

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

### pH calibration parameters Lot No. 1940 (BioLector® I, filter module ID-102/-302)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	57.53	57.45	57.36	57.27	57.19	57.10	57.01
$\phi$ max	13.68	13.66	13.65	13.63	13.61	13.59	13.57
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pH <sub>0</sub>	6.36	6.35	6.35	6.34	6.34	6.33	6.32
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.93	56.84	56.75	56.66	56.58	56.49	56.40
$\phi$ max	13.56	13.54	13.52	13.50	13.48	13.47	13.45
dpH	0.53	0.53	0.53	0.53	0.53	0.54	0.54
pH <sub>0</sub>	6.32	6.31	6.31	6.30	6.30	6.29	6.29
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	56.32	56.23	56.14	56.06	55.97	55.88	55.80
$\phi$ max	13.43	13.41	13.39	13.37	13.36	13.34	13.32
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.28	6.27	6.27	6.26	6.26	6.25	6.25

### pH sensor properties

Dynamic range	pH 4.45 - 7.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.95 - 5.25; ± 0.1 pH at pH 5.25 - 7.05; ± 0.25 pH at pH 7.05 - 7.35 (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 HP8-1811-01_2 (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 3.00 ± 0.01 / pH 4.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C); 150 mM Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = pH-DO-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = FlowerPlate (MTP-48-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2019/10/28

#### 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. 1940 (BioLector® I, filter module ID-103/303)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.11	72.09	72.07	72.06	72.04	72.02	72.01
ϕ cal100	43.34	43.10	42.85	42.61	42.36	42.12	41.87
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.99	71.97	71.96	71.94	71.92	71.91	71.89
ϕ cal100	41.63	41.38	41.14	40.89	40.65	40.41	40.16
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.87	71.86	71.84	71.82	71.81	71.79	71.77
ϕ cal100	39.92	39.67	39.43	39.18	38.94	38.69	38.45

### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.5 % O <sub>2</sub> (software)
Precision (CV)	± 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 PST3-HG-1810-01_2 (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 = pH-DO-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = FlowerPlate (MTP-48-BOH1)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc, gain 48)
Date of calibration	2019/10/28

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	671293
Date of sterilization	2019/09/10

#### 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