5A/10V ----> 40A / 50V

high power

IVIUMSTAT
ELECTROCHEMICAL INTERFACE

DISCONNECT   ON / OFF

discover:
our complete range of instruments

IV**I**UM
TECHNOLOGIES

innovative **solutions** for electrochemical research

pocketSTAT™

Handheld potentiostat/galvanostat/ZRA with integrated impedance analyser

The pocketSTAT is a complete electrochemical measurement instrument with the size of a smart phone. It has been specifically designed for (field) measurements such as corrosion and analytical electrochemistry.

HANDHELD The pocketSTAT has the size and weight of a smart phone. It can be controlled via USB connection from any netbook, laptop or PC that is Windows operated.

KEY SPECIFICATIONS

- Size: 115.2x58.5x12.5mm
- Weight: 140 g
- Scan range: ±4V ±10mA
- 3 electrode connection:
  RE/WE/CE and GND lead
- Max. acquisition rate: 5000 pnts/sec

RUGGED DESIGN The pocketSTAT has a housing made of strong, yet light weight, aluminium. The instrument enclosure is waterproof and complies with the ip44 rating. It is equipped with a full color display that shows the basic information, such as voltage, current and technique.

ALL TECHNIQUES All standard electrochemical techniques are available, including impedance analysis and corrosion techniques. The pocketSTAT includes a full suite of IviumSoft control and data analysis software.

System Performance:

Current compliance	±10 mA
Maximum output Voltage	± 8 V
3 Electrodes	WE, CE, RE
Potentiostat Bandwidth	>1 MHz
Stability settings	High Speed, Standard, and High Stability
Programmable response filter	1 MHz , 100 kHz , 10 kHz , 1 kHz , 10 Hz
Signal acquisition	dual channel 16 bit ADC, 100.000 samples/sec
Electrode connection	RE/WE/CE and ground lead, 2mm banana plugs

Potentiostat:

Applied potential range	±4 V, at 0.125 mV resolution
Applied potential accuracy	0.2%, or 2 mV
Current ranges	±1 nA to ±10 mA in 8 steps
Measured current resolution	0.015% of current range, minimum 0.15pA
Measured current accuracy	0.2%

Galvanostat:

Applied current resolution	0.0125% of applied current range
Applied current accuracy	0.2%
Potential ranges	±0.4mV, ±4mV, ±40mV, ±0.4V, ±4V
Measured potential resolution	0.003% of potential range, minimum 16nV
Measured potential accuracy	0.2%, or 2 mV

Impedance Analyser :

Frequency range	10µHz to 100kHz
Amplitude	0.015mV to 1.0V, or 0.03% to 100% of current range
DC offset	16 bit dc offset subtraction, 2 dc-decoupling filters

Electrometer:

Input impedance	>1000 Gohm //<20pF
Input bias current	<10 pA
Bandwidth	>2 MHz

Environment:

Power requirements	via USB
Interfacing	USB 2.0 and 3.0 compliant
Size	w x d x h = 11.5 x 5.85 x 1.25 cm
Weight	140 gram
PC requirements	Windows XP/Vista/7/8 with free USB port

CompactStat ™

Portable USB powered potentiostat/galvanostat/ZRA with integrated impedance analyser

The CompactStat can be operated via the USB port of a laptop or PC, without additional power supply. With its small footprint (<600 gram) and low power consumption, the CompactStat provides a truly mobile electrochemical measurement station. Among its many applications are corrosion, analytical, nano, bio, and battery/fuel cell testing

THE COMPACTSTAT IS AVAILABLE IN 3 POWER CONFIGURATIONS:
- ± 30mA @ ±10V
- ± 800mA @ ±10V*
- ± 250mA @ ±20V*
- ± 30mA / ±100V*

*) With internal power booster.

EXPANDABILITY The CompactStat is fully compatible with all options and modules, including: integrated Bipotentiostat and True Linear Scan, the MultiWE32, ModuLight, Multiplexer, Fastscan, etc.

LOW NOISE AND GALVANIC ISOLATION The CompactStat is electrically isolated from power lines and PC. It has a superior noise immunity and is capable of determining very small signals, such as is required in nano-technology applications. Additionally, the instrument can be applied in situations where the sample must be disconnected from a common ground (floating).

