

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

pH calibration parameters Lot No.2109321 and 2109327 (BioLector® Pro, filter module ID-424)

| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min | 67.89 | 67.99 | 68.10 | 68.20 | 68.30 | 68.40 | 68.51 |
| φ max | 12.40 | 12.44 | 12.48 | 12.52 | 12.57 | 12.61 | 12.65 |
| dpH | -0.39 | -0.39 | -0.39 | -0.38 | -0.38 | -0.38 | -0.38 |
| pH ₀ | 5.46 | 5.45 | 5.45 | 5.44 | 5.44 | 5.43 | 5.43 |

| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min | 68.61 | 68.71 | 68.81 | 68.91 | 69.02 | 69.12 | 69.22 |
| φ max | 12.70 | 12.74 | 12.78 | 12.83 | 12.87 | 12.91 | 12.95 |
| dpH | -0.38 | -0.38 | -0.38 | -0.38 | -0.38 | -0.38 | -0.38 |
| pH ₀ | 5.42 | 5.42 | 5.41 | 5.41 | 5.40 | 5.40 | 5.39 |

| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| φ min | 69.32 | 69.42 | 69.53 | 69.63 | 69.73 | 69.83 | 69.93 |
| φ max | 13.00 | 13.04 | 13.08 | 13.13 | 13.17 | 13.21 | 13.26 |
| dpH | -0.38 | -0.38 | -0.38 | -0.38 | -0.37 | -0.37 | -0.37 |
| pH ₀ | 5.39 | 5.38 | 5.38 | 5.37 | 5.37 | 5.36 | 5.36 |

pH sensor properties

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|---------------------|---|
| Dynamic range | pH 3.90 - 6.65 |
| Resolution | Up to 0.01 pH (software) |
| Accuracy | ± 0.25 pH at pH 4.20-4.40; ± 0.1 pH at pH 4.40-6.15; ± 0.25 pH at pH 6.15-6.35 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 pH51-200950179 (at least stable for 7 days with CertiPUR-buffer) pH sensors are light-sensitive; please protect them from direct light! |

pH calibration

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|--------------------------|---|
| Buffer | CertiPUR Reference Material Buffer solutions Set (pH 2.00 ± 0.01 / pH 3.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 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 (Round Well) Plate (MTP-(R)MF32-BOH3) |
| Calibration device | Hardware ID: BL-09-000F-0032 |
| Calibration phase offset | pH -360.10 (pH Ser. 3288, gain 6) |
| Date of calibration | 2021-06-30 |

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

DO calibration parameters Lot No.2109321 and 2109327 (BioLector® Pro, filter module ID-228/-428)

| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0 | 71.58 | 71.58 | 71.57 | 71.57 | 71.57 | 71.56 | 71.56 |
| ϕ cal100 | 41.67 | 41.51 | 41.34 | 41.18 | 41.02 | 40.85 | 40.69 |

| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0 | 71.55 | 71.55 | 71.55 | 71.54 | 71.54 | 71.54 | 71.53 |
| ϕ cal100 | 40.52 | 40.36 | 40.20 | 40.03 | 39.87 | 39.71 | 39.54 |

| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ cal0 | 71.53 | 71.53 | 71.52 | 71.52 | 71.52 | 71.51 | 71.51 |
| ϕ cal100 | 39.38 | 39.21 | 39.05 | 38.89 | 38.72 | 38.56 | 38.40 |

DO sensor properties

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|----------------------------------|---|
| Dynamic range | 0 - 100 % air saturation (a.s.) |
| Resolution | Up to 0.1 % O ₂ (software) |
| Accuracy | ± 5% dissolved oxygen (batch calibration) |
| Drift at 0% oxygen | < 0.5% O ₂ per day (sampling interval of 6 min) |
| Response time (t ₉₀) | < 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-210250002 (at least stable for 7 days with CertiPUR-buffer) DO sensors are light-sensitive; please protect them from direct light! |

DO calibration

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|--------------------------|--|
| 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 (Round Well) Plate (MTP-(R)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 | 2021-06-30 |

Sterilization procedure

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|-----------------------|---------------------------|
| Sterilization | Beta irradiation (20 kGy) |
| BGS-certificate No | 911184 |
| Date of sterilization | 2021-06-24 |

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