

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

### pH calibration parameters Lot No. 1945 (BioLector® Pro, filter module ID-202/402)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	64.07	64.04	64.01	63.99	63.96	63.93	63.90
φ max	14.60	14.60	14.59	14.59	14.59	14.58	14.58
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.54
pH <sub>0</sub>	6.36	6.35	6.35	6.34	6.34	6.33	6.33
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	63.87	63.85	63.82	63.79	63.76	63.73	63.71
φ max	14.58	14.57	14.57	14.56	14.56	14.56	14.55
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.32	6.32	6.31	6.31	6.30	6.30	6.30
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	63.68	63.65	63.62	63.60	63.57	63.54	63.51
φ max	14.55	14.55	14.54	14.54	14.54	14.53	14.53
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.29	6.29	6.28	6.28	6.27	6.27	6.26

### pH sensor properties

Dynamic range	pH 4.40 - 7.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.90 - 5.15; ± 0.1 pH at pH 5.15 - 7.15; ± 0.25 pH at pH 7.15 - 7.45 (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_2 (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-MF32-BOH1)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -1.85 (pH Ser.3111-hc, gain 7)
Date of calibration	2019/12/18

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### DO calibration parameters Lot No. 1945 (BioLector® Pro, filter module ID-203/403)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.31	72.30	72.28	72.27	72.26	72.25	72.24
ϕ cal100	42.47	42.36	42.24	42.13	42.02	41.91	41.80
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.23	72.21	72.20	72.19	72.18	72.17	72.16
ϕ cal100	41.68	41.57	41.46	41.35	41.23	41.12	41.01
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.14	72.13	72.12	72.11	72.10	72.09	72.07
ϕ cal100	40.90	40.79	40.67	40.56	40.45	40.34	40.23

### 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-1810-01_2 (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-MF32-BOH1)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.52 (DO Ser.4103-hc, gain 7)
Date of calibration	2019/12/18

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	688736
Date of sterilization	2019/10/24

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