COMPLETE SOLUTION The CompactStat offers a complete package. The hardware includes a build-in high-performance Frequency Response Analyser and all the standard Electrochemical techniques. Complete measurement and dataprocessing software is included.

AUTOMATION Multiple analog and digital input & output ports are available that can be used to monitor & control peripheral equipment. The software integrates this functionality.

System Performance:	Standard (30 mA / 10 V)
Current compliance	± 30 mA
Maximum output Voltage	± 10 V
4 Electrodes	WE, CE, RE, S
Potentiostat Bandwidth	>3 MHz
Stability settings	High Speed, Standard, and High Stability
Programmable response filter	1 MHz , 100 kHz , 10 kHz , 1 kHz , 10 Hz
Signal acquisition	dual channel 16 bit ADC, 100.000 samples/s

Potentiostat:	
Applied potential range	±4 V, 0.125 mV resolution/±10 V, 0.333mV resolution
Applied potential accuracy	0.2%, or 2 mV
Current ranges	±10 nA to ±10 mA, (100 mA, 1A)
High sensitivity current ranges	±1 pA, ±10 pA, ±100 pA, ±1 nA
Measured current resolution	0.015% of current range, minimum 0.15fA
Measured current accuracy	0.2%

Galvanostat:	
Applied current resolution	0.0125% of applied current range
Applied current accuracy	0.2%
Potential ranges	±0.4 mV, ±4 mV, ±40 mV, ±0.4 V, ±4 V, ±10 V
Measured potential resolution	0.003% of potential range, minimum 16nV
Measured potential accuracy	0.2%, or 2 mV

Impedance Analyser:	
Frequency range	10μHz to 3MHz
Amplitude	0.015mV to 1.0V, or 0.03% to 100% of current range
DC offset	16 bit dc offset subtraction, 2 dc-decoupling filters
Dynamic range	4 nV to10 V, and 0.05 fA to 30 mA

Electrometer:	
Input impedance	>1000 Gohm //<8pF
Input bias current	<10 pA
Bandwidth	>16 MHz

Special functions:	
Ohmic drop compensation	2 V/current range, 16 bits resolution

Peripheral connections:	
8 Analog in, and 2 analog out	0 to +4 V, 16 bits resolution
2 Digital inputs, 3 Digital outputs	0 to +5 V
I-out, and E-out	analog monitor for cell current and potential
AC-out	±0.5 V sinewave 10μHz-3MHz with variable attenuation
Channel-X, and Channel-Y inputs	±4 V: to record impedance from peripheral devices

Environment:	
Power requirements	in USB powered mode: standard 5 V, 500 mA
external adapter:	100-240 V, 50-60 Hz, 350 mA
Interfacing	USB 2.0 and 3.0 compliant
Size	w x d x h = 12 x 26 x 2.5 cm
Weight	0.6 kg
PC requirements	Windows XP/Vista/7/8 with free USB port

CompactStat with booster* System performance:	e10800 800mA/10V	e20250 250mA/20V	e10030 30mA/100V
Current compliance	±800mA	±250mA	±30mA
Maximum output voltage	±10V	±20V	±100V
Applied potential range	±10V, 0.333mV resolution	±20V, 0.667mV resolution	±100V, 3.33mV resolution
Additional potential range	−	±20V	±100V
Power requirements (Adapter powered only)	100-240V, 50-60Hz, 700mA	100-240V, 50-60Hz, 700mA	100-240V, 50-60Hz, 700mA
Weight	0.7kg	0.7kg	0.7kg

*) All other specs same as standard model.

Vertex ™

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:

- ±100mA / ±10V
- ±1A / ±10V
- ±5A / ±10V
- ±10A / ±10V
- ±2A / ±20V

KEY SPECIFICATIONS

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

EXPANDABILITY The Vertex can optionally be expanded with a 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, biotechnology.

