

QbD1200 plus Laboratory TOC Analyzer

Make Testing Easier, Reproducible and Accurate

Reliable Measurement Data for TOC (Total Organic Carbon)

- Stop throwing away your first sample. The QbD1200 plus has virtually eliminated sample-to-sample carryover.
- QbD1200 plus has excellent reproducibility and good stability of measurement results
- Dynamic endpoint detection technology can ensure:
 - Full oxidation of the organic matter
 - Sufficient removal of the inorganic carbon
- No extra modules to remove the inorganic carbon
- Digital NDIR detector can automatically correct the background and drift, ensuring long-term stability
- It can be very effectively used in purified water, injection water and cleaning verification, with a range up to 100 ppm.



Simplify Your Validation and Analysis

- QbD1200 plus can be measured within one hour after unpacking
- No external PC is required, so there is no additional computer system to verify compliance of 21 CFR 11
- Display the user interface through the large 10.4-inch color touchscreen
- Automated calibrations, system suitability testing and report generation
- The intuitive user interface means you'll never have to refer to a complicated manual.
- Automatic adjustment range/automatic dilution function means you never have to know the sample concentration in advance
- Highest performance by using one reagent for all tests



Be Right™

Benefits

Low Cost of Ownership

- Say goodbye to frequent maintenance; Reduced service calls from once a month to once a year
- Low reagent cost

Fast Calibration

- Automatic calibration takes only two hours

Accidentally over-range samples?

For Qbd1200+, It Is No Problem!

- The reaction chamber is effectively flushed after each time measurement
- Resume the measurement of out-of-limit samples (10× upper limit) next time
- No special maintenance or cleaning is required after the measurement range is exceeded

Quality Assurance Comes from The

Design Concept

- Each time the self-health check is performed after QbD1200 plus is powered on, and it can also be adjusted as needed
- There are multiple types of sensors placed at 10 different monitoring points, which can continuously perform pressure, liquid flow, gas flow, temperature inspection and NDIR detection
- Easily ensure that all subsystems are working normally to ensure reliable measurements



Ensure Regulatory Compliance

- Fully complies with major global pharmacopoeia regulations: USP, JP, EP, IP, KP, ICH
- Simplified IQ/OQ/PQ certification procedures comply with ICH guidelines
- Simple automated routines can be used in the following areas:
 - USP/EP SST bulk water
 - USP SST sterile water
 - JP SDBS validation
 - KHP calibration in accordance with Japanese standards

Data Security

- Designed for use in 21 CFR Part 11 lab environments
- The paperless function is simple and convenient, data can be exported in a network shared directory managed by Windows Security Policy Management
- Data and reports are sent to the same location for centralized record keeping
- The integrated hard drive encrypts all data and has sufficient storage space for the entire measurement life
- Reports can be created at the touch of a button



Be Right™

QbD1200 plus Laboratory TOC Analyzer

Parameter	
Range	0 -100 ppm
Precision	<2% or 3 ppb (use the greater as standard)
Accuracy	±3% (≥500 ppb)
Calibration period	About 2 hours
Analysis time	About 4.5 mins at the fastest

Inorganic carbon treatment	
Do high levels of inorganic carbon samples require expensive extra modules to remove the inorganic carbon?	No
Is dynamic endpoint detection used to ensure complete removal of the inorganic carbon?	Yes

Self-diagnostic function ensures data integrity	
Will the instrument report TOC if the following conditions occurs?	
UV lamp intensity is too low	No
Insufficient carrier gas /empty tank	No
Insufficient reagent /empty bottle	No
Insufficient sample volume / empty vial	No

Reagent	
Reagent supply	Purchased or self-prepared
Is there an option to prepare your own reagent	Yes
Total number of reagents (acid, oxidant, dilution water)	One

Measurement method and guarantee	
Oxidation	UV lamp + persulfate
Confirmation of UV lamp	Broadband silicate photodiode sensor
Detector	Digital NDIR
Stability of detector	Continuously verify according to reference value
Detector moisture pre- removed	Peltier cooler with continuous current monitoring
Distribution module	Using syringe pump, accurate to ±1% of the volume
Flow Sensor	Dynamic fluid detector (to ensure the accuracy of sample and reagent volume)
Carrier gas selection	High purity air, oxygen or nitrogen
Confirmation of carrier gas pressure	Double orifice pressure sensor
Closing of carrier gas valve	After the measurement, the valve will close to avoid wasting gas
Auto range function	Yes
Analysis mode	NPOC (non-purge organic carbon)

