

# CL17 CHLORINE ANALYZER



## Applications

- Beverage
- Collection Systems
- Drinking Water
- Field Use
- Food QC Lab
- Pharmaceutical
- Power
- Semiconductor
- Wastewater

## Dependable, colorimetric DPD free or total chlorine analysis.

### Accurate, Reliable Results

The Hach CL17 Chlorine Analyzer uses colorimetric DPD chemistry to monitor water continuously for free or total residual chlorine. The CL17 analysis method is not affected by changes in chlorine concentration, sample pH, temperature, flow or pressure, thus offering more accuracy than other methods in today's market.

### Simple, Predictable Maintenance

Monthly routine maintenance for the CL17 can usually be performed in 15 minutes, including changing reagents and cleaning the colorimetric cell. No special tools are required. For typical use, the CL17 will operate unattended for 30 days. Challenging applications may require more frequent cleaning.

### Factory Calibrated

The CL17 Chlorine Analyzer is factory calibrated. A built-in electronic calibration curve is preprogrammed into the instrument. This instrument does not require recalibration unless specified by your regulatory agency for compliance reporting purposes.

### EPA Compliant

The CL17 is compliant with US EPA regulation 40 CFR 140.74. Both Method 4500-CL G and Method 334.0 can be used for measuring residual chlorine in drinking water.



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## Specifications\*

<b>Range</b>	0 to 5 mg/L free or total residual chlorine
<b>Accuracy</b>	± 5 % or ±0.03 mg/L (ppm) as Cl <sub>2</sub> , whichever is greater
<b>Lower Limit of Detection (LOD)</b>	0.03 mg/L (ppm)
<b>Cycle Time</b>	2.5 minutes
<b>Inlet Pressure</b>	1 to 5 psig (0.07 to 0.34 bar), .5 psi is optimum
<b>Pressure Limit</b>	Inlet Pressure to Sample Conditioning: 1.5 to 75 psi (0.1 bar to 5.2 bar)
<b>Inlet</b>	1/4-inch OD polyethylene tube, quick-disconnect fitting
<b>Drain</b>	1/2-inch ID flexible hose, hose barb
<b>Air Purge</b>	0.1 cfm (0.17 m <sup>3</sup> /h) instrument quality air at max. 20 psig (ca. 1.4 bar) with 1/4-inch OD tube, quick disconnect fitting
<b>Sample Flow Rate</b>	200 to 500 mL per minute minimum
<b>Sample Temperature</b>	5 to 40 °C (41 to 104 °F)
<b>Operating Temperature Range</b>	5 to 40 °C (41 to 104 °F)
<b>Operating Humidity</b>	Up to 90% at 40 °C (104 °F) maximum
<b>Interferences</b>	Other oxidizing agents such as bromide, chlorine dioxide, permanganate and ozone will cause a positive interference. Hexavalent chromium will cause a positive interference: 1 mg/L Cr <sup>6+</sup> = approximately 0.02 mg/L as Cl <sub>2</sub> . Hardness must not exceed 1,000 mg/L as CaCO <sub>3</sub> .
<b>Recorder Outputs</b>	One 0/4-20 mA with an output span programmable over any portion of the 0 to 5 mg/L range.  Recommended load impedance 3.6 to 500 ohms, 130 V isolation from earth ground.

<b>Alarm</b>	Two alarms selectable for sample concentration alarm, analyzer system warning, or analyzer system shut-down alarm. Each is equipped with an SPDT relay with contacts rated for 5A resistive load at 230 V AC.
<b>Certifications</b>	Europe, CE Approved with: EN 61326-1 CISPR 11 EN 61010-1 IEC 60529  North America: UL 61010A-1 CAN/CSA C22.2 No. 1010.1-92
<b>Power Requirements (Voltage)</b>	100 - 115/230 V AC
<b>Power Requirements (Amps)</b>	2.5 A
<b>Power Requirements (Hz)</b>	50/60 Hz
<b>Display</b>	LCD, 3-1/2 inch digit measurement readout and six-character alphanumeric scrolling text line
<b>Light Source</b>	Class 1 LED (light emitting diode) with a peak wavelength of 520 nm; 50,000 hours estimated minimum life
<b>Enclosure Construction</b>	ABS plastic, two clear polycarbonate windows, IP62-rated with the gasketed door latched.
<b>Mounting Style</b>	Wall mount
<b>Dimensions Metric (H x W x D)</b>	454 mm x 314 mm x 179 mm
<b>Weight</b>	23.13 lbs. (10.49 kg)

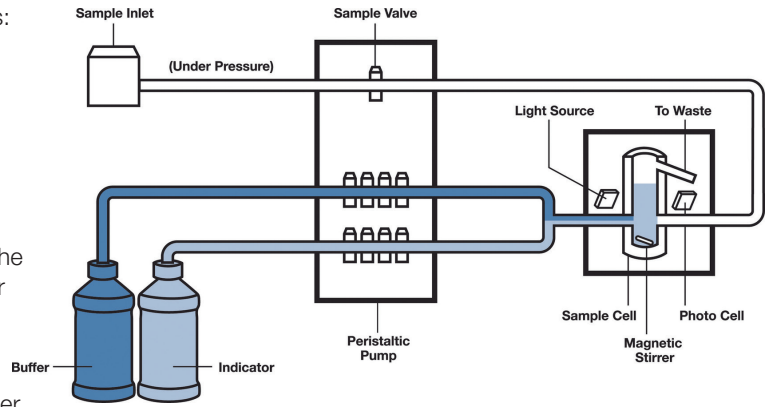
\*Subject to change without notice.

