

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

pH calibration parameters Lot No. 1808 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	57.79	57.71	57.62	57.54	57.45	57.36	57.28
ϕ max	15.93	15.91	15.89	15.86	15.84	15.82	15.80
dpH	0.51	0.51	0.51	0.50	0.50	0.50	0.50
pH ₀	6.51	6.50	6.49	6.48	6.47	6.46	6.46
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	57.19	57.11	57.02	56.93	56.85	56.76	56.68
ϕ max	15.77	15.75	15.73	15.71	15.68	15.66	15.64
dpH	0.50	0.50	0.50	0.50	0.50	0.50	0.50
pH ₀	6.45	6.44	6.43	6.42	6.41	6.40	6.39
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	56.59	56.50	56.42	56.33	56.25	56.16	56.07
ϕ max	15.62	15.59	15.57	15.55	15.53	15.50	15.48
dpH	0.50	0.49	0.49	0.49	0.49	0.49	0.49
pH ₀	6.38	6.37	6.36	6.35	6.34	6.33	6.32

pH sensor properties

Dynamic range	pH 3.90 - 8.50
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.45 - 5.15; ± 0.1 pH at pH 5.15 - 7.25; ± 0.25 pH at pH 7.25 - 7.95 (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 HP8-1427-02_4 (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-BOH)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2018/03/29

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DO calibration parameters Lot No. 1808 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	73.27	73.20	73.13	73.06	72.99	72.92	72.85
ϕ cal100	44.83	44.55	44.27	43.98	43.70	43.42	43.14
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.78	72.71	72.64	72.58	72.51	72.44	72.37
ϕ cal100	42.86	42.58	42.29	42.01	41.73	41.45	41.17
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.30	72.23	72.16	72.09	72.02	71.95	71.88
ϕ cal100	40.88	40.60	40.32	40.04	39.76	39.47	39.19

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-1426-03_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 = 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	2018/03/29

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	483330
Date of sterilization	2018/03/22

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