

# DASGIP BioLector

## Calibration Data Sheet for *pH & DO optodes*

Please enter these **calibration parameters** and the **Lot.-No.** in the BioLector software!

**Lot.-No.:** 1113  
**Filter:** HC

Date of calibration: 2011/09/16

### pH calibration parameters

| Buffer             | 150 mM Na-Phosphate buffer, <i>CertiPUR</i> buffer: pH 3.00, pH 4.01, pH 9.00, pH 10.00 (25°C)<br>(20 point calibration) |             |             |             |             |             |             |
|--------------------|--|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Temperature</b> | <b>20°C</b>  | <b>21°C</b> | <b>22°C</b> | <b>23°C</b> | <b>24°C</b> | <b>25°C</b> | <b>26°C</b> |
| $\phi$ min         | 59.01  | 58.95       | 58.89       | 58.83       | 58.78       | 58.72       | 58.66       |
| $\phi$ max         | 12.45  | 12.46       | 12.47       | 12.48       | 12.49       | 12.50       | 12.51       |
| dpH                | 0.63   | 0.63        | 0.63        | 0.63        | 0.63        | 0.63        | 0.63        |
| pHo                | 5.86   | 5.86        | 5.85        | 5.84        | 5.83        | 5.82        | 5.81        |
| <b>Temperature</b> | <b>27°C</b>  | <b>28°C</b> | <b>29°C</b> | <b>30°C</b> | <b>31°C</b> | <b>32°C</b> | <b>33°C</b> |
| $\phi$ min         | 58.60  | 58.54       | 58.48       | 58.42       | 58.36       | 58.30       | 58.25       |
| $\phi$ max         | 12.52  | 12.53       | 12.55       | 12.56       | 12.57       | 12.58       | 12.59       |
| dpH                | 0.63   | 0.63        | 0.63        | 0.63        | 0.63        | 0.63        | 0.63        |
| pHo                | 5.81   | 5.80        | 5.79        | 5.78        | 5.77        | 5.77        | 5.76        |
| <b>Temperature</b> | <b>34°C</b>  | <b>35°C</b> | <b>36°C</b> | <b>37°C</b> | <b>38°C</b> | <b>39°C</b> | <b>40°C</b> |
| $\phi$ min         | 58.19  | 58.13       | 58.07       | 58.01       | 57.95       | 57.89       | 57.83       |
| $\phi$ max         | 12.60  | 12.61       | 12.62       | 12.63       | 12.64       | 12.65       | 12.66       |
| dpH                | 0.63   | 0.63        | 0.63        | 0.62        | 0.62        | 0.62        | 0.62        |
| pHo                | 5.75   | 5.74        | 5.73        | 5.72        | 5.72        | 5.71        | 5.70        |

### Sensor properties

|                     |  |
|---------------------|--|
| Dynamic range       | pH 3.8-8.2   |
| Resolution          | Up to 0.01 pH (software)   |
| Accuracy            | ± 0.01 pH (pH 4.5-6.9); ± 0.1 pH (> pH 6.9; < pH 4.5) (batch calibration)  |
| Response time (t90) | At 25°C < 30s  |
| Drift at pH = 7     | < 0.005 pH per day (sampling interval of 1 min)  |
| Temperature range   | 5°C to 50°C  |
| Compatibility       | Aqueous solutions, ethanol, methanol (max. 10% v/v)  |
| Cross-sensitivity   | Reduced to ionic strength (salinity); a high concentration of fluorescent molecules in the visible range can interfere |
| Basic material      | pH sensor HP8-1125-01  |

### Calibration

|                          |   |
|--------------------------|---|
| Buffer                   | CertiPUR Reference Material Buffer solutions Set<br>(pH 3.00 ± 0.01 / pH 4.01 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20°C);<br>150 mM Na-Phosphate buffer (16 solutions) |
| Settings                 | BioLector protocol = pH-DO-calibration, T = 20-40°C, 700 rpm, 1000 µL/well,<br>shaking diameter 3 mm, MTP-type = Flowerplate (MTP-48-BOH)                                     |
| Calibration device       | BioLector CX_OCFD29 (BL042)   |
| Calibration phase offset | pH 255.9 (pH Ser.3018-hc, gain 25)  |

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**Filter: HC**

Date of calibration: 2011/09/16

### DO calibration parameters

| Buffer             | Sulfite system |             |             |             |             |             |             |
|--------------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Temperature</b> | <b>20°C</b>    | <b>21°C</b> | <b>22°C</b> | <b>23°C</b> | <b>24°C</b> | <b>25°C</b> | <b>26°C</b> |
| $\phi$ cal0        | 73.64          | 73.67       | 73.69       | 73.72       | 73.74       | 73.77       | 73.79       |
| $\phi$ cal100      | 45.44          | 45.22       | 45.00       | 44.77       | 44.55       | 44.33       | 44.11       |
| <b>Temperature</b> | <b>27°C</b>    | <b>28°C</b> | <b>29°C</b> | <b>30°C</b> | <b>31°C</b> | <b>32°C</b> | <b>33°C</b> |
| $\phi$ cal0        | 73.82          | 73.84       | 73.87       | 73.89       | 73.92       | 73.94       | 73.97       |
| $\phi$ cal100      | 43.89          | 43.67       | 43.44       | 43.22       | 43.00       | 42.78       | 42.56       |
| <b>Temperature</b> | <b>34°C</b>    | <b>35°C</b> | <b>36°C</b> | <b>37°C</b> | <b>38°C</b> | <b>39°C</b> | <b>40°C</b> |
| $\phi$ cal0        | 73.99          | 74.02       | 74.04       | 74.06       | 74.09       | 74.11       | 74.14       |
| $\phi$ cal100      | 42.34          | 42.11       | 41.89       | 41.67       | 41.45       | 41.23       | 41.01       |

### Sensor properties

|                      |  |
|----------------------|--|
| Dynamic range        | 0-100% air saturation (a.s.)   |
| Resolution           | Up to 0.1% O <sub>2</sub> (software)   |
| Accuracy             | ± 2% dissolved oxygen (batch calibration)  |
| Drift at 0% oxygen   | < 0.03% O <sub>2</sub> within 30 days (sampling interval of 1 min)                           |
| Response time (t90)  | < 30s  |
| Temperature range    | 0-50°C   |
| Cross-sensitivity to | Organic solvents, such as acetone, toluene, chloroform or methylene chloride<br>Chlorine gas |
| Basic material       | Oxygen sensor PSt3-HG-1113-01  |

### Calibration

|                          |  |
|--------------------------|--|
| Calibration              | 0.5 M Sulfite system (Two-point calibration with oxygen-free environment (nitrogen, sodium sulfite) and air-saturated environment)     |
| Settings                 | BioLector protocol = pH-DO-calibration, T = 20-40°C, 700 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flowerplate (MTP-48-BOH) |
| Calibration device       | BioLector CX_0CFD29 (BL042)  |
| Calibration phase offset | DO 332.3 (DO Ser.4018-hc, gain 45)   |

### Sterilization procedure

|                       |                            |
|-----------------------|----------------------------|
| Sterilization         | Gamma irradiation (15 kGy) |
| BGS-certificate No    | 31112371                   |
| Date of sterilization | 2011/09/14                 |