

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

pH calibration parameters Lot No.2113221+2113227 (BioLector® XT, filter module ID-521)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	68.30	68.23	68.15	68.08	68.00	67.93	67.85
φ max	11.68	11.60	11.52	11.44	11.36	11.28	11.20
dpH	0.85	0.85	0.85	0.85	0.85	0.85	0.85
pH ₀	6.61	6.60	6.59	6.58	6.57	6.56	6.55

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	67.77	67.70	67.62	67.55	67.47	67.40	67.32
φ max	11.12	11.04	10.96	10.88	10.80	10.72	10.64
dpH	0.85	0.85	0.85	0.85	0.85	0.85	0.85
pH ₀	6.55	6.54	6.53	6.52	6.51	6.50	6.49

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	67.25	67.17	67.10	67.02	66.94	66.87	66.79
φ max	10.56	10.47	10.39	10.31	10.23	10.15	10.07
dpH	0.85	0.84	0.84	0.84	0.84	0.84	0.84
pH ₀	6.48	6.47	6.46	6.45	6.44	6.43	6.42

pH sensor properties

Dynamic range	pH 3.75 - 8.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.55 - 5.10 ; ± 0.1 pH at pH 5.10 - 7.55 ; ± 0.25 pH at pH 7.55 - 8.10 (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 ± 0.02 / pH 3.00 ± 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 = 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	2021-09-15

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DO calibration parameters Lot No.2113221+2113227 (BioLector® XT, filter module ID-528)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-1833	-1801	-1768	-1736	-1703	-1671	-1638
B	14133	13878	13623	13369	13114	12859	12604
C	-12489	-12259	-12029	-11799	-11569	-11339	-11109

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-1606	-1574	-1541	-1509	-1476	-1444	-1411
B	12350	12095	11840	11585	11330	11076	10821
C	-10880	-10650	-10420	-10190	-9960	-9730	-9500

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1379	-1346	-1314	-1281	-1249	-1216	-1184
B	10566	10311	10056	9802	9547	9292	9037
C	-9270	-9040	-8810	-8580	-8350	-8120	-7890

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-21160296 (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	2021-09-15

Sterilization procedure

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

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