

Environmental

Low Dissolved Oxygen levels can cause aquatic life to suffocate and cause conditions of the water to become favorable for the growth of harmful bacteria. Thermo Electron Corporation offers a DO test method to support the increasing regulations mandated by the U.S. EPA.

DO in Salt Water

Orion 4-Star pH/DO
Portable Meter



For instructions on DO measurement using Orion products, download our Star Series meter information at www.thermo.com/water.



Orion 4-Star for pH/DO in Salt Water

The amount of oxygen that can be dissolved in water is dependant on the water temperature and the salinity levels. Rising temperatures and salinity will allow less oxygen to be saturated in the water. DO levels vary throughout a 24 hour period rising during daylight due to photosynthesis and declining at night due to bacterial decomposition. Healthy DO levels range from 4-11mg/L but when the level drops to 3mg/L, the aquatic life can become stressed and hypoxia could set in. Since inadequate DO levels can greatly affect marine life and the decomposition of

organic matter, testing and monitoring with quality products are extremely important. Using products such as the Orion 4-Star pH/ DO meter (Cat. No.1216000) and Orion Dissolved Oxygen probe (Cat. No. 83010MD) will provide accurate, easy to read results. Expert technology and a concentration range of 0.00 – 90.0 ppm and a % saturation of 0 – 600, the Orion DO probe is beyond the competition. Expert technology available in the new Orion 4-Star pH/ DO meter offers a wider measurement range, a more stable calibration and a wide temperature variation tolerance.

Orion 4-Star pH/DO

Thermo Electron's advanced technology offers you superior quality with the Orion 4-Star pH/DO meter (Cat. No. 1216000) and simpler, faster measurements with the Orion DO probe (Cat. No. 83010MD) than with any other analytical techniques.

Orion 4-Star pH/DO Specifications:

Specifications		Benefit
pH		
Readout Range / Resolution	-2.000 to 19.999 or 0 to 14 in aqueous solutions / 0.1,0.01,0.001	Calibration point flexibility
Relative Accuracy	± 0.002	For exceptional accuracy
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic	Optimized accuracy, precision & response time
AUTO-CAL™ and/or Manual Calibration	1 to 5 points; US/NIST, DIN, and custom buffers recognized	Protocol compliance
DO		
Range / Resolution Concentration	0.00 to 90.0 mg/L / 0.0/0.00	Wide operating range
Range / Resolution % Saturation	0.0 to 600% / 0/0.0	
Relative Accuracy Concentration / % Saturation	± 0.5% ±1 digit	
Temperature		
Range / Resolution	-5 to 105 °C / 0.1 up to 99.9 °C, 1.0 over 99.9 °C	Allows for temperature variations
Relative Accuracy	± 0.1 °C	
Temperature Compensation	DO (auto); pH (auto/manual)	
Special GLP Software Features		
# Of Data Logging Points	200 points by time, stability or manual read with time/date stamp	Expanded data storage available
Calibration Log	Last 10 Calibrations	Establish audit trail
User Method Storage	10 Saved	For easy retrieval of routine tests
Display		
	Custom backlit LCD, for easy viewing	Easy to read
Power		
	4 x AA batteries, powerless date protection	Data is secure
Regulatory and Safety		
	CE, CSA, UL, TÜV, FCC Class A limits	Meets all necessary regulations
Environmental Operating Conditions		
Ambient Operating Temperature	5 to 45 °C	
Relative Humidity	5 to 85% Non-Condensing	
IP Rating	IP67, waterproof and dustproof	
Warranty		
	36 months (from date of purchase)	Reduces service cost

Above data generated under optimal/controlled circumstances.

Equipment needed for pH/DO measurement using the Orion 4-Star pH/DO meter:

Description	Orion Cat. No.
DO Application Package (includes all items listed below)	1010116
Star Series Method Note: DO in Salt Water	M-1015-E
4-Star Portable pH/ DO Meter	1216000
ROSS Ultra® Combination pH Electrode	8156BNUWP
Field DO Probe	083010MD
Electrolyte Solution	80514
Field Case	1210004
Portable Meter, Rubber Armor & Storage Sleeve Insert	1210002
Electrode Storage Sleeve Insert	1210003

ROSS and the COIL tradenames are trademarks of Thermo Electron Corporation. US Patent 6,793,787.

Thermo
ELECTRON CORPORATION

www.thermo.com

Environmental Instruments Water Analysis Instruments

166 Cummings Center
Beverly, MA 01915 USA

Toll Free: 1-800-225-1480
Tel: 1-978-232-6000
Dom. Fax: 1-978-232-6015
Int'l Fax: 978-232-6031
www.thermo.com/water



T-1015-E 02/05 RevB

© 2005 Thermo Electron Corporation. All rights reserved.