System Performance:	Standard (100mA / 10V)
Current compliance	±100 mA
Maximum output Voltage	± 10 V
4 Electrodes	WE, CE, RE, S
Potentiostat Bandwidth	>500 kHz
Stability settings	High Speed, Standard, and High Stability
Programmable response filter	1 MHz , 100 kHz , 10 kHz , 1 kHz , 10 Hz
Signal acquisition	dual channel 16 bit ADC, 100.000 samples/sec

Potentiostat:	
Applied potential range	±10 V, with 0.333mV resolution
Applied potential accuracy	0.2%, or 2 mV
Current ranges	±10 nA to ±1 A in 9 steps
Measured current resolution	0.015% of current range, minimum 15pA
Measured current accuracy	0.2%

Galvanostat:	
Applied current resolution	0.033% of applied current range
Applied current accuracy	0.2%
Potential ranges	±10 mV, ±100 mV, ±1 V, ±10 V
Measured potential resolution	0.003% of potential range, minimum 0.4µV
Measured potential accuracy	0.2%, or 2 mV

Electrometer:	
Input impedance	>100 Gohm //<20pF
Input bias current	<20 pA
Bandwidth	>5 MHz

Impedance Analyser (optional):	
Frequency range	10µHz to 1MHz
Amplitude	0.015mV to 1.0V, or 0.03% to 100% of current range
DC offset	16 bit dc offset subtraction, 2 dc-decoupling filters

Special functions:	
Ohmic drop compensation	2 V/current range, 16 bits resolution

Peripheral connections:	
Shared input/output	user selectable
	- analog input: ±10V, 16 bits res.; or
	- analog output: ±10V, 16 bits res.;
	bandwidth 40kHz

Environment:	
Power requirements	100-240 V, 50-60 Hz, 700 mA (supply included)
Interfacing	USB 2.0 and 3.0 compliant
Size	w x d x h = 13 x 27 x 4 cm
Weight	1.5 kg
PC requirements	Windows XP/Vista/7/8 with free USB port

Vertex* System performance:	1A 1A / 10V	5A 5A / 10V	10A 10A / 10V	2A 2A / 20V
Current compliance	±1A	±5A	±10A	±2A
Additional current ranges	–	±10A	±10A	–
Maximum output voltage	±10V	±10V	±10V	±20V
Additional (applied) potential range	–	–	–	±20V, 0,667mV resolution
Pheripheral port	as standard	see below**	see below**	see below**
Power requirements	as standard	100-240V, 50-60Hz, 2A	100-240V, 50-60Hz, 4A	100-240V, 50-60Hz, 2A
Weight	1.5kg	2kg	3kg	2kg

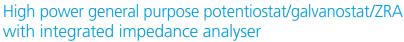*) All other specs same as standard model.

**) Peripheral connections:

2 Analog in	±10 V, 16 bits resolution, bandwidth 40 kHz	I-out, and E-out	analog monitor for cell current and potential
1 Analog out	±10 V, 16 bits resolution	AC-out	±0.5 V sinewave 10µHz-1MHz with variable attenuation
1 Digital input, 3 Digital outputs	0 to +5 V	Channel-X, and Channel-Y inputs	±4 V: to record impedance from peripheral devices

IviumStat™

High power general purpose potentiostat/galvanostat/ZRA with integrated impedance analyser

The IviumStat is well-suited for applications requiring a wide dynamic range.
The high current capability combined with its complete range of options enables application in research, corrosion, battery/fuel cell testing, analysis and bio- and nano-electrochemistry.

THE IVIUMSTAT IS AVAILABLE IN 3 POWER CONFIGURATIONS

- ±5A / ±10V
- ±10A / ±10V
- ±2A / ±50V
- Current- and voltage boosters available

EXPANDABILITY The IviumStat is fully compatible with all options and modules, including: integrated Bipotentiostat and True Linear Scan, the MultiWE32, ModuLight, multiplexer, FastScan and all current- and voltage boosters.

AUTOMATION Multiple analog and digital input & output ports are available that can be used to monitor & control peripheral equipment. The software integrates this functionality.

SAFETY The compliance (maximum current or potential) of the instrument can be defined by the operator. In this way valuable samples may be protected and unsafe situations prevented.

COMPLETE SOLUTION The IviumStat offers a complete package. The hardware includes a built-in high-performance Frequency Response Analyser and all the standard electrochemical techniques. Complete measurement and data processing software is included.

