

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

pH calibration parameters Lot No. 1910 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	56.69	56.62	56.54	56.47	56.39	56.32	56.24
ϕ max	13.33	13.32	13.31	13.30	13.29	13.27	13.26
dpH	0.56	0.56	0.56	0.56	0.56	0.56	0.56
pH ₀	6.22	6.21	6.20	6.19	6.18	6.18	6.17
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	56.17	56.09	56.02	55.94	55.87	55.79	55.72
ϕ max	13.25	13.24	13.23	13.21	13.20	13.19	13.18
dpH	0.56	0.56	0.56	0.56	0.56	0.56	0.56
pH ₀	6.16	6.15	6.14	6.13	6.12	6.12	6.11
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	55.64	55.57	55.49	55.42	55.34	55.27	55.19
ϕ max	13.17	13.16	13.14	13.13	13.12	13.11	13.10
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH ₀	6.10	6.09	6.08	6.07	6.07	6.06	6.05

pH sensor properties

Dynamic range	pH 3.65 – 8.30
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.15 – 4.85; ± 0.1 pH at pH 4.85 – 7.10; ± 0.25 pH at pH 7.10 – 7.80 (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 (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 COC (MTP-48C-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc. gain 45)
Date of calibration	2019/03/05

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DO calibration parameters Lot No. 1910 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.82	72.78	72.73	72.69	72.64	72.60	72.55
ϕ cal100	44.64	44.42	44.20	43.98	43.76	43.54	43.32
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.51	72.46	72.42	72.37	72.33	72.28	72.24
ϕ cal100	43.10	42.88	42.66	42.44	42.22	42.00	41.78
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.19	72.14	72.10	72.05	72.01	71.96	71.92
ϕ cal100	41.56	41.34	41.12	40.90	40.68	40.46	40.24

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-1742-02 (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 COC (MTP-48C-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc. gain 48)
Date of calibration	2019/03/05

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	598020
Date of sterilization	2019/02/21

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