

# SP-300 + M470

## A winning combination

The most powerful bipotentiostat available merged with the most flexible electrochemical scanning system.



**Available for dc-SECM, ac-SECM, ic-mode SECM, LEIS, SVP, SDS**

### SP-300

- Current resolution 76 aA
- Potential resolution 1  $\mu$ V
- Analog filters on measured potential and current
- EIS measurements up to 3 MHz
- 0.2% and 0.2° max error at 200 kHz

### M470

- 9 different techniques available  
dc-SECM, ac-SECM, ic-mode SECM,  
LEIS, SVP, SDS, ac-SDS, SKP, OSP
- 20 nm resolution
- 11 cm max scanning range in all directions
- 10 mm/s max scanning speed

Bio-Logic is pleased to announce that the **M470** is now available with a choice of potentiostats/galvanostats/FRA.

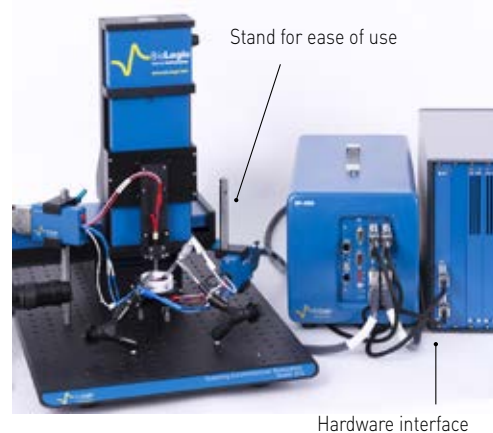
Both the higher specification **SP-300** standalone potentiostat/galvanostat/FRA and the original model 3300, integrated into the **M470** chassis, are now supported.

Selecting the **SP-300** option offers further dc current measurement sensitivity and increased EIS bandwidth. Current **SP-300** owners have the option of purchasing the **M470** system with a hardware interface to connect their existing system.

The **SP-300** hardware interface module plugs directly into the **M470** modular chassis and provides all the required connections to interface the analogue signals, and control functionality required by the system.

To facilitate mounting of the **SP-300** low current amplifiers locally to the scanning probe cell connections, adjustable stands and brackets are provided which mount directly to the **M470** base plate.

The required **SP-300** configuration is one or two channel boards with impedance ability and ultra low current options.



## SP-300 detailed specifications

### Control amplifier

Compliance	$\pm 12$ V
Maximum current	$\pm 500$ mA continuous
Gain-bandwidth compensation	9 programmable stability factors
Calibration board	included

### Voltage control

Ranges	$\pm 10$ V
Accuracy	$< \pm 1$ mV $\pm 0.03\%$ of setting
Lowest resolution	1 $\mu$ V

### Current control

Maximum current resolution	0.004% of the range [76 aA max]
Best applied current accuracy	$< \pm 0.1\%$ of range $\pm 0.03\%$ of setting

### Voltage measurement

Ranges	$\pm 10$ V
Accuracy (DC)	$< \pm 1$ mV $\pm 0.03\%$ of reading
Maximum resolution	$< 0.0033\%$ of range

### Filtering

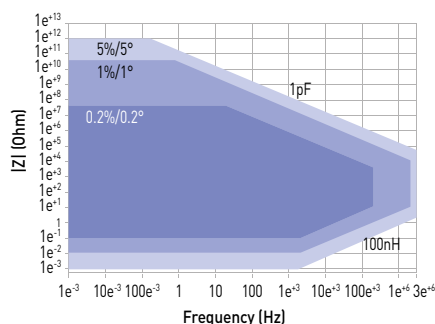
On current and voltage	50 kHz, 1 kHz and 5 Hz, low-pass 4 poles Sallen-Key filters
------------------------	---

### Current measurement

Ranges	13 ranges (auto/auto limited/manual) $\pm 1$ A down to $\pm 1$ pA ( $\pm 10$ pA, $\pm 1$ pA with gain)
Maximum resolution	0.004% of the range [76 aA max]
Best accuracy (+20°C $\leq$ T $\leq$ +30°C)	$< \pm 0.1\%$ of range $\pm 0.03\%$ of reading

## EIS Contour plots

SP-300 with ultra low current option



## dc-SECM / ac-SECM

Available probe sizes	25, 15, 10 $\mu$ m
Triggered approach curves termination on both dc- and ac-SECM	
General electrochemistry and corrosion suites available	

## ic-mode

Simultaneous topography and electrochemistry measurements	
Available on the whole scanning range	11 cm
Allows fully automated approach curves	

## SKP

Available probe sizes	500, 150 $\mu$ m
Allows capacitance topography measurement and Kelvin potential measurement	
Constant distance Kelvin probe measurement available	

## SVP

Micrometric probe for limited electrolyte convection	
Sensitivity better than 5 $\mu$ A/cm <sup>2</sup>	

## LEIS

Additional filters and offset compensation for signal optimization	
Automated gain adjustment	

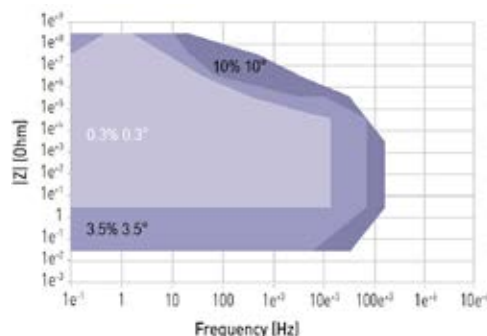
## SDS / ac-SDS

Available aperture sizes	500, 100 $\mu$ m
Minimum droplet size	200 $\mu$ m

## OSP

Spot size	30 $\mu$ m
Minimum vertical resolution	20 nm

3300



Specifications are subject to change



### Headquarters

#### Bio-Logic SAS

1, rue de l'Europe  
38 640 Claix - France  
Phone: +33 476 98 68 31  
Fax: +33 476 98 69 09

[www.bio-logic.info](http://www.bio-logic.info)

### Affiliate offices

#### Bio-Logic USA, LLC

P.O.Box 30009 - Knoxville, TN37930 - USA  
Phone: +1 865 769 3800 - Fax: +1 865 769 3801

#### Bio-Logic Science Instruments Pvt Ltd

304, Orion Business Park, Next to Cine Wonder,  
G. B. Road, Thane(W), 400 607 Mumbai - India