

Add-on instruments & accessories

CATALOG



 **BioLogic**

Shaping the future. Together.



Your one-stop-shop for accessories and add-ons.

As one of the world's first designers and manufacturers of high-performance electrochemical measurement instruments, BioLogic has forged its place in the international market.

Our comprehensive product portfolio includes cutting-edge scientific products in such diverse applications as electrochemistry, battery testing and fuel cell/material testing.

And supporting these high-precision measurement instruments is an extensive line of product accessories, ranging from climate chambers to cells and cell holder to electrodes.

So whatever your field of research, we can provide you with high-quality, hard-wearing equipment.

BioLogic accessories: a one-stop-shop to suit your every need.



BioLogic Add-on instruments.

Rotating Electrodes: BluRev	Systems Tips Cells Enclosure	6-9
Temperature Control Units	Intermediate Temperature System (ITS-e) Controlled Environment Sample Holder (CESH-e) Conductivity cell (HTCC) High Temperature Furnace (HTF-1100) High Temperature Sample Holders (HTSH-1100)	10-13
Fuel Cell and Electrolyzer Workstations	Systems Cells Membranes	14-15

Accessories.

Battery Holders	Coin Cell Holders Cylindrical Cell Holders Pouch Cell Holders Prismatic & Pouch Cell Holders	16-19
Connection Accessories	Potentiostat & Booster Cables Glove Box Cables Multi-Electrode Investigation Cables Sense Adapter Module (SAM-50) External Device Connection Battery Cycler Cables Temperature Probes Current Collectors High-Temperature Extension Cables Connectors Test boxes Faraday cage	20-25
Analytical Cells	Small volume cells Large volume cells Multi purpose cells	26-29
Corrosion Cells	Standard corrosion cells Avesta cell Flat cells Galvanic cells Plate material evaluating cell Coating cells	30-33
Electrodes	Working electrodes Counter electrodes Small reference electrodes Hydrogen reference electrodes	34-39
Energy Conversion Accessories	Redox Flow Battery Cells Fuel Cell Accessories Laboratory Cells Membranes	40-41
Spectroelectrochemistry	Spectrometer system Spectroelectrochemical Cell	42-43



Your partner from A to Z. Turnkey solutions provider



Master the **full measurement chain** using high quality instruments and accessories. The quality, reliability and innovation that lies behind BioLogic's product portfolio helps shape the future of research and industry around the world. Take advantage of the **unique specs** of your instruments.

Master the full measurement chain

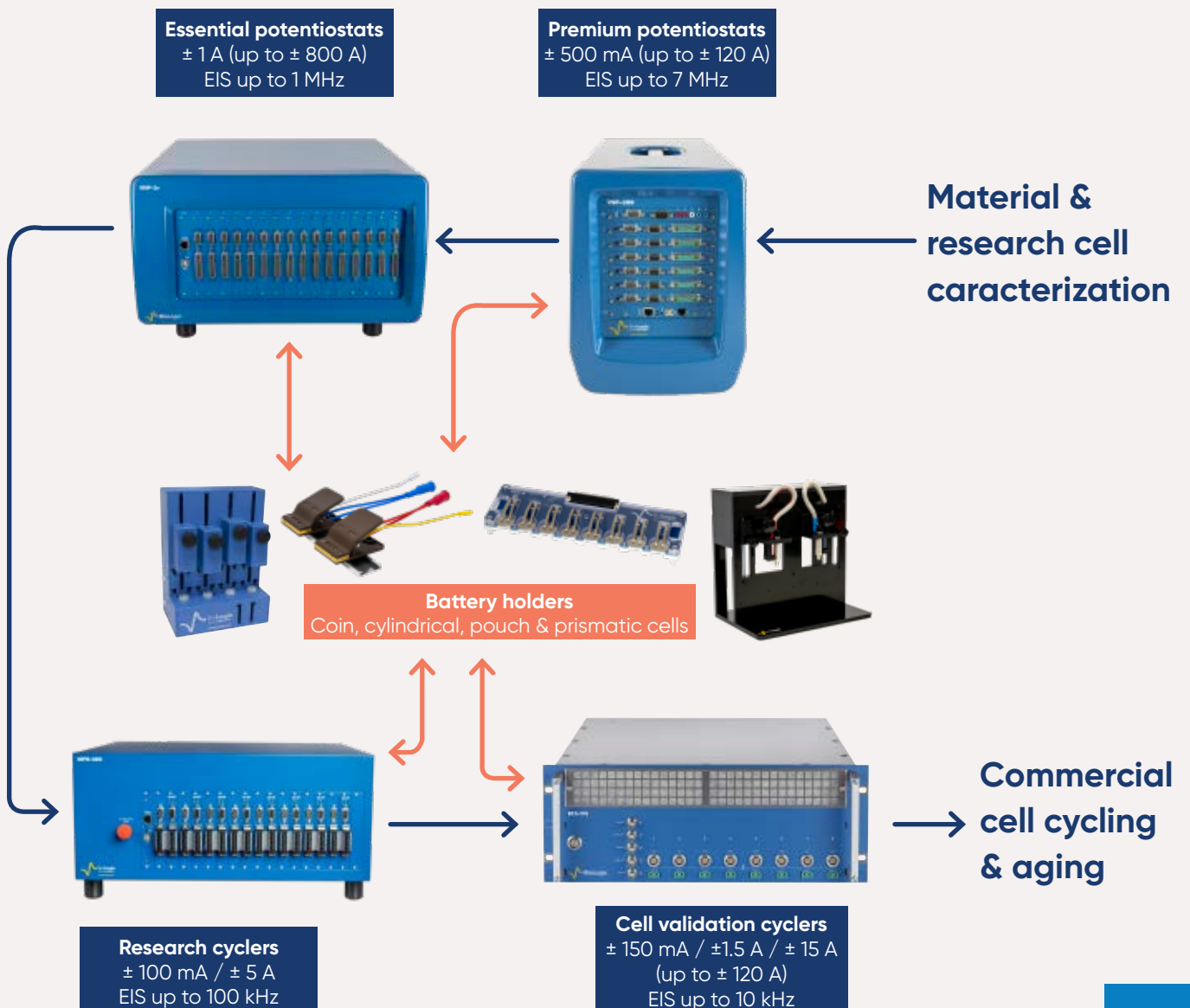
Our range of add-on instruments and accessories are designed to increase the scope of your electrochemical experiments, without compromise: corrosion, material study, electrochemical reactions and much more can be easily and fully addressed.



Battery: from research to industry

Throughout the full battery value chain every single component must be thoroughly tested. This includes anode, cathode, binder, separator, electrolyte all the way to the commercial cell, and there are unique challenges at every step:

- Materials & components research
- Research cell performance & characterization
- Manufacturing process optimization
- Commercial cell validation & ageing
- Screening & benchmarking for modules
- Integration & second life evaluation



BluRev • Rotating disk/ring disk electrodes

Steady state efficiency



Exploit the power of EC-Lab® with BluRev rotating electrodes

BluRev is a range of robust, versatile rotating disk (RDE) and rotating ring disk (RRDE) electrodes ideal for use with BioLogic potentiostats. A range of quick-fit exchangeable electrode tips (multiple materials/diameters) can be easily added to the body. Driven by EC-Lab® software, an industry standard for potentiostat control software, BluRev instruments can be used independently, or as part of an integrated setup.

A fully integrated solution

The BluRev's custom designed enclosure has been specifically designed to facilitate the operation and set-up of the BluRev RRDE. This makes it easy to hold the RRDE body as well as the BioLogic potentiostat cables. The result is a fully integrated, purpose-built rotating electrode system.



Which one do I need? An RDE or RRDE?
What are the advantages of the extra "R" ?

Click or scan



BluRev Systems

±1 RPM constant accuracy over the whole rotational range

These modular research instruments demonstrate excellent levels of accuracy, particularly at high rotation rates. The RC-10k control unit offers an accuracy of ±1 rpm over the whole rotational range for precise and fully reproducible experimental conditions.



Access the true rotation rate even in very demanding media

BluRev systems are the only devices on the market to display both target and true rates of rotation thanks to the embed optical encoder. Accessing this data can greatly assist users during experiments by enabling them to monitor rotation rates in real-time. Viscous medias will not affect the rotation speed as the system will adapt it accordingly.

Robust, even in highly corrosive conditions

Protect the rotating electrode by connecting it to inert gases. The gas will flow through the shaft inner parts to protect them from corrosion.

Highly compatible

The speed can be set manually or remotely by using the analog output of a BioLogic instrument.

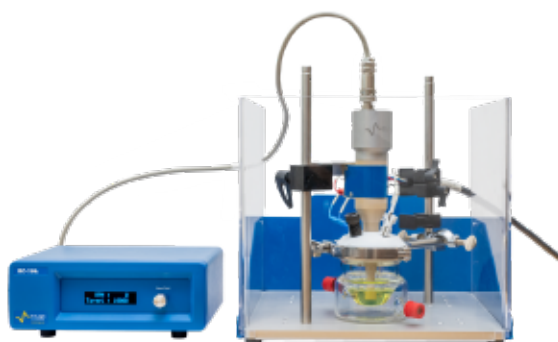


094-RDE without tip

Specifications

	Information
Rotational range/rpm	100 - 10,000 (9000 for RRDE)
Accuracy/rpm	1 typical over the whole rotational range
Runout/mm	<0.1
Setting resolution/rpm	10 (Manual control) or 25 (Remote control)
Materials of RRDE/RDE	PEEK, Al alloy
Inert gas inlet for shaft corrosion protection/mm	Ø 2
Operating temperature/°C	10 - 40
Power	24 Vdc, 1 A max
Max consumption/W	24
Dimensions/mm	RC-10k: 95x227x178 (HxWxD), RDE/RRDE: 233.6 (length with tip)
Weight/kg	RC-10k: 1.00 RDE/RRDE: 0.36 (without tip)

	094-RC/RDE	094-RC/RRDE
Content		
RC-10k Rotation controller	094-RC	
Electrode rotator (motor, shaft, electrode body, Ag/C brushes)	094-RDE	094-RRDE
DB9 to BNC connector for external control of RC-10k	092-22/1	
1 m BNC/BNC cable	Included	
Replacement Ag/C brush	094-RDE-BRUSH	
1 transport case	Included	



BluRev Tips

All standard tip bodies (M6 thread) are made of PEEK, but for experiments requiring a high chemical resistance, PTFE versions are also available.

All tips are polished to obtain a final roughness Ra of 50 nm (*Ra = 10 nm for the Boron Doped Diamond tip).

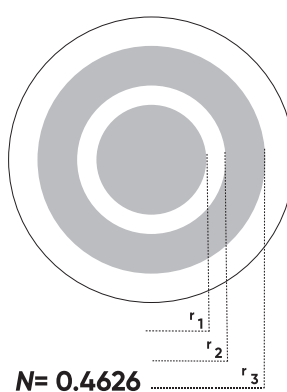
RDE Tips

	Catalog n°
Glassy Carbon (3 mm)	094-GC/3
Glassy Carbon (5 mm)	094-GC/5
Glassy Carbon, PTFE body (3 mm)	094-PTFE-GC/3
Glassy Carbon, PTFE body (5 mm)	094-PTFE-GC/5
Platinum (2 mm), 999 %	094-Pt/2
Platinum, PTFE body (3 mm), 999 %	094-PTFE-Pt/3
Gold (2 mm), 999 %	094-Au/2
Gold, PTFE body (3 mm), 999 %	094-PTFE-Au/3
Boron Doped Diamond (3 mm), 500-1000 ppm 500 µm diamond layer	094-BDD/3
Titanium (3 mm), 999 %	094-Ti/3
Silver (3mm), 999 %	094-Ag/3
Aluminum (3 mm), 999 %	094-Al/3
Copper (3 mm), 999 %	094-Cu/3
Nickel (3 mm), 999 %	094-Ni/3
Stainless steel (3 mm), 999 %	094-316L/3



RRDE Tips

	Catalog n°
Glassy Carbon Ring & Disk (Nmax = 0.4626)	094-GC-GC
Pt Ring (999 %) - Glassy Carbon Disk (Nmax = 0.4626)	094-Pt-GC



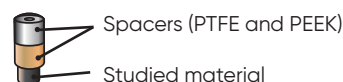
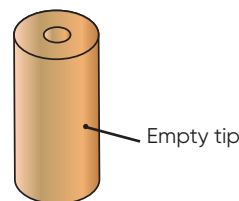
Dimensions/mm: r1 = 1.5 ; r2 = 2 ; r3 = 3.
N = maximum theoretical collection factor using Albery formula.
[1] W. J. Albery and S. Bruckenstein, Trans. Faraday Soc. 62 (1966) 1920.

Replaceable Disk Tips

This solution allows users to put custom designed materials as working electrodes (disks) to perform RDE or RRDE experiments.

The custom active material is placed inside the 3 mm diameter hole by using a mounting tool kit and spacers: lead free solution. An empty tip is provided for RDE measurements, and a platinum ring tip is provided for RRDE ones. Those tips are made with PEEK.

	Catalog n°
Mounting tool kit	094-DRE-KIT
RDE replaceable disk tip	094-DRE/3
"RRDE platinum ring replaceable disk tip	094-DRE-Pt/3
Spacer kit (1x PEEK, 3x PTFE)	094-SPACER-KIT
Polishing tip	094-DRE-POLISH



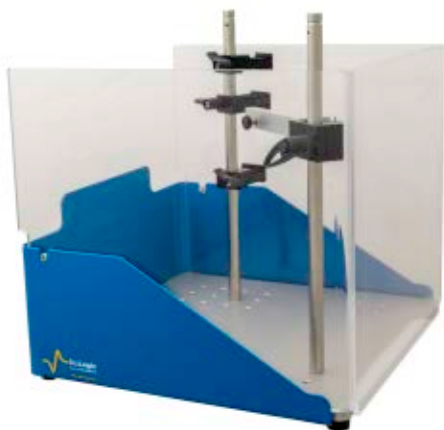
BluRev Cells

The BluRev RDE/RRDE range is compatible with a wide range of cells, in particular the **EL-ELECTRO-80**, **EL-ELECTRO-80DJ** or **EL-ELECTRO-150DJ** kits.

	Catalog n°
PTFE 5 holes cap compatible with BluRev RDE (needed if you already have an EL-ELECTRO cell)	094-A-CAP

Note: if you already possess one of these cells, you will need a special adaptor cap: **094-A-CAP**.

