

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

**pH calibration parameters Lot No.2111101 (BioLector® XT, filter module ID-502)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	64.54	64.47	64.39	64.32	64.25	64.17	64.10
φ max	13.54	13.55	13.55	13.55	13.55	13.55	13.56
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.22	6.21	6.21	6.20	6.19	6.18	6.18

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	64.03	63.95	63.88	63.81	63.74	63.66	63.59
φ max	13.56	13.56	13.56	13.56	13.56	13.57	13.57
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.17	6.16	6.16	6.15	6.14	6.13	6.13

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	63.52	63.44	63.37	63.30	63.23	63.15	63.08
φ max	13.57	13.57	13.57	13.58	13.58	13.58	13.58
dpH	0.55	0.56	0.56	0.56	0.56	0.56	0.56
pH <sub>0</sub>	6.12	6.11	6.10	6.10	6.09	6.08	6.08

**pH sensor properties**

Dynamic range	pH 4.20 - 7.85
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.70 - 5.00 ; ± 0.1 pH at pH 5.00 - 7.00 ; ± 0.25 pH at pH 7.00 - 7.35 (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 HP8-1811-01_4 (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 3.00 ± 0.01 / pH 4.00 ± 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_BOH1 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -1.81 (pH Ser. 3511, gain 7)
Date of calibration	2021-08-27

**HEADQUARTERS EUROPE**

m2p-labs GmbH  
Arnold-Sommerfeld-Ring 2  
52499 Baesweiler, Germany  
Phone +49 -2401 805 330  
Fax +49 -2401 805 33  
info@m2p-labs.com

**SUPPORT**

**EUROPE**  
Phone +49 - 2401 805 335  
support@m2p-labs.com

**N./S. AMERICAS**  
Phone +1 631 501 1878  
supportUS@m2p-labs.com

**ASIA PACIFIC**  
Phone +852 6092 6778  
supportAsia@m2p-labs.com

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**DO calibration parameters Lot No.2111101 (BioLector® XT, filter module ID-503)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-4619	-4526	-4434	-4341	-4248	-4155	-4062
B	36404	35667	34930	34193	33456	32718	31981
C	-33026	-32351	-31676	-31002	-30327	-29652	-28977

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-3970	-3877	-3784	-3691	-3599	-3506	-3413
B	31244	30507	29770	29033	28296	27559	26822
C	-28303	-27628	-26953	-26278	-25604	-24929	-24254

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-3320	-3227	-3135	-3042	-2949	-2856	-2763
B	26085	25348	24611	23873	23136	22399	21662
C	-23579	-22905	-22230	-21555	-20880	-20206	-19531

**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 Pst3-HG-1810-01_3 (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_BOH1 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH1)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.63 (DO Ser.4446, gain 7)
Date of calibration	2021-08-27

**Sterilization procedure**

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

**HEADQUARTERS EUROPE**

m2p-labs GmbH  
Arnold-Sommerfeld-Ring 2  
52499 Baesweiler, Germany  
Phone +49 -2401 805 330  
Fax +49 -2401 805 33  
info@m2p-labs.com

**SUPPORT**

**EUROPE**  
Phone +49 - 2401 805 335  
support@m2p-labs.com

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supportUS@m2p-labs.com

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supportAsia@m2p-labs.com