

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

**pH calibration parameters Lot No.2110301 (BioLector® XT, filter module ID-524)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	58.40	58.64	58.88	59.12	59.36	59.60	59.84
φ max	11.44	11.47	11.50	11.54	11.57	11.60	11.64
dpH	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH <sub>0</sub>	5.41	5.40	5.40	5.39	5.38	5.38	5.37

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	60.08	60.32	60.56	60.80	61.04	61.28	61.52
φ max	11.67	11.70	11.74	11.77	11.80	11.84	11.87
dpH	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH <sub>0</sub>	5.37	5.36	5.36	5.35	5.34	5.34	5.33

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	61.76	62.00	62.25	62.49	62.73	62.97	63.21
φ max	11.90	11.93	11.97	12.00	12.03	12.07	12.10
dpH	-0.41	-0.41	-0.41	-0.40	-0.40	-0.40	-0.40
pH <sub>0</sub>	5.33	5.32	5.32	5.31	5.30	5.30	5.29

**pH sensor properties**

Dynamic range	pH 3.95 - 6.55
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.25 - 4.45 ; ± 0.1 pH at pH 4.45 - 6.05 ; ± 0.25 pH at pH 6.05 - 6.25 (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 pH-51-202850546+547 (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 7.00 ± 0.01 / pH 8.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = pH_DO_calibration_BOH3 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Flower Plate (MTP-48-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.99 (pH Ser. 3587, gain 6)
Date of calibration	2021-08-19

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**DO calibration parameters Lot No.2110301 (BioLector® XT, filter module ID-528)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-1949	-1909	-1869	-1830	-1790	-1750	-1711
B	15040	14728	14416	14104	13792	13480	13167
C	-13306	-13024	-12741	-12458	-12176	-11893	-11610

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-1671	-1631	-1592	-1552	-1512	-1473	-1433
B	12855	12543	12231	11919	11607	11295	10982
C	-11328	-11045	-10762	-10480	-10197	-9914	-9632

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1393	-1354	-1314	-1274	-1235	-1195	-1155
B	10670	10358	10046	9734	9422	9110	8797
C	-9349	-9067	-8784	-8501	-8219	-7936	-7653

**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-210250003 (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_BOH3 , T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flower Plate (MTP-48-BOH3)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.67 (DO Ser.4452, gain 4)
Date of calibration	2021-08-19

**Sterilization procedure**

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

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