BluRev Enclosure



	Catalog n°
Protective housing and stand kit for the BluRev	094-ENCL
Contents	
1x stainless steel plate with M6 threaded holes to fix support poles 2x support poles to hold BluRev RDE and the cell 1x clamping flange for the BluRev 3x half-clamps for the potentiostat cables (all BioLogic cables are supported) 1x plexiglas protective housing	
Specifications	
Dimensions with protective housing (HxWxD)/mm	287x318x308
Weight (with protective housing)/kg	5.3

BluRev Background information and theory

RDE

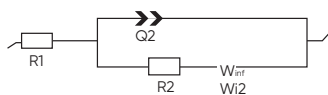
Commonly used techniques...

Levich and Koutecký-Levich are powerful analysis tools used to obtain kinetic electrochemical parameters such as the diffusion coefficient of a redox species in a given medium and the reaction constant (*Application Note #56*)

...advanced EIS based techniques

Fitting impedance measurements made on a redox reaction occurring at a rotating electrode at only one rotation speed also enables the direct measurement of the diffusion coefficient.

By Using ZFit and W_{inf} (BioLogic unique element), it is possible to directly obtain the diffusion coefficient of the species of interest.



For more detailed information please see the *EC-Lab application note #66*.

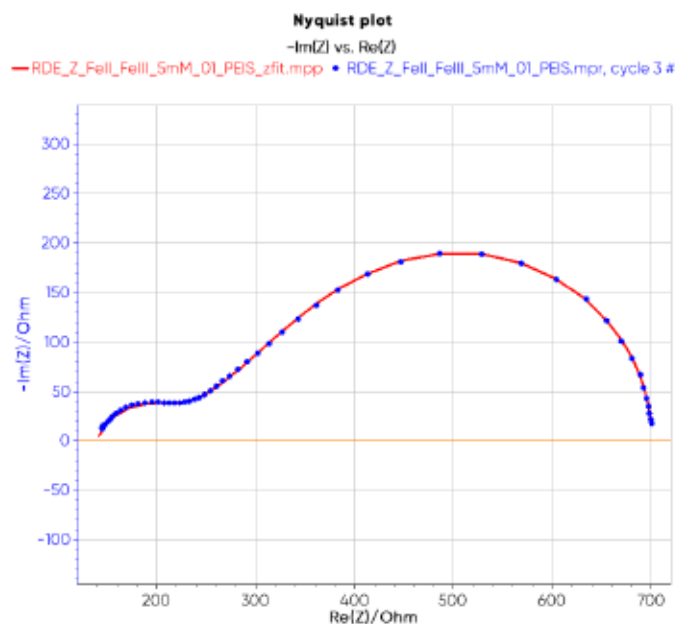


Figure 1: PEIS measurement using an equimolar solution of 5 mM $K_3Fe(CN)_6$ and $K_4Fe(CN)_6$ in 0.1 M KCl and a BluRev RDE at 2000 rpm.

RRDE

BioLogic bipotentiostats

At the disk electrode, the electroactive species are generated depending on the applied potential and detected at the ring. In a typical experiment, a CV is performed on the disk electrode and a constant voltage is applied on the ring electrode. EC-Lab® software embed a CV-CA technique that is dedicated for this purpose ("bipotentiostat" techniques folder).

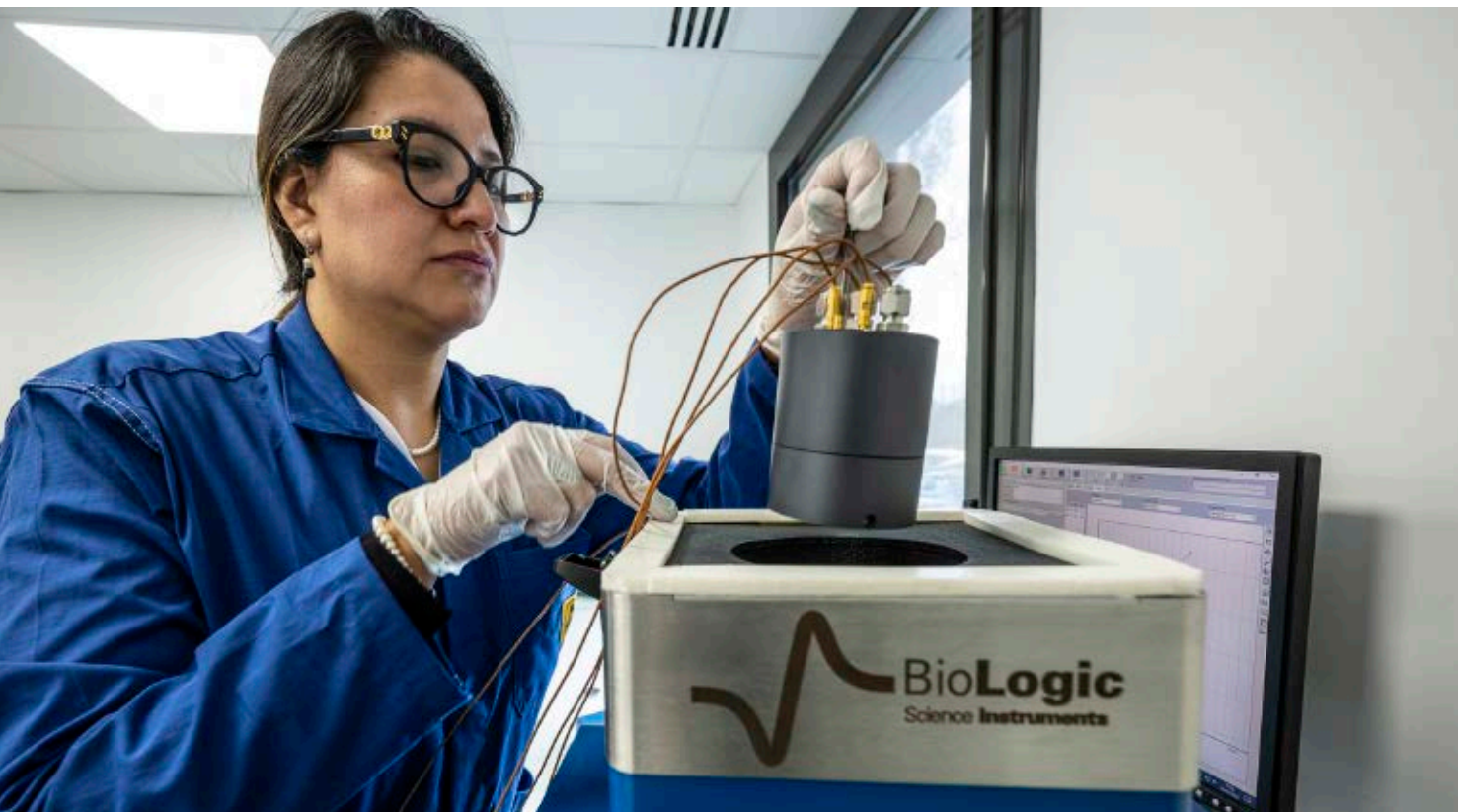
For RRDE measurements, a bipotentiostat is needed to control both working electrodes. Because of the presence of two working electrodes, a specific connection mode is needed to avoid ground loops: the "CE to Ground" connection mode.

Unique "CE to Ground" connection mode for accurate measurements

The "CE to Ground" connection mode is recommended as it highly reduces risks of current leakage that leads to measurement errors. All BioLogic multichannel potentiostats offer this feature.

Temperature Control Unit.

Master sample temperature



ITS-e

A small-footprint benchtop temperature chamber

The intermediate temperature system allows accurate temperature control between -35°C and $+150^{\circ}\text{C}$. This is a good alternative to the larger conventional climatic chambers available on the market. Thanks to its small chamber, the temperature homogeneity is much better than in conventional chambers and leads to more reproducible measurements.

Application oriented

The ITS-e is dedicated to control the material's temperature for its electrical characterization. It can also be used for thermal curing and aging and for the determination of some kinetic or thermodynamic parameters like activation energy, phase transformation or glass transition temperatures.

Fully integrated and compatible with BioLogic products

The ITS-e is compatible with BioLogic potentiostats. It allows users to easily set up their electrical and electrochemical experiments with EC-Lab[®].



Specifications



	Information
Temperature range /°C	-35 to +150
Temperature accuracy /°C	± 0.3
Input voltage	115 V / 230 V, 50/60 Hz
Computer Interface	USB or Ethernet
Power consumption /W	250
Dimension /mm	400 x 313 x 385 (HxWxD)
Weight /kg	8
Catalog n°	
ITS-e	097-140e

CESH-e

A leak-tight sample holder for controlled atmosphere study

The Controlled Environment Sample Holder is a leak-tight (up to 2 bar relative) sample holder for the electrical characterization of hard, powdered, pasty and soft materials. Oxygen and moisture sensitive samples can be prepared in a glove box and then placed inside the CESH-e.

The CESH-e can be used as standalone, or inside an ITS-e or a climate chamber.

Constant contact pressure and thickness measurement

A thickness measurement kit including a micrometer head with a calibrated ratchet is provided as an option to ensure the accurate measurement of the thickness of the sample (ASTM D374). This also enables reproducible pressure (100 N or 6 N respectively) to study flexible and compressible materials.



	Information
Operating temperature /°C	-40 to 150
Max sample diameter /mm	30
Max sample thickness /mm	4
Core material	Anodized aluminum
Electrode material	Gold plated copper
Dimension /mm D 79 x H 94 mm	79x94 (Diameter x Height) 121.90 clearance
Residual capacitance with 20 mm diameter /pF	8
Weight /kg	0.9
To be used	Standalone or with ITS-e or climate chamber
Catalog n°	
CESH-e	097-150e
Thickness measurement kit	097-150e/10
Cable kit for CESH-e and MTZ-35	097-150e/01
Cable kit for CESH-e and Potentiostat	097-150e/02

Electrodes

Thanks to its modular electrodes setup, the CESH-e allows Through-plane and In-plane electrical measurements using interchangeable electrodes.



(Left) In-plane / (Right) Trough-plane

In-plane	Trough plane
097-150/IPSD (standard) (10 mm) 097-150/IP250 (250 μm) 097-150/IP100 (100 μm)	097-150/TP20 (20 mm diameter) 097-150/TP12 (1/2" diameter) 097-150/TP06 (1/4" diameter)

HTCC

High Temperature Conductivity cell (up to 180°C)

The HTCC is a sealed 2-pole conductivity cell composed of two parallel platinum electrodes. Its design allows measurements from -50°C up to 180°C. With a nominal constant of 1.0 cm⁻¹, conductivities from 2 μS·cm⁻¹ to 0.2 S·cm⁻¹ can be measured.



Platinized and non-platinized electrodes

The platinized electrodes are coated with a black platinum layer in order to increase the effective surface area of the electrode. Only 0.5 mL of liquid/gel is required, reducing the cost of experiments and their environmental impact. The cells are compatible with the ITS-e.

	Information
Cell type	Platinum parallel plates on glass holder
Connections	2-wire (l = 70 cm each)
Nominal constant /cm-1	1 ± 10 %
Minimal sample volume /mL	0.5
Conductivity range /μS.cm	2 to 200 000
Temperature range /°C	-50 to +180
Maximum temperature ramp for platinized cell /°C/min	1 (to avoid platinum detachment)
Compatible with	Potentiostat, MTZ-35, ITS-e
Catalog n°	
Platinized (x1)	098-010/10
Non-platinized (x1)	098-010/11

HTF-1100

High Temperature Furnace (up to 1100°C)

The HTF-1100 is a horizontal laboratory tube furnace dedicated to the electrical characterization of materials and for heat treatment in the range between 150°C and 1100°C.

Manual and remote control

The HTF-1100 can be controlled by using the Watlow controller or EC-Lab[®] software. Its controller facilitates the set-up and consequent monitoring of the temperature during tests. The controlled temperature can be based on a K-type thermocouple placed in the bottom of the furnace or one placed inside the sample holder (HTSH-1100); accurate control and measurement of the temperature close to the sample.



	Information
Temperature range /°C	150°C up to 1100°C
Temperature control accuracy /°C	< ± 1
Temperature ramp /°C/min	Adjustable from 0.1 to 20
Insulation material	Alumina Fiber
Temperature sensors	K-Type Thermocouple
Safety Features	Emergency stop button Buzzer sound alarm Temperature safety limit
Catalog n°	
HTF-1100	097-111

HTSH-1100

The furnace accommodates multiple tubular High Temperature Sample Holders (HTSH-1100). It can operate under controlled environment conditions with inert or active gas (Ar, N₂, O₂, etc) and with variable pressures up to 2 bar relative thanks to its gas inlet/outlet and quartz tube and safety valve.

	Information
Temperature range /°C	150°C up to 1100
Quartz tube dimension /mm	45.5x270.5 (Diameter x Height)
Electrodes diameters /mm	3 / 12 / 25
Electrodes material	High purity Platinum disc (1 mm thickness)
Maximum sample diameter /mm	27
Maximum sample thickness /mm	5
Temperature probe	K-Type thermocouple (inconel shielded)
Water cooling	Tube included for water cooling when using T > 800°C
Dimension (including quartz tube) /mm	80x310.5 (Diameter x Height)
Weight /kg	1.2
Catalog n°	
HSTF-1100, 3 mm diameter electrode	097-130/S
HSTF-1100, 12 mm diameter electrode	097-132/S
HSTF-1100, 25 mm diameter electrode	097-133/S

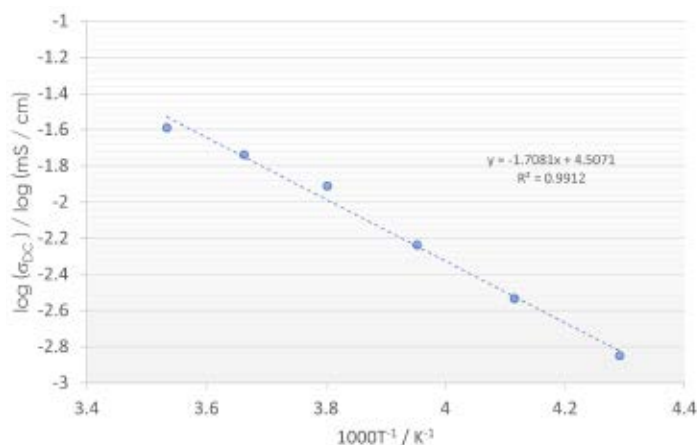
Temperature Control Unit: background & theory

Battery component researches

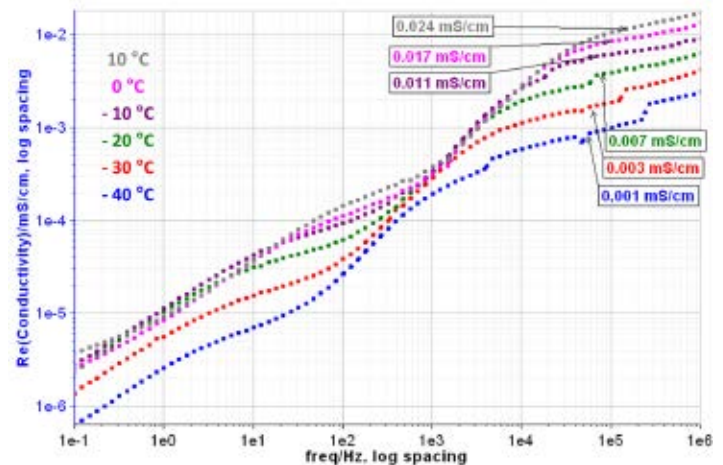
Researching components for batteries often requires precise data over a large temperature range to determine how temperature affects ionic conductivity. With precise electric conductivity measurements collected over a range of temperatures, EC-Lab® is able to calculate the material's activation energy, and thus determine the temperature stability of a material.

