

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

**pH calibration parameters Lot No.2113101+2113107 (BioLector® I, filter module ID-102/-302)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	56.46	56.40	56.34	56.28	56.22	56.16	56.10
φ max	11.21	11.21	11.20	11.20	11.20	11.19	11.19
dpH	0.59	0.59	0.59	0.59	0.59	0.59	0.59
pH <sub>0</sub>	6.23	6.23	6.22	6.21	6.20	6.19	6.18

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	56.04	55.98	55.91	55.85	55.79	55.73	55.67
φ max	11.19	11.18	11.18	11.17	11.17	11.17	11.16
dpH	0.59	0.58	0.58	0.58	0.58	0.58	0.58
pH <sub>0</sub>	6.18	6.17	6.16	6.15	6.14	6.13	6.13

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	55.61	55.55	55.49	55.43	55.37	55.31	55.25
φ max	11.16	11.16	11.15	11.15	11.14	11.14	11.14
dpH	0.58	0.58	0.58	0.58	0.58	0.58	0.58
pH <sub>0</sub>	6.12	6.11	6.10	6.09	6.08	6.08	6.07

### pH sensor properties

Dynamic range	pH 4.20 - 7.85
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.75-5.10; ± 0.1 pH at pH 5.10-6.90; ± 0.25 pH at pH 6.90-7.30 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 3.00 ± 0.02 / pH 4.00 ± 0.02 / pH 9.00 ± 0.03 / 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	2021-09-20

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**DO calibration parameters Lot No.2113101+2113107 (BioLector® I, filter module ID-103/-303)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	73.04	73.01	72.98	72.95	72.92	72.89	72.86
ϕ cal100	43.35	43.12	42.89	42.65	42.42	42.19	41.95

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.83	72.80	72.77	72.73	72.70	72.67	72.64
ϕ cal100	41.72	41.49	41.25	41.02	40.79	40.56	40.32

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.61	72.58	72.55	72.52	72.49	72.46	72.43
ϕ cal100	40.09	39.86	39.62	39.39	39.16	38.92	38.69

**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-1921-01_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	2021-09-20

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	941459
Date of sterilization	2021-09-09

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