## Principle of Operation

The CL17 Chlorine Analyzer has three operating components:

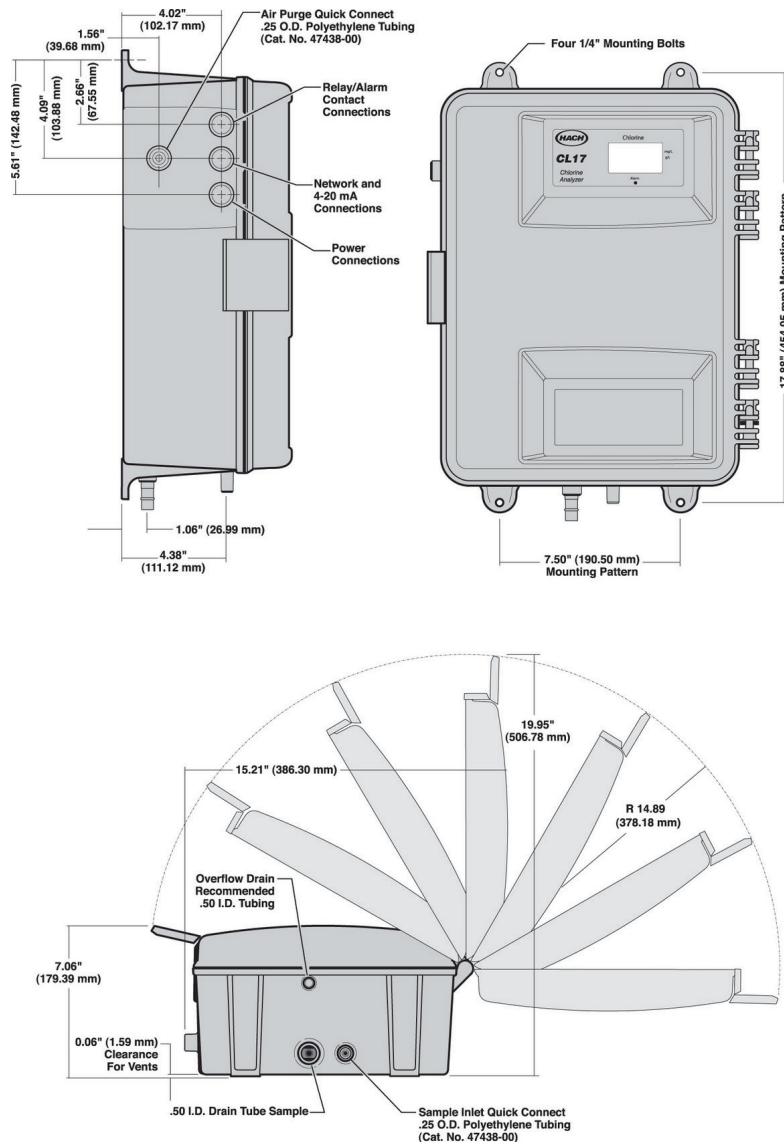
- A linear peristaltic pump to precisely control the volume of incoming samples and reagents.
- A colorimeter with seal-free, solid-state mixing system that includes a self-cleaning stir bar.
- One-month supply of reagents (indicator and buffer)

A zero reference point is established with the first sample in the cycle by measuring blank absorbance. (This compensates for the sample's color intensity and turbidity before the chlorine measurement is made.) Then, indicator and buffer reagents are added to the sample while a magnetic stirrer mixes the solution and the sample changes color. A compact colorimeter then measures the light transmitted through the sample. The measured color intensity is compared to a reference standard. Finally, the sample cell is flushed with new sample so that the cycle can repeat itself every 2.5 minutes.



## Dimensions

The CL17 is designed to be wall-mounted with four 1/4-inch screws. Adequate clearance must be left at the sides and bottom of the case for plumbing and electrical connections. The sample inlet connection is 1/4-inch quick-disconnect fitting and the drain connection is 1/2-inch I.D. flexible hose. Electrical connections are inside the instrument case. Holes for three 1/2-inch conduit fittings are provided.



## Ordering Information

Hach CL17 Chlorine Analyzers are shipped with a one-month supply of reagents, maintenance kit, installation kit, and manual. (The power cord is ordered separately.)

- 5440001** Model CI17 Free Residual Chlorine Analyzer
- 5440002** Model CI17 Total Residual Chlorine Analyzer
- 5440003** Model CI17 Free Residual Chlorine Analyzer with AquaTrend® Network Capability
- 5440004** Model CI17 Total Residual Chlorine Analyzer with AquaTrend® Network Capability

## Accessories

- 5448800** North American Power Cord Kit with Strain Relief, 125V
- 5448900** European Power Cord Kit with Strain Relief, 230V
- 5444300** Maintenance Kit, 1 year, includes tubing, caps, funnel, and fittings
- 5444301** Maintenance kit, 1 year, includes preassembled tubing, caps, funnel, and fittings.
- 4643600** Sample Inlet Flow Meter
- 5449000** CI17 Calibration/Verification Kit

## Reagents

Reagents

- 2556900** Free Chlorine Reagent Set
- 2557000** Total Chlorine Reagent Set
- 2297255** CI17 DPD Indicator Powder (Free and Total)
- 2314011** CL17 Free Chlorine Indicator Solution
- 2314111** CL17 Free Chlorine Buffer Solution
- 2263411** CL17 Total Chlorine Indicator Solution
- 2263511** CL17 Total Chlorine Buffer Solution



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