



Hach BioTector B3500ul Online TOC Analyser

Applications

- Dry steam condensate return
- Boiler feed
- Drinking Water from desalination



Precise, low-level TOC measurement that you can trust

Changes in water quality for ultra pure applications are disruptive to plant operations. Accurate, on-line analysis is important to protect critical equipment that depends on ultra pure water resources. Leading manufacturers know that it is critical to analyse for contaminants precisely at ppb levels to maintain water quality. Reliability and effective oxidation of large samples ensures that manufacturers can trust the results reported by the BioTector B3500ul analyser. With a full picture of organic contaminants in critical water applications manufacturers make water treatment decisions more efficiently.

The Hach® BioTector B3500ul provides reliable and accurate TOC analysis at ppb levels for ultrapure water applications. The unique two stage advanced oxidation technology behind the BioTector thoroughly, and reliably oxidises samples for valuable real-time water analysis.

Maximum uptime for your process

With uptime certified at 99.86% and two short, scheduled maintenance events per year, you will not be missing critical process information when you need it the most.

Instant and long term savings

Reduce the costs related to water re-treatment, and save on operational expenses. On-line TOC analysis enables maximum water reuse and keeps critical water resources at their best to maximise the lifetime of high-value capital equipment.

Technical Data*

Parameter	TOC, TIC, TC, VOC, after correlation COD, BOD	EExp / Hazardous Location	Certification options are available to European Standards, (ATEX Zone 1, Zone 2), North American Standards (Class I Division 2) and IECEx Zone 1
Measurement method	Infrared measurement of CO ₂ after oxidation	Sample inlet temperature	2 - 60 °C
Oxidation method	Unique Two-Stage Advanced Oxidation Process (TSAO) using Hydroxyl Radicals	Ambient temperature	5 - 45 °C For best performance, ambient temperature control must be ±3 °C or better. Cooling and heating options are available.
Measuring range	0 - 5000 µg/L C	Humidity	5 - 85 % (non-condensing)
Multi-Stream	Up to 2 process streams and grab sample	Particle size	Up to 100 µm
Repeatability	± 2% of reading or ± 6 µg/L C, whichever is greater	Data storage	Previous 9999 analysis data on screen in the microcontroller memory and storage of data archive for the lifetime of the analyser in the SD/MMC card. Previous 99 fault data on screen in the microcontroller memory and storage of fault data archive for the lifetime of the analyser in the SD/MMC card.
Accuracy	±2 % of reading or ±15 µg/L C, whichever is greater	Display	High contrast 40 character x 16 line backlit LCD with LED backlight
Limit of quantification	80 µg/L	User interface	Microcontroller with membrane keyboard
Calibration	For best performance ultra-pure water (18.2 MΩ*cm, < 5 µg/L TOC) is needed for calibration.	Power requirements (Voltage)	115 V AC/230 V AC
Interferences	TIC Interference: At 500 µg/L TIC (as bicarbonate), 2% carryover into TOC may occur.	Power requirements (Hz)	50/60 Hz
pH range	pH 1-12	Service interval	6 months service intervals
Cycle time	TOC from 5 minutes, depending on application	Dimensions (H x W x D)	1000 mm x 500 mm x 320 mm
Communication: digital	Modbus RTU, Modbus TCP/IP & Profibus (when the Profibus option is selected, the digital output signals are sent through the Profibus converter with its specific communication protocol) Except for Zone 1 certification then Modbus RTU, Modbus TCP/IP & Modbus TCP/IP Redundant is available	Weight	50 kg
Protection class	IP44, standard fan cooled, maximum ambient temperature 45 °C IP54, air cooled, maximum ambient temperature 35 °C IP54, vortex cooled, maximum ambient temperature 50 °C		

*Subject to change without notice.

Principle of Operation

TIC

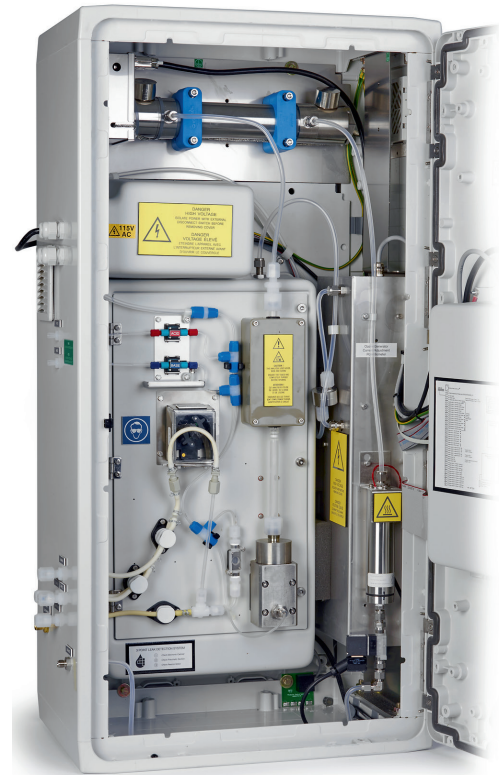
Acid is added to lower the pH so that inorganic carbon is sparged off as CO₂. This is also measured to ensure the Total Inorganic Carbon (TIC) is not carried over into the TOC.

