

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

### pH calibration parameters Lot No. 1939 (BioLector® II/Pro. filter module ID-221/421)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	63.79	63.75	63.71	63.67	63.64	63.60	63.56
$\phi$ max	6.40	6.37	6.35	6.33	6.31	6.29	6.27
dpH	0.72	0.72	0.72	0.72	0.72	0.72	0.72
pH <sub>0</sub>	5.85	5.85	5.84	5.83	5.83	5.82	5.82
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	63.52	63.49	63.45	63.41	63.37	63.33	63.30
$\phi$ max	6.25	6.23	6.20	6.18	6.16	6.14	6.12
dpH	0.72	0.72	0.72	0.72	0.72	0.72	0.72
pH <sub>0</sub>	5.81	5.81	5.80	5.80	5.79	5.79	5.78
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	63.26	63.22	63.18	63.14	63.11	63.07	63.03
$\phi$ max	6.10	6.08	6.06	6.03	6.01	5.99	5.97
dpH	0.72	0.71	0.71	0.71	0.71	0.71	0.71
pH <sub>0</sub>	5.78	5.77	5.77	5.76	5.76	5.75	5.75

### pH sensor properties

Dynamic range	pH 3.35 – 7.95
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.05 - 4.5; ± 0.1 pH at pH 4.5 – 6.8; ± 0.25 pH at pH 6.8 - 7.25 (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 LG1-1816-01 (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 FlowerPlate (MTP-MF32-BOH2)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -360.31 (pH Ser.3188-RD. gain 8)
Date of calibration	2019/08/30

#### HEADQUARTERS EUROPE

m2p-labs GmbH  
Arnold-Sommerfeld-Ring 2  
52499 Baesweiler. Germany  
Tel.:+ 49 - 2401 805 330  
Fax:+49 - 2401 805 33  
info@m2p-labs.com

#### USA / CANADA

m2p-labs. Inc.  
400 Oser Ave. Suite 1650  
Hauppauge. NY 11788. USA  
Phone:+1 631 501 1878  
Fax:+1 631 501 1060  
infoUS@m2p-labs.com

#### ASIA PACIFIC

m2p-labs Limited  
Unit 117. Biotech Centre 2. HKSTP  
Shatin. NT. Hong Kong  
Phone:+852 6092 6778  
Fax:+852 3594 6381  
infoAsia@m2p-labs.com

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

### DO calibration parameters Lot No. 1939 (BioLector® II/Pro. filter module ID-228/428)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	68.17	68.15	68.13	68.11	68.09	68.07	68.06
φ cal100	42.05	41.93	41.81	41.68	41.56	41.44	41.32
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	68.04	68.02	68.00	67.98	67.96	67.94	67.93
φ cal100	41.20	41.07	40.95	40.83	40.71	40.59	40.46
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	67.91	67.89	67.87	67.85	67.83	67.81	67.80
φ cal100	40.34	40.22	40.10	39.98	39.85	39.73	39.61

### 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-12/2018 (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-BOH2)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.39 (DO Ser.4170-RD, gain 4)
Date of calibration	2019/08/30

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	658230
Date of sterilization	2019/08/05

#### HEADQUARTERS EUROPE

m2p-labs GmbH  
Arnold-Sommerfeld-Ring 2  
52499 Baesweiler, Germany  
Tel.: +49 - 2401 805 330  
Fax: +49 - 2401 805 33  
info@m2p-labs.com

#### USA / CANADA

m2p-labs, Inc.  
400 Oser Ave, Suite 1650  
Hauppauge, NY 11788, USA  
Phone: +1 631 501 1878  
Fax: +1 631 501 1060  
infoUS@m2p-labs.com

#### ASIA PACIFIC

m2p-labs Limited  
Unit 117, Biotech Centre 2, HKSTP  
Shatin, NT, Hong Kong  
Phone: +852 6092 6778  
Fax: +852 3594 6381  
infoAsia@m2p-labs.com