

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

**pH calibration parameters Lot No. 2006211 (BioLector® Pro, filter module ID-221/-421)**

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>
$\phi$ min	67.66	67.60	67.53	67.47	67.40	67.34	67.27
$\phi$ max	9.53	9.48	9.43	9.37	9.32	9.27	9.21
dpH	0.66	0.66	0.66	0.66	0.66	0.66	0.66
pH <sub>0</sub>	6.06	6.05	6.04	6.03	6.02	6.01	6.00
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>
$\phi$ min	67.21	67.14	67.08	67.01	66.95	66.88	66.82
$\phi$ max	9.16	9.10	9.05	9.00	8.94	8.89	8.84
dpH	0.66	0.66	0.66	0.66	0.66	0.66	0.66
pH <sub>0</sub>	5.99	5.98	5.97	5.96	5.94	5.93	5.92
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>
$\phi$ min	66.75	66.69	66.62	66.56	66.49	66.43	66.36
$\phi$ max	8.78	8.73	8.67	8.62	8.57	8.51	8.46
dpH	0.66	0.66	0.66	0.66	0.66	0.66	0.66
pH <sub>0</sub>	5.91	5.90	5.89	5.88	5.87	5.86	5.85

**pH sensor properties**

Dynamic range	pH 3.75 - 7.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.35 - 4.70; ± 0.1 pH at pH 4.70 – 6.90; ± 0.25 pH at pH 6.90 - 7.30 (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 LG1-1840-01 (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 = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Flower (MTP-MF32-BOH2)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	pH -360.20 (pH Ser. 3305, gain 8)
Date of calibration	2020/06/09

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**DO calibration parameters Lot No. 2006211 (BioLector® 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	70.45	70.43	70.41	70.39	70.36	70.34	70.32
φ cal100	43.20	43.01	42.82	42.63	42.44	42.25	42.06
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	70.30	70.28	70.26	70.24	70.22	70.20	70.18
φ cal100	41.87	41.68	41.49	41.30	41.11	40.92	40.73
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	70.16	70.14	70.12	70.10	70.08	70.05	70.03
φ cal100	40.54	40.35	40.16	39.97	39.79	39.60	39.41

**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 194150162 (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 = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic Flower (MTP-MF32-BOH2)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	DO -360.50 (DO Ser.4302-RD, gain 4)
Date of calibration	2020/06/09

**Sterilization procedure**

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

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