System Performance:	Standard (5A / 10V)
Current compliance	± 5A
Maximum output Voltage	± 10V
4 Electrodes	WE, CE, RE, S
Potentiostat Bandwidth	8 MHz for small signals, 300kHz for large signals
Stability settings	High Speed, Standard, and High Stability
Programmable response filter	1MHz , 100kHz , 10kHz , 1kHz , 10Hz
Signal acquisition	dual channel 16 bit ADC, 100.000 samples/sec
Potentiostat:	
Applied potential range	±10 V, with 0.33mV resolution
Applied potential accuracy	0.2%, or 2mV
Current ranges	±10nA to ±10A in 10 steps
High sensitivity current ranges	±1pA, ±10pA, ±100pA, ±1nA
Measured current resolution	0.015% of current range, minimum 0.15fA
Measured current accuracy	0.2%
Galvanostat:	
Applied current resolution	0.033% of applied current range
Applied current accuracy	0.2%
Potential ranges	±1mV, ±10mV, ±100mV, ±1V, ±10V,
Measured potential resolution	0.003% of potential range, minimum 40nV
Measured potential accuracy	0.2%, or 2mV
Impedance Analyser:	
Frequency range	10μHz to 8MHz
Amplitude	0.015mV to 1.0V, or 0.03% to 100% of current range
DC offset	16 bit dc offset subtraction, 2 dc-decoupling filters
Dynamic range	12nV to 10V, and 0.05fA to 5A

Electrometer:	
Input impedance	>1000 Gohm //<8pF
Input bias current	<10 pA
Bandwidth	>16 MHz
Special functions:	
Ohmic drop compensation	2 V/current range, 16 bits resolution
Peripheral connections:	
8 Analog in, and 2 analog out	0 to +4V, 16 bits resolution
2 Digital inputs, 3 Digital outputs	0 to +5V
I-out, and E-out	analog monitor for cell current and potential
AC-out	±0.5V sinewave 10μHz-8MHz with variable attenuation
Channel-X, and Channel-Y inputs	±4V: to record impedance from peripheral devices
Environment:	
Power requirements	100-240V, 47-63Hz, 150VA
Interfacing	USB 2.0 and 3.0 compliant
Size	w x d x h = 26 x 33 x 12 cm
Weight	4.2 kg
PC requirements	Windows XP/Vista/7/8 with free USB port

IviumStat* System performance:	XRi 10A / 10V	XRe 2A / 50V
Current compliance	±10A	±2A
Additional current ranges	±10A	±10A
Maximum output voltage	±10V	±50V
Additional (applied) potential range	–	±50V, 1.667mV resolution
Power requirements	100-240V, 45-63Hz, 300VA	100-240V, 45-63Hz, 300VA
Weight	5.3kg	5.3kg

*) All other specs same as standard model.

Ivium-n-Stat™

High power multi-channel potentiostat/galvanostat/ZRA with integrated impedance analyser

The Ivium-n-Stat is a state-of-the-art multi-channel potentiostat-galvanostat with integrated impedance analyser in each channel. It can be operated in grounded or in floating mode. The variety of different channels, the high sensitivity, and the separate or synchronous control of channels allow the Ivium-n-Stat to be used in a wide range of applications from research to production testing.

VARIOUS CHANNELS AND FRAMES AVAILABLE

Single channel sModule:
- ±2.5A / ±10V
- ±5A / ±10V
- ±2A / ±20V

Dual channel dModule:
- 2 x ±500mA / ±10V
- 2 x ±2.5A / ±10V

Integrated EIS:
- All channels standard include intergrated FRA/EIS: 10µHz - 250kHz (Optional High Frequency upgrade to 1MHz)

Main frame:
- 20A or 40A
- max. 8 modules / 16 channels per frame
- Stackable up to 64 channels

EXPANDABILITY
The Ivium-n-Stat main frame contains 8 slots for a maximum of 16 channels and can be stacked up to 8 frames and a maximum of 64 channels. Modules are encased for easy handling so that users can upgrade the number of channels in a simple plug-and-play manner. With the exception of the dual channel module, an integrated peripheral port with multiple analog and digital input & output ports is available that can be used to monitor & control peripheral equipment. The software integrates this functionality.

