

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

**pH calibration parameters Lot No.2111101,2111107,2111181,2111187 (BioLector® I, filter module ID-102/-302)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	56.66	56.59	56.52	56.46	56.39	56.32	56.25
φ max	10.95	10.94	10.94	10.93	10.93	10.92	10.91
dpH	0.58	0.58	0.58	0.58	0.58	0.58	0.58
pH <sub>0</sub>	6.20	6.19	6.18	6.17	6.17	6.16	6.15

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	56.18	56.11	56.05	55.98	55.91	55.84	55.77
φ max	10.91	10.90	10.90	10.89	10.88	10.88	10.87
dpH	0.58	0.58	0.58	0.58	0.58	0.58	0.58
pH <sub>0</sub>	6.14	6.13	6.12	6.12	6.11	6.10	6.09

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	55.71	55.64	55.57	55.50	55.43	55.36	55.30
φ max	10.87	10.86	10.85	10.85	10.84	10.84	10.83
dpH	0.58	0.58	0.58	0.58	0.58	0.58	0.58
pH <sub>0</sub>	6.08	6.07	6.07	6.06	6.05	6.04	6.03

### pH sensor properties

Dynamic range	pH 4.15 - 7.80
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.70-5.05; ± 0.1 pH at pH 5.05-6.90; ± 0.25 pH at pH 6.90-7.25 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_4 (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 2.00 ± 0.01 / pH 3.00 ± 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 = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: BL092-CX-4A7394
Calibration phase offset	pH 255.90 (pH Ser. 3403, gain 55)
Date of calibration	2021-08-17

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**DO calibration parameters Lot No.2111101,2111107, 2111181,2111187 (BioLector® I, filter module ID-103/-303)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.51	72.47	72.42	72.37	72.32	72.27	72.22
ϕ cal100	43.08	42.83	42.58	42.33	42.07	41.82	41.57

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.17	72.12	72.07	72.02	71.97	71.92	71.88
ϕ cal100	41.31	41.06	40.81	40.55	40.30	40.05	39.79

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.83	71.78	71.73	71.68	71.63	71.58	71.53
ϕ cal100	39.54	39.29	39.04	38.78	38.53	38.28	38.02

#### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.5 % 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 (t <sub>90</sub> )	< 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_3 (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 = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: BL092-CX-4A7394
Calibration phase offset	DO 332.50 (DO Ser. 3402, gain 70)
Date of calibration	2021-08-17

#### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	928111
Date of sterilization	2021-08-05

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