

**Calibration Data Sheet: pH & DO optodes Lot. No. 1306
(HC filter sets)**

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

Date of calibration: 2013/05/17

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	54.85	54.79	54.74	54.69	54.64	54.58	54.53
φ max	14.76	14.76	14.76	14.76	14.76	14.76	14.77
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pHo	6.46	6.45	6.44	6.43	6.42	6.41	6.41
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	54.48	54.42	54.37	54.32	54.26	54.21	54.16
φ max	14.77	14.77	14.77	14.77	14.77	14.77	14.78
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pHo	6.40	6.39	6.38	6.37	6.36	6.35	6.34
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	54.11	54.05	54.00	53.95	53.89	53.84	53.79
φ max	14.78	14.78	14.78	14.78	14.78	14.78	14.79
dpH	0.53	0.53	0.53	0.53	0.53	0.53	0.53
pHo	6.33	6.32	6.31	6.31	6.30	6.29	6.28

Sensor properties

Dynamic range	pH 4.00 - 8.45
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.1 pH at pH 4.40 - 5.20; ± 0.02 pH at pH 5.20 – 7.05; ± 0.2 pH at pH 7.05 - 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_110353 (BL079)
Calibration phase offset	pH 255.9 (pH Ser.3065-hc, gain 20)

**Calibration Data Sheet: pH & DO optodes Lot. No. 1306
(HC filter sets)**

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

Date of calibration: 2013/05/17

DO calibration parameters

Buffer	Sulfite system						
Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.75	71.79	71.84	71.88	71.92	71.97	72.01
ϕ cal100	46.81	46.58	46.35	46.13	45.90	45.68	45.45
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	72.05	72.09	72.14	72.18	72.22	72.26	72.31
ϕ cal100	45.23	45.00	44.77	44.55	44.32	44.10	43.87
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	72.35	72.39	72.43	72.48	72.52	72.56	72.60
ϕ cal100	43.65	43.65	43.19	42.97	42.74	42.52	42.29

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-1113-01_3 (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_110353 (BL079)
Calibration phase offset	DO 332.6 (DO Ser.4065-hc, gain 32)

Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	33106361
Date of sterilization	2013/05/09