

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

### pH calibration parameters Lot No. 1946 (BioLector® Pro, filter module ID-221/421)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	64.25	64.20	64.15	64.11	64.06	64.01	63.96
$\phi$ max	6.48	6.46	6.44	6.42	6.41	6.39	6.37
dpH	0.71	0.71	0.71	0.71	0.71	0.71	0.71
pH <sub>0</sub>	5.91	5.90	5.90	5.89	5.89	5.88	5.88
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	63.92	63.87	63.82	63.77	63.73	63.68	63.63
$\phi$ max	6.35	6.33	6.32	6.30	6.28	6.26	6.24
dpH	0.71	0.71	0.71	0.70	0.70	0.70	0.70
pH <sub>0</sub>	5.87	5.87	5.86	5.86	5.85	5.85	5.84
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	63.58	63.54	63.49	63.44	63.39	63.35	63.30
$\phi$ max	6.23	6.21	6.19	6.17	6.15	6.14	6.12
dpH	0.70	0.70	0.70	0.70	0.70	0.70	0.70
pH <sub>0</sub>	5.84	5.83	5.83	5.82	5.82	5.81	5.80

### pH sensor properties

Dynamic range	pH 3.45 - 7.95
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.10 - 4.55; ± 0.1 pH at pH 4.55 - 6.85; ± 0.25 pH at pH 6.85 - 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 LG1-1816-01 (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	2019/12/20

#### 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.  
62-64 Enter Lane  
Islandia, NY 11749, 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. 1946 (BioLector® Pro, filter module ID-228/428)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	67.79	67.77	67.75	67.74	67.72	67.70	67.69
φ cal100	42.66	42.54	42.43	42.32	42.20	42.09	41.97
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	67.67	67.65	67.64	67.62	67.60	67.59	67.57
φ cal100	41.86	41.74	41.63	41.52	41.40	41.29	41.17
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	67.55	67.54	67.52	67.50	67.48	67.47	67.45
φ cal100	41.06	40.94	40.83	40.72	40.60	40.49	40.37

### 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	2016/12/22

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	688736
Date of sterilization	2019/10/24

#### 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.  
62-64 Enter Lane  
Islandia, NY 11749, 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