Advanced temperature control

A solid electrolyte sample is loaded inside a CESH-e and put inside an ITS-e to collect multiple impedance measurements at various temperatures. EC-Lab® software is used to control both VMP-300 potentiostat and ITS-e by using the TCU server.



Arrhenius plot for the bulk conductivity of solid electrode: Temperature intervals of 10°C from -40°C to 10°C



AC conductivity obtained from EIS data: Temperature intervals of 10°C from -40°C to 10°C

Determine the activation energy (Arrhenius plot)

By setting the sample's thickness and diameter, EC-Lab® can calculate the sample cell constant (k) and directly use it to plot the electrical conductivity as a function of frequency: DC conductivities can then be extracted from the pseudo-plateau found in the high frequency domain (shown above). By using this information, the activation energy for the materials conductivity can be determined from an Arrhenius plot, shown on the left (0.14 eV).

A low activation energy indicates that the material's ionic conductivity will remain stable when exposed to temperature extremes and the material can be used for applications in a wider range of temperature environments.

Fuel Cells & Electrolyzer Workstations.



BluPEM Series

BluPEM

BluPEM is a complete PEM fuel cell solution. In its standard configuration, it supports fuel cells up to 100 W, and can be customized for systems up to 2 kW, covering nearly all single-cell formats and small stacks. Whether you're testing at low or high power, BluPEM delivers unmatched control and flexibility.

BluPEM-EL

BluPEM-EL is a modular test station designed for rigorous electrolyzer studies, including PEM, AEM, and alkaline technologies. With fluidic components built to handle corrosive chemistries, and a software-controlled pressure system up to 10 bar, it's ready for demanding lab environments.



Fuel Cell Accessories

PEM Test Cells

BioLogic offers two sizes of PEM test cells designed for fuel cell and electrolyzer research. These cells can be used with any of our potentiostats and integrated into a variety of workstations. Built with metal construction for superior durability and thermal management, they feature serpentine single-channel flow fields for uniform gas distribution and gold-plated copper current collectors for reliable measurements. Both sizes incorporate heating cartridge slots and probe ports, and are designed for quick assembly and easy MEA exchange.

The 5 cm² cell is ideal for material screening and component characterization, while the 25 cm² cell is suited for MEA development and performance benchmarking under near-realistic conditions.



	Catalog n°
5 cm ²	SFC-SC-5
25 cm ²	SFC-SC-25

Membrane Electrode Assemblies (MEA)

These ready-to-integrate MEAs are manufactured by coating catalyst layers directly onto a proton exchange membrane (CCM process), then assembling with gas diffusion layers and subgaskets.

Each assembly is produced to performance or composition specifications, ensuring consistent, reproducible results. Available in 5 cm² and 25 cm² active areas, they are fully compatible with our test cell hardware.



	Catalog n°
5 cm ² x5 units	SFC-S5-7L/5
25 cm ² x5 units	SFC-S25-7L/5

Want More Information?

Tailored for Your Application

Each BluPEM system is configured at the time of order to match your application and testing requirements. While the fluidics are not modular in the field, the architecture is designed to accommodate a wide range of options during manufacturing: Gas flow control and mixing, Environmental control, Integrated sensors, Power scalability, Extended applications.

If you would like to learn more about BluPEM and BluPEM-EL, please visit the product website

Click/or scan



Battery Holders. Four point cell holders

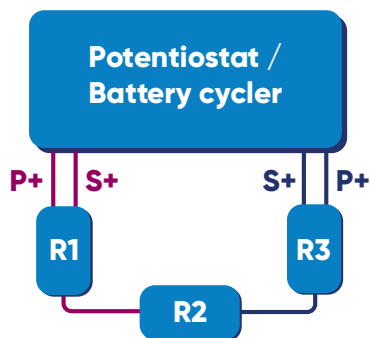
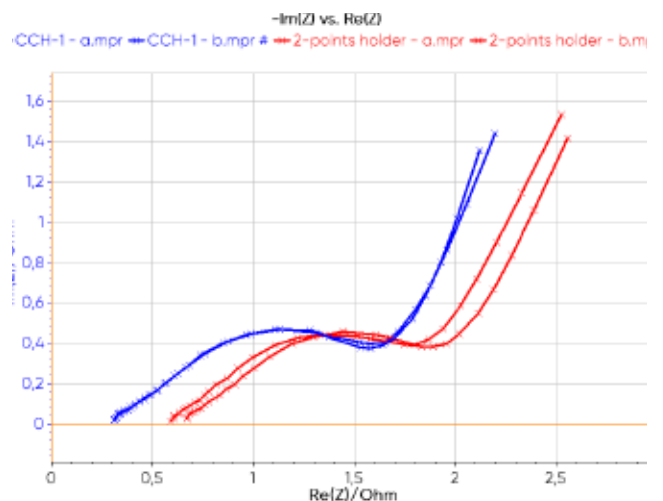
Ensure reliable, repeatable measurements



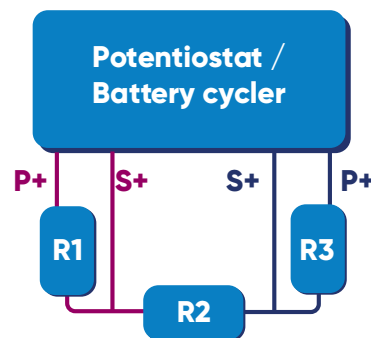
Why four points are better than two

By measuring only the impedance of the cell, a 4-point connection battery holder enables reliable and repeatable measurements. Its design negates measurements of connector and holder-related impedances.

All of our battery holders, with the exception of the CCH model, are built around the 4-point connection design.



2-point measurements

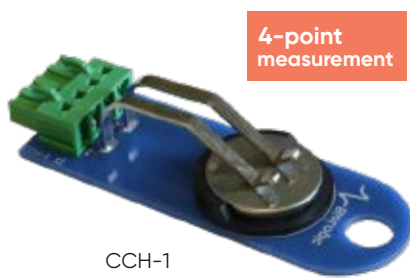


4-point measurements

*R2 represents the cell

Coin Cell Holders

	CCH-1	CCH-8	CCH
Cell max diameter/mm	24		
Cell height/mm	1.6 - 3.2		3
Number of channels	1	8	4
Measurement type 4/2 point	4 point		2 point
To be used with	Any instruments		MPG2 VMP3, VMP-3e
Climatic chamber compatibility	Yes (-30 to 80°C)	Yes (-30 to 80°C)	No
Catalog n°	096-126	096-128/H Cables must be purchased separately	092-22/14



CCH-1



CCH

CCH-8 Cables



CCH-8

Compatible with	Length	Catalog n°
BCS-905 BCS-910	2.5 m	096-128/C25
	5 m	096-128/C50
	75 cm	092-22/24a
Essential/Premium range Potentiostats MPG2 (banana receptacles)	2.5 m	092-22/24b
	Essential range Potentiostats MPG2 (front panel connexion)	2.5 m

Why four point measurements?
What are the benefits of using our battery holders?

Click or scan



Cylindrical Cell Holders



BH-1i

4-point measurement



CBH-8

4-point measurement

2 and 4 mm receptacles are available for the current (power) cables. For voltage (sense) cables, only 2 mm receptacles are available.

4 mm receptacles are available for the current (power) and voltage (sense) cables.



CBH-4

4-point measurement

	BH-1i	CBH-4	CBH-8
Cell max diameter/mm	26	60	
Cell min height/mm	0	30	
Cell max height/mm	76	100	
Number of channels	4	4	8
Max current/A	12	32	
Measurement type	4 point	4 point	
Receptacles diameter/mm	2 and 4	4	
To be used with	All instruments		
Max operating T/°C	60	80	
Size : HxWxD/mm	205x150x95	335x260x150	335x520x150
Weight/kg	0.6	1.9	3.8
Catalog n°	092-22/15	092-C32/4	092-C32/8

More reliable measurements, higher repeatability levels.

Pouch Cell Holders



4-point measurement

PBH-125

	PBH-125	PBH-150	PBH-1100	PBH-4	PBH-8
Min leads separation distance/mm		0		12	
Max leads separation distance/mm		110*		44	
Number of channels		1		4	8
Max current/A	25	50	100	32	
Measurement type	4 point				
Receptacles diameter/mm	4 (power) 2 (voltage)	6 (power)** 4 (voltage)		4	
To be used with	All instruments				
Max operating T/°C	80	100		80	
Size : HxWxD/mm	40x50x210*			135x325x180	135x650x180
Weight/kg	0.2*			1.9	3.8
Catalog n°	092-P25/1	092-P50/1	092-P100/1	092-P32/4	092-P32/8

*Measured with the two clamps mounted on the middle of the guide rail.

Eyelet ring (connection kit **094-110/CNT can be used for an easier connection to 6 mm diameter cables)..



4-point measurement

PBH-4

PBH-4 & PBH-8 holders

4 mm receptacles are available for the current (power) and voltage (sense) cables.

Prismatic and Pouch Cell Holders



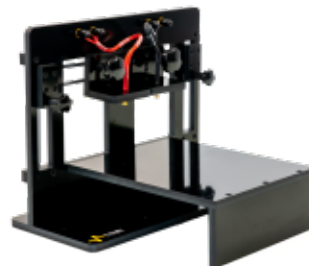
4-point measurement

PPBH-1100

	PPBH-132	PPBH-1100
Cell min height/mm		0
Cell max height/mm		139
Min leads separation distance/mm		66
Max leads separation distance/mm		155
Number of channels		1
Max current/A	32	100
Measurement type	4 point	
Receptacles diameter/mm	4 (power and sense)	4 (power and sense) and 6 (power)
To be used with	All instruments	
Max operating T/°C	80	
Size : HxWxD/mm	265x320x300	320x320x360
Weight/kg	3	5.1
Catalog n°	092-PC32/1	092-PC100/1

Pouch cell and prismatic holder

4 mm receptacles can be used for currents up to 32 A. For higher currents, the 6 mm flush mounting plugs should be used. These are compatible with FlexP 0160, HCV-3048, CC4-60 A and CC8 cables.



4-point measurement

PPBH-132

Pouch cell and prismatic holder

4 mm receptacles are available for the current (power) and voltage (sense) cables.

Connection Accessories.

Potentiostat Cables & Connections

Cable Lengths

Essential potentiostat boards are provided with a 1.5 m long standard cable by default. Premium standard cables are 1.75 m long.

Different cable lengths are available for specialized applications

	Essential	Premium
	Catalog n°	
Standard	Included with the board (1.75 m)	094-101/6 (1.75 m)
3 m	092-23/7	094-101/3B
5 m	092-23/3	094-101/3C
10 m	092-23/4	-



Essential cable



Premium cable

Booster Cables

Booster cables are also available with different lengths. Contact your sales representatives for more information

Hermetic / Glovebox Cables



Hermetic cell cable for glove boxes

For applications carried out in glove boxes, special hermetic/glove box cell cables are available.

Bad connections can affect measurements (stability, artifacts etc). In order to optimize your setup, we recommend you use the accessories described in this section.

	Essential	Premium
Catalog n°	092-23/5	094-101/6 (standard cable) 094-101/8 (low current cable)
Content		
Feedthrough type	12 pins	25 pins*
Inside glovebox (length: 1 m)	Cable with 2 mm connectors on one side and 12-pin Jaeger connector on the other side	Cable with electrometer on one side and 25-pin connector on the other side
Outside glovebox (length: 1.5 m)	Cable with Sub-D 25 connector on one side and 12 pin Jaeger connector on the other side (length 1.5 m)	Cable with Sub-D 25 connector on one side and 12 pin Jaeger connector on the other side (length 1.5 m)
Requirement		
Hole diameter needed in glovebox /mm	27	45

*Two feedthrough seals: One installed in the glove box wall, the other dedicated to the channel board.

Multi-Electrode Investigation Cables

For the Essential product range, we offer several options to facilitate the use of connection cables when multi-electrode experiments are performed: for example, RRDE experiments or corrosion experiments on several samples using the same reference and the same counter electrode.



Nstat box (8 channels)



Bipot cable: dedicated to RRDE applications

	N° of channels	Length	Catalog n°
Bipot cable (for SP-150e, VSP, VSP-3e and VMP-3e)	2	1.5 m	092-22/12
Nstat box (for VSP, VSP-3e and VMP-3e). External power supply required.	4	1.5 m	092-16
	8	1.5 m	092-22/3
External power supply for the Nstat box			092-16/1

Sense Adapter Module (SAM-50)

The SAM-50 can be connected to an Essential multi-channel potentiostats to perform stack measurements up to 60 V and 10-element measurement (using 5x channel boards).

3 SAM-50 modules can be linked to track up to 30 elements.

Sense Adapter Module	Catalog n°
SAM-50 module	092-26/B
SAM-50 power supply	092-16/1
80 cm long cables (x5) for SAM-50	092-26/80
2.5 m long cables (x5) for SAM-50	092-26/25



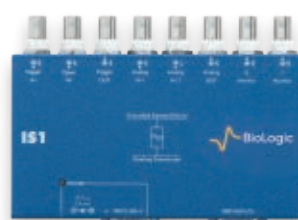
SAM-50

External Device Connection

External Device Connections ensures safe, accurate data transmission, while providing reliable, low-noise connectivity for up to 8 channels.

Perfect for research labs, industrial testing, and educational setups where precision and flexibility are critical.

