

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

### pH calibration parameters Lot No. 1510

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	58.40	58.32	58.24	58.15	58.07	57.99	57.91
$\phi$ max	19.44	19.42	19.39	19.37	19.34	19.32	19.29
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.54	6.53	6.52	6.51	6.50	6.50	6.49
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	57.82	57.74	57.66	57.58	57.49	57.41	57.33
$\phi$ max	19.27	19.24	19.22	19.20	19.17	19.15	19.12
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.48	6.47	6.46	6.46	6.45	6.44	6.43
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	57.25	57.17	57.08	57.00	56.92	56.84	56.75
$\phi$ max	19.10	19.07	19.05	19.02	19.00	18.97	18.95
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pH <sub>0</sub>	6.42	6.41	6.41	6.40	6.39	6.38	6.37

### pH sensor properties

Dynamic range	pH 3.90 - 8.55
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.1 pH at pH 4.50 - 5.45; ± 0.02 pH at pH 5.45 - 6.95; ± 0.2 pH at pH 6.95 - 7.95 (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 HP8-1427-02_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-BOH)
Calibration device	BioLector CX_110335(BL092)
Calibration phase offset	pH 255.5 (pH Ser.3083-hc, gain 30)
Date of calibration	2015/07/23

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### DO calibration parameters Lot No. 1510

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	72.97	72.93	72.89	72.85	72.81	72.77	72.73
φ cal100	45.94	45.70	45.46	45.22	44.98	44.74	44.50
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	72.69	72.65	72.61	72.57	72.53	72.49	72.45
φ cal100	44.26	44.01	43.77	43.53	43.29	43.05	42.81
Temperature	34°C	345C	36°C	37°C	38°C	39°C	40°C
φ cal0	72.41	72.37	72.33	72.29	72.25	72.21	72.17
φ cal100	42.57	42.33	42.09	41.85	41.61	41.37	41.13

### 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-1426-03_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 (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_110335(BL092)
Calibration phase offset	DO 332.4 (DO Ser.4084-hc, gain 40)
Date of calibration	2015/07/23

### Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	146277
Date of sterilization	2015/07/16

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