

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

### pH calibration parameters Lot No. 1847 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	56.78	56.69	56.60	56.51	56.42	56.33	56.24
$\phi$ max	12.62	12.61	12.60	12.59	12.58	12.57	12.56
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.18	6.17	6.17	6.16	6.16	6.15	6.15
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.16	56.07	55.98	55.89	55.80	55.71	55.62
$\phi$ max	12.55	12.54	12.53	12.52	12.50	12.49	12.48
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.14	6.13	6.13	6.12	6.12	6.11	6.11
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	55.53	55.44	55.36	55.27	55.18	55.09	55.00
$\phi$ max	12.47	12.46	12.45	12.44	12.43	12.42	12.41
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.10	6.09	6.09	6.08	6.08	6.07	6.07

### pH sensor properties

Dynamic range	pH 3.65 - 8.30
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.10 - 4.74; ± 0.1 pH at pH 4.75 - 7.15; ± 0.25 pH at pH 7.15 - 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) <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-BOH)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2018/11/29

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### DO calibration parameters Lot No. 1847 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.61	71.62	71.62	71.63	71.63	71.64	71.64
ϕ cal100	42.26	42.04	41.83	41.61	41.40	41.18	40.96
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.65	71.65	71.66	71.66	71.67	71.67	71.68
ϕ cal100	40.75	40.53	40.32	40.10	39.88	39.67	39.45
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.68	71.68	71.69	71.69	71.70	71.70	71.71
ϕ cal100	39.24	39.02	38.80	38.59	38.37	38.16	37.94

### 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-BOH)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc, gain 48)
Date of calibration	2018/11/29

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	567029
Date of sterilization	2018/11/22

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