	Catalog n°
DB9-8 BNC connector for auxiliary I/O	092-22/1
IS1 isolation module for auxiliary I/O for Premium based instruments	094-081/5



IS1



DB9-8 BNC

Battery Cycler Cables & Connections

Cable Lengths

Battery Cyclers cables are available in four lengths to suit different test bench setups. These cables feature four-point measurements for accurate voltage and current measurement and can be adapted to with different connectors to fit any DUT type. Cables can be operated in the temperature range between -20°C to 70°C



Lenght	BCS-1012	BCS-905/-910	BCS-915	BCS-975	MPG-2	MPG-205
	Catalog n°					
25 cm	-	096-021/1 (30 cm)	096-011/1	-	092-80/5	092-81/4
2.5 m	096-031/2	096-021/2	096-011/2	096-041/2	092-80/6	092-81/3
5 m	096-031/3	096-021/3	096-011/3	096-041/3	092-80/7	092-81/5
10 m	096-031/4	096-021/4	096-011/4	-	-	-
Connectors	banana	banana	banana	banana/amphenol	banana	banana

Temperature Probes

Thermocouples

Rigid Teflon-insulated K-type thermocouples for accurate temperature monitoring from -25°C to 200°C. The Teflon insulation ensures chemical resistance making them well-suited for demanding electrochemical applications. Available in four lengths with compatible extension cables in two lengths, allowing greater flexibility without compromising measurement accuracy.



	Lenght	Catalog n°
K-Type thermocouples Teflon rigid	25 cm	096-018/1
	2.5 m	096-013/1
	5 m	096-014/1
	10 m	096-019/1
Thermocouple extensions	2.5 m	096-013/25E
	5 m	096-013/50E

PT-100 Probes

Three configurations of high-accuracy PT100 probes are available to suit different measurement needs for precise temperature monitoring. The standard air probe connects to the auxiliary I/O and covers a temperature range of -50°C to 250°C, it is well-suited for ambient and gas-phase temperature measurements. For liquid-phase measurement, two solution probes are available – one with a Sub-D 9 connector and one with a triad connector – providing flexibility for integration with different test station interfaces.

	Catalog n°
PT100 temperature probe, to be connected to the auxiliary I/O, Temperature range: -50°C to 250°C, Dimensions: 3 x 20 mm, Length of cable: 2.5 m, Accuracy: ±1°C For temperature measurement in air	092-22/13
PT100 temperature probe for temperature measurement in solution with Sub-D 9 connector	EL-C-014
PT100 temperature probe for temperature measurement in solution with triad connector	EL-C-014/1

Current Collectors

BioLogic's current collectors offer the possibility to connect several channels in parallel and increase the maximum current that can be passed through the cell. The quick connections save time and simplify your setup.



CC8



CC4-60A



CC4-200A

	CC4-60A	CC8	CC4-200A
Connection details			
Input			
Power cables/receptacles diameter/mm	4		6 (IP2x)
Voltage sense receptacles diameter/mm		2	4
Number of input channels	4	8	4
Max current/channel/A	15		50
Output			
Power receptacles diameter/mm	6 (IP2x)		8 (Amphenol, IP2x)
Voltage sense receptacles diameter/mm	2 (IP2x)		4 (IP2x)
Max output current/A	60	120	200
Cables details			
Output power cables	1 pair of 2 m power cables with 6 mm receptacles		1 pair of 2.5 m power cables with 8 mm receptacles and M8 threads
Output voltage cables	1 pair of 2 m sense cables with 2 mm banana plugs		1 pair of 2.5 m sense cables with 4 mm banana plugs
Instrument compatibility	BCS-915* VSP-300 VMP-300		FlexP0160 FlexP0060 HCV-3048
Included connection kit	094-110/CNT		093-200/CNT
Measurement type		4 point	
Max operating T/°C		80	
Size (with feet) : HxWxD /mm	70x170x88	70x300x88	120x248x169
Weight/kg		3.8	
Catalog n°	096-022	096-015	093-100/CC4

*The CC8 comes with BCS tablets and cables. It is also compatible with the VSP-300 and VMP-300 and can be provided without cables and tablets using the following part number: **096-015/1**.

High-Temperature Extension Cables

These extension cables are intended to be connected between the instrument's cell cable and the cell.

Available in two different sizes, 1.3 m and 2.5 m long, and with a maximum temperature of 150°C, these cables are compatible with:

- SP-50e, SP-150e, VSP, VSP-3e, VMP-3e and boosters for Essential range instruments
- SP-200, SP-240, SP-300, VSP-300, VMP-300, and boosters for Premium range instruments
- BCS-905, BCS-910 and BCS-915



	1.3 m	2.5 m
Temperature /°C	-40 to 150	
Max current /A (2 mm connectors)	2	
Max current /A (4 mm connectors)	20	
Cable diameter /mm	12.7	
Catalog n°	092-25/1	092-25/2

Connectors

	Picture	Size	Colors	Catalog n°
Alligator clips		2 mm	8x Red, 8x Blue, 8x White, 4x Black	092-1001/40
		4 mm	3x Red, 3x Blue, 3x Black	092-1001/41
Receptacles		2 mm	20x Red, 20x Blue, 20x White, 15x Black	092-1001/42
		4 mm	12x Red, 12x Blue, 12x Black	092-1001/43
Banana plugs		2 mm	10x Red, 10x Blue, 10x White, 10x Black	092-1001/44
		4 mm	8x Red, 8x Blue, 8x White	092-1001/45
Adaptors		2 mm receptacle to 4 mm plug adapter	6x Red, 6x Blue, 4x White, 4x Black	092-1001/46
		2 mm receptacles to 4 mm banana plugs	16x Red, 16x Blue	092-1001/47
		4 mm receptacles to 2 mm banana plugs	20x Black	092-1001/48

Connection Kits

	Content	Colors	Catalog n°
For standard board	4 alligator clips of 2 mm 3 receptacles of 2 mm	red, blue, white, black red, blue, white	092-1001/30
For booster board	3 alligator clips of 2 mm 2 alligator clips of 4 mm 3 receptacles of 2 mm 2 receptacles of 4 mm	red, blue, white red, black red, blue, white blue, white	092-1001/31
For HCV-3048, FlexP 0060, 0160, CC4-60A and CC8	Contains: 2x6 mm receptacles 4 lugs with 4 mm receptacles	red, blue red, blue	094-110/CNT
For FlexP0012 and CC4-200A	Contains: 2 Amphenol 8 mm receptacles, 4 lugs with 4 mm receptacles	red, black red, blue	093-200/CNT



094-110/CNT

093-200/CNT

Test Boxes

Designed for precise calibration, validation, and educational demonstrations. Both test boxes provide hands-on, reliable tools for research and educational labs.

	Description	Catalog n°
Test Box 2	Several circuits with high precision resistors for calibration and validation	092-22/6
Test Box 3	Three circuits: linear, two non-linear systems (Tafel & passivating) for teaching and demonstration	092-22/7



Test Box 2

Test Box 3

Faraday Cage

To avoid any external perturbations, especially for low current applications, we recommend using a Faraday cage.

Please note that in order to ensure that the cage is fully functional, it must be earthed by connecting it to the ground (this is done via a green plug on the instrument's rear panel).

	Catalog n°
FC-45 Faraday cage, 450x450x450 mm	094-084/1
Cell stand for FC-45	094-084/2



test box specifically designed for the user to learn how to achieve impedance measurements on linear and non-linear electrochemical systems.

Need More Information?

In this application note, a Test Box #3 is used to teach users how to achieve impedance measurements on linear and non-linear electrochemical systems.

Click/or scan



Analytical Cells.

Small Volume Cells

Each voltammetry cell is designed for a specific application (specific working electrode, volume of solution, oxygen-free condition, etc.). As an example, for voltammetry investigations using standard working electrodes with an outer diameter (OD) of 6 mm, the fixed configuration of the SVC-3 kit is recommended. For applications requiring other working electrode shapes, the SVC-2 is more suitable.

The SVC-2 in microvolume mode was designed for those cases where only a small amount of electroactive compound is available.

Here is a list of the available cells:

- SVC-2, modular
- SVC-3, for a volume of 5 to 20 mL, only for working electrode with OD of 6 mm
- VC-4, for a volume of 1 to 3 mL, only for working electrode with OD of 6 mm
- Bulk electrolysis cell, for a volume of 100 mL



SVC-2



SVC-3

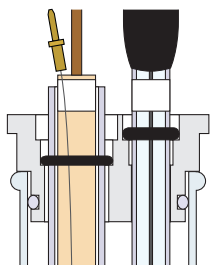


VC-4



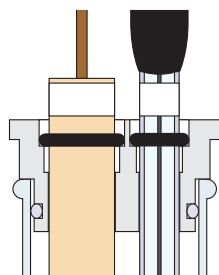
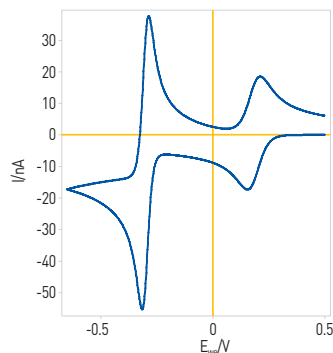
Bulk electrolysis cell

Products	SVC-2	Catalog n°	SVC-3	Catalog n°	VC-4	Catalog n°	Bulk electrolysis cell	Catalog n°
Products	SVC-2	A-012668	SVC-3	A-012669	VC-4	A-011224	Bulk electrolysis cell	A-001197
Content								
Sample vial/mL	20 (7 pieces)	A-001056	20 (7 pieces)	A-001056	5 (7 pieces)	A-011504	100 (1 piece)	A-012632
Counter electrode (CE)/mm	57	A-002222	50	A-002233	57	A-002222	230	A-002234
PTFE cap		A-012670		A-012671		A-011226		A-012551
Purge tube (ETFE), 100 mm		Included		Included		Included		Included
Additional items	Adapter 10 to 6 mm	Included			Cell holder	A-011227	Porous carbon electrode Lid for CE Chamber for CE O-ring Port plug Stirrer bar	A-010530 A-001198 A-001196 A-001236 A-009131 A-000178
Options								
Sample holder/mm	9.0 (2 pieces)	A-012177	6.0 (2 pieces)	A-012176				
Cell holder	for 20 mL	A-001209	for 20 mL	A-001209				
Purge tube (ETFE)/m	1	A-010537	1	A-010537	1	A-010537	1	A-010537
Working electrodes	See page 26							
Reference electrodes	See page 28							
PTFE cap								

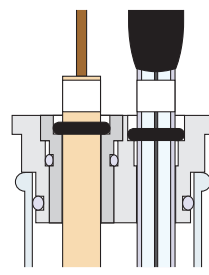


Small amount of solution
(200 μL in the sample holder)

SVC-2 modularity:
microvolume mode

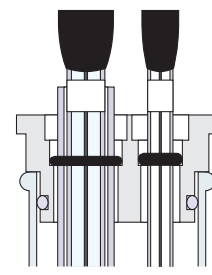


For electrode
with OD of 10 mm



For electrode
with OD of 6 mm

SVC-2 modularity:
oxygen free mode



For microelectrode
with OD of 4 mm

Please note that a full, purpose-built, analytical kit is also available SK-2 (A-012763) but the reference electrode must be purchased separately.

This kit includes:

- SVC-3 kit (A-012669)
- PK-3 polishing kit (A-011975) see page 26
- one glassy carbon electrode, OD 6.0 mm, ID 3.0 mm (A-002012) see page 26
- one platinum electrode, OD 6.0 mm, ID 1.6 mm (A-002013) see page 26

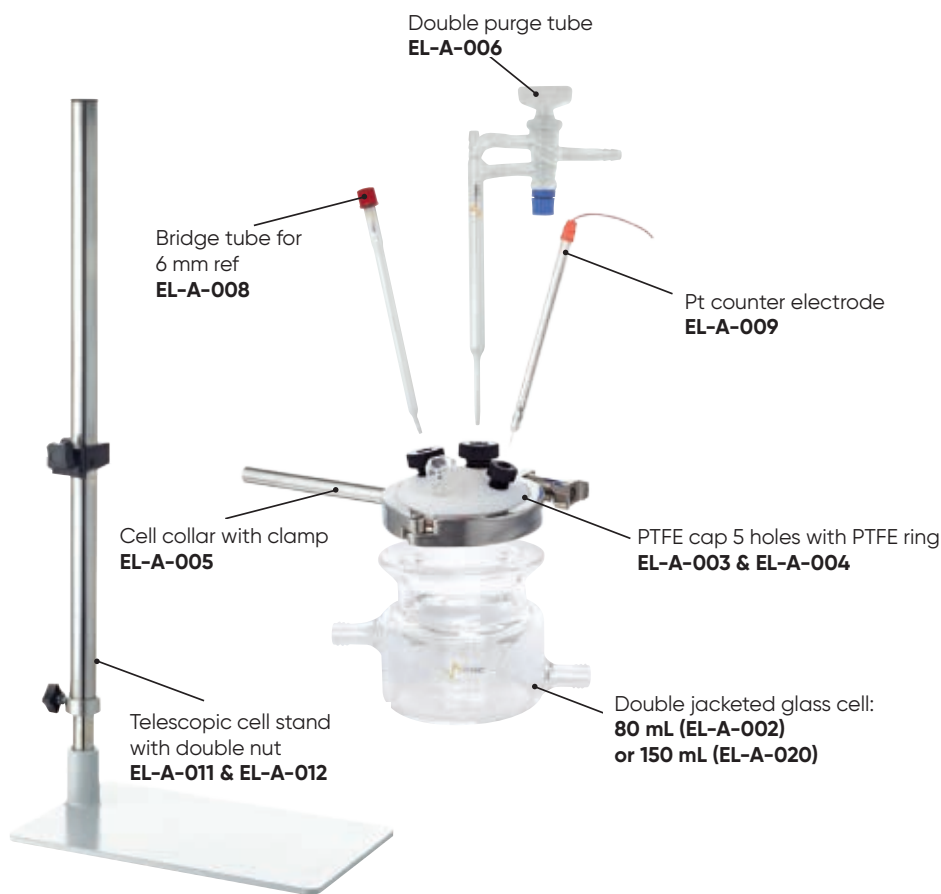
Cell Geometry

The geometry of the cell should be optimized to reduce the ohmic drop. Working and reference electrodes must be positioned close to one another. The counter electrode should not limit the transfer of electrons, so its contact surface should be larger than the contact surface of the working electrode.



Large Volume Cells

This cell is perfect for standard analytical electrochemistry experiments with electrolyte volumes of several tens of mL. It is also compatible with the BluRev product range, *i.e.* electrode rotators.



