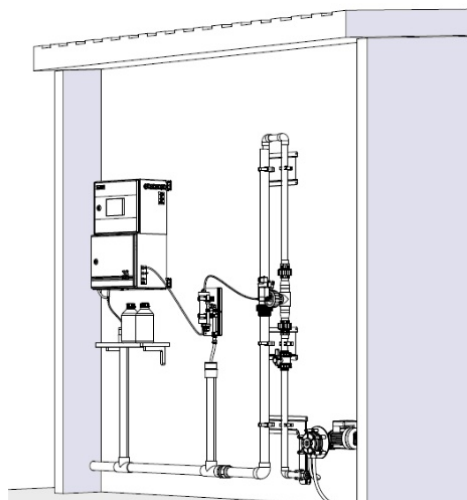
Copper (I) ions form an orange-colored complex with the bathocuproine in a buffered solution at pH 4.5. Any copper (II) ions present in the water sample are previously reduced to copper (I) ions before the complex is formed. The absorbance intensity is proportional to the copper concentration in the sample and is determined at 470 nm.



TECHNICAL SPECIFICATIONS

Measured parameter	Cu ⁺ / Cu ²⁺ (ppb, ppm, mg/l)
Measuring principle	Differential colorimetric absorbance. Bathocuproine method.
Measuring range	0.05 to 1 mg/L (26 mm cell) 0.1 to 3 mg/L (16 mm cell) up to 150 mg/L with internal dilution.
Reproducibility	± 20 ppb or ± 5%, whichever is greater (26 mm cell) ± 50 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.

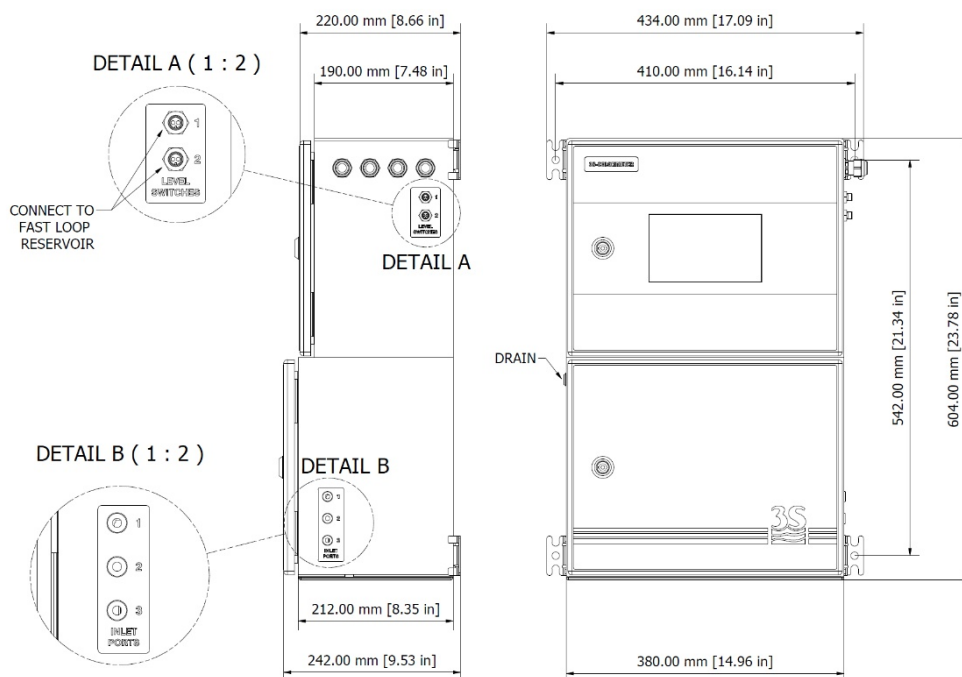
In the picture are included the optional accessories:

- 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

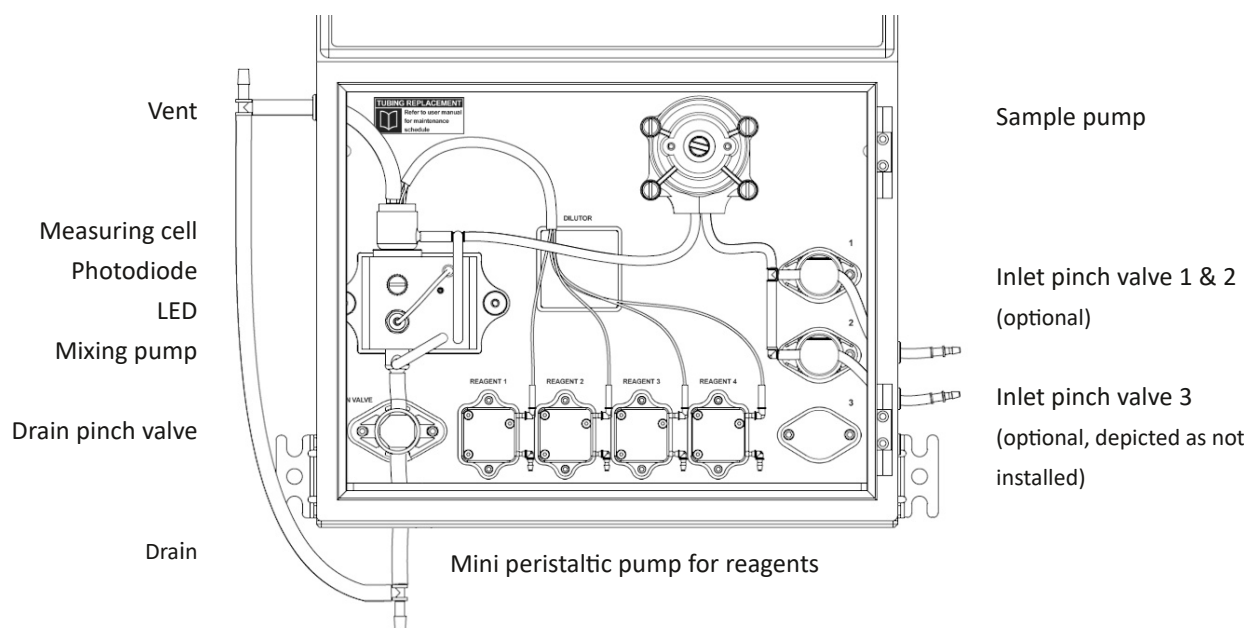
Other accessories, including external dilutors to increase the analyzer range and different kind of sample reservoirs are also available. See our website for more info.



TECHNICAL DRAWING



HYDRAULIC COMPARTMENT VIEW



PRODUCT CODES

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