SIMULTANEOUS CONTROL
The IviumSoft control software allows control of separate channels or all channels simultaneously with synchronized start. Data can be plotted per channel or simultaneously for all channels on a single screen.
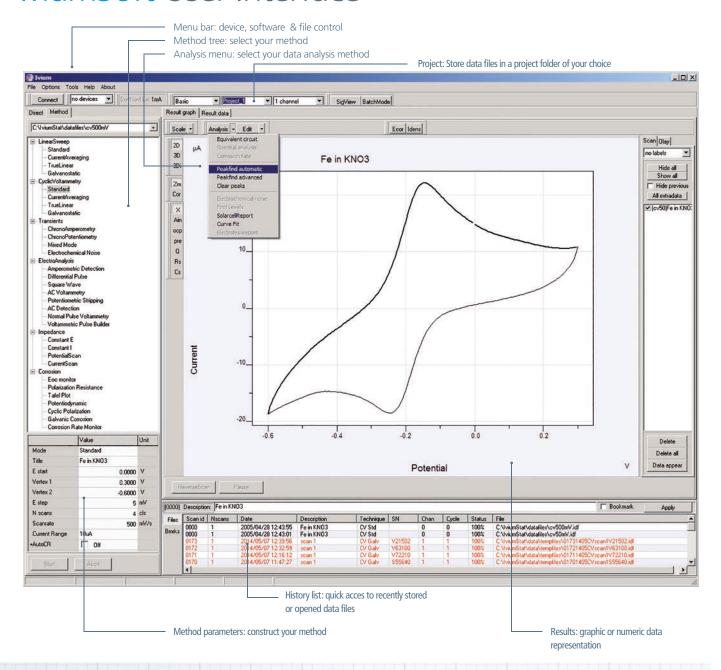
Channel Performance:	Standard sModule (2.5 / 10V)
Current compliance	±2.5 A
Maximum output Voltage	±10 V
4 Electrodes	WE, CE, RE, S
Potentiostat Bandwidth	>500 kHz
Stability settings	High Speed, Standard, and High Stability
Programmable response filter	1 MHz , 100 kHz , 10 kHz , 1 kHz , 10 Hz
Signal acquisition	dual channel 16 bit ADC, 100.000 samples/sec

Potentiostat:	
Applied potential range	±10 V, with 0.33 mV resolution
Applied potential accuracy	0.2%, or 2 mV
Current ranges	±10 nA to ±10 A in 10 steps
Measured current resolution	0.015% of current range, minimum 1.5pA
Measured current accuracy	0.2%

Galvanostat:	
Applied current resolution	0.033% of applied current range
Applied current accuracy	0.2%
Potential ranges	±10mV, ±100mV, ±1V, ±10V
Measured potential resolution	0.003% of potential range, minimum 400nV
Measured potential accuracy	0.2%, or 2 mV

Impedance Analyser:	
Frequency range	10µHz to 250kHz (optional: 10µHz to 1MHz)
Amplitude	0.015mV to 1.0V, or 0.03% to 100% of current range
DC offset	16 bit dc offset subtraction, 2 dc-decoupling filters

Electrometer	
Input impedance	>1000 Gohm //<8pF
Input bias current	<10 pA
Bandwidth	>5 MHz

Special functions:	
Ohmic drop compensation	2 V/current range, 16 bits resolution

Peripheral connections: (not for dual channel module)	
2 Analog in	±10 V, 16 bits resolution, bandwidth 40 kHz
1 Analog out	±10 V, 16 bits resolution
1 Digital input, 3 Digital outputs	0 to +5 V
I-out, and E-out	analog monitor for cell current and potential
AC-out	±0.5 V sinewave 10µHz to max. 1MHz with variable attenuation
Channel-X, and Channel-Y inputs	±4 V: to record impedance from peripheral devices

Environment	
Size	w x d x h = 3 x 35 x 13 cm
Weight	0.7 kg
PC requirements	Windows XP/Vista/7/8 with free USB port

Specifications: Ivium-n-Stat main frame	
Slot positions	Can mount up to 8 Modules
Common connectors	GND and combined emergency off control monitor
Power requirements	20A-frame: 100-240 V, 47-63 Hz, 300 W
	40A-frame: 100-240V, 47-63Hz, 600W
Interfacing	USB 2.0 and 3.0 compliant
Size	w x d x h = 47 x 36 x 14 cm
Weight	6.2 kg (no modules)
	11.8 kg (with 8 modules)

Module* System performance:	sModule 5A / 10V	sModule 2A / 20V	dModule 500mA / 10V	dModule 2.5A / 10V
Number of channels in module	1	1	2	2
Current compliance	±5A	±2A	±500mA	±2.5A
Maximum output voltage	±10V	±20V	±10V	±10V
Additional (applied) potential range	–	±20V, 0.667mV resolution	–	–
Pheripheral port	yes	yes	not available	not available

*) All other specs same as standard model.