	EL-ELECTRO-80	EL-ELECTRO-80DJ	EL-ELECTRO-150DJ
Glass cell	EL-A-001 (80 mL)	EL-A-002 (80 mL double jacketed)	EL-A-020 (150 mL double jacketed)
PTFE cap 5 holes		EL-A-003	
PTFE ring, silicon encapsulated, OD 102 mm		EL-A-004	
Cell collar with clamp		EL-A-005	
Bridge tube for reference electrode, OD 6 mm		EL-A-008	
Platinum counter electrode		EL-A-009	
Purge tube	EL-A-016	-	
Double purge tube	-	EL-A-006	
Double nut 25 mm and 12 mm diameter	-	EL-A-011	
Telescopic cell stand	-	EL-A-012	
Options			
Bridge tube for reference electrode of OD 8 mm		EL-A-017	
PT100 probe		EL-C-014	
Aluminum base holder for magnetic stirrer		EL-C-018	
Set of 10 porous 4 mm glass frits (CoralPor) with PTFE heat shrink (200 mm)		092-VYC4	

Multi Purpose Cells

FlexCell®

These cells, manufactured by Gaskatel, are ideal for corrosion experiments in aggressive media, as well as studies on Gas Diffusion Electrodes (GDE) and membranes. Their unique design and a specific choice of materials allow repeatability and avoid common pitfalls in other cells: heterogeneous electric field, variable ohmic drop, crevice corrosion, degradation of the cell. Used in combination with the robust HydroFlex® or MiniHydroFlex® hydrogen reference electrode, this is the perfect cell for corrosion, membrane and GDE studies. Two versions are available: PTFE and PP.



FlexCell® PTFE



FlexCell® PP

	Catalog n°
FlexCell® PP – Electrochemical Test Cell made of PP	G-FLEXCELL/PP
FlexCell® Analyte Compartment in PP for membrane studies	G-COMP/PP
FlexCell® PTFE – Electrochemical Test Cell made of PTFE	G-FLEXCELL/PTFE
FlexCell® Analyte Compartment in PTFE for membrane studies	G-COMP/PTFE
Options to be ordered separately (see p.31)	
HydroFlex® Hydrogen Reference Electrode	G-HYDROFLEX
HydroFlex® Hydrogen Reference Electrode Starter Kit	G-HYDROFLEX-KIT
MiniHydroFlex® Hydrogen Reference Electrode	G-MINIHYDROFLEX

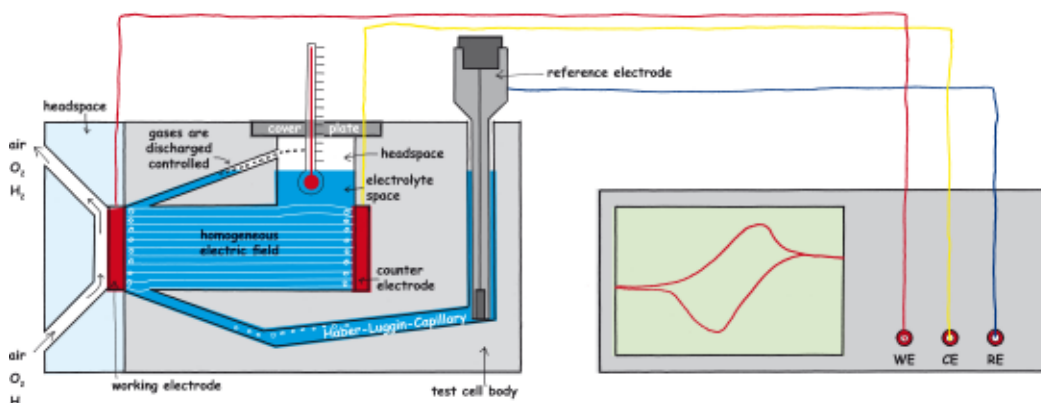


PTFE analyte compartment



PP analyte compartment

	Operating conditions
Max. exposure time/h	24
Temperature/°C	-20 to 120
pH range	-2 to 16
Max. current/A	3



Cross-section of the cell and instrument connection.

	Max. sample size /cm	Max. sample thickness /mm*	Active area /cm²	Electrolyte volume /ml	Dimensions (w/o screw adapters) (HxWxD)/mm
FlexCell®	3 x 5	10	3	30	75 x 100 x 132
Analyte Compartment	3 x 5	10	3	12	75 x 100 x 30

*Longer wing screws can be supplied

	Materials
Main	PP or PTFE
Gasket	Silicon
O-rings	EPDM
Cover plate	PSU
Gas compartments	PMMA or PSU
Counter electrode	Pt-Ir

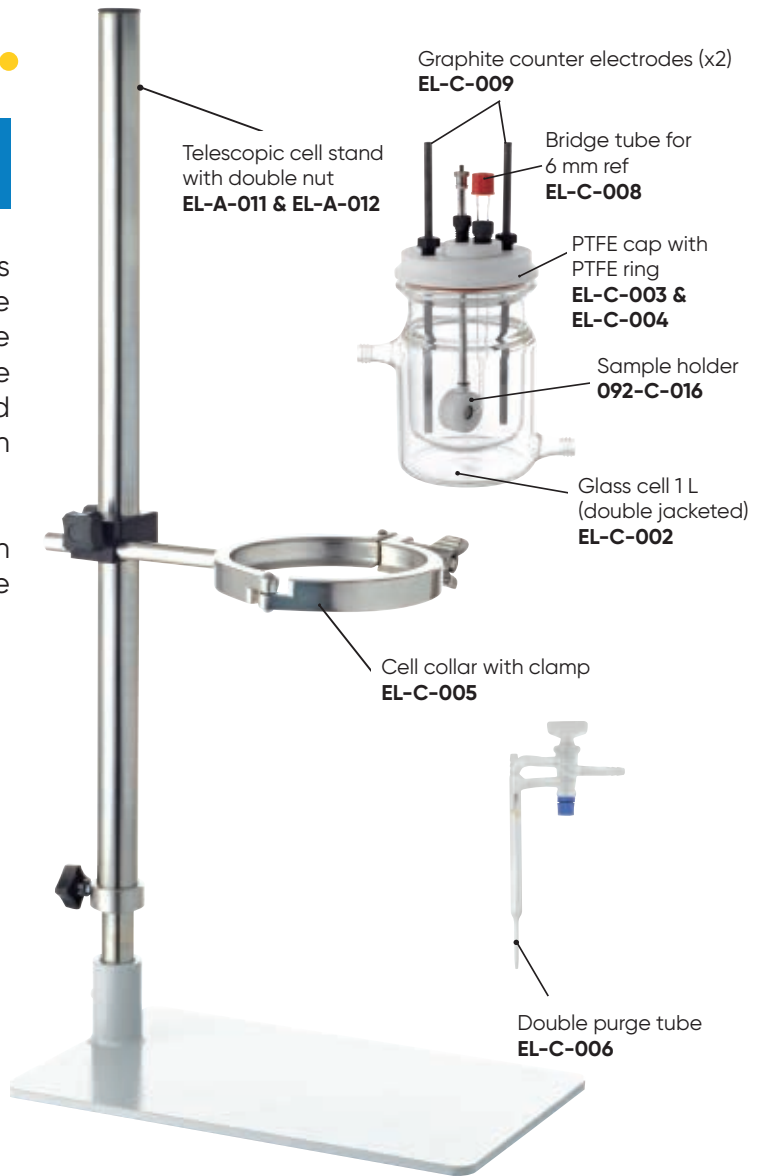
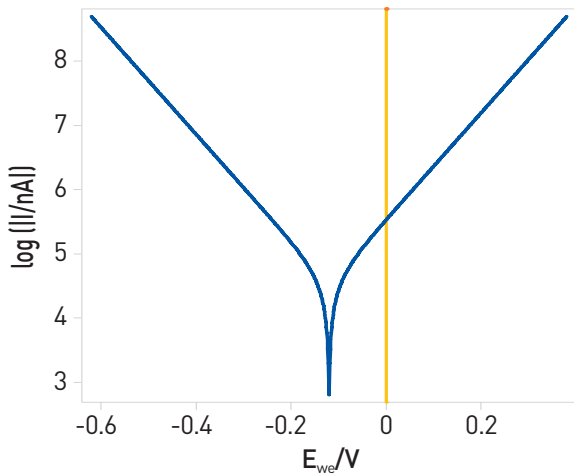
PP	Polypropylene
PTFE	Polytetrafluoroethylene
PSU	Polysulfone
PMMA	Polymethylmethacrylate
EPDM	Ethylene propylene diene monomer
Pt	Platinum
Ir	Iridium

Corrosion Cells.

Standard Corrosion Cells

The standard corrosion cell is available with as single or double jacket glass cell for temperature control. It is provided with two graphite rods to be used as counter electrodes, a bridge tube, to ensure the minimum distance between the reference and the working electrode, and purge tubes, to maintain a controlled gaseous environment.

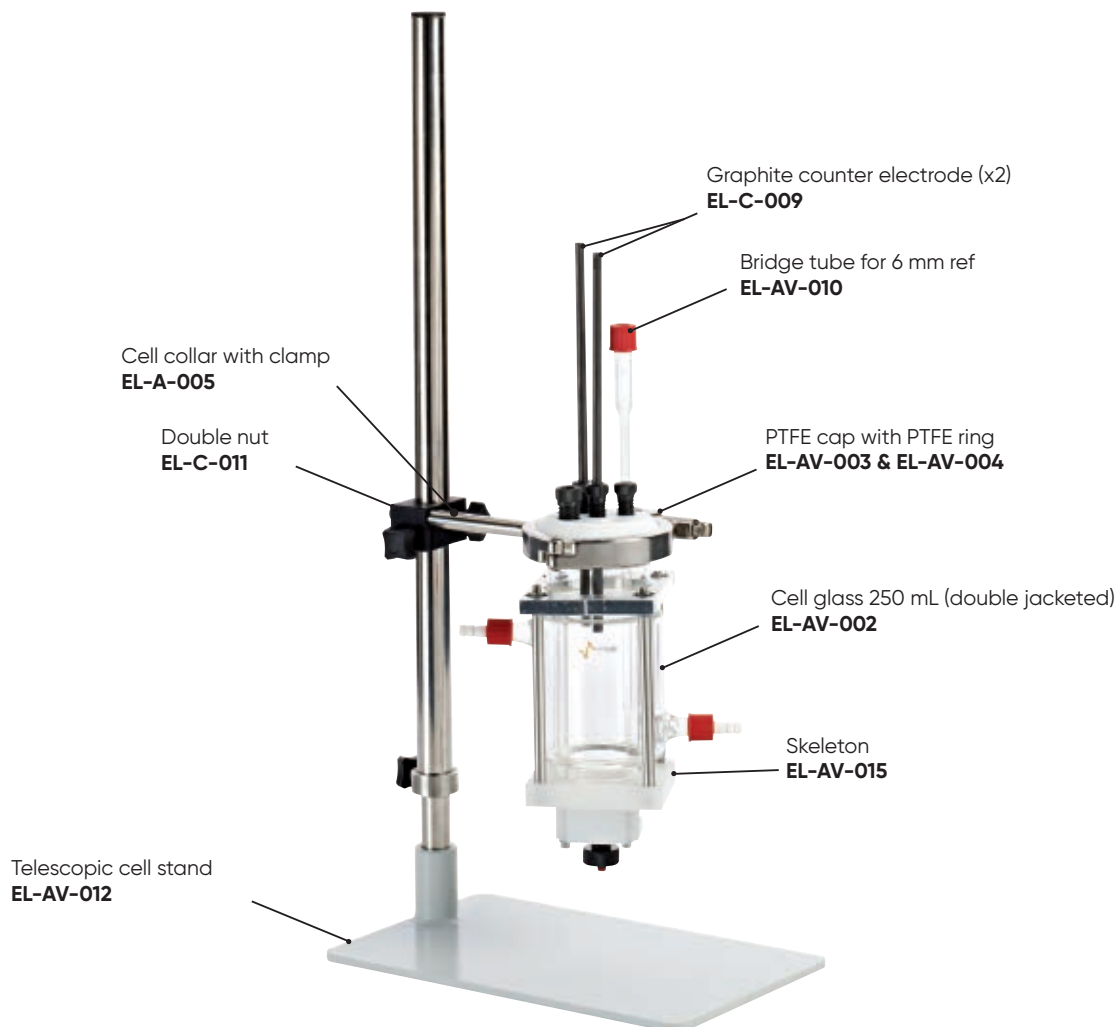
Two kits are available: a standard one and an advanced kit with telescopic cell stand, sample holder and double purge tubes.



	Basic corrosion cell kit EL-CORR-1	Complete corrosion cell kit EL-CORR-1DJ
Glass cell 1 L	EL-C-001	EL-C-002 (double jacketed)
PTFE cap		EL-C-003
PTFE ring, silicon encapsulated, OD 102 mm		EL-C-004
Cell collar with clamp		EL-C-005
Graphite counter electrode rod (2 pieces) $\rho = 1.070 \mu\Omega \text{ cm}$		EL-C-009
Bridge tube for 6 mm diameter reference electrode		EL-C-008
Purge tube	EL-C-016	-
Double purge tube	-	EL-C-006
Double nut 25 mm and 12 mm diameter	-	EL-C-011
Telescopic cell stand	-	EL-C-012
Sample holder 1 cm ² (max sample thickness 3.4 mm and max diameter 14.6 mm)	-	092-C-016
Options		
Bridge tube for 8 mm diameter reference electrode		EL-C-017
PT100 probe (indicate connector type)		EL-C-014
Magnetic stirrer & heater, without PT100 probe	220 V	EL-C-015A
	110 V	EL-C-015B
Aluminum base holder for magnetic stirrer and 1 L cell vial		EL-C-018
Set of 10 porous frits (4 mm CoralPor™) with PTFE heat shrink (200 mm)		092-VYC4

Avesta Cell

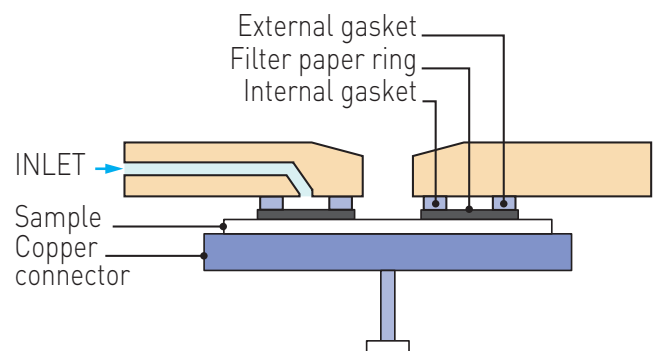
The Avesta Cell is an electrochemical cell developed for pitting corrosion testing (ASTM G150). It is designed to avoid microcrevice corrosion formed between the working electrode and the gasket at the bottom aperture of the cell.



