

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

### pH calibration parameters Lot No. 1826 (BioLector® II/Pro, filter module ID-221)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	69.28	69.18	69.08	68.99	68.89	68.80	68.70
$\phi$ max	13.15	13.06	12.98	12.89	12.81	12.73	12.64
dpH	0.73	0.73	0.73	0.73	0.73	0.73	0.73
pH <sub>0</sub>	6.30	6.30	6.29	6.28	6.28	6.27	6.27
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	68.61	68.51	68.42	68.32	68.23	68.13	68.03
$\phi$ max	12.56	12.47	12.39	12.30	12.22	12.13	12.05
dpH	0.73	0.73	0.73	0.73	0.73	0.73	0.73
pH <sub>0</sub>	6.26	6.25	6.25	6.24	6.24	6.23	6.23
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	67.94	67.84	67.75	67.65	67.56	67.46	67.37
$\phi$ max	11.96	11.88	11.79	11.71	11.62	11.54	11.45
dpH	0.73	0.73	0.73	0.72	0.72	0.72	0.72
pH <sub>0</sub>	6.22	6.21	6.21	6.20	6.20	6.19	6.18

### pH sensor properties

Dynamic range	pH 2.45 - 8.80
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 3.35 - 4.95; ± 0.1 pH at pH 4.95 - 6.60; ± 0.25 pH at pH 6.60 - 8.10 (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 LG1-1737-01 (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 1.00 ± 0.01 / pH 2.00 ± 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 FlowerPlate (MTP-MF32-BOH)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -360.31 (pH Ser. 3188-RD, gain 8)
Date of calibration	2018/07/20

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**DO calibration parameters Lot No. 1826 (BioLector® II/Pro, filter module ID-228)**

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	68.98	68.97	68.96	68.95	68.94	68.93	68.92
ϕ cal100	45.04	44.85	44.66	44.47	44.29	44.10	43.91
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	68.91	68.90	68.89	68.89	68.88	68.87	68.86
ϕ cal100	43.72	43.53	43.35	43.16	42.97	42.78	42.59
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	68.85	68.84	68.83	68.82	68.81	68.80	68.79
ϕ cal100	42.41	42.22	42.03	41.84	41.65	41.46	41.28

**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-01/2017 (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 FlowerPlate (MTP-MF32-BOH)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.39 (DO Ser.4170-RD, gain 4)
Date of calibration	2018/07/20

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	518342
Date of sterilization	2018/07/01

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