

Reference 3020

Potentiostat/Galvanostat/ZRA



GAMRY
INSTRUMENTS

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BEST IN CLASS PERFORMANCE

The Gamry Instruments **Reference 3020™** is a high-performance high-current Potentiostat/Galvanostat/ZRA meant for the most demanding of applications. An optional booster is available for even higher current applications.

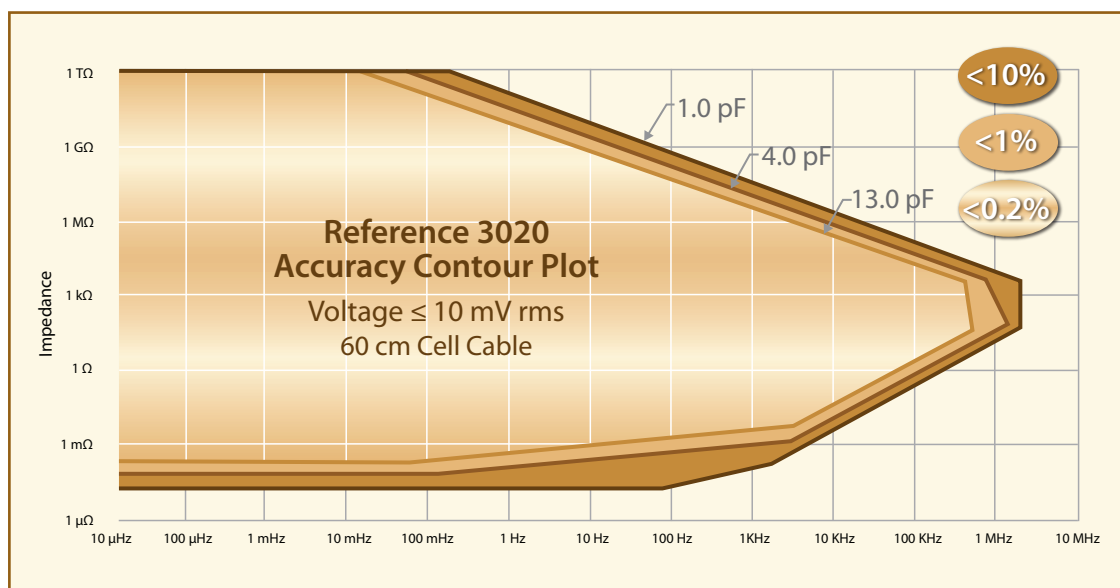
The Reference 3020 is a potentiostat sensitive enough for research and capable enough for development of your battery, fuel cell, or electrolyzer. It is smaller and lighter than most comparable potentiostats. While the Reference 3020 can apply and measure ampere level currents, it is also an excellent low noise, small signal potentiostat that can work with picoamp currents.

The Reference 3020 is ideal for a number of applications, including:

- Fuel cell and electrolyzer research
- Battery development
- Electroplating
- Kinetic and Thermodynamic Measurements
- Corrosion Measurement
- Sensor Development
- Electrocatalysis
- Analytical Electrochemistry
- Electrochemical Impedance Spectroscopy

Superior EIS Performance

Our Accuracy Contour Plot is second-to-none and shows you how versatile the Reference 3020 can be.



