

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

pH calibration parameters Lot No. 1835 (BioLector®)

| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| ϕ min | 55.63 | 55.55 | 55.47 | 55.39 | 55.30 | 55.22 | 55.14 |
| ϕ max | 11.63 | 11.62 | 11.60 | 11.59 | 11.57 | 11.56 | 11.54 |
| dpH | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| pH ₀ | 6.29 | 6.28 | 6.28 | 6.27 | 6.27 | 6.26 | 6.25 |
| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
| ϕ min | 55.06 | 54.98 | 54.89 | 54.81 | 54.73 | 54.65 | 54.56 |
| ϕ max | 11.52 | 11.51 | 11.49 | 11.48 | 11.46 | 11.45 | 11.43 |
| dpH | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 | 0.52 |
| pH ₀ | 6.25 | 6.24 | 6.23 | 6.23 | 6.22 | 6.22 | 6.21 |
| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
| ϕ min | 54.48 | 54.40 | 54.32 | 54.24 | 54.15 | 54.07 | 53.99 |
| ϕ max | 11.41 | 11.40 | 11.38 | 11.37 | 11.35 | 11.33 | 11.32 |
| dpH | 0.52 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 |
| pH ₀ | 6.20 | 6.20 | 6.19 | 6.18 | 6.18 | 6.17 | 6.16 |

pH sensor properties

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|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dynamic range | pH 3.75 - 8.40 |
| Resolution | Up to 0.01 pH (software) |
| Accuracy | ± 0.25 pH at pH 4.20 - 4.85; ± 0.1 pH at pH 4.85 - 7.20; ± 0.25 pH at pH 7.20 - 7.90 (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 HP8-1803-01 (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 3.00 ± 0.01 / pH 4.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C); 150 mM Na-Phosphate buffer (16 solutions) |
| Settings | BioLector protocol = pH-DO-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = FlowerPlate (MTP-48-BOH) |
| Calibration device | BioLector CX_110335 (BL092) |
| Calibration phase offset | pH 255.5 (pH Ser.3083-hc, gain 45) |
| Date of calibration | 2018/09/20 |

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

DO calibration parameters Lot No. 1835 (BioLector®)

| | | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Temperature | 20°C | 21°C | 22°C | 23°C | 24°C | 25°C | 26°C |
| ϕ cal0 | 73.47 | 73.42 | 73.38 | 73.33 | 73.28 | 73.24 | 73.19 |
| ϕ cal100 | 43.62 | 43.40 | 43.19 | 42.97 | 42.75 | 42.54 | 42.32 |
| Temperature | 27°C | 28°C | 29°C | 30°C | 31°C | 32°C | 33°C |
| ϕ cal0 | 73.15 | 73.10 | 73.05 | 73.01 | 72.96 | 72.92 | 72.87 |
| ϕ cal100 | 42.10 | 41.89 | 41.67 | 41.45 | 41.24 | 41.02 | 40.81 |
| Temperature | 34°C | 35°C | 36°C | 37°C | 38°C | 39°C | 40°C |
| ϕ cal0 | 72.82 | 72.78 | 72.73 | 72.69 | 72.64 | 72.59 | 72.55 |
| ϕ cal100 | 40.59 | 40.37 | 40.16 | 39.94 | 39.72 | 39.51 | 39.29 |

DO sensor properties

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|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dynamic range | 0 - 100 % air saturation (a.s.) |
| Resolution | Up to 0.5 % O ₂ (software) |
| Precision (CV) | ± 5% dissolved oxygen (batch calibration) |
| Drift at 0% oxygen | < 0.5% O ₂ 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 PST3-HG-1742-02 (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 = pH-DO-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = FlowerPlate (MTP-48-BOH) |
| Calibration device | BioLector CX_110335 (BL092) |
| Calibration phase offset | DO 332.4 (DO Ser.4084-hc, gain 48) |
| Date of calibration | 2019/09/20 |

Sterilization procedure

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|-----------------------|---------------------------|
| Sterilization | Beta irradiation (20 kGy) |
| BGS-certificate No | 545116 |
| Date of sterilization | 2018/09/17 |

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