

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

### pH calibration parameters Lot No. 1846 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	56.84	56.75	56.66	56.57	56.49	56.40	56.31
$\phi$ max	11.97	11.96	11.96	11.96	11.95	11.95	11.95
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.19	6.18	6.18	6.17	6.16	6.15	6.14
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.23	56.14	56.05	55.96	55.88	55.79	55.70
$\phi$ max	11.94	11.94	11.94	11.94	11.93	11.93	11.93
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.54
pH <sub>0</sub>	6.14	6.13	6.12	6.11	6.10	6.09	6.09
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	55.62	55.53	55.44	55.36	55.27	55.18	55.09
$\phi$ max	11.92	11.92	11.92	11.91	11.91	11.91	11.90
dpH	0.54	0.54	0.54	0.53	0.53	0.53	0.53
pH <sub>0</sub>	6.08	6.07	6.06	6.05	6.04	6.04	6.03

### pH sensor properties

Dynamic range	pH 3.65 - 8.30
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.15 – 4.75; ± 0.1 pH at pH 4.75 – 7.15; ± 0.25 pH at pH 7.15 - 7.80 (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 (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-BOH)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2018/11/16

#### 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. 1846 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	72.41	72.38	72.35	72.33	72.30	72.27	72.24
ϕ cal100	42.95	42.70	42.45	42.19	41.94	41.69	41.43
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.21	72.18	72.16	72.13	72.10	72.07	72.04
ϕ cal100	41.18	40.93	40.67	40.42	40.16	39.91	39.66
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.01	71.98	71.96	71.93	71.90	71.87	71.84
ϕ cal100	39.40	39.15	38.90	38.64	38.39	38.14	37.88

### 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-1742-02 (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-BOH)
Calibration device	BioLector CX_110335 (BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc, gain 48)
Date of calibration	2018/11/16

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	563808
Date of sterilization	2018/11/12

#### 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