

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

**pH calibration parameters Lot No. 2006302 (BioLector® II/Pro, filter module ID-424)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	72.38	72.43	72.48	72.53	72.58	72.63	72.68
φ max	18.03	18.05	18.08	18.10	18.13	18.15	18.18
dpH	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42
pH <sub>0</sub>	5.25	5.24	5.24	5.23	5.23	5.23	5.22
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	72.73	72.78	72.83	72.88	72.93	72.98	73.03
φ max	18.20	18.22	18.25	18.27	18.30	18.32	18.35
dpH	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42
pH <sub>0</sub>	5.22	5.21	5.21	5.21	5.20	5.20	5.19
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	73.08	73.13	73.18	73.23	73.28	73.33	73.38
φ max	18.37	18.39	18.42	18.44	18.47	18.49	18.52
dpH	-0.42	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
pH <sub>0</sub>	5.19	5.19	5.18	5.18	5.17	5.17	5.17

**pH sensor properties**

Dynamic range	pH 3.45 - 6.45
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 3.80 - 4.00; ± 0.1 pH at pH 4.00 – 5.90; ± 0.25 pH at pH 5.90 - 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	15 °C to 40 °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)
Basic material	pH sensor pH51-194150153 (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 7.00 ± 0.01 / pH 8.00 ± 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 = Round Plate (MTP-(R)48-BOH3)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	pH -360.25 (pH Ser. 3288, gain 6)
Date of calibration	2020/06/18

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**DO calibration parameters Lot No. 2006302 (BioLector® II/Pro, filter module ID-228/-428)**

Temperature	<b>20°C</b>	<b>21°C</b>	<b>22°C</b>	<b>23°C</b>	<b>24°C</b>	<b>25°C</b>	<b>26°C</b>
ϕ cal0	70,67	70,65	70,64	70,62	70,61	70,59	70,58
ϕ cal100	42,62	42,46	42,31	42,15	42,00	41,84	41,69
Temperature	<b>27°C</b>	<b>28°C</b>	<b>29°C</b>	<b>30°C</b>	<b>31°C</b>	<b>32°C</b>	<b>33°C</b>
ϕ cal0	70,56	70,55	70,53	70,52	70,50	70,49	70,47
ϕ cal100	41,53	41,38	41,22	41,07	40,91	40,76	40,60
Temperature	<b>34°C</b>	<b>35°C</b>	<b>36°C</b>	<b>37°C</b>	<b>38°C</b>	<b>39°C</b>	<b>40°C</b>
ϕ cal0	70,46	70,44	70,43	70,41	70,40	70,38	70,37
ϕ cal100	40,44	40,29	40,13	39,98	39,82	39,67	39,51

**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 (t90)	< 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-m2p-A 194150163 (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 = Round Plate (MTP-(R)48-BOH3)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	DO -360.50 (DO Ser.4302-RD, gain 4)
Date of calibration	2020/06/18

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	766620
Date of sterilization	2020/05/25

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