	Catalog n°
Avesta cell kit	EL-AVESTA
Content	
Double jacketed cell glass 250 mL	EL-AV-002
PTFE cap 5 holes	EL-AV-003
O-ring PTFE silicone encapsulated	EL-AV-004
Cell collar with clamp	EL-A-005
Double purge tube	EL-AV-006
Filter paper ring (100 pieces)	EL-AV-007
Graphite counter electrode rods (2 pieces) $\rho = 1.070 \mu\Omega \text{ cm}$	EL-C-009
Bridge tube for RE 6 mm	EL-AV-010
Double nut	EL-C-011
Telescopic cell stand	EL-AV-012
Skeleton	EL-AV-015
Options	
Peristaltic pump for low flow	EL-AV-008
Bridge tube for reference electrode with OD of 8 mm	EL-AV-013
Single purge tube	EL-AV-014
Temperature probe PT100	EL-C-014
Set of 10 porous frits (4 mm CoralPor™) with PTFE heat shrink (200 mm)	092-VYC4

A filter paper ring placed between the sample and the gasket is flooded by distilled water in order to eliminate crevice corrosion.

The water flow is controlled by a peristaltic pump (EL-AV-008).

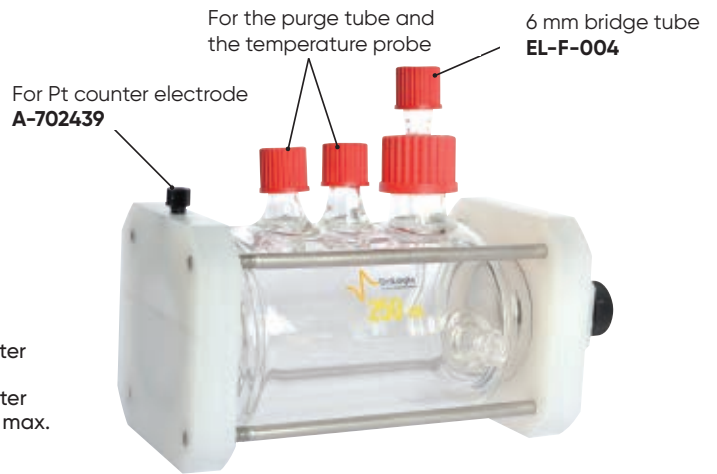


Flat Cells

1 to 10 cm² sample area

The Flat cell with a volume of 250 mL is perfect for experiments on flat specimens of 1 or 10 cm² surface area.

This cell has a double jacket for temperature control and three holes for reference electrodes, purge tubes and temperature probes with an inner diameter of 17.6 mm and the two others of 8.3 mm.



Sample size:
30.5 mm min. diameter (EL-FLAT-1CM)
40.5 mm min. diameter (EL-FLAT-10CM)
6 mm max. thickness

	Glass kits (double jacket)		PVDF kits (single jacket)	
	1 cm ² EL-FLAT-1CM	10 cm ² EL-FLAT-10CM	1 cm ² EL-FLAT-1CM-PVDF	10 cm ² EL-FLAT-10CM-PVDF
Platinum mesh counter electrode (54 mm wire/ 80 mesh), 25 x 35 mm	A-702439			
Bridge tube for 6 mm diameter reference electrode	EL-F-004		-	
Glass cell (250 mL) for flat cell	EL-F-002		EL-F-PVDF	
Mechanical parts	EL-FLAT-3H	EL-FLAT-4H	EL-FLAT-3H	EL-FLAT-4H
Option				
Bridge tube for 8 mm diameter reference electrode	EL-F-004B		-	

Investigations In Agressive Media

If the experiment is performed in more aggressive media such as hydrofluoric acid, it is possible to obtain the body of the flat cell in PVDF* instead of glass (Polyvinylidene fluoride).

	Hydrofluoric acid 48%		Sulfuric acid 98%		Phosphoric acid 85%		Hydrochloric acid 35%		Nitric acid 70%		Perchloric acid		Sodium hydroxide 50%		Potassium hydroxide concentr.	
	20° C	50° C	20° C	50° C	20° C	50° C	20° C	50° C	20° C	50° C	20° C	50° C	20° C	50° C	20° C	50° C
PTFE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
PVDF*	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Borosilicate glass	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

■ excellent
■ good
■ not recommended
■ not compatible

Options	Catalog n°
PVDF body (single-jacketed)	EL-F-PVDF
EPDM O-rings for 1 cm ² with PEEK ferrule for CE*	EL-SEAL-1B
EPDM O-rings for 10 cm ² with PEEK ferrule for CE*	EL-SEAL-10B
PTFE O-rings for 1 cm ² with PEEK ferrule for CE*	EL-SEAL-T1B
PTFE O-rings for 10 cm ² with PEEK ferrule for CE*	EL-SEAL-T10B
EPDM O-rings for 1 cm ² *	EL-SEAL-1
EPDM O-rings for 10 cm ² *	EL-SEAL-10
PTFE O-rings for 1 cm ² *	EL-SEAL-T1
PTFE O-rings for 10 cm ² *	EL-SEAL-T10
Set of 10 porous frits (4 mm CoralPor™) with PTFE heat shrink (200 mm)	092-VYC4

* The O-ring kits include 4 O-rings for the glassware side and 10 O-rings for the sample side

Galvanic Cells

1 to 10 cm² sample area

Thanks to the modular design of the flat cell, it is possible to place two different materials at each end of the cell. The surface area can be 1 or 10 cm². This cell is provided with a double jacket by default.

	1 cm ² EL-GAL-1CM	10 cm ² EL-GAL-10CM
Content		
Flat cell kit 1 cm ²	EL-FLAT-1CM	EL-FLAT-10CM
Galvanic kit 1 cm ²	092-FLAT/1	092-FLAT/10



Sample size:
30.5 mm min. diameter (EL-GAL-1CM)
40.5 mm min. diameter (EL-GAL-10CM)
6 mm max. of thickness

Plate Material Evaluating Cell

up to 1 cm² sample area

This cell was developed to evaluate plate material such as metals, semi-conducting plates, etc. The sample plate is sandwiched between the two cell blocks. The required volume of solution is about 1 mL.



	Catalog n°
Plate material evaluating cell	A-011951
Content	
PTFE cell [body & base] (1 piece)	Included
O-ring (1 piece)	Included
Screw 20 mm (2 piece)	Included
Purging tube, 100 mm	Included
Platinum counter electrode (1 piece)	A-002222
Options	
O-ring (10 pieces)	A-012022

Coating Cell

The "Coating cell" is an affordable cell especially dedicated for testing flat coated material samples. Masks with different areas are available for corrosion testing.



	Catalog n°
Coating cell kit	EL-COAT
Content	
Glass for coating cell	EL-P-002
Nylon base with three feet	EL-P-003
Rubber cup with two holes	EL-P-004
Metallic clamp	EL-P-005
O-ring for coating cell	EL-P-006
Graphite rod counter electrode (L: 145 mm, OD: 6 mm, ρ = 1.070 μΩ cm)	EL-P-009
Options	
Bridge tube for 6 mm reference electrode	EL-P-008
Mask for 1 cm ² (20 pieces)	EL-P-011
Mask for 3 cm ² (20 pieces)	EL-P-012
Mask for 10 cm ² (20 pieces)	EL-P-013

Electrodes.

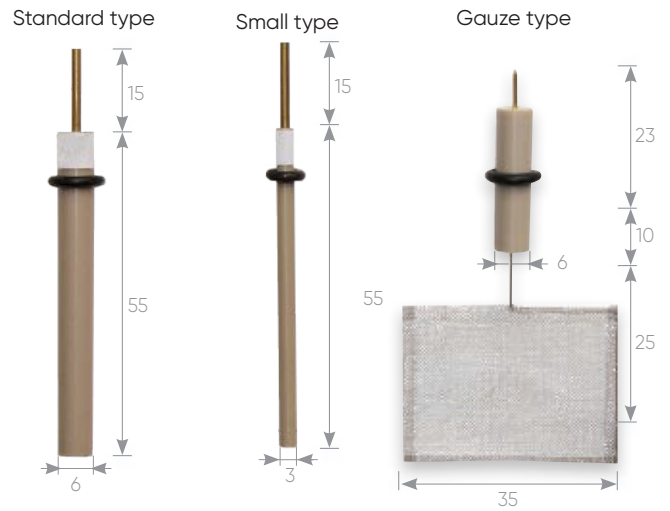
Working Electrodes

To address every application, a wide range of working electrodes (WE) is available with diameters ranging from 7 µm up to 10 mm and made of different materials.

BioLogic exclusive



M-BDD-3: Boron-doped diamond 3 mm diameter disk



Dimensions in mm

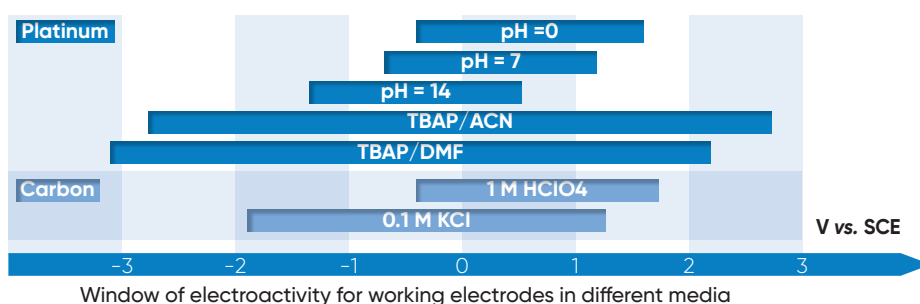
		Isolation	OD/mm	Disk Ø/mm	Catalog n°	
Carbon	Standard glassy carbon electrode	PEEK	10	5	A-002417	
		PEEK	6	3	A-002012	
		PEEK	6	1.6	A-012297	
	Small glassy carbon electrode	PEEK	3	1.6	A-012298	
		PEEK	3	1	A-002412	
	Standard pyrolytic graphite electrode	Basal plane	PEEK	6	3	A-002252
		Edge plane	PEEK	6	3	A-002253
Standard plastic formed carbon electrode	Standard plastic formed carbon electrode	PEEK	6	3	A-002408	
		PEEK	6	1	A-002409	
	Small plastic formed carbon electrode	PEEK	3	1	A-011854	
Platinum (9995% purity)	Standard platinum electrode	PEEK	10	5	A-002420	
		PEEK	6	3	A-002422	
		PEEK	6	1.6	A-002013	
	Small platinum electrode	PEEK	3	1.6	A-002313	
Gold	Standard gold electrode	PEEK	10	5	A-002418	
		PEEK	6	3	A-002421	
		PEEK	6	1.6	A-002014	
	Small gold electrode	PEEK	3	1.6	A-002314	
Silver	Standard silver electrode	PEEK	10	5	A-002416	
		PEEK	6	3	A-002419	
		PEEK	6	1.6	A-002011	
	Small silver electrode	PEEK	3	1.6	A-002315	
Palladium	Standard palladium electrode	PEEK	6	1.6	A-002019	
	Small palladium electrode	PEEK	3	1.6	A-002319	
Nickel	Standard nickel electrode	PEEK	6	1.5	A-002016	
Copper	Standard copper electrode	PEEK	6	1.6	A-002017	
		PEEK	6	3	A-012584	
Iron (99.65% purity)	Standard iron electrode	PEEK	6	1.5	A-002018	
		PEEK	6	3	A-012585	
Carbon paste	Standard carbon paste electrode hole depth 4 mm	PEEK	6	3	A-002210	
	Small carbon paste electrode hole depth 4 mm	PEEK	3	1.6	A-002223	
	Carbon paste oil base 1 g				A-001010	
Boron-doped diamond	Doping level between 500 and 1000 ppm. The electrode is a 500 µm thick disk attached to a conductive rod in brass. It is polished with an Ra < 10 nm.	PEEK	7	3	M-BDD-3	

Electrode Polishing Kit

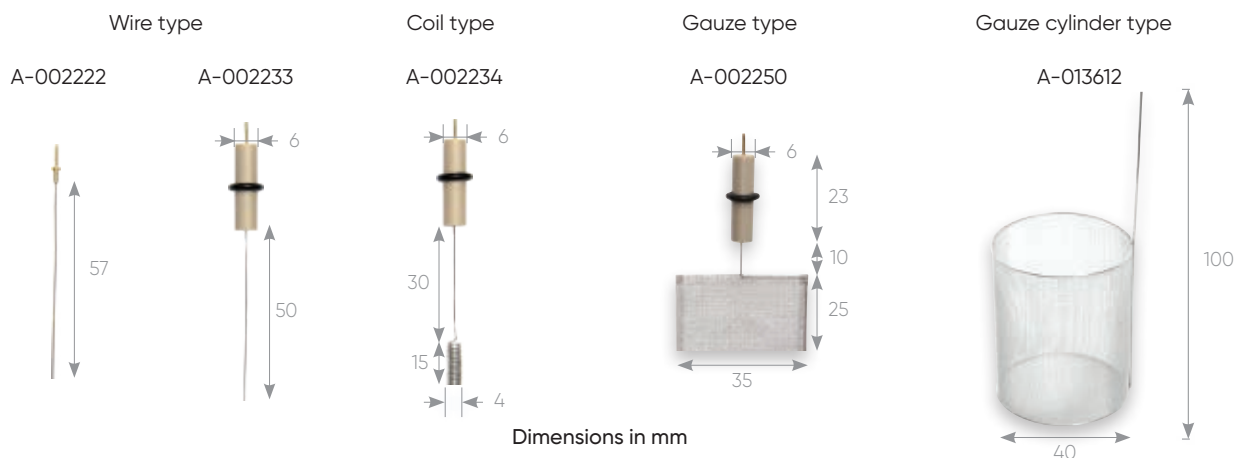
	Purpose	Catalog n°
PK-3 electrode polishing kit*		A-011975
Content		
0.05 µm polishing alumina (20 mL)	For final polishing	A-001050
1 µm polishing diamond (10 mL)	For intermediate polishing	A-002054
Glass plate (1 piece)		A-002249
Alumina polishing pad (10 pieces)	For final polishing	-
Diamond polishing pad (10 pieces)	For intermediate polishing	-
Spare parts		
Alumina polishing pad (20 pieces)	For final polishing	A-001040
Diamond polishing pad (20 pieces)	For intermediate polishing	A-001041
Emery paper UF800 (20 pieces)	For PG and PFCE electrodes	A-012611
Coarse polishing pad (20 pieces)	Rough hewn	A-001042
6 µm polishing diamond (10 mL)	For intermediate polishing	A-002053



*To refresh the working electrode surface, we recommend polishing before each measurement.



