

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

### pH calibration parameters Lot No. 1851 (BioLector® II/Pro. filter module ID-202)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	62.88	62.84	62.81	62.77	62.73	62.7	62.66
$\phi$ max	12.95	12.94	12.93	12.92	12.92	12.91	12.90
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH <sub>0</sub>	6.18	6.18	6.17	6.17	6.17	6.16	6.16
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	62.62	62.58	62.55	62.51	62.47	62.44	62.4
$\phi$ max	12.90	12.89	12.88	12.88	12.87	12.86	12.86
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH <sub>0</sub>	6.16	6.15	6.15	6.15	6.14	6.14	6.14
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	62.36	62.32	62.29	62.25	62.21	62.18	62.14
$\phi$ max	12.85	12.84	12.84	12.83	12.82	12.81	12.81
dpH	0.52	0.52	0.52	0.52	0.52	0.52	0.52
pH <sub>0</sub>	6.13	6.13	6.13	6.12	6.12	6.12	6.11

### pH sensor properties

Dynamic range	pH 3.55 - 8.45
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.00 - 4.55; ± 0.1 pH at pH 4.55 - 7.45; ± 0.25 pH at pH 7.45 - 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 HP8-1811-01 (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	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -1.40 (pH Ser.3111. gain 7)
Date of calibration	2018/11/30

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### DO calibration parameters Lot No. 1851 (BioLector® II/Pro. filter module ID-203)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.68	71.65	71.62	71.58	71.55	71.52	71.48
ϕ cal100	42.53	42.42	42.32	42.22	42.11	42.01	41.9
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.45	71.42	71.38	71.35	71.32	71.28	71.25
ϕ cal100	41.8	41.69	41.59	41.48	41.38	41.27	41.17
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.22	71.18	71.15	71.12	71.08	71.05	71.02
ϕ cal100	41.07	40.96	40.86	40.75	40.65	40.54	40.44

### 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 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	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.25 (DO Ser.4103, gain 7)
Date of calibration	2018/11/30

### Sterilization procedure

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

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