

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

**pH calibration parameters Lot No. 1955 (BioLector® Pro, filter module ID-221/421)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
$\phi$ min	66.96	66.94	66.92	66.89	66.87	66.85	66.82
$\phi$ max	9.32	9.30	9.27	9.25	9.23	9.21	9.18
dpH	0.70	0.70	0.70	0.70	0.70	0.70	0.70
pH <sub>0</sub>	6.03	6.03	6.02	6.02	6.01	6.00	6.00
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
$\phi$ min	66.80	66.78	66.76	66.73	66.71	66.69	66.67
$\phi$ max	9.16	9.14	9.11	9.09	9.07	9.05	9.02
dpH	0.70	0.70	0.70	0.70	0.70	0.70	0.70
pH <sub>0</sub>	5.99	5.99	5.98	5.98	5.97	5.97	5.96
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
$\phi$ min	66.64	66.62	66.60	66.57	66.55	66.53	66.51
$\phi$ max	9.00	8.98	8.96	8.93	8.91	8.89	8.87
dpH	0.70	0.70	0.69	0.69	0.69	0.69	0.69
pH <sub>0</sub>	5.95	5.95	5.94	5.94	5.93	5.93	5.92

**pH sensor properties**

Dynamic range	pH 3.60 – 7.95
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.25 - 4.70; ± 0.1 pH at pH 4.70 – 6.85; ± 0.25 pH at pH 6.85 - 7.30 (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 LG1-1840-01 (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 2.00 ± 0.01 / pH 3.00 ± 0.015 / pH 9.00 ± 0.01 / pH 10.00 ± 0.03, 20 °C); 150 mM Citrat-Na-Phosphate buffer (16 solutions)
Settings	BioLector protocol = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH2)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	pH -360.31 (pH Ser.3188-RD, gain 8)
Date of calibration	2020/01/22

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### DO calibration parameters Lot No. 1955 (BioLector® Pro, filter module ID-228/428)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	69.63	69.62	69.61	69.60	69.59	69.59	69.58
ϕ cal100	40.13	40.02	39.92	39.81	39.71	39.60	39.50
Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	69.57	69.56	69.55	69.54	69.53	69.52	69.52
ϕ cal100	39.39	39.29	39.18	39.08	38.97	38.87	38.76
Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	69.51	69.50	69.49	69.48	69.47	69.46	69.46
ϕ cal100	38.66	38.55	38.45	38.34	38.23	38.13	38.02

### DO sensor properties

Dynamic range	0 - 100 % air saturation (a.s.)
Resolution	Up to 0.1 % O <sub>2</sub> (software)
Accuracy	± 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 RF- 192050140(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 = LG1-RF-calibration, T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type = Microfluidic FlowerPlate (MTP-MF32-BOH2)
Calibration device	Hardware ID: BL-02-000F-0032
Calibration phase offset	DO -360.39 (DO Ser.4170-RD, gain 4)
Date of calibration	2020/01/22

### Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	716326
Date of sterilization	2020/01/16

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