Counter Electrodes

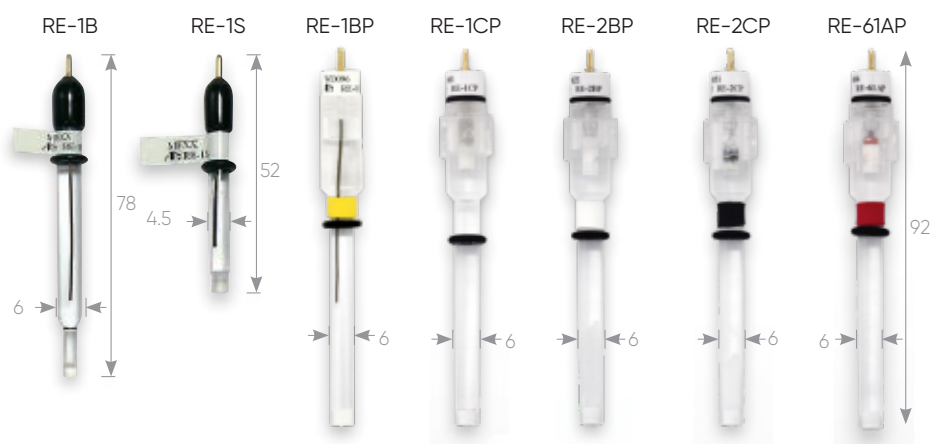


	Size/mm	Wire Ø/mm	Surf. area/cm ²	Purpose	Catalog n°
Platinum (99.95 % purity)	57	0.5	~ 0.7	SVC-2, VC-4, plate material evaluating cell	A-002222
	50	0.5	~ 0.7	SVC-3	A-002233
	45 (230 coiled)	0.5	~ 3.6	RRDE, bulk electrolysis cell, SVC-3	A-002234
Gold	45 (230 coiled)	0.5	~ 3.6	RRDE, bulk electrolysis cell, SVC-3	A-012638
Nickel	45 (230 coiled)	0.5	~ 3.6	RRDE, bulk electrolysis cell, SVC-3	A-012639
Platinum gauze electrode, PEEK body 80 mesh (99.95 % purity)	25x35	0.08	~ 22.9	Bulk electrolysis cell	A-002250
Platinum gauze electrode, 54 mm wire 80 mesh (99.95 % purity)	25x35	0.08	~ 22.9	Flat cell	A-702439
Platinum electrode, 80 mesh (99.95 % purity)	40x50	0.12	~ 47.4	Bulk electrolysis cell	A-013612
Gold gauze electrode, PEEK body 100 mesh	25x35	0.07	~ 29	Bulk electrolysis cell	A-002251

Small-Size Reference Electrodes

for aqueous solutions

There are two main types of reference electrodes: those suited for aqueous solutions and those for organic solutions.



	Junction	Electrolyte	Purpose	Catalog n°
RE-1B Ag/AgCl	IPPG*	3 M NaCl	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, flat cell	A-012167
RE-1S Ag/AgCl	IPPG*	3 M NaCl	SECM	A-012168
RE-1BP (Ag/AgCl)	Ceramic	3 M NaCl	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, EQCM, flat cell	A-013613
RE-1CP Ag/AgCl	Ceramic	Saturated KCl	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, flat cell	A-013429
RE-2BP Hg/Hg ₂ Cl ₂	Ceramic	Saturated KCl	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, flat cell	A-013430
RE-2CP Hg/Hg ₂ SO ₄ , free from chloride	Ceramic	Saturated K ₂ SO ₄	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, flat cell	A-013431
RE-61AP Hg/HgO main body in polyacetal resin	Ceramic	1 M NaOH	For alkaline media	A-013395
Spare parts				
Porous glass frits (CoralPor)				See p.30
Options				
RE-PV preservative vial for reference electrode, 10 mL				A-012108
Bridge tube Ø 9.0 mm (2 pieces) - Picture available next page				A-012177
Bridge tube Ø 9.0 mm (22 pieces) - Picture available next page				A-012307

* Ion Permeable Porous Glass

Support: How to Check Your Reference Electrode

Click or scan



BioLogic's Learning Center is a great source of information for tech-tips, theory and product information. Visit our Learning Center to find out why reference electrode maintenance is so important.

Small-Size Reference Electrodes for non aqueous solutions



	Junction	Electrolyte	Purpose	Catalog n°
RE-7N (Ag/Ag ⁺)	IPPG*	Ag/Ag ⁺ /ACN** TBAP*** (not provided)	SVC-2, SVC-3, VC-4, bulk electrolysis cell, RDE/RRDE, eQCM	A-013848
RE-7SN (Ag/Ag ⁺)	IPPG*	Ag/Ag ⁺ /ACN** TBAP*** (not provided)	SECM	A-013849
Spare parts				
PTFE cap with Ag wire (for RE-7N)				A-012057
Sample holder 6 mm diameter (for RE-7N) (2 pieces)				A-012176
Porous glass frits (CoralPor)				See p.30
Options				
RE-PV preservative vial for reference electrode, 10 mL				A-012108
Bridge tube Ø 9.0 mm (2 pieces)				A-012177
Bridge tube Ø 9.0 mm (22 pieces)				A-012307

* Ion Permeable Porous Glass

** Acetonitrile

*** Tetrabutylammonium perchlorate

Don't forget!

There is a huge amount of supporting information on www.biologic.net.

The BioLogic Learning Center has over 150 articles and if you want a deeper understanding, there are over 80 application notes and 50 technical notes on the field of electrochemistry alone.

[biologic.net](http://www.biologic.net)

Maintenance of Reference Electrodes

Store your reference electrode immersed in the electrolyte

When not in use, we recommend that you keep reference electrodes in sealed, air-tight vials in order to prolong their life. The storage solution should be identical to the filling solution of the reference electrode. Preferably a cold and dark place.

Prevent contamination

To prevent contamination of the reference electrode, a bridge tube can be used.

Replace the junction when needed

If you are using IPPG junctions, yellowish discoloration indicates contamination. This is caused by the absorption of organic compounds into the pores. The average pore diameter of IPPG is about 40 - 200 Å. If you are using CoralPor™ junctions, you might want to use one of the available replacement kits. The average pore diameter of CoralPor™ is about 4 - 10 nm.

Potentials of common reference electrodes

E/V vs. NHE at 25°C

0.930	Hg/HgO / NaOH (0.1 M)
0.650	Hg/Hg ₂ SO ₄ / K ₂ SO ₄ (sat)
0.624	Fc/Fc ⁺ / TBAP (0.1 M) ACN
0.542	Ag/Ag ⁺ / TBAP (0.1 M) ACN
0.241	Hg/Hg ₂ Cl ₂ / KCl (sat)*
0.236	Hg/Hg ₂ Cl ₂ / NaCl (sat)*
0.205	Ag/AgCl / KCl (3.5 M)
0.197	Ag/AgCl / KCl (sat)
0.194	Ag/AgCl / NaCl (sat)
0.000	NHE Normal Hydrogen Electrode

* Hg/Hg₂Cl₂ : Calomel

Catalog n°	Compatible reference electrodes	Compatible bridge tubes	Content	Heat shrink tube material
092-VYC3	A-012167	A-012176	10 glass frits (Ø 2.8 mm Coralpor™) 200 mm long heat shrink tube (Ø 3.2 mm)	PTFE
092-VYC3A		A-012306 A-012177 A-012307		PVDF
092-VYC4	-	EL-C-005 EL-C-017	10 glass frits (Ø 4 mm CoralPor™) 200 mm long heat shrink tube (Ø 4.8 mm)	PTFE
092-VYC4A		EL-F-004B EL-A-017 EL-A-008		PVDF
092-VYC5	A-012168	-	10 glass frits (Ø 2.8 mm CoralPor™) 200 mm long heat shrink tube (Ø 4.8 mm)	PTFE
092-VYC5A				PVDF

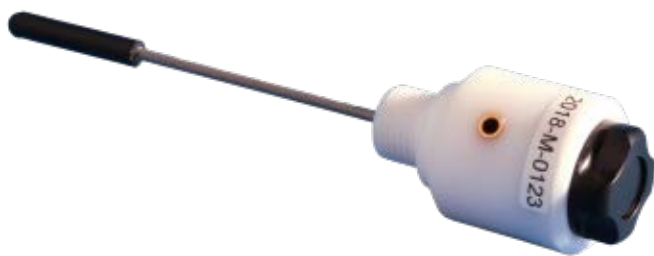
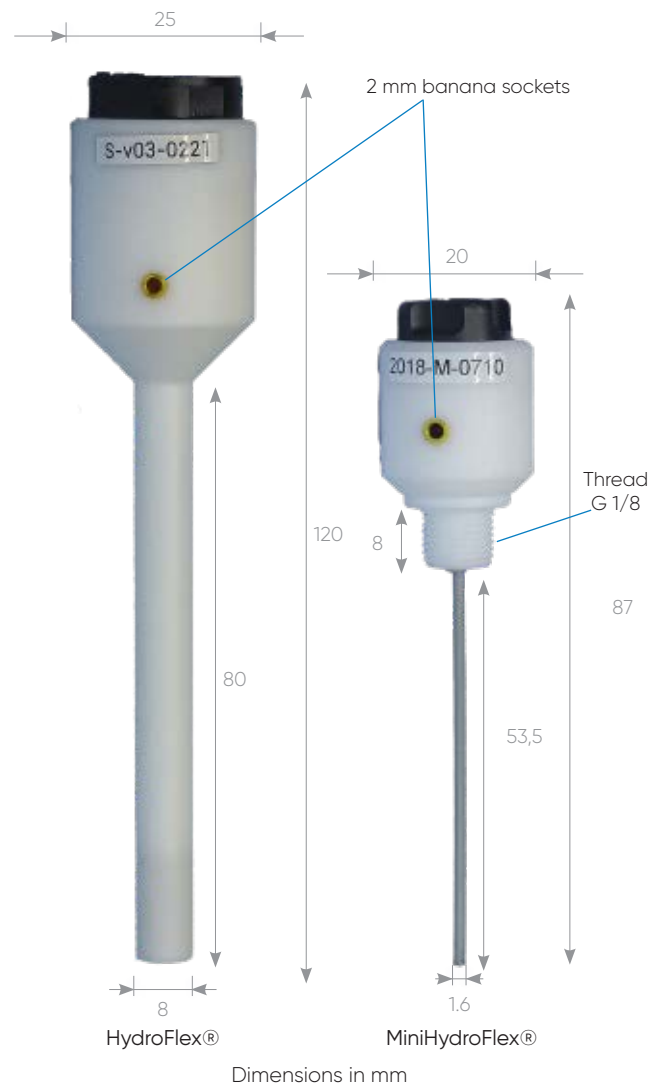
Hydrogen Reference Electrodes

These hydrogen reference electrodes, manufactured by Gaskatel, are beneficial in that they are Hg-free and not made of glass, which extends their range of operating conditions. These reference electrodes are easy to use and robust. The hydrogen source is contained within a cartridge that is easily replaceable.

	Catalog n°
HydroFlex® Hydrogen Reference Electrode	G-HYDROFLEX
HydroFlex® Starter Kit*	G-HYDROFLEX-KIT
MiniHydroFlex® Hydrogen Reference Electrode	G-MINIHYDROFLEX
Options	
HydroFlex® Hydrogen Cartridge (x4)	G-HYDROFLEX-CARTRIDGE
MiniHydroFlex® Hydrogen Cell (x2)	G-MINIHYDRO-CELL
Bridge tube for use of HydroFlex® with EL-ELECTRO	EL-A-017
Bridge tube for use of HydroFlex® with EL-CORR	EL-C-017
Bridge tube for use of HydroFlex® with EL-FLAT	EL-F-004B

	Operating conditions
Cartridge lifetime/months	12 (MiniHydroFlex®), 6 (HydroFlex®)
Temperature/°C	-20 to 120 (PTFE body)
pH range	-2 to 16

The HydroFlex® electrode is compatible with BioLogic's electrochemical cells. The MiniHydroFlex® is dedicated to the FlexCell®.



Part	Materials
Body	PTFE, PP
Shaft	PEEK, PTFE
Cap and cartridge	PC or PVC
Measuring electrode	Pt, Pd
PP	Polypropylene
PTFE	Polytetrafluoroethylene
PVC	Polyvinyl chloride
PC	Polycarbonate
PEEK	Polyether ether ketone
Pt	Platinum
Pd	Palladium

HydroFlex® Starter Kit Content

1x HydroFlex® hydrogen reference electrode (incl. 1 hydrogen cartridge)
1x connector lead
1x hydrogen cartridge
1x cartridge wrench
1x operating time wrench



Energy Conversion Accessories.

Redox Flow Battery Cells

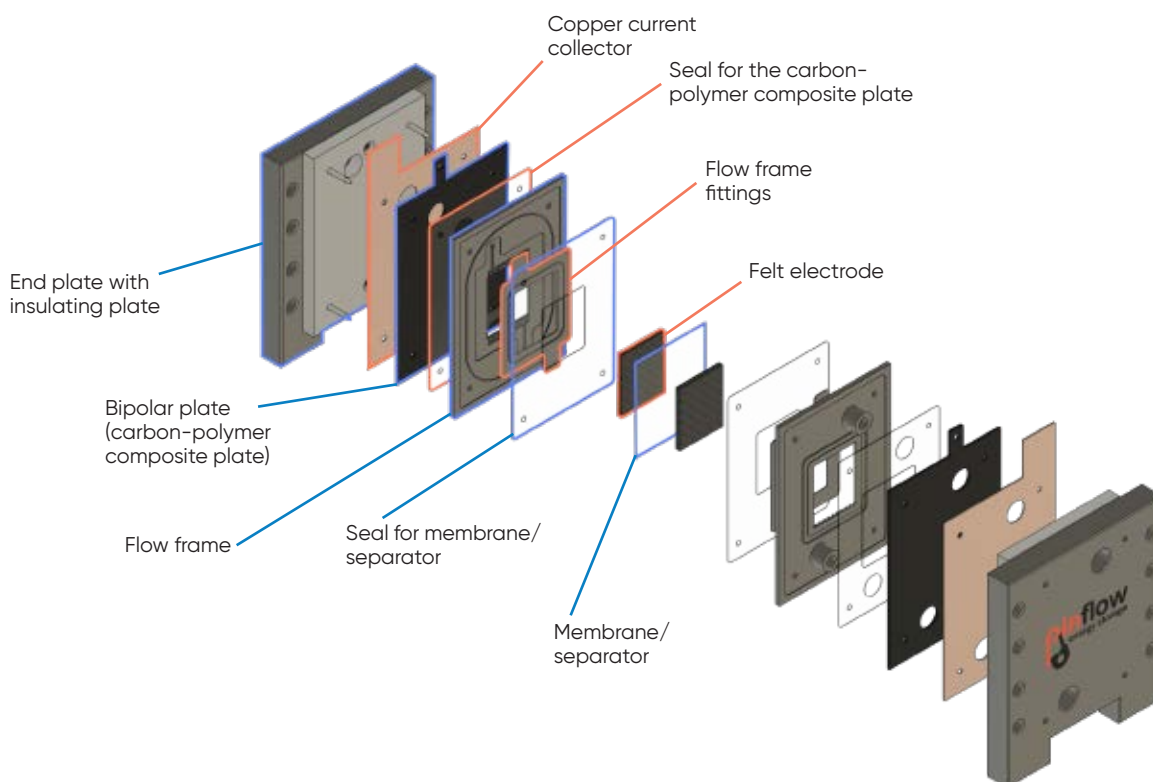


This range of redox flow battery cells are manufactured by **Pinflow energy storage**.

