

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

**pH calibration parameters Lot No.2102311 (BioLector® Pro, filter module ID-424)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	68.31	68.38	68.46	68.53	68.60	68.67	68.74
φ max	14.07	14.11	14.15	14.19	14.22	14.26	14.30
dpH	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38
pH <sub>0</sub>	5.41	5.40	5.40	5.39	5.39	5.38	5.38

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	68.82	68.89	68.96	69.03	69.10	69.18	69.25
φ max	14.34	14.38	14.42	14.46	14.50	14.54	14.57
dpH	-0.38	-0.38	-0.38	-0.38	-0.37	-0.37	-0.37
pH <sub>0</sub>	5.37	5.37	5.37	5.36	5.36	5.35	5.35

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	69.32	69.39	69.46	69.54	69.61	69.68	69.75
φ max	14.61	14.65	14.69	14.73	14.77	14.81	14.85
dpH	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37
pH <sub>0</sub>	5.34	5.34	5.33	5.33	5.32	5.32	5.31

### pH sensor properties

Dynamic range	pH 3.80 - 6.50
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.15-4.30; ± 0.1 pH at pH 4.30-6.05; ± 0.25 pH at pH 6.05-6.20 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) <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 ± 0.01 / 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 = pH51-RF-calibration, 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: BL-09-000F-0032
Calibration phase offset	pH -360.10 (pH Ser. 3288, gain 6)
Date of calibration	2021-03-18

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**DO calibration parameters Lot No.2102311 (BioLector® Pro, filter module ID-228/-428)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	70.99	71.04	71.08	71.13	71.17	71.22	71.27
ϕ cal100	42.36	42.17	41.98	41.79	41.60	41.41	41.21

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.31	71.36	71.41	71.45	71.50	71.54	71.59
ϕ cal100	41.02	40.83	40.64	40.45	40.26	40.06	39.87

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.64	71.68	71.73	71.78	71.82	71.87	71.92
ϕ cal100	39.68	39.49	39.30	39.10	38.91	38.72	38.53

**DO sensor properties**

Dynamic range	0 - 100 % air saturation (a.s.)
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 = pH51-RF-calibration, 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: BL-09-000F-0032
Calibration phase offset	DO -360.44 (DO Ser. 4302-RD, gain 4)
Date of calibration	2021-03-18

**Sterilization procedure**

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

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