

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

**pH calibration parameters Lot No.2113221+2113227 (BioLector® Pro, filter module ID-221/-421)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
φ min	68.25	68.18	68.11	68.05	67.98	67.91	67.84
φ max	13.46	13.40	13.33	13.27	13.20	13.14	13.07
dpH	0.83	0.83	0.83	0.83	0.83	0.83	0.83
pH <sub>0</sub>	6.60	6.60	6.59	6.59	6.58	6.58	6.57

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
φ min	67.77	67.71	67.64	67.57	67.50	67.43	67.37
φ max	13.01	12.94	12.88	12.81	12.75	12.68	12.61
dpH	0.83	0.83	0.83	0.83	0.83	0.83	0.83
pH <sub>0</sub>	6.57	6.56	6.56	6.56	6.55	6.55	6.54

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
φ min	67.30	67.23	67.16	67.09	67.03	66.96	66.89
φ max	12.55	12.48	12.42	12.35	12.29	12.22	12.16
dpH	0.83	0.83	0.83	0.83	0.83	0.83	0.83
pH <sub>0</sub>	6.54	6.53	6.53	6.52	6.52	6.51	6.51

### pH sensor properties

Dynamic range	pH 3.80 - 8.90
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.60-5.15; ± 0.1 pH at pH 5.15-7.60; ± 0.25 pH at pH 7.60-8.10 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 LG1-1939-01_2 (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 Flower Plate (MTP-MF32C-BOH2)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	pH -360.15 (pH Ser. 3305, gain 8)
Date of calibration	2021-09-16

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**DO calibration parameters Lot No.2113221+2113227 (BioLector® Pro, filter module ID-228/-428)**

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ cal0	71.35	71.34	71.34	71.33	71.33	71.32	71.32
ϕ cal100	41.05	40.91	40.76	40.62	40.47	40.33	40.18

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ cal0	71.31	71.31	71.30	71.30	71.29	71.29	71.28
ϕ cal100	40.04	39.89	39.75	39.60	39.46	39.31	39.17

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ cal0	71.28	71.27	71.27	71.26	71.26	71.25	71.25
ϕ cal100	39.02	38.88	38.73	38.59	38.44	38.30	38.15

**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 (t <sub>90</sub> )	< 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-21160296 (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 Flower Plate (MTP-MF32C-BOH2)
Calibration device	Hardware ID: BL-09-000F-0032
Calibration phase offset	DO -360.44 (DO Ser. 4302-RD, gain 4)
Date of calibration	2021-09-16

**Sterilization procedure**

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	941459
Date of sterilization	2021-09-09

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