

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

pH calibration parameters Lot No.2109211(BioLector® XT, filter module ID-521)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	69.85	69.73	69.61	69.50	69.38	69.26	69.14
φ max	14.21	14.10	13.99	13.88	13.77	13.66	13.55
dpH	0.76	0.76	0.76	0.76	0.76	0.76	0.76
pH ₀	6.50	6.50	6.49	6.48	6.48	6.47	6.47

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	69.03	68.91	68.79	68.68	68.56	68.44	68.33
φ max	13.44	13.33	13.22	13.10	12.99	12.88	12.77
dpH	0.76	0.76	0.76	0.76	0.76	0.75	0.75
pH ₀	6.46	6.46	6.45	6.44	6.44	6.43	6.43

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	68.21	68.09	67.97	67.86	67.74	67.62	67.51
φ max	12.66	12.55	12.44	12.33	12.22	12.11	12.00
dpH	0.75	0.75	0.75	0.75	0.75	0.75	0.75
pH ₀	6.42	6.41	6.41	6.40	6.40	6.39	6.39

pH sensor properties

Dynamic range	pH 4.00 - 8.65
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.65 - 5.10 ; ± 0.1 pH at pH 5.10 - 7.55 ; ± 0.25 pH at pH 7.55 - 7.95 (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 LG1-1939-01_2 (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 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = MF_pH_DO_calibration_BOH2 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Microfluidic Flower Plate (MTP-MF32-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.45 (pH Ser.3513, gain 8)
Date of calibration	2021-07-16

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DO calibration parameters Lot No.2109211 (BioLector® XT, filter module ID-528)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-2114	-2070	-2027	-1984	-1940	-1897	-1854
B	16379	16037	15694	15352	15010	14668	14326
C	-14564	-14253	-13942	-13631	-13320	-13009	-12698

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-1810	-1767	-1724	-1680	-1637	-1593	-1550
B	13984	13641	13299	12957	12615	12273	11930
C	-12387	-12076	-11765	-11454	-11143	-10832	-10521

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1507	-1463	-1420	-1377	-1333	-1290	-1247
B	11588	11246	10904	10562	10219	9877	9535
C	-10210	-9899	-9588	-9277	-8967	-8656	-8345

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-210250002 (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 = MF_pH_DO_calibration_BOH2 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Microfluidic Flower Plate (MTP-MF32-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.45 (DO Ser.4452, gain 4)
Date of calibration	2021-07-16

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	911184
Date of sterilization	2021-06-24

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