BioLogic provides two types of redox flow batteries with two different active surface areas: 5 cm² and 20 cm². This package allows you to work with both aqueous or organic electrolytes depending on your research needs or studies. Ready to use out of the box, we have different testing packages available that consist of 8 felts and 4 membranes. You can choose between Fumasep F-1850, multiple Nafion types or VANADion membranes.

Sealings and bipolar plates can also be purchased separately as spare parts.

Complete turnkey setups with climatic chambers and flow control are also available. Please ask your local reseller for more information or see the table below.

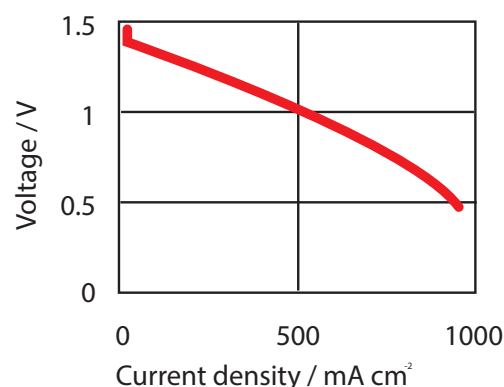


Pinflow RFB cells exhibit low internal resistance as can be seen on the following curve. Typical values of internal resistance are lower than 2 Ω·cm².

Pinflow cells were used and characterized in the following papers:

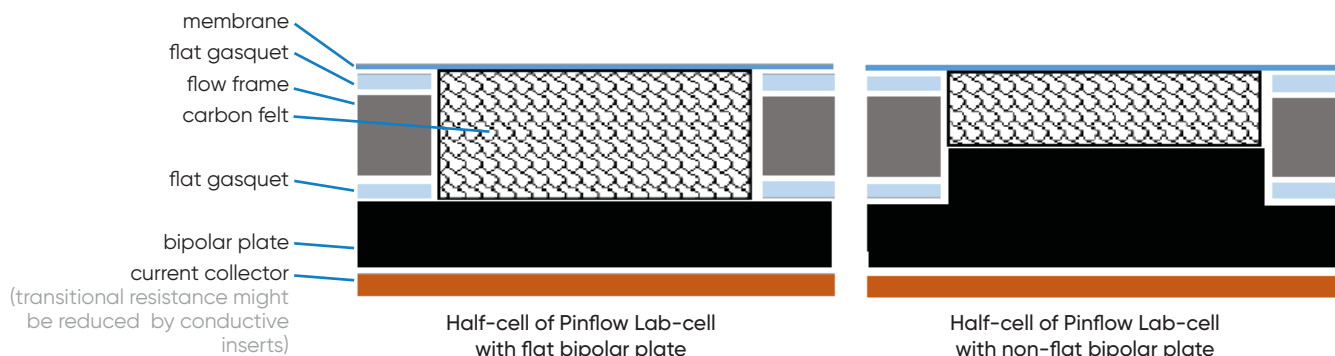
<https://doi.org/10.1016/j.memsci.2018.02.011>

<https://doi.org/10.1016/j.jpowsour.2018.01.079>



The Lab-cells from Pinflow are specially designed to control the pressure applied on the carbon felts that are used as electrodes. Using rigid components and non-flat bipolar plates, one can not only perform reproducible experiments, but also, it is possible to use various electrode thicknesses.

The schematic below shows, that by providing non-flat carbon polymer composite plates, one can control the compression and the thickness of the carbon felt electrode being used. The thickness of the electrode compartment can be easily set up using carbon-polymer composite plates with a defined stump or pit.



			5 cm ²	20 cm ²
Lab Cells		Standard	P-LABCELL/5	P-LABCELL/20
		For organic media	P-LABCELL/5F	P-LABCELL/20F
Consumables	Testing packages (8x felts, 4x membranes)	Fumasep F-1850	P-TEST-PACK/5-11	P-TEST-PACK/20-11
		Nafion N115	P-TEST-PACK/5-13	P-TEST-PACK/20-13
		Nafion N117	P-TEST-PACK/5-14	P-TEST-PACK/20-14
		Nafion N212	P-TEST-PACK/5-15	P-TEST-PACK/20-15
		Vanadion	P-TEST-PACK/5-16	P-TEST-PACK/20-16
	Membranes (x1)	Fumasep F-1850	P-MEMB/5-11	P-MEMB/20-11
		Nafion N115	P-MEMB/5-13	P-MEMB/20-13
		Nafion N117	P-MEMB/5-14	P-MEMB/20-14
		Nafion N212	P-MEMB/5-15	P-MEMB/20-15
		Vanadion	P-MEMB/5-16	P-MEMB/20-16
Spare parts	Pack of sealings (x10)	Standard	P-PSEAL/5	P-PSEAL/20
		For organic media	P-PSEAL/5F	P-PSEAL/20F
	Sealings	Standard	P-SSEAL/5	P-SSEAL/20
		For organic media	P-SSEAL/5F	P-SSEAL/20F
	Bipolar plates (1x set of 2)	-	P-SBIPOL/5	P-SBIPOL/20
	Tubing and vessels	-	P-TUBINGS	
Fittings	-	P-FPM		
Accessories	Felt cutter	-	P-CUTTER/5	P-CUTTER/20
	Wrench	-	P-WRENCH	
	Stand	-	P-STAND	
	Peristaltic pump	-	P-LABCELLPUMP/2	
	Climate chamber	-	P-CCHAMBER	
	Data acquisition module	-	P-DATAMOD	

Need More Information?

In this application note, a Vanadium Redox Flow Battery (VRFB) was characterized using typical DC and AC techniques: galvanostatic charge and discharge cycling and Electrochemical Impedance Spectroscopy (EIS).

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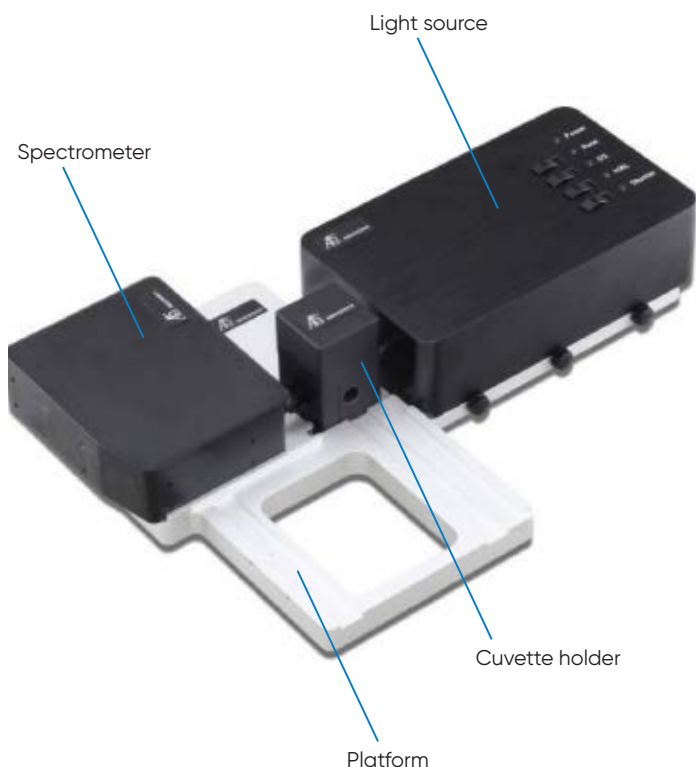
Spectroelectrochemistry.

Spectrometer System

The SEC2120 spectrometer system is a spectrometer that enables spectroelectrochemical measurements. The high-performance grating and optical design, makes possible to measure with high sensitivity in a wide wavelength range, from ultraviolet to near infrared (UV/VIS/NIR), with a single unit.

The kit is made up of three parts (spectrometer, light source and cuvette holder).

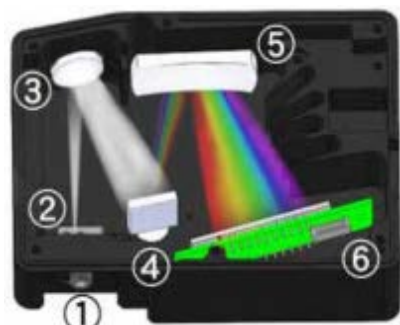
The spectrometer is equipped with a trigger to synchronize electrochemical and spectroscopic measurements.



	Catalog n°
SEC2020 spectrometer kit	A-014109
AC adapter	A-014110
Options	
Connecting cable to synchronize with BioLogic instruments.	092-22/11

Spectrometer specification	Information
Detector	1024 elements (Pixel size: 28 x 200 μm) CMOS with Fast Exposure
Full description	SEC2121-025-DUVN
Detector range/nm	200 - 1025
Grating	Blaze wavelength (300 nm)
Slit/ μm	25
Wavelength resolution/nm	< 1.4
Fiber connector	SMA905 NA=0.22
Interface	USB2.0
Operating system	Windows 11
Dimensions (H x W x D)/mm	32 x 86 x 110

The SEC 2120 Spectrometer System adopts Zernitana optical mount. This system is an M-shaped structure symmetrical about the grating (4) and is an optical system with extremely small aberration



Light source structure

- | | |
|-----------------------|---------------------------|
| 1. SMA905 Connector | 4. Grating |
| 2. Slit | 5. Focus mirror |
| 3. Collimating mirror | 6. 2048 element CCD array |

Light source specification	Information
Light type	Deuterium halogen
Wavelength range/nm	200 - 2500
Stability	0.40%
Drift/h	< 0.25%
Bulb life/h	1500 (D2 lamp) 18000 (halogen lamp)
Connector	None, built-in collimator, connection port (UNF 3/8-24)
Size (H x W x D)/mm	46 x 100 x 150

Spectroelectrochemical Cell



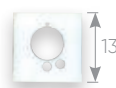
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A-012606



A-012609



A-011501

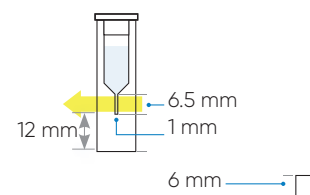
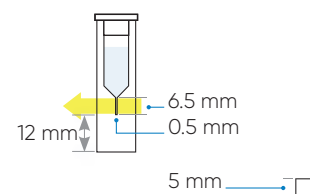


Purge tube



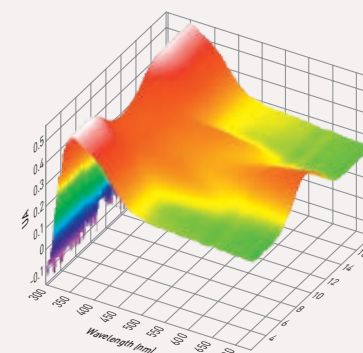
A-012813

		Platinum	Gold
0.5 mm	Kit	A-012813	A-012814
	Content		
	Platinum counter electrode	A-012609	
	Thin layer quartz glass cell	A-012815	
	PTFE cap	A-011501	
	Purge tube (ETFE, 100 mm)	-	
	Gauze working electrode	A-012606 (80 mesh, height 5 mm)	A-012607 (100 mesh, height 5 mm)
1 mm	Kit	A-013510	A-013511
	Content		
	Platinum counter electrode	A-012906	
	Thin layer quartz glass cell	A-012907	
	PTFE cap	A-011501	
	Purge tube (ETFE, 100 mm)	-	
	Gauze working electrode	A-011498 (80 mesh, height 6 mm)	A-012017 (100 mesh, height 6 mm)
Options			
RE-1BP Ag/AgCl reference electrode		A-013613	
RE-7N non-aqueous reference electrode		A-013848	
Purge tube (ETFE), 1 m		A-010537	



Utilization modes

Information	
Transmittance	
Absorbance/ Transmittance	<ul style="list-style-type: none"> - Concentration of chemicals (solution) - Polymer extrusion processes - DNA quantification
Reflectance	<ul style="list-style-type: none"> - Freshness testing - Film thickness/composition (quality control) - Activation energy of photocatalytic species - Textile quality control
Fluorescence	
Fluorescence	<ul style="list-style-type: none"> - Marine organisms - Biology (DNA, protein, cell proliferation assay, histamine-analysis, algae monitoring) - Environmental fields (waste water analysis, ground water trace studies, hydrocarbon detection, dissolved oxygen) - Plant efficiency (plant physiology, plant breeding, horticulture, agronomy, agrochemicals, pollution studies, forestry, ecology) - Tissue diagnosis
Irradiance	
Emission	<ul style="list-style-type: none"> - Astronomy (e.g, spectra of Hale-Bopp, plasma monitoring) - In situ metal monitoring - Luminescence (Photoluminescence, Electroluminescence), LED & laser wavelength

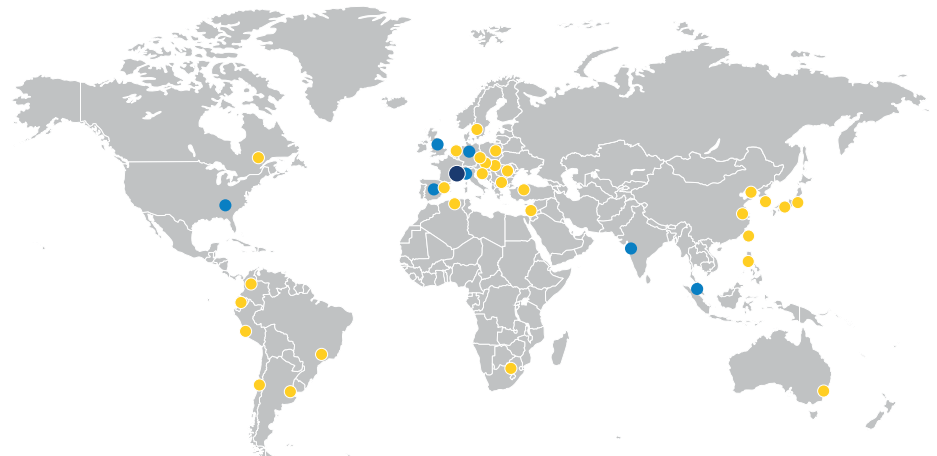


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Always by your side. Wherever you are.

We here at BioLogic pride ourselves on the quality and robustness of our instruments. However if you, for whatever reason, encounter a problem with your instrument, our global support network will help find you a solution quickly and effectively.

If you need more information, or perhaps a little inspiration, you can browse our ever-growing support database with hundreds of Learning Center articles, application/technical notes and support videos at www.biologic.net.



Application notes



Learning center



Tutorials



Videos