

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

pH calibration parameters Lot No.2111307 (BioLector® XT, filter module ID-524)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	58.66	58.91	59.16	59.41	59.65	59.90	60.15
φ max	11.02	11.05	11.07	11.10	11.13	11.16	11.18
dpH	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH ₀	5.43	5.43	5.42	5.41	5.41	5.40	5.40

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	60.40	60.65	60.89	61.14	61.39	61.64	61.89
φ max	11.21	11.24	11.27	11.29	11.32	11.35	11.37
dpH	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH ₀	5.39	5.38	5.38	5.37	5.37	5.36	5.35

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	62.13	62.38	62.63	62.88	63.13	63.37	63.62
φ max	11.40	11.43	11.46	11.48	11.51	11.54	11.57
dpH	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH ₀	5.35	5.34	5.34	5.33	5.32	5.32	5.31

pH sensor properties

Dynamic range	pH 3.95 - 6.70
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.30 - 4.50 ; ± 0.1 pH at pH 4.50 - 6.15 ; ± 0.25 pH at pH 6.15 - 6.35 (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 pH51-202850552 (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 2.00 ± 0.01 / pH 3.00 ± 0.015 / pH 7.00 ± 0.01 / pH 8.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = pH_DO_calibration_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Round Well Plate (MTP-R48-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.69 (pH Ser. 3587, gain 6)
Date of calibration	2021-08-20

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DO calibration parameters Lot No.2111307 (BioLector® XT, filter module ID-528)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-2267	-2214	-2160	-2107	-2054	-2000	-1947
B	17589	17168	16746	16324	15903	15481	15060
C	-15663	-15279	-14894	-14510	-14126	-13742	-13357

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-1894	-1841	-1787	-1734	-1681	-1627	-1574
B	14638	14216	13795	13373	12952	12530	12109
C	-12973	-12589	-12205	-11820	-11436	-11052	-10668

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1521	-1468	-1414	-1361	-1308	-1254	-1201
B	11687	11265	10844	10422	10001	9579	9157
C	-10283	-9899	-9515	-9131	-8746	-8362	-7978

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 RF-210250003 (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_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Round Well Plate (MTP-R48-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.67 (DO Ser.4452, gain 4)
Date of calibration	2021-08-20

Sterilization procedure

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

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