

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

### pH calibration parameters Lot No. 1839 (BioLector® II/Pro, filter module ID-221)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	67.55	67.44	67.32	67.21	67.10	66.99	66.88
$\phi$ max	11.21	11.13	11.05	10.97	10.89	10.81	10.74
dpH	0.74	0.74	0.74	0.74	0.74	0.74	0.74
pH <sub>0</sub>	6.28	6.27	6.26	6.25	6.24	6.23	6.22
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	66.77	66.66	66.55	66.44	66.32	66.21	66.10
$\phi$ max	10.66	10.58	10.50	10.42	10.34	10.26	10.18
dpH	0.74	0.74	0.74	0.73	0.73	0.73	0.73
pH <sub>0</sub>	6.21	6.20	6.19	6.17	6.16	6.15	6.14
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	65.99	65.88	65.77	65.66	65.55	65.44	65.33
$\phi$ max	10.11	10.03	9.95	9.87	9.79	9.71	9.63
dpH	0.73	0.73	0.73	0.73	0.73	0.72	0.72
pH <sub>0</sub>	6.13	6.12	6.11	6.10	6.09	6.08	6.07

### pH sensor properties

Dynamic range	pH 2.40 - 8.70
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 3.30 - 4.80; ± 0.1 pH at pH 4.80 - 6.65; ± 0.25 pH at pH 6.65 - 8.00 (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 LG1-1737-01 (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 1.00 ± 0.01 / pH 2.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -360.31 (pH Ser.3188-RD, gain 8)
Date of calibration	2018/09/26

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### DO calibration parameters Lot No. 1839 (BioLector® II/Pro, filter module ID-228)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	67.66	67.63	67.60	67.57	67.54	67.51	67.48
ϕ cal100	42.59	42.39	42.20	42.01	41.81	41.62	41.43
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	67.45	67.43	67.40	67.37	67.34	67.31	67.28
ϕ cal100	41.23	41.04	40.85	40.65	40.46	40.27	40.07
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	67.25	67.22	67.20	67.17	67.14	67.11	67.08
ϕ cal100	39.88	39.69	39.49	39.30	39.11	38.92	38.72

### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.1 % O <sub>2</sub> (software)
Accuracy	± 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 RF-07/2018 (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 = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.39 (DO Ser.4170-RD, gain 4)
Date of calibration	2018/09/26

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	545116
Date of sterilization	2018/09/17

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