

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

pH calibration parameters Lot No. 2010101 (BioLector® I, filter module ID-102/-302)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	57.35	57.27	57.19	57.11	57.04	56.96	56.88
ϕ max	11.13	11.13	11.13	11.12	11.12	11.12	11.12
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH ₀	6.22	6.21	6.21	6.20	6.20	6.19	6.18
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	56.80	56.73	56.65	56.57	56.49	56.42	56.34
ϕ max	11.12	11.11	11.11	11.11	11.11	11.11	11.10
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH ₀	6.18	6.17	6.17	6.16	6.16	6.15	6.14
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	56.26	56.18	56.11	56.03	55.95	55.88	55.80
ϕ max	11.10	11.10	11.10	11.10	11.09	11.09	11.09
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.54
pH ₀	6.14	6.13	6.13	6.12	6.12	6.11	6.10

pH sensor properties

Dynamic range	pH 4.20 – 7.80
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.70 – 5.05; ± 0.1 pH at pH 5.05 – 6.95; ± 0.25 pH at pH 6.95 – 7.25 (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_3 (at least stable for 7 days with CertiPUR-buffer) pH sensors are light-sensitive; please protect them from direct light!

pH calibration

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 Citrat-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 = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: BL092-CX-4A7394
Calibration phase offset	pH 255.9 (pH Ser. 3403, gain 55)
Date of calibration	2020/10/27

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DO calibration parameters Lot No. 2010101 (BioLector® I, filter module ID-103/-303)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	72.64	72.61	72.58	72.56	72.53	72.50	72.47
φ cal100	44.69	44.48	44.26	44.04	43.82	43.60	43.38
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	72.45	72.42	72.39	72.36	72.34	72.31	72.28
φ cal100	43.16	42.95	42.73	42.51	42.29	42.07	41.85
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	72.26	72.23	72.20	72.17	72.15	72.12	72.09
φ cal100	41.63	41.42	41.20	40.98	40.76	40.54	40.32

DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.5 % 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 (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-1810-01_3 (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 = pH-DO-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: BL092-CX-4A7394
Calibration phase offset	DO 332.5 (DO Ser.3402, gain 70)
Date of calibration	2020/10/27

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	815113
Date of sterilization	2020/10/15

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