

# DASGIP BioLector

## Calibration Data Sheet for *pH & DO optodes*

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

**Lot.-No.: 1107**

**Filter: STD**

Date of calibration: 2011/06/10

### pH calibration parameters

Buffer	150 mM Na-Phosphate buffer, <i>CertiPUR</i> buffer pH 4.01 (25°C), <i>CertiPUR</i> buffer pH 10.00 (25°C) (18 point calibration)						
Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	50.24	50.19	50.13	50.08	50.03	49.98	49.93
$\phi$ max	17.97	17.93	17.89	17.85	17.80	17.76	17.72
dpH	0.54	0.54	0.54	0.54	0.54	0.54	0.55
pHo	6.24	6.24	6.23	6.22	6.21	6.20	6.19
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	49.87	49.82	49.77	49.72	49.67	49.61	49.56
$\phi$ max	17.68	17.63	17.59	17.55	17.51	17.46	17.42
dpH	0.55	0.55	0.55	0.55	0.55	0.55	0.55
pHo	6.18	6.17	6.16	6.16	6.15	6.14	6.13
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	49.51	49.46	49.41	49.35	49.30	49.25	49.20
$\phi$ max	17.38	17.34	17.29	17.25	17.21	17.17	17.12
dpH	0.55	0.56	0.56	0.56	0.56	0.56	0.56
pHo	6.12	6.11	6.10	6.09	6.08	6.07	6.07

### Sensor properties

Dynamic range	pH 4.0-7.9
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.10 pH (pH 4.5-7.5); ± 0.25 pH (> pH 7.5; < pH 4.5) (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 HP8-0919-01

### Calibration

Buffer	CertiPUR Reference Material Buffer solutions Set 2 Lot No.: HC701006 (pH 4.01 ± 0.015 / pH 10.00 ± 0.03, 25°C); 150 mM Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = pH-DO-calibration, T = 20-40°C, 700 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flowerplate (MTP-48-BOH)
Calibration device	BioLector CX_05B82F(BL010)
Calibration phase offset	pH 255.6 (pH(p) Ser.0086, gain 50)

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### DO calibration parameters

Buffer	Sulfite system						
Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	75.12	75.11	75.10	75.09	75.07	75.06	75.05
ϕ cal100	44.99	44.80	44.61	44.41	44.22	44.03	43.83
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	75.04	75.03	75.02	75.01	75.00	74.99	74.98
ϕ cal100	43.64	43.45	43.25	43.06	42.87	42.68	42.48
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	74.97	74.96	74.95	74.94	74.93	74.92	74.91
ϕ cal100	42.29	42.10	41.90	41.71	41.52	41.32	41.13

### Sensor properties

Dynamic range	0-100% air saturation (a.s.)
Resolution	Up to 0.1% O <sub>2</sub> (software)
Accuracy	± 2% 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
Cross-sensitivity to	Organic solvents, such as acetone, toluene, chloroform or methylene chloride Chlorine gas
Basic material	Oxygen sensor PSt3-HG-1113-01

### 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, 1000 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Flowerplate (MTP-48-BOH)
Calibration device	BioLector CX_05B82F(BL010)
Calibration phase offset	DO 332.4 (pO <sub>2</sub> (p) Ser.0164, gain 50)

### Sterilization procedure

Sterilization	Gamma irradiation (15 kGy)
BGS-certificate No	31107905
Date of sterilization	2011/06/03