

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

### pH calibration parameters Lot No. 1612 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	58.05	57.97	57.88	57.79	57.71	57.62	57.54
$\phi$ max	17.34	17.32	17.31	17.29	17.28	17.26	17.25
dpH	0.49	0.49	0.49	0.49	0.49	0.49	0.48
pH <sub>0</sub>	6.76	6.75	6.74	6.73	6.72	6.71	6.70
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	57.45	57.36	57.28	57.19	57.10	57.02	56.93
$\phi$ max	17.24	17.22	17.21	17.19	17.18	17.16	17.15
dpH	0.48	0.48	0.48	0.48	0.48	0.48	0.48
pH <sub>0</sub>	6.69	6.68	6.67	6.66	6.65	6.63	6.62
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	56.84	56.76	56.67	56.58	56.50	56.41	56.32
$\phi$ max	17.13	17.12	17.10	17.09	17.07	17.06	17.04
dpH	0.48	0.48	0.48	0.48	0.48	0.48	0.48
pH <sub>0</sub>	6.61	6.60	6.59	6.58	6.57	6.56	6.55

### pH sensor properties

Dynamic range	pH 4.10 - 8.70
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.65 - 5.50; ± 0.1 pH at pH 5.50 – 7.30; ± 0.25 pH at pH 7.30 - 8.15 (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 HP8-1427-02_3 (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 255.1 (pH Ser.3083-hc , gain 32)
Date of calibration	2016/11/30

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### DO calibration parameters Lot No. 1612 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	71.76	71.77	71.78	71.79	71.80	71.81	71.82
φ cal100	44.95	44.73	44.52	44.31	44.10	43.89	43.68
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	71.83	71.84	71.85	71.87	71.88	71.89	71.90
φ cal100	43.47	43.25	43.04	42.83	42.62	42.41	42.20
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	71.91	71.92	71.93	71.94	71.95	71.96	71.98
φ cal100	41.99	41.78	41.56	41.35	41.14	40.93	40.72

### 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-1426-03_3 (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 42)
Date of calibration	2016/11/30

### Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	309917
Date of sterilization	2016/11/17

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