

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

pH calibration parameters Lot No.2114101 (BioLector® XT, filter module ID-502)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	63.65	63.58	63.51	63.44	63.37	63.30	63.23
φ max	11.43	11.42	11.40	11.39	11.38	11.37	11.35
dpH	0.57	0.57	0.57	0.58	0.58	0.58	0.58
pH ₀	6.26	6.25	6.24	6.24	6.23	6.22	6.22

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	63.16	63.09	63.02	62.95	62.88	62.81	62.74
φ max	11.34	11.33	11.31	11.30	11.29	11.27	11.26
dpH	0.58	0.58	0.58	0.58	0.58	0.58	0.58
pH ₀	6.21	6.20	6.20	6.19	6.18	6.18	6.17

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	62.67	62.60	62.53	62.46	62.39	62.32	62.25
φ max	11.25	11.24	11.22	11.21	11.20	11.18	11.17
dpH	0.59	0.59	0.59	0.59	0.59	0.59	0.59
pH ₀	6.17	6.16	6.15	6.15	6.14	6.13	6.13

pH sensor properties

Dynamic range	pH 4.15 - 8.00
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.70 - 5.00 ; ± 0.1 pH at pH 5.00 - 7.10 ; ± 0.25 pH at pH 7.10 - 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_5 (at least stable for 7 days with CertiPUR-buffer)

pH sensors are light-sensitive; please protect them from direct light!

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 Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = pH_DO_calibration_BOH1 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -1.81 (pH Ser. 3511, gain 7)
Date of calibration	2021-10-11

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DO calibration parameters Lot No.2114101 (BioLector® XT, filter module ID-503)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-4488	-4406	-4323	-4240	-4158	-4075	-3992
B	35393	34736	34080	33424	32768	32111	31455
C	-32132	-31532	-30932	-30331	-29731	-29131	-28531

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-3910	-3827	-3744	-3661	-3579	-3496	-3413
B	30799	30142	29486	28830	28174	27517	26861
C	-27930	-27330	-26730	-26130	-25529	-24929	-24329

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-3331	-3248	-3165	-3083	-3000	-2917	-2835
B	26205	25548	24892	24236	23579	22923	22267
C	-23729	-23128	-22528	-21928	-21328	-20727	-20127

DO sensor properties

Dynamic range	0 - 100 % oxygen
Resolution	Up to 0.1 % O ₂ (software)
Accuracy	± 5% dissolved oxygen (batch calibration)
Drift at 0% oxygen	< 0.5% O ₂ per day (sampling interval of 6 min)
Response time (t ₉₀)	< 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_2 (at least stable for 7 days with CertiPUR-buffer) DO sensors are light-sensitive; please protect them from direct light!

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_BOH1 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.63 (DO Ser. 4446, gain 7)
Date of calibration	2021-10-11

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	952124
Date of sterilization	2021-10-05

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