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

## pH calibration parameters Lot No.2115321 (BioLector® Pro, filter module ID-424)

| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
|---|---|---|---|---|---|---|---|
| ϕ min | 62.97 | 63.14 | 63.31 | 63.48 | 63.65 | 63.82 | 63.99 |
| ϕ max | 11.17 | 11.20 | 11.22 | 11.25 | 11.27 | 11.30 | 11.33 |
| dpH | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 |
| $pH_0$ | 5.55 | 5.55 | 5.54 | 5.53 | 5.53 | 5.52 | 5.51 |

| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
|---|---|---|---|---|---|---|---|
| ϕ min | 64.15 | 64.32 | 64.49 | 64.66 | 64.83 | 65.00 | 65.17 |
| ϕ max | 11.35 | 11.38 | 11.40 | 11.43 | 11.46 | 11.48 | 11.51 |
| dpH | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 | -0.39 |
| $pH_0$ | 5.51 | 5.50 | 5.49 | 5.48 | 5.48 | 5.47 | 5.46 |

| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
|---|---|---|---|---|---|---|---|
| ϕ min | 65.34 | 65.51 | 65.68 | 65.85 | 66.01 | 66.18 | 66.35 |
| ϕ max | 11.53 | 11.56 | 11.59 | 11.61 | 11.64 | 11.66 | 11.69 |
| dpH | -0.39 | -0.39 | -0.39 | -0.39 | -0.38 | -0.38 | -0.38 |
| $pH_0$ | 5.46 | 5.45 | 5.44 | 5.44 | 5.43 | 5.42 | 5.42 |

### pH sensor properties

| | |
|---|---|
| Dynamic range | pH 4.00 - 6.65 |
| Resolution | Up to 0.01 pH (software) |
| Accuracy | ± 0.25 pH at pH 4.35-4.50; ± 0.1 pH at pH 4.50-6.20; ± 0.25 pH at pH 6.20-6.35 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 pH51-202850561+562 (at least stable for 7 days with CertiPUR-buffer)<br>**pH sensors are light-sensitive; please protect them from direct light!** |

### 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 = Microfluidic Flower Plate (MTP-MF32-BOH3) |
| Calibration device | Hardware ID: BL-09-000F-0032 |
| Calibration phase offset | pH -360.10 (pH Ser. 3288, gain 6) |
| Date of calibration | 2021-11-15 |


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**DO calibration parameters Lot No.2115321 (BioLector® Pro, filter module ID-228/-428)**

| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
|---|---|---|---|---|---|---|---|
| ϕ cal0 | 70.06 | 70.04 | 70.03 | 70.02 | 70.00 | 69.99 | 69.98 |
| ϕ cal100 | 40.96 | 40.80 | 40.63 | 40.46 | 40.30 | 40.13 | 39.96 |

| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
|---|---|---|---|---|---|---|---|
| ϕ cal0 | 69.96 | 69.95 | 69.94 | 69.92 | 69.91 | 69.90 | 69.88 |
| ϕ cal100 | 39.80 | 39.63 | 39.46 | 39.29 | 39.13 | 38.96 | 38.79 |

| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
|---|---|---|---|---|---|---|---|
| ϕ cal0 | 69.87 | 69.85 | 69.84 | 69.83 | 69.81 | 69.80 | 69.79 |
| ϕ cal100 | 38.63 | 38.46 | 38.29 | 38.13 | 37.96 | 37.79 | 37.62 |

## DO sensor properties

| | |
|---|---|
| Dynamic range | 0 - 100 % air saturation (a.s.) |
| Resolution | Up to 0.1 % O2 (software) |
| Accuracy | ± 5% dissolved oxygen (batch calibration) |
| Drift at 0% oxygen | < 0.5% O2 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-213550639 (at least stable for 7 days with CertiPUR-buffer) |
| | **DO sensors are light-sensitive; please protect them from direct light!** |

## DO calibration

| | |
|---|---|
| Calibration | 0.5 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 = Microfluidic Flower Plate (MTP-MF32-BOH3) |
| Calibration device | Hardware ID: BL-09-000F-0032 |
| Calibration phase offset | DO -360.44 (DO Ser. 4302-RD, gain 4) |
| Date of calibration | 2021-11-15 |

## Sterilization procedure

| | |
|---|---|
| Sterilization | Beta irradiation (20 kGy) |
| BGS-certificate No | 963394 |
| Date of sterilization | 2021-11-03 |


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