

Please enter these **calibration parameters** and the **Lot No.** into the BioLection software!

### pH calibration parameters Lot No. 1827 (BioLector® II/Pro, filter module ID-221)

| Temperature     | 20°C  | 21°C  | 22°C  | 23°C  | 24°C  | 25°C  | 26°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| $\phi$ min      | 69.38 | 69.29 | 69.20 | 69.10 | 69.01 | 68.92 | 68.83 |
| $\phi$ max      | 13.98 | 13.90 | 13.81 | 13.73 | 13.65 | 13.57 | 13.49 |
| dpH             | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  |
| pH <sub>0</sub> | 6.29  | 6.29  | 6.28  | 6.28  | 6.27  | 6.27  | 6.26  |
| Temperature     | 27°C  | 28°C  | 29°C  | 30°C  | 31°C  | 32°C  | 33°C  |
| $\phi$ min      | 68.73 | 68.64 | 68.55 | 68.45 | 68.36 | 68.27 | 68.18 |
| $\phi$ max      | 13.40 | 13.32 | 13.24 | 13.16 | 13.08 | 12.99 | 12.91 |
| dpH             | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  | 0.69  |
| pH <sub>0</sub> | 6.26  | 6.25  | 6.25  | 6.24  | 6.23  | 6.23  | 6.22  |
| Temperature     | 34°C  | 35°C  | 36°C  | 37°C  | 38°C  | 39°C  | 40°C  |
| $\phi$ min      | 68.08 | 67.99 | 67.90 | 67.81 | 67.71 | 67.62 | 67.53 |
| $\phi$ max      | 12.83 | 12.75 | 12.67 | 12.59 | 12.50 | 12.42 | 12.34 |
| dpH             | 0.68  | 0.68  | 0.68  | 0.68  | 0.68  | 0.68  | 0.68  |
| pH <sub>0</sub> | 6.22  | 6.21  | 6.21  | 6.20  | 6.20  | 6.19  | 6.19  |

### pH sensor properties

|                     |   |
|---------------------|---|
| Dynamic range       | pH 2.45 - 8.80  |
| Resolution          | Up to 0.01 pH (software)  |
| Accuracy            | ± 0.25 pH at pH 3.40 - 5.00; ± 0.1 pH at pH 5.00 – 6.55; ± 0.25 pH at pH 6.55 - 8.10 (batch calibration)  |
| Response time (t90) | At 25 °C < 30 s   |
| Drift at pH = 7     | < 0.005 pH per day (sampling interval of 6 min)   |
| Temperature range   | 5 °C to 50 °C   |
| Compatibility       | Aqueous solutions, ethanol, methanol (max. 5 % v/v)   |
| Sensor stability    | sensor material can be degraded by some microorganisms  |
| Cross-sensitivity   | Reduced to ionic strength (salinity);<br>high concentration of fluorescent molecules in the visible range can interfere (GFP, (e)YFP);<br>complex media can cause a pH-shift (peptone, yeast extract) |
| Basic material      | pH sensor LG1-1737-01 (at least stable for 7 days with CertiPUR-buffer)<br><b>pH sensors are light-sensitive; please protect them from direct light!</b>  |

### pH calibration

|                          |   |
|--------------------------|---|
| Buffer                   | CertiPUR Reference Material Buffer solutions Set<br>(pH 1.00 ± 0.01 / pH 2.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C);<br>150 mM Citrat-Na-Phosphate buffer (16 solutions) |
| Settings                 | BioLector protocol = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well,<br>shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH)                            |
| Calibration device       | Hardware ID: BL-02-000F-0032  |
| Calibration phase offset | pH -360.31 (pH Ser.3188-RD, gain 8)   |
| Date of calibration      | 2018/07/21  |

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Please enter these **calibration parameters** and the **Lot No.** into the BioLecture software!

**DO calibration parameters Lot No. 1827 (BioLector® II/Pro, filter module ID-228)**

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Temperature | <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> |
| ϕ cal0      | 67.95       | 67.94       | 67.93       | 67.92       | 67.91       | 67.90       | 67.89       |
| ϕ cal100    | 43.29       | 43.12       | 42.95       | 42.79       | 42.62       | 42.45       | 42.29       |
| Temperature | <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> |
| ϕ cal0      | 67.88       | 67.87       | 67.85       | 67.84       | 67.83       | 67.82       | 67.81       |
| ϕ cal100    | 42.12       | 41.95       | 41.78       | 41.62       | 41.45       | 41.28       | 41.12       |
| Temperature | <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> |
| ϕ cal0      | 67.80       | 67.79       | 67.78       | 67.77       | 67.76       | 67.75       | 67.74       |
| ϕ cal100    | 40.95       | 40.78       | 40.62       | 40.45       | 40.28       | 40.12       | 39.95       |

**DO sensor properties**

|                      |   |
|----------------------|---|
| Dynamic range        | 0 - 100 % air saturation (a.s.)   |
| Resolution           | Up to 0.1 % O <sub>2</sub> (software)   |
| Accuracy             | ± 5% dissolved oxygen (batch calibration)   |
| Drift at 0% oxygen   | < 0.5% O <sub>2</sub> per day (sampling interval of 6 min)  |
| Response time (t90)  | < 30 s  |
| Temperature range    | 5 – 50°C  |
| Sensor stability     | sensor material can be degraded by some microorganisms  |
| Cross-sensitivity to | Organic solvents, such as acetone, toluene, chloroform or methylene chloride, Chlorine gas; high concentration of fluorescent molecules in the visible range can interfere (mCherry, tdTomato, dsRed, Nile red); complex media can cause a DO-shift |
| Basic material       | Oxygen sensor RF-03/2018 (at least stable for 7 days with CertiPUR-buffer)<br><b>DO sensors are light-sensitive; please protect them from direct light!</b>   |

**DO calibration**

|                          |   |
|--------------------------|---|
| Calibration              | 0.5 M Sulfite system (Two-point calibration with oxygen-free environment (sodium sulfite) and air-saturated environment)                                |
| Settings                 | BioLector protocol = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH) |
| Calibration device       | Hardware ID: BL-02-000F-0032  |
| Calibration phase offset | DO -360.39 (DO Ser.4170-RD, gain 4)   |
| Date of calibration      | 2018/07/21  |

**Sterilization procedure**

|                       |                           |
|-----------------------|---------------------------|
| Sterilization         | Beta irradiation (20 kGy) |
| BGS-certificate No    | 518342                    |
| Date of sterilization | 2018/07/01                |

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