

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

### pH calibration parameters Lot No. 1614 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	58.16	58.07	57.98	57.90	57.81	57.72	57.63
$\phi$ max	17.21	17.20	17.18	17.16	17.14	17.12	17.10
dpH	0.49	0.49	0.49	0.49	0.49	0.49	0.49
pH <sub>0</sub>	6.79	6.77	6.76	6.75	6.74	6.73	6.72
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	57.55	57.46	57.37	57.29	57.20	57.11	57.02
$\phi$ max	17.09	17.07	17.05	17.03	17.01	17.00	16.98
dpH	0.49	0.49	0.49	0.49	0.49	0.49	0.49
pH <sub>0</sub>	6.70	6.69	6.68	6.67	6.66	6.65	6.64
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	56.94	56.85	56.76	56.68	56.59	56.50	56.42
$\phi$ max	16.96	16.94	16.92	16.90	16.89	16.87	16.85
dpH	0.48	0.48	0.48	0.48	0.48	0.48	0.48
pH <sub>0</sub>	6.62	6.61	6.60	6.59	6.58	6.57	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 255.5 (pH Ser.3083-hc, gain 45)
Date of calibration	2017/01/06

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### DO calibration parameters Lot No. 1614 (BioLector®)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ cal0	72.09	72.08	72.07	72.06	72.04	72.03	72.02
φ cal100	44.23	44.01	43.78	43.56	43.34	43.12	42.90
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ cal0	72.00	71.99	71.98	71.97	71.95	71.94	71.93
φ cal100	42.68	42.46	42.24	42.02	41.79	41.57	41.35
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ cal0	71.91	71.90	71.89	71.87	71.86	71.85	71.84
φ cal100	41.13	40.91	40.69	40.47	40.25	40.02	39.80

### 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 48)
Date of calibration	2017/01/06

### Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	319783
Date of sterilization	2016/12/15

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