

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

**pH calibration parameters Lot No.2011201 (BioLector® XT, filter module ID-521)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	68.31	68.25	68.20	68.14	68.09	68.03	67.98
φ max	8.92	8.88	8.83	8.78	8.73	8.69	8.64
dpH	0.71	0.71	0.71	0.71	0.71	0.71	0.71
pH <sub>0</sub>	6.12	6.11	6.10	6.09	6.07	6.06	6.05

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	67.92	67.87	67.81	67.75	67.70	67.64	67.59
φ max	8.59	8.54	8.49	8.45	8.40	8.35	8.30
dpH	0.71	0.71	0.71	0.71	0.71	0.71	0.71
pH <sub>0</sub>	6.03	6.02	6.01	6.00	5.98	5.97	5.96

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	67.53	67.48	67.42	67.37	67.31	67.26	67.20
φ max	8.26	8.21	8.16	8.11	8.06	8.02	7.97
dpH	0.71	0.71	0.71	0.71	0.71	0.72	0.72
pH <sub>0</sub>	5.95	5.93	5.92	5.91	5.90	5.88	5.87

**pH sensor properties**

Dynamic range	pH 3.60 - 8.20
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.25 - 4.70 ; ± 0.1 pH at pH 4.70 - 7.05 ; ± 0.25 pH at pH 7.05 - 7.50 (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 LG1-1840-01_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 = pH_DO_calibration_BOH2 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Flower Plate (MTP-48-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.45 (pH Ser. 3513, gain 8)
Date of calibration	2021-06-10

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**DO calibration parameters Lot No.2011201 (BioLector® XT, filter module ID-528)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-3259	-3166	-3073	-2979	-2886	-2793	-2699
B	25462	24722	23982	23241	22501	21760	21020
C	-22875	-22197	-21520	-20842	-20165	-19487	-18810

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-2606	-2513	-2419	-2326	-2233	-2140	-2046
B	20279	19539	18798	18058	17317	16577	15836
C	-18132	-17455	-16778	-16100	-15423	-14745	-14068

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1953	-1860	-1766	-1673	-1580	-1486	-1393
B	15096	14355	13615	12874	12134	11393	10653
C	-13390	-12713	-12035	-11358	-10680	-10003	-9326

**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-202850573 (at least stable for 7 days with CertiPUR-buffer) <b>DO sensors are light-sensitive; please protect them from direct light!</b>

**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_BOH2 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.67 (DO Ser.4452, gain 4)
Date of calibration	2021-06-10

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	829779
Date of sterilization	2020-11-23

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