

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

pH calibration parameters Lot No. 1950 (BioLector® I, filter module ID-102/-302)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	57.07	56.99	56.91	56.83	56.75	56.67	56.59
φ max	13.01	12.99	12.98	12.97	12.96	12.94	12.93
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH ₀	6.25	6.25	6.24	6.23	6.23	6.22	6.21
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	56.51	56.43	56.35	56.26	56.18	56.10	56.02
φ max	12.92	12.90	12.89	12.88	12.87	12.85	12.84
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH ₀	6.21	6.20	6.19	6.19	6.18	6.17	6.17
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	55.94	55.86	55.78	55.70	55.62	55.54	55.45
φ max	12.83	12.82	12.80	12.79	12.78	12.76	12.75
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH ₀	6.16	6.15	6.15	6.14	6.13	6.13	6.12

pH sensor properties

Dynamic range	pH 4.35 - 7.75
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.85 - 5.15; ± 0.1 pH at pH 5.15 - 6.90; ± 0.25 pH at pH 6.90 - 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_2 (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 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-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2019/12/03

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DO calibration parameters Lot No. 1950 (BioLector® I, filter module ID-103/303)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	73.08	73.02	72.95	72.88	72.81	72.75	72.68
ϕ cal100	42.82	42.57	42.32	42.07	41.81	41.56	41.31
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.61	72.55	72.48	72.41	72.35	72.28	72.21
ϕ cal100	41.06	40.81	40.55	40.30	40.05	39.80	39.55
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.15	72.08	72.01	71.95	71.88	71.81	71.75
ϕ cal100	39.29	39.04	38.79	38.54	38.28	38.03	37.78

DO sensor properties

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-1810-01_2 (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 = FlowerPlate (MTP-48-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc, gain 48)
Date of calibration	2019/12/03

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	699875
Date of sterilization	2019/11/21

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