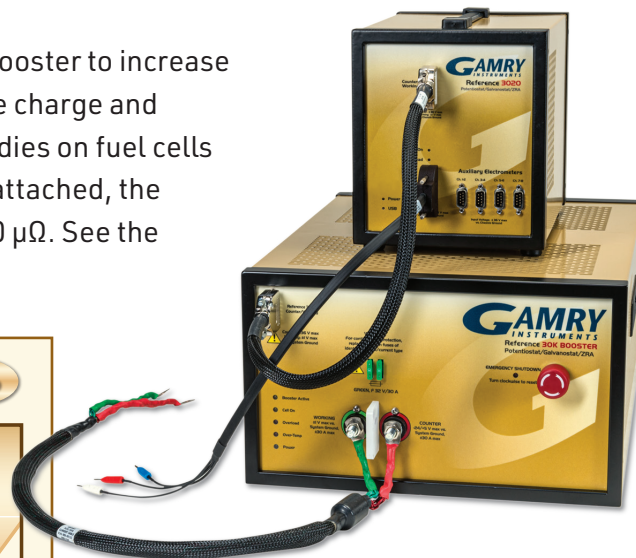
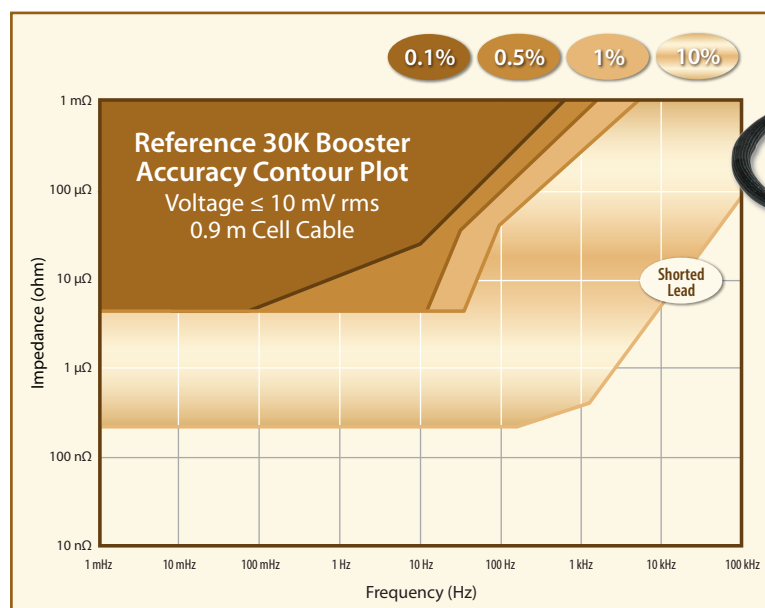


Auxiliary Electrometer Option

The Reference 3020 Potentiostat can be equipped with a unique Auxiliary Electrometer option. This factory installed option is especially useful when you need to measure the performance of several individual cells in a multi-cell stack. Each of the eight channels on this option can measure a complete 5V signal anywhere in the compliance range.

Reference 30K Booster Option

The Reference 3020 can interface to a Reference 30K Booster to increase the current to ± 30 A at $+20/-2.5$ V. This allows complete charge and discharge of a supercapacitor as well as cross-over studies on fuel cells and electrolyzers. When the Reference 30K Booster is attached, the Reference 3000 can measure impedances less than $100 \mu\Omega$. See the Accuracy Contour Plot below.



The **Reference 3020** includes software for all electrochemical applications. Contact your local Gamry sales representative for more information. Below are selected specifications. See our website for complete specifications.

SELECTED SPECIFICATIONS

SYSTEM

Potentiostat	Yes
Galvanostat	Yes
Zero Resistance Ammeter	Yes
Floating (Isolated from Earth Ground)	Yes
Cell Connections	2, 3, or 4
Maximum Current	Normal Compliance: ± 3 A High Compliance: ± 1.5 A
Current Ranges	11
Current Ranges (including internal gain)	13
Maximum Applied Potential	± 12 V Normal Compliance: ± 36 V High Compliance
Rise Time	< 250 ns
Noise and Ripple	< 2 μ V rms
Minimum Time Base	3.333 μ s
Analog/Digital Converter	20 bit

EIS MEASUREMENT

EIS	10 μ Hz - 3 MHz (500 kHz maximum on high compliance)
EIS Accuracy	See Accuracy Contour Plot

CONTROL AMPLIFIER

Compliance Voltage	Normal Compliance: ± 17.5 V High Compliance: ± 36 V
Output Current	$> \pm 3$ A

MEASURED POTENTIAL

Measured Accuracy	± 1 mV $\pm 0.3\%$ of reading
Measured Resolution	12.5 μ V, 50 μ V, 200 μ V/bit

MEASURED CURRENT

Measured Accuracy	± 10 pA $\pm 0.3\%$ of range
Measured Resolution	0.0033% full-scale/bit

IR COMPENSATION

Mode	Current Interrupt and Positive Feedback
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AUXILIARY ELECTROMETER

Input Voltage

Common Mode Range	$\pm$ Compliance Voltage
Input Resistance	> 10 G Ω
Input Current	< 10 pA

Difference Amp

Difference Voltage	± 5 V
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