

**Calibration Data Sheet: pH & DO optodes Lot. No. 1307
(HC filter sets)**

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

Date of calibration: 2013/06/19

pH calibration parameters

Buffer	150 mM Na-Phosphate buffer, <i>CertiPUR</i> buffer: pH 3.00, pH 4.01, pH 9.00, pH 10.00 (25°C) (20 point calibration)						
Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	56.50	56.45	56.40	56.35	56.29	56.24	56.19
φ max	16.37	16.37	16.36	16.35	16.35	16.34	16.33
dpH	0.52	0.52	0.52	0.52	0.52	0.53	0.53
pHo	6.44	6.43	6.42	6.41	6.41	6.41	6.40
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	56.13	56.08	56.03	55.98	55.92	55.87	55.82
φ max	16.33	16.32	16.32	16.31	16.30	16.30	16.29
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pHo	6.39	6.39	6.39	6.37	6.37	6.36	6.35
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	55.77	55.71	55.66	55.61	55.55	55.50	55.45
φ max	16.29	16.28	16.27	16.27	16.26	16.26	16.25
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pHo	6.35	6.43	6.33	6.32	6.32	6.31	6.30

Sensor properties

Dynamic range	pH 4.00 - 8.45
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.1 pH at pH 4.35 - 5.15; ± 0.02 pH at pH 5.15 – 7.10; ± 0.2 pH at pH 7.10 - 7.90 (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. 10 % v/v)
Cross-sensitivity	Reduced to ionic strength (salinity); a high concentration of fluorescent molecules in the visible range can interfere
Basic material	pH sensor HP8-1248-01 (at least stable for 7 days with CertiPUR-buffer)

calibration

Buffer	CertiPUR Reference Material Buffer solutions Set (pH 3.00 ± 0.01 / pH 4.01 ± 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_110350 (BL073)
Calibration phase offset	pH 256.3 (pH Ser.3064-hc, gain 20)

**Calibration Data Sheet: pH & DO optodes Lot. No. 1307
(HC filter sets)**

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

Date of calibration: 2013/06/19

DO calibration parameters

Buffer	Sulfite system						
Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.65	71.76	71.87	71.98	72.09	72.20	72.31
ϕ cal100	46.37	46.14	45.91	45.69	45.46	45.24	45.01
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.42	72.53	72.64	72.75	72.86	72.97	73.08
ϕ cal100	44.79	44.56	44.43	44.11	43.88	43.66	43.43
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	73.18	73.29	73.40	73.51	73.62	73.73	73.84
ϕ cal100	43.21	42.98	42.76	42.53	42.31	42.08	41.85

Sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.1 % O ₂ (software)
Accuracy	± 2 % dissolved oxygen (batch calibration)
Drift at 0% oxygen	< 0.03% O ₂ within 30 days (sampling interval of 1 min)
Response time (t ₉₀)	< 30 s
Temperature range	0 – 50°C
Cross-sensitivity to	Organic solvents, such as acetone, toluene, chloroform or methylene chloride Chlorine gas
Basic material	Oxygen sensor PSt3-HG-1317-01 (at least stable for 7 days with CertiPUR-buffer)

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_110350 (BL073)
Calibration phase offset	DO 332.6 (DO Ser.4064-hc, gain 33)

Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	33108319
Date of sterilization	2013/06/16