

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

### pH calibration parameters Lot No. 1831 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	56.68	56.59	56.50	56.40	56.31	56.22	56.13
$\phi$ max	11.87	11.86	11.85	11.84	11.83	11.82	11.82
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pH <sub>0</sub>	6.36	6.35	6.34	6.34	6.33	6.32	6.31
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.04	55.95	55.86	55.77	55.68	55.59	55.50
$\phi$ max	11.81	11.80	11.79	11.78	11.78	11.77	11.76
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pH <sub>0</sub>	6.30	6.29	6.28	6.28	6.27	6.26	6.25
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	55.41	55.32	55.23	55.14	55.05	54.96	54.87
$\phi$ max	11.75	11.74	11.74	11.73	11.72	11.71	11.70
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pH <sub>0</sub>	6.24	6.23	6.23	6.22	6.21	6.20	6.19

### pH sensor properties

Dynamic range	pH 3.80 - 8.40
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.25 - 4.90; ± 0.1 pH at pH 4.90 - 7.25; ± 0.25 pH at pH 7.25 - 7.90 (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 HP8-1803-1 (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	2018/09/04

#### 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

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### DO calibration parameters Lot No. 1831 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.46	71.48	71.51	71.53	71.56	71.58	71.61
ϕ cal100	43.52	43.29	43.06	42.83	42.59	42.36	42.13
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.64	71.66	71.69	71.71	71.74	71.76	71.79
ϕ cal100	41.90	41.66	41.43	41.20	40.97	40.73	40.50
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.82	71.84	71.87	71.89	71.92	71.94	71.97
ϕ cal100	40.27	40.04	39.81	39.57	39.34	39.11	38.88

### 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	2018/09/04

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	535493
Date of sterilization	2018/08/17

#### 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