Data storage and retrieval	
Statutory certification	All measurement results for 21 CFR, Part 11 are recorded in an encrypted database
Paperless report	Output report via Ethernet network shared directory managed by Windows security policy
IO (input and output)	3 USB ports, 1 Ethernet port
Data export format	PDF, CSV

User Interface	
display	10.4" high resolution color touch-screen
External PC	No external hardware, Windows 10 IoT Enterprise operating system embedded
External keyboard/mouse	Optional, not required
Easy operation	Intuitive user interface, guide the operator through measurement settings

Technical regulations	
calibration	Automated processing: 18-point calibration with KHP (3 repetitions each at 5 different concentrations, 3 background)
Calibration solution	5 ppm C, KHP (single 125 ml bottle), diluted with reagents to concentrations of 1, 2, 3, 4, 5 ppm
Verification test / system suitability	Automation routine: <ul style="list-style-type: none"> USP SST bulk water Blank, 500 ppb in C: sucrose, p-benzoquinone USP SST sterile water Blank, 8 ppm in C: sucrose, p-benzoquinone JP-16 <2.59> validation Blank, 500 ppb in C SDBS

Compliance	
USP <643> (including sterile water SST), JP-16 <2.59>, EP <2.2.44>, IP, CP, KP, US EPA 5310c	Yes
21 CFR, Part 11	Yes
ICH guidelines for instrument validation includes: accuracy, precision, detection limit, quantitative limit, linearity, range, specificity, durability	Yes

Auto sampler	
Capacity	64 sampling bottles (40 mL glass vial for TOC)
Style	XYZ, spacer perforation
Sample tray material	Aluminum anodizing

General technical data	
Instrument size	(W)320 x (D)507 x (H)410 mm
Power	100-240 VAC, 50/60 Hz, 2A
Weight	14 kg (31 lbs)
Auto sampler size	(W)366 x (D)537 x (H)457 mm
Power	100-240 VAC, 47-63 Hz
Weight	21 kg (45 lb)
Temperature and Humidity	5-35°C; relative humidity up to 90%, non-condensing
Unit	µg/L (ppb)



Order Information

Instrument		
9890000	QbD1200 Plus, TOC ANALYZER, HACH, Asia, US Power supply	JP, TW, TH
9890800	QbD1200 Plus, TOC ANALYZER, HACH, Asia, EU Power supply	Rest of Asia
9890300	QbD1200 Plus, TOC ANALYZER, HACH, Asia, CN Power supply	ANZ, China
Standard Solution / Reagent		
Auto-sampler		
9467100	AS0640 Auto-sampler	9459400
		QbD1200 Concentrated Reagent Solution, Containing Phosphoric Acid and Ammonium Persulfate (500 mL), can measure up to 8000 Times
Optional Spare Parts		
9891700	Syringe Replacement Kit	9459500
		QbD1200 Calibration Solution, 5 mg/L C (KHP potassium hydrogen phthalate, 125 mL)
9890500	Ozone Processor Replacement Kit	9459600
		SDBS Verification Kit, 500 ug/L C (SDBS sodium dodecylbenzene sulfonate, used for JP standard), containing 40 mL VOA bottles*2, each blank and 500 ppb
9898900	Pipeline Replacement Kit	9459700
9880200	UV Reactor Replacement Kit	
9890600	Reagent Bottles (with cover)	9459800
		USP System Suitability Kit, containing 40 mL VOA bottles*3, blank, 8 ppm sucrose, 8 ppm p-benzoquinone
Autosampler Accessories		
9467200	AS0640 Autosampler Tray	9459900
9454400	AS0640 Flangeless Nut Extension Tool for Autosampler	
9467300	AS0640 Power Supply for Autosampler, 90-260 VAC IN, 21-27 VDC IN, 21-27 VDC OUT	9460000
9467400	AS0640 Needle Sleeve for Autosampler	
SP6790	AS0640 Diaphragm Puncture Probe for Autosampler	
2672700	Injection Bottles*72	9460100
		Verification Protocol set, including one set of 9459600, 9459700, 9459800, 9459900, 9460000 each, and two sets of 9459500

