

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

**pH calibration parameters Lot No.2210301+2210307 (BioLector II/Pro Microbioreactor, filter module ID-424)**

| Temperature     | 20°C  | 21°C  | 22°C  | 23°C  | 24°C  | 25°C  | 26°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| $\phi$ min      | 70.98 | 71.07 | 71.17 | 71.27 | 71.36 | 71.46 | 71.56 |
| $\phi$ max      | 13.69 | 13.73 | 13.76 | 13.80 | 13.83 | 13.87 | 13.90 |
| dpH             | -0.40 | -0.40 | -0.40 | -0.40 | -0.40 | -0.40 | -0.40 |
| pH <sub>0</sub> | 5.30  | 5.29  | 5.29  | 5.28  | 5.28  | 5.27  | 5.27  |

| Temperature     | 27°C  | 28°C  | 29°C  | 30°C  | 31°C  | 32°C  | 33°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| $\phi$ min      | 71.65 | 71.75 | 71.85 | 71.95 | 72.04 | 72.14 | 72.24 |
| $\phi$ max      | 13.94 | 13.97 | 14.01 | 14.04 | 14.08 | 14.11 | 14.15 |
| dpH             | -0.40 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 |
| pH <sub>0</sub> | 5.27  | 5.26  | 5.26  | 5.25  | 5.25  | 5.24  | 5.24  |

| Temperature     | 34°C  | 35°C  | 36°C  | 37°C  | 38°C  | 39°C  | 40°C  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| $\phi$ min      | 72.33 | 72.43 | 72.53 | 72.63 | 72.72 | 72.82 | 72.92 |
| $\phi$ max      | 14.18 | 14.22 | 14.25 | 14.29 | 14.33 | 14.36 | 14.40 |
| dpH             | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 |
| pH <sub>0</sub> | 5.23  | 5.23  | 5.22  | 5.22  | 5.21  | 5.21  | 5.20  |

**pH sensor properties**

|                     |   |
|---------------------|---|
| Dynamic range       | pH 3.75 - 6.50  |
| Resolution          | Up to 0.01 pH (software)  |
| Accuracy            | ± 0.25 pH at pH 4.10-4.25; ± 0.1 pH at pH 4.25-6.05; ± 0.25 pH at pH 6.05-6.20 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 pH51-211650286+287 (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 2.00 ± 0.02 / pH 3.00 ± 0.02 / pH 7.00 ± 0.02 / pH 8.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions) |
| Settings                 | BioLector protocol = pH51-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH3)                                   |
| Calibration device       | Hardware ID: BL-09-000F-0032  |
| Calibration phase offset | pH -360.09 (pH Ser. 3288, gain 6)   |
| Date of calibration      | 2022-09-05  |

**Contact us**

If you have any questions, contact Beckman Coulter Customer Support Center:

- Worldwide, find out in our website at: [www.beckman.de/support/technical](http://www.beckman.de/support/technical)
- In the USA and Canada, call us at 1-800-369-0333
- Outside the USA and Canada, contact your local Beckman Coulter representative

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

**DO calibration parameters Lot No.2210301+2210307 (BioLector II/Pro Microbioreactor, filter module ID-228/-428)**

| Temperature | 20°C  | 21°C  | 22°C  | 23°C  | 24°C  | 25°C  | 26°C  |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0      | 70.91 | 70.90 | 70.88 | 70.87 | 70.85 | 70.84 | 70.82 |
| ϕ cal100    | 41.71 | 41.56 | 41.41 | 41.26 | 41.11 | 40.96 | 40.81 |

| Temperature | 27°C  | 28°C  | 29°C  | 30°C  | 31°C  | 32°C  | 33°C  |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0      | 70.81 | 70.80 | 70.78 | 70.77 | 70.75 | 70.74 | 70.72 |
| ϕ cal100    | 40.66 | 40.51 | 40.36 | 40.21 | 40.06 | 39.91 | 39.76 |

| Temperature | 34°C  | 35°C  | 36°C  | 37°C  | 38°C  | 39°C  | 40°C  |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0      | 70.71 | 70.69 | 70.68 | 70.66 | 70.65 | 70.63 | 70.62 |
| ϕ cal100    | 39.61 | 39.46 | 39.31 | 39.15 | 39.00 | 38.85 | 38.70 |

**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 (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 RF-221155398 (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              | 1.0 M Sulfite system (Two-point calibration with oxygen-free environment (sodium sulfite) and air-saturated environment)                    |
| Settings                 | BioLector protocol = pH51-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH3) |
| Calibration device       | Hardware ID: BL-09-000F-0032  |
| Calibration phase offset | DO -360.39 (DO Ser. 4302-RD, gain 4)  |
| Date of calibration      | 2022-09-05  |

**Sterilization procedure**

|                       |                           |
|-----------------------|---------------------------|
| Sterilization         | Beta irradiation (20 kGy) |
| BGS-certificate No    | 1069681                   |
| Date of sterilization | 2022-08-11                |

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