

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

**pH calibration parameters Lot No.2102311 (BioLector® XT, filter module ID-524)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	60.45	60.66	60.87	61.08	61.28	61.49	61.70
φ max	10.25	10.28	10.30	10.33	10.35	10.38	10.40
dpH	-0.37	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.48	5.47	5.47	5.46	5.46	5.45	5.45

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	61.91	62.12	62.33	62.54	62.75	62.95	63.16
φ max	10.43	10.45	10.48	10.50	10.52	10.55	10.57
dpH	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.44	5.43	5.43	5.42	5.42	5.41	5.41

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	63.37	63.58	63.79	64.00	64.21	64.42	64.63
φ max	10.60	10.62	10.65	10.67	10.70	10.72	10.75
dpH	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.40	5.40	5.39	5.39	5.38	5.38	5.37

**pH sensor properties**

Dynamic range	pH 3.85 - 6.45
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.15 - 4.30 ; ± 0.1 pH at pH 4.30 - 5.95 ; ± 0.25 pH at pH 5.95 - 6.10 (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 pH51-200950172 (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 = 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	2021-06-15

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**DO calibration parameters Lot No.2102311 (BioLector® XT, filter module ID-528)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-2773	-2707	-2641	-2575	-2509	-2444	-2378
B	21636	21114	20592	20070	19548	19026	18504
C	-19401	-18924	-18447	-17970	-17493	-17016	-16539

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-2312	-2246	-2180	-2114	-2049	-1983	-1917
B	17982	17460	16938	16416	15894	15373	14851
C	-16062	-15585	-15108	-14631	-14154	-13677	-13201

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-1851	-1785	-1719	-1654	-1588	-1522	-1456
B	14329	13807	13285	12763	12241	11719	11197
C	-12724	-12247	-11770	-11293	-10816	-10339	-9862

**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-204150648 (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 = 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 -360.67; DO Ser.4452, gain 4
Date of calibration	2021-06-15

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	867189
Date of sterilization	2021-03-03

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