

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

**pH calibration parameters Lot No.2107327 (BioLector® XT, filter module ID-524)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	59.75	60.01	60.27	60.52	60.78	61.04	61.30
φ max	9.22	9.24	9.25	9.27	9.29	9.30	9.32
dpH	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45
pH <sub>0</sub>	5.62	5.61	5.60	5.60	5.59	5.58	5.57

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	61.56	61.81	62.07	62.33	62.59	62.85	63.11
φ max	9.34	9.36	9.37	9.39	9.41	9.42	9.44
dpH	-0.45	-0.45	-0.45	-0.44	-0.44	-0.44	-0.44
pH <sub>0</sub>	5.57	5.56	5.55	5.54	5.53	5.53	5.52

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	63.36	63.62	63.88	64.14	64.40	64.65	64.91
φ max	9.46	9.48	9.49	9.51	9.53	9.54	9.56
dpH	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.43
pH <sub>0</sub>	5.51	5.50	5.50	5.49	5.48	5.47	5.47

**pH sensor properties**

Dynamic range	pH 3.70 - 6.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.05 - 4.40 ; ± 0.1 pH at pH 4.40 - 6.30 ; ± 0.25 pH at pH 6.30 - 6.55 (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 pH51-202850560 (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 2.00 ± 0.02 / pH 3.00 ± 0.02 / pH 7.00 ± 0.02 / pH 8.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = MF_pH_DO_calibration_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Round Plate (MTP-RMF32C-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.69 (pH Ser. 3587, gain 6)
Date of calibration	2021-11-17

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**DO calibration parameters Lot No.2107327 (BioLector® XT, filter module ID-528)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-2587	-2517	-2448	-2379	-2310	-2240	-2171
B	20154	19605	19057	18508	17960	17412	16863
C	-18043	-17542	-17041	-16541	-16040	-15539	-15038

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-2102	-2033	-1964	-1894	-1825	-1756	-1687
B	16315	15766	15218	14669	14121	13573	13024
C	-14537	-14036	-13536	-13035	-12534	-12033	-11532

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1618	-1548	-1479	-1410	-1341	-1271	-1202
B	12476	11927	11379	10830	10282	9734	9185
C	-11031	-10530	-10030	-9529	-9028	-8527	-8026

**DO sensor properties**

Dynamic range	0 - 100 % oxygen
Resolution	Up to 0.1 % 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 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_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Round Plate (MTP-RMF32C-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.69 (DO Ser. 4452, gain 4)
Date of calibration	2021-11-17

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	901348
Date of sterilization	2021-05-31

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