

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

### pH calibration parameters Lot No. 1919 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	57.14	57.04	56.95	56.86	56.77	56.68	56.59
$\phi$ max	13.30	13.28	13.27	13.26	13.24	13.23	13.21
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH <sub>0</sub>	6.22	6.21	6.21	6.20	6.19	6.19	6.18
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.49	56.40	56.31	56.22	56.13	56.03	55.94
$\phi$ max	13.20	13.18	13.17	13.15	13.14	13.12	13.11
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH <sub>0</sub>	6.18	6.17	6.17	6.16	6.15	6.15	6.14
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	55.85	55.76	55.67	55.57	55.48	55.39	55.30
$\phi$ max	13.09	13.08	13.06	13.05	13.03	13.02	13.00
dpH	0.52	0.52	0.52	0.52	0.52	0.51	0.51
pH <sub>0</sub>	6.14	6.13	6.12	6.12	6.11	6.11	6.10

### pH sensor properties

Dynamic range	pH 4.35 - 7.70
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 - 7.20 (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) <b>pH sensors are light-sensitive; please protect them from direct light!</b>

### 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	2019/04/24

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### DO calibration parameters Lot No. 1919 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	73.48	73.40	73.32	73.24	73.16	73.08	73.00
φ cal100	45.10	44.89	44.68	44.47	44.26	44.04	43.83
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	72.92	72.84	72.76	72.68	72.60	72.52	72.44
φ cal100	43.62	43.41	43.20	42.98	42.77	42.56	42.35
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	72.36	72.28	72.20	72.12	72.04	71.97	71.89
φ cal100	42.14	41.92	41.71	41.50	41.29	41.07	40.86

### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.5 % O <sub>2</sub> (software)
Precision (CV)	± 5% dissolved oxygen (batch calibration)
Drift at 0% oxygen	< 0.5% O <sub>2</sub> 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) <b>DO sensors are light-sensitive; please protect them from direct light!</b>

### 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	2019/04/24

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	617573
Date of sterilization	2019/04/15

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