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# Star Series Specifications



## Orion 5-Star pH/ORP/ISE/DO/Cond

Portable Multiparameter (Cat. No. 1219000)  
Portable Multiparameter Kit (Cat. No. 1219001)

- pH, ISE, DO, ORP and Conductivity measurements in one waterproof, hand-held unit
- Durable and balanced with backlit display for easy handling in the most demanding field applications
- Battery power delivers over 2,000 hours of continuous operation
- Full complement of GLP-related features including 21 CFR Part 11 software
- SMART STABILITY™ and SMART AVERAGING™ functions for automatically optimized accuracy, precision and response time
- Storage of up to 10 password protected methods for easy retrieval of operation procedures
- Simultaneous display of pH or ISE, Cond, DO and temperature measurements

Specifications	
<b>pH</b>	
Readout Range / Resolution	-2.000 to 19.999 or 0 to 14 in aqueous solutions / 0.1,0.01,0.001
Relative Accuracy	± 0.002
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic
AUTO-CAL™ and/or Manual Calibration	1 to 5 points; US/NIST, DIN, and custom buffers recognized
<b>ISE</b>	
Range / Resolution	0 to 19900 / 1,2, or 3 significant digits
Relative Accuracy	± 0.2 mV or 0.05%, whichever is greater
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic
Units	M, mg/L, %, ppb, or no units
# ISE Cal points	1 to 5
<b>Special ISE Calibration Features</b>	Linear point to point, selectable auto-blank non-linear, low concentration range
<b>mV</b>	
Range – mV / RmV	± 1999.9
ORP	E <sub>H</sub> autocalibration to standard hydrogen electrode
Resolution	0.1
Relative Accuracy	± 0.2 mV or 0.05%, whichever is greater
<b>Conductivity</b>	
Range	0.000 to 3000 mS/cm, auto resolution with cell constant dependence
Resolution	4 significant digits down to 0.001 µS/cm, cell constant dependent
Relative Accuracy	0.5% ± 1 digit or 0.01 µS/cm, whichever is greater
Cell Constant	0.001 to 199.9
Cell Compatibility	2 Cell, 4 Cell, Planar Cell
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic
DirectCal™ / AUTO-CAL™	1 to 5 points / 1 to 3 points
<b>Resistivity</b>	
Range / Resolution	0.0001 to 100 Megohm / Auto resolution
Relative Accuracy	0.5 % ± 1 digit
<b>Salinity</b>	
Range / Resolution	0.01 to 80.0 ppt NaCl equivalent, 0.01 to 42ppt practical salinity / 0.01
Relative Accuracy	± 0.1 ± 1 digit
<b>TDS</b>	
Range / Resolution	0 to 19999 / 1 mg/L
Relative Accuracy	± 0.5 % ± 1 digit
Adjustable TDS Factor	0.00 to 10.00
<b>DO</b>	
Range / Resolution Concentration	0.00 to 90.0 mg/L / 0.0/0.00
Range / Resolution % Saturation	0.0 to 600% / 0/0.0
Relative Accuracy Concentration / % Saturation	± 0.5% ±1 digit
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic
Auto Calibration or Manual Input	Water Saturated Air and Air Saturated Water, Winkler
Calibration to Winkler Titration for BOD	Available as needed
Salinity Factor	0 to 45 ppt
Barometric Pressure Range	450 to 850 mm Hg
Probe Type	Polarographic

*Above data generated under optimal/controlled circumstances.*

Specifications	
<b>Temperature</b>	
Range / Resolution	-5 to 105 °C / 0.1 up to 99.9 °C, 1.0 over 99.9 °C
Relative Accuracy	± 0.1 °C
Temperature Compensation	DO (auto); Cond (nLF, linear 0.0 to 10.0% / °C); pH (auto/manual)
<b>Display</b>	Custom backlit LCD, for easy viewing
<b>Inputs/Outputs</b>	
Sensor Inputs	Conductivity-miniDIN - Locking; DO-miniDIN - Locking; ATC-miniDIN-Locking; pH/ISE - BNC; (all waterproof)
Communications	Waterproof bi-directional RS232 - Stereo jack, optional USB interface Cable
<b>Special GLP Software Features</b>	
# Of Data Logging Points	200 points by time, stability or manual read with time/date stamp
Calibration Log	Last 10 Calibrations
User Method Storage	10 Saved
Advanced Self-test and Diagnostics	YES
GLP Electrode Verification	YES
Password Protection	YES
Internet Software Updates / Downloadable Methods	YES
21 CFR Part 11 Software Package	YES
<b>Power</b>	4 x AA batteries, powerless date protection
<b>Regulatory and Safety</b>	CE, CSA, UL, TÜV, FCC Class A limits
<b>Environmental Operating Conditions</b>	
Ambient Operating Temperature	5 to 45 °C
Relative Humidity	5 to 85% Non-Condensing
IP Rating	IP67, waterproof and dustproof
<b>Warranty</b>	36 months (from date of purchase)

Above data generated under optimal/controlled circumstances.

Multiparameter Portable Meter Kit (1219001) Includes:	
Cat. No.	Description
1219000	5-Star multiparameter portable meter with ISE
9107WMMD	Waterproof pH Triode™ DIN
910060	pH storage solution, 5x60 mL
013010MD	Conductivity 4 cell, K=0.475, 8 PIN F
011007	Conductivity/TDS standard 1413 µS/cm, 5x60 mL
80045	EP protective sleeve insert
204947-001	Beaker
083010MD	A line probe, 8 PIN F
080513	DO probe maintenance kit
080017	DO calibration sleeve, A series probes
1210002	Portable impact jacket with electrode storage sleeve
910460	pH 4.01 buffer, 5x60 mL
1210004	Hard field case
910410	pH 4.01 buffer, 10 pack
910710	pH 7.00 buffer, 10 pack
911010	pH 10.01 buffer, 10 pack

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