Software to match every research application

One software to control all Ivium instruments: IviumSoft includes all standard electrochemical techniques and allows integrated data processing and analysis. The software is feature rich, yet intuitive to use. All functions are directly available from the principle user interface. The full software is shipped with all Ivium instruments and is standard included in the price. Installation is not limited to a maximum number of Windows operated PCs.

IviumSoft User Interface

Menu bar: device, software & file control
Method tree: select your method
Analysis menu: select your data analysis method
Project: Store data files in a project folder of your choice

History list: quick acces to recently stored or opened data files

Method parameters: construct your method

Results: graphic or numeric data representation

- Scan rate 1μV/s to 10,000V/s
- Minimum time interval 10μs
- Continuous scan at 500 points/s
- Transients up to 255 levels
- Transients with user selectable dynamic cut-off
- Single sine/multi sine impedance 10μHz to 8 MHz
- Simultaneous peripheral I/O control and data aqcuisition

- Open Cell Potential measurement
- Ohmic drop compensation
- Batch processing for automation and sequencing
- Signal view monitoring
- Pulse generator
- Instrument diagnostics
- Software development driver for LabView™, delphi, C, etc

Why Electrochemists prefer Ivium instruments

- FREE SOFTWARE
- INTEGRATED DESIGN IS BETTER THAN MODULAR
- VERSATILE HARDWARE AND SOFTWARE

Compatibility table of Ivium instruments

	VERTEX					COMPACTSTAT				IVIUMSTAT			IVIUM-N-STAT				
						Standard	e20250	e10800	e10030	Standard	XRi	XRe	sModule			dModule	
Current:	0.1A	1A	2A	5A	10A	30mA	250mA	800mA	30mA	5A	10A	2A	2.5A	5A	2A	500mA	2.5A
Voltage:	10A	10A	20A	10A	10A	10V	20V	10V	100V	10V	10V	50V	10V	10V	20V	10V	10V
FRA/EIS:			1 MHz*					3 MHz			8 MHz				250 kHz (1MHz*)		
OPTIONS:																	
Plus-module (20V/250mA)						•											
Plus2-module (10V/800mA)						•											
IviumBoost1040 (10V/40A)										•	•	•	•	•	•	•	•
IviumBoost1001 (100V/0.6A)							•			•	•	•	•	•	•	•	•
IviumBoost205 (20V/5A)										•	•	•	•	•	•	•	•
IviumBoost1010 (10V/10A)										•		•	•	•	•	•	•
PPE: Pheripheral Port Expander						•	•	•	•	•	•	•					
PDA: Pheripheral Differential Amplifier						•	•	•	•	•	•	•					
mPDAsv			•	•	•								•	•			
mPDA						•	•	•	•	•	•	•					
Bipotentiostat						•	•	•	•	•	•	•					
True Linear Scan	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HiMUX.XR	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•
uMUX	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MulitWE32	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
FastScan						•	•	•	•	•	•	•					
Current Interrupt Module	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•
Peripheral Level Transformer						•	•	•	•	•	•	•					
ModuLight program. light source			•	•	•		•	•	•	•	•	•	•	•	•	•	•
IviSUN solar simulator			•	•	•		•	•	•	•	•	•	•	•	•	•	•

*) Optional

IviumBoost:
power booster
±40A max.
±100V max.

Multiplexer:
8 channels consecutive
stackable up to 64 channels

FastScan:
20 Msamples/s
Scan rate 10 MV/s
Memory: 10,000,000 pts

MultiWE32:
synchronous 32 channels
potentiostat module
1RE, 1CE, 32WEs
1mA/channel

innovative solutions for electrochemical research