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# Star Series Specifications



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

Benchtop Multiparameter (Cat. No. 1119000)  
Benchtop Multiparameter Kit (Cat. No. 1119001)

- pH, ORP, DO, ISE, and Conductivity measurements in one compact, easy to use unit
- 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
- Convenient, built-in Quick-Start Guide
- Backed by revolutionary electrode technology and applications expertise
- Simultaneous display of pH, ORP, ISE, Cond, DO and temperature measurements
- Stirrer & AUTO-STIR™ probe control

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; Reference-Pin tip; Stirrer-Phono-jack
Communications	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>	Universal power adapter and battery power 4 x AA batteries
<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	IP54, splashproof and dustproof
<b>Warranty</b>	36 months (from date of purchase)

Above data generated under optimal/controlled circumstances.

Multiparameter Benchtop Meter Kit (1119001) Includes:	
Cat. No.	Description
1119000	5-Star multiparameter benchtop meter with ISE
8102BNU	ROSS Ultra® electrode with BN connector
927005MD	A series PerpHecT® meter, epoxy ATC probe, 3.5m cable
081010MD	DO probe, 3m cable
013005	Conductivity cell, 1.5m cable
810001	ROSS™ pH electrode storage solution, 475 mL
011007	Conductivity/TDS standard 1413 µS, 5x60 mL
080113	Probe service kit
970802	Overflow funnel with stirbox
080017	DO calibration sleeve, A series probes
1110001	Electrode stand
910104	pH 4.01 buffer, 475 mL
910107	pH 7.00 buffer, 475 mL
910110	pH 10.01 buffer, 475 mL

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