

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

pH calibration parameters Lot No. 1802 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	57.57	57.49	57.41	57.32	57.24	57.16	57.08
ϕ max	16.14	16.12	16.10	16.08	16.06	16.04	16.01
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pH ₀	6.56	6.55	6.54	6.53	6.52	6.51	6.50
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	57.00	56.91	56.83	56.75	56.67	56.59	56.50
ϕ max	15.99	15.97	15.95	15.93	15.91	15.89	15.86
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH ₀	6.49	6.47	6.46	6.45	6.44	6.43	6.42
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	56.42	56.34	56.26	56.18	56.09	56.01	55.93
ϕ max	15.84	15.82	15.80	15.78	15.76	15.73	15.71
dpH	0.52	0.52	0.52	0.52	0.52	0.51	0.51
pH ₀	6.41	6.40	6.39	6.38	6.37	6.36	6.35

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 - 5.25; ± 0.1 pH at pH 5.25 - 7.20; ± 0.25 pH at pH 7.20 - 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	2018/02/28

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DO calibration parameters Lot No. 1802 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	71.85	71.85	71.85	71.85	71.85	71.85	71.85
φ cal100	43.77	43.52	43.27	43.02	42.78	42.53	42.28
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	71.85	71.86	71.86	71.86	71.86	71.86	71.86
φ cal100	42.03	41.79	41.54	41.29	41.04	40.80	40.55
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	71.86	71.87	71.87	71.87	71.87	71.87	71.87
φ cal100	40.30	40.06	39.81	39.56	39.31	39.07	38.82

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	2018/02/28

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	472772
Date of sterilization	2018/02/23

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