

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

**pH calibration parameters Lot No.2113121 (BioLector® XT, filter module ID-502)**

| Temperature     | 20°C  | 21°C  | 22°C  | 23°C  | 24°C  | 25°C  | 26°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min           | 63.76 | 63.70 | 63.64 | 63.58 | 63.52 | 63.46 | 63.40 |
| φ max           | 13.58 | 13.57 | 13.57 | 13.57 | 13.56 | 13.56 | 13.56 |
| dpH             | 0.59  | 0.59  | 0.59  | 0.59  | 0.58  | 0.58  | 0.58  |
| pH <sub>0</sub> | 6.42  | 6.42  | 6.41  | 6.40  | 6.39  | 6.38  | 6.37  |

| Temperature     | 27°C  | 28°C  | 29°C  | 30°C  | 31°C  | 32°C  | 33°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min           | 63.34 | 63.28 | 63.21 | 63.15 | 63.09 | 63.03 | 62.97 |
| φ max           | 13.55 | 13.55 | 13.55 | 13.55 | 13.54 | 13.54 | 13.54 |
| dpH             | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  |
| pH <sub>0</sub> | 6.36  | 6.35  | 6.34  | 6.33  | 6.32  | 6.31  | 6.30  |

| Temperature     | 34°C  | 35°C  | 36°C  | 37°C  | 38°C  | 39°C  | 40°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min           | 62.91 | 62.85 | 62.79 | 62.73 | 62.67 | 62.61 | 62.54 |
| φ max           | 13.53 | 13.53 | 13.53 | 13.52 | 13.52 | 13.52 | 13.51 |
| dpH             | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  | 0.58  |
| pH <sub>0</sub> | 6.29  | 6.28  | 6.27  | 6.26  | 6.25  | 6.24  | 6.24  |

### pH sensor properties

|                     |   |
|---------------------|---|
| Dynamic range       | pH 4.35 - 8.00  |
| Resolution          | Up to 0.01 pH (software)  |
| Accuracy            | ± 0.25 pH at pH 4.90 - 5.20 ; ± 0.1 pH at pH 5.20 - 7.15 ; ± 0.25 pH at pH 7.15 - 7.45 (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); high concentration of fluorescent molecules in the visible range can interfere (GFP, (e)YFP); complex media can cause a pH-shift (peptone, yeast extract) |
| Basic material      | pH sensor HP8-1811-01_4 (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 (pH 3.00 ± 0.02 / pH 4.00 ± 0.02 / pH 9.00 ± 0.03 / pH 10.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions) |
| Settings                 | BioLector protocol = MF_pH_DO_calibration_BOH1 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Flower Plate (MTP-MF32C-BOH1)              |
| Calibration device       | Hardware ID: 03166164  |
| Calibration phase offset | pH -1.81 (pH Ser. 3511, gain 7)  |
| Date of calibration      | 2021-09-17   |

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**DO calibration parameters Lot No.2113121 (BioLector® XT, filter module ID-503)**

| Temperature | 20°C   | 21°C   | 22°C   | 23°C   | 24°C   | 25°C   | 26°C   |
|-------------|--------|--------|--------|--------|--------|--------|--------|
| A           | -3738  | -3673  | -3607  | -3541  | -3475  | -3410  | -3344  |
| B           | 29406  | 28885  | 28365  | 27844  | 27324  | 26803  | 26283  |
| C           | -26618 | -26143 | -25668 | -25193 | -24718 | -24243 | -23768 |

| Temperature | 27°C   | 28°C   | 29°C   | 30°C   | 31°C   | 32°C   | 33°C   |
|-------------|--------|--------|--------|--------|--------|--------|--------|
| A           | -3278  | -3213  | -3147  | -3081  | -3015  | -2950  | -2884  |
| B           | 25762  | 25242  | 24721  | 24201  | 23680  | 23159  | 22639  |
| C           | -23293 | -22818 | -22343 | -21868 | -21394 | -20919 | -20444 |

| Temperature | 34°C   | 35°C   | 36°C   | 37°C   | 38°C   | 39°C   | 40°C   |
|-------------|--------|--------|--------|--------|--------|--------|--------|
| A           | -2818  | -2753  | -2687  | -2621  | -2556  | -2490  | -2424  |
| B           | 22118  | 21598  | 21077  | 20557  | 20036  | 19516  | 18995  |
| C           | -19969 | -19494 | -19019 | -18544 | -18069 | -17594 | -17119 |

**DO sensor properties**

|                                  |   |
|----------------------------------|---|
| Dynamic range                    | 0 - 100 % oxygen  |
| 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 (t <sub>90</sub> ) | < 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 Pst3-HG-1921-01_2 (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 = MF_pH_DO_calibration_BOH1 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Flower Plate (MTP-MF32C-BOH1) |
| Calibration device       | Hardware ID: 03166164   |
| Calibration phase offset | DO -1.81 (DO Ser. 4446, gain 7)   |
| Date of calibration      | 2021-09-17  |

**Sterilization procedure**

|                       |                           |
|-----------------------|---------------------------|
| Sterilization         | Beta irradiation (20 kGy) |
| BGS-certificate No    | 941459                    |
| Date of sterilization | 2021-09-09                |

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