



Entry level potentiostat/galvanostat/ZRA

The Vertex is an entry level potentiostat/galvanostat/ZRA with optional FRA/EIS. Its price easily matches its application in educational and applied electrochemistry. The Vertex is capable of all standard electrochemical techniques and includes a complete suite of IviumSoft control and data processing software.

THE VERTEX IS AVAILABLE IN 5 POWER CONFIGURATIONS:

- $\pm 100\text{mA} / \pm 10\text{V}$
- $\pm 1\text{A} / \pm 10\text{V}$
- $\pm 5\text{A} / \pm 10\text{V}$
- $\pm 10\text{A} / \pm 10\text{V}$
- $\pm 2\text{A} / \pm 20\text{V}$

KEY SPECIFICATIONS

- Current ranges: 10nA to 1A (10A)
- WE/RE/S/CE 4-electrode configuration
- Floating operation
- Data acquisition rate 100kHz
- Optional FRA/EIS: 10 μ Hz to 1MHz

EXPANDABILITY

The Vertex can be expanded with an optional True Linear Scan module and FRA/EIS. The Vertex is also compatible with other Ivium modules, such as the multiplexer and current interrupt module.

WIDE APPLICATION RANGE

The robust design, wide range of available models, floating operation and the availability of all standard electrochemical techniques makes the Vertex ideal for a variety of applications, including: educational, routine electrochemistry and analysis, batteries and fuel cells, corrosion, sensors and biotechnology.

System Performance

Current compliance
Maximum output voltage
4 electrodes
Potentiostat bandwidth
Stability settings
Programmable response filter
Signal acquisition

Vertex.100mA

$\pm 100\text{mA}$
 $\pm 10\text{V}$
WE, CE, RE, S
>500kHz
High Speed, Standard, and High Stability
1MHz, 100kHz, 10kHz, 1kHz, 10Hz
Dual channel 16 bit ADC, 100,000 samples/s

Potentiostat

Applied potential range
Applied potential accuracy
Current ranges
Measured current resolution
Measured current accuracy

$\pm 10\text{V}$, 0.333mV resolution
0.2% or 2mV
 $\pm 10\text{nA}$ to $\pm 100\text{mA}$ in 8 decades
0.015% of current range, minimum 1.5pA
0.2%

Galvanostat

Applied current resolution
Applied current accuracy
Potential ranges
Measured potential resolution
Measured potential accuracy

0.033% of applied current range
0.2%
 $\pm 10\text{mV}$, $\pm 100\text{mV}$, $\pm 1\text{V}$, $\pm 10\text{V}$
0.003% of potential range, minimum 0.4 μ V
0.2% or 2mV

Electrometer

Input impedance
Input bias current
Bandwidth

>100Gohm // <20pF
<20pA
>5MHz

Impedance analyser (optional)

Frequency range
Amplitude
DC offset

10 μ Hz to 1MHz
0.015mV to 1.0V, or 0.03% to 100% of current range
16 bit DC offset subtraction, and 2 DC-decoupling filters

Special functions

Ohmic drop compensation

2V/current range, 16 bit resolution

Peripheral Connections

Shared input/output

User selectable input or output
 $\pm 10\text{V}$, 16 bit, bandwidth 40kHz

Environment

Power requirements
Interfacing
Size
Weight
PC requirements

100-240V, 45-65Hz, 700mA
USB
w x d x h = 13 x 27 x 4cm
1.5kg
Windows XP/7/8/10, with free USB port

Vertex*	1A 1A/10V	5A 5A/10V	10A 10A/10V	2A 2A/20V
System performance				
Current compliance	$\pm 1\text{A}$	$\pm 5\text{A}$	$\pm 10\text{A}$	$\pm 2\text{A}$
Additional current ranges	$\pm 1\text{A}$	$\pm 1\text{A}, \pm 10\text{A}$	$\pm 1\text{A}, \pm 10\text{A}$	$\pm 1\text{A}$
Maximum output voltage	$\pm 10\text{V}$	$\pm 10\text{V}$	$\pm 10\text{V}$	$\pm 20\text{V}$
Additional (applied) potential range	-	-	-	$\pm 20\text{V}$, 0.667mV resolution
Peripheral connections	*)	**)	**)	**)
Power requirements	100-240V, 50-60Hz 700mA	100-240V, 50-60Hz 2A	100-240V, 50-60Hz 4A	100-240V, 50-60Hz 2A
Weight	1.5kg	2kg	3kg	2kg

*) All other specs same as standard model.

**) Peripheral connections:

2 Analog in $\pm 10\text{V}$, 16 bit resolution, bandwidth 40kHz
1 Analog out $\pm 10\text{V}$, 16 bit resolution
1 Digital input, 3 Digital outputs 0 to +5V

I-out, and E-out analog monitor for cell current and potential
AC-out $\pm 0.5\text{V}$ sinewave 10 μ Hz-1MHz with variable attenuation
Channel-X, and $\pm 4\text{V}$: to record impedance from peripheral devices
Channel-Y inputs