

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

### pH calibration parameters Lot No. 1401

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	56.92	56.85	56.77	56.7	56.63	56.56	56.49
$\phi$ max	17.10	17.07	17.04	17.02	16.99	16.97	16.94
dpH	0.50	0.50	0.50	0.50	0.50	0.50	0.50
pH <sub>0</sub>	6.68	6.67	6.66	6.65	6.64	6.63	6.62
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	56.42	56.35	56.28	56.21	56.14	56.07	55.99
$\phi$ max	16.92	16.89	16.86	16.84	16.81	16.79	16.76
dpH	0.5	0.5	0.5	0.51	0.51	0.51	0.51
pH <sub>0</sub>	6.61	6.60	6.59	6.58	6.57	6.56	6.55
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	55.92	55.85	55.78	55.71	55.64	55.57	55.5
$\phi$ max	16.74	16.71	16.68	16.66	16.63	16.61	16.58
dpH	0.51	0.51	0.51	0.51	0.51	0.51	0.51
pH <sub>0</sub>	6.53	6.52	6.51	6.50	6.49	6.48	6.47

### pH sensor properties

Dynamic range	pH 4.05 - 8.65
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.1 pH at pH 4.60 - 5.45; ± 0.02 pH at pH 5.45 - 7.20; ± 0.2 pH at pH 7.20 - 8.05 (batch calibration)
Response time (t90)	At 25 °C < 30 s
Drift at pH = 7	< 0.005 pH per day (sampling interval of 1 min)
Temperature range	5 °C to 50 °C
Compatibility	Aqueous solutions, ethanol, methanol (max. 5 % v/v)
Sensor stability	sensor material can be destructed 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 HP8-1329-01 (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_12D651 (BL091)
Calibration phase offset	pH 255.7 (pH Ser.3079-hc, gain 32)
Date of calibration	2014/02/11

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### DO calibration parameters Lot No. 1401

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	66.06	66.16	66.27	66.37	66.47	66.57	66.67
ϕ cal100	44.47	44.23	43.99	43.75	43.51	43.28	43.04
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	66.77	66.87	66.97	67.07	67.17	67.27	67.38
ϕ cal100	42.8	42.56	42.32	42.08	41.84	41.6	41.36
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	67.48	67.58	67.68	67.78	67.88	67.98	68.08
ϕ cal100	41.12	40.89	40.65	40.41	40.17	39.93	39.69

### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.1 % O <sub>2</sub> (software)
Precision (CV)	± 5% dissolved oxygen (batch calibration)
Drift at 0% oxygen	< 0.03% O <sub>2</sub> within 30 days (sampling interval of 1 min)
Response time (t90)	< 30 s
Temperature range	0 – 50°C
Sensor stability	sensor material can be destructed 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-1326-03 (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 (nitrogen, 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_12D651 (BL091)
Calibration phase offset	DO 332.5 (DO Ser.4079-hc, gain 65)
Date of calibration	2014/02/11

### Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	34101722
Date of sterilization	2014/02/05

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#### EUROPE

m2p-labs GmbH  
Arnold-Sommerfeld-Ring 2 | 52499 Baesweiler | Germany  
Phone +49-2401-805-330 | Fax: +49-2401-805-333  
info@m2p-labs.com | support@m2p-labs.com

#### USA

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 | supportUS@m2p-labs.com