

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

**pH calibration parameters Lot No.2115321 (BioLector® XT, filter module ID-524)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	60.60	60.74	60.88	61.02	61.16	61.30	61.44
φ max	7.80	7.83	7.85	7.87	7.89	7.91	7.93
dpH	-0.39	-0.39	-0.39	-0.39	-0.39	-0.39	-0.39
pH <sub>0</sub>	5.60	5.60	5.59	5.59	5.58	5.57	5.57

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	61.57	61.71	61.85	61.99	62.13	62.27	62.41
φ max	7.95	7.97	7.99	8.01	8.03	8.05	8.07
dpH	-0.39	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.56	5.56	5.55	5.54	5.54	5.53	5.53

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	62.55	62.69	62.83	62.97	63.11	63.25	63.39
φ max	8.09	8.11	8.13	8.15	8.17	8.19	8.21
dpH	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.52	5.52	5.51	5.50	5.50	5.49	5.49

**pH sensor properties**

Dynamic range	pH 4.15 - 6.75
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.45 - 4.60 ; ± 0.1 pH at pH 4.60 - 6.30 ; ± 0.25 pH at pH 6.30 - 6.45 (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 pH51-202850561+562 (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 Flower Plate (MTP-MF32-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.69 (pH Ser. 3587, gain 6)
Date of calibration	2021-11-12

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**DO calibration parameters Lot No.2115321 (BioLector® XT, filter module ID-528)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-1592	-1562	-1532	-1502	-1472	-1442	-1412
B	12215	11979	11744	11508	11273	11038	10802
C	-10737	-10525	-10313	-10100	-9888	-9676	-9464

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-1382	-1352	-1322	-1292	-1261	-1231	-1201
B	10567	10331	10096	9861	9625	9390	9155
C	-9252	-9039	-8827	-8615	-8403	-8190	-7978

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1171	-1141	-1111	-1081	-1051	-1021	-991
B	8919	8684	8448	8213	7978	7742	7507
C	-7766	-7554	-7341	-7129	-6917	-6705	-6492

**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-213550639 (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 Flower Plate (MTP-MF32-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.69 (DO Ser. 4452, gain 4)
Date of calibration	2021-11-12

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	963394
Date of sterilization	2021-11-03

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