

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

pH calibration parameters Lot No. 1931 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	56.86	56.77	56.68	56.59	56.51	56.42	56.33
ϕ max	11.97	11.97	11.97	11.96	11.96	11.95	11.95
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH ₀	6.19	6.18	6.18	6.17	6.16	6.15	6.14
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	56.24	56.15	56.06	55.97	55.89	55.80	55.71
ϕ max	11.95	11.94	11.94	11.94	11.93	11.93	11.93
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH ₀	6.13	6.13	6.12	6.11	6.10	6.09	6.09
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	55.62	55.53	55.44	55.36	55.27	55.18	55.09
ϕ max	11.92	11.92	11.92	11.91	11.91	11.90	11.90
dpH	0.54	0.54	0.54	0.53	0.53	0.53	0.53
pH ₀	6.08	6.07	6.06	6.05	6.04	6.04	6.03

pH sensor properties

Dynamic range	pH 4.25 - 7.65
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.75 - 5.10; ± 0.1 pH at pH 5.10 - 6.85; ± 0.25 pH at pH 6.85 - 7.15 (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 (MTP-48-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2019/07/09

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DO calibration parameters Lot No. 1931 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.41	72.38	72.35	72.33	72.30	72.27	72.24
ϕ cal100	42.95	72.38	42.45	42.19	41.94	41.69	41.43
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.21	72.18	72.16	72.13	72.10	72.07	72.04
ϕ cal100	41.18	40.93	40.67	40.42	40.16	39.91	39.66
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.01	71.98	71.96	71.93	71.90	71.87	71.84
ϕ cal100	39.40	39.15	38.90	38.64	38.39	38.14	37.88

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 (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	2019/07/09

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	645838
Date of sterilization	2019/07/02

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