Oxidation

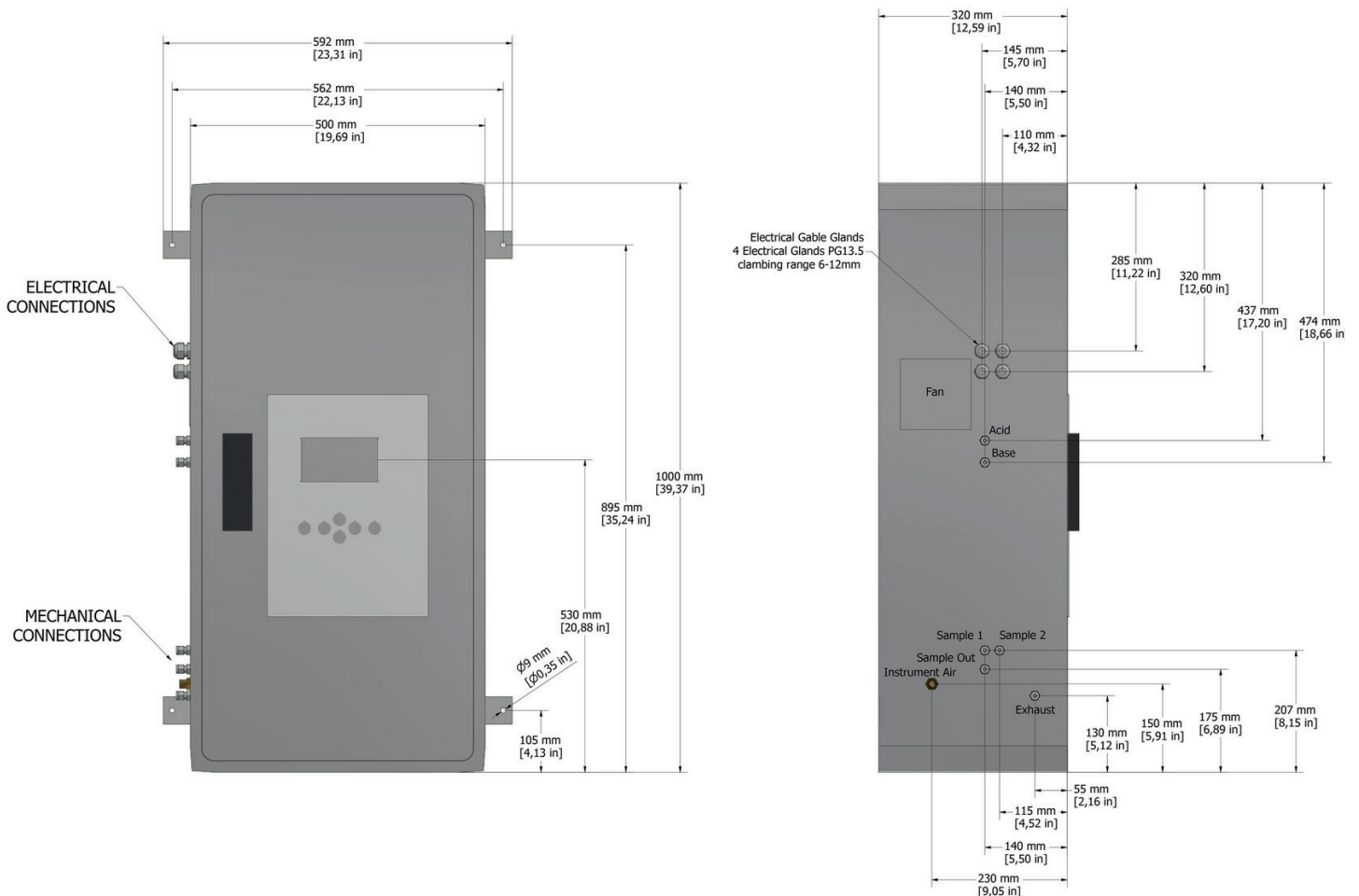
BioTectors's unique oxidation method (TSAO) efficiently oxidises the organic carbon in the sample to CO₂. TSAO utilises hydroxyl radicals generated within the analyser by combining oxygen, which passes through the ozone generator, with sodium hydroxide.

TOC

To remove CO₂ from the oxidised sample, the pH of the sample is lowered again. The CO₂ is sparged and measured by the specially developed NDIR CO₂ analyser. The result is displayed as Total Organic Carbon (TOC).



Dimensions



Order Information*

Instruments

B5FBAA152EAC2 Hach BioTector B3500ul TOC analyser, 0 - 5000 µg/L C, 1 stream, grab sample, 230 V AC

B5FBAA152EAF2 Hach BioTector B3500ul TOC analyser, 0 - 5000 µg/L C, 2 streams, grab sample, 230 V AC

There are additional options available. Please contact Hach for more details.

Accessories

19-COM-160 BioTector compressor 115 V / 60 Hz

19-COM-250 BioTector compressor 230 V / 50 Hz

10-SMC-001 Air supply filter pack

19-KIT-123 Six months spare part kit for BioTector B3500

19-BAS-031 BioTector sample overflow chamber

Reagents

2985562 BioTector base reagent 1.2 N sodium hydroxide

25255061 BioTector acid reagent 1.8 N sulfuric acid containing 80 mg/L Mn

**Part numbers may vary by country.*



With Hach Service, you have a global partner who understands your needs and cares about delivering timely, high-quality service you can trust. Our Service Team brings unique expertise to help you maximise instrument uptime, ensure data integrity, maintain operational stability, and reduce compliance risk.

