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Beckman Coulter Life Sciences

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

pH calibration parameters Lot No.2014211 (BioLector® XT, filter module ID-521)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
ϕ min	69.71	69.51	69.30	69.10	68.90	68.69	68.49
ϕ max	13.52	13.41	13.29	13.18	13.07	12.96	12.85
dpH	0.77	0.77	0.77	0.77	0.77	0.77	0.77
pH_0	6.64	6.63	6.62	6.60	6.59	6.58	6.56

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
ϕ min	68.29	68.08	67.88	67.68	67.47	67.27	67.07
ϕ max	12.74	12.63	12.51	12.40	12.29	12.18	12.07
dpH	0.77	0.77	0.77	0.77	0.77	0.77	0.77
pH_0	6.55	6.54	6.53	6.51	6.50	6.49	6.47

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
ϕ min	66.86	66.66	66.45	66.25	66.05	65.84	65.64
ϕ max	11.96	11.84	11.73	11.62	11.51	11.40	11.29
dpH	0.77	0.77	0.77	0.77	0.77	0.77	0.77
pH_0	6.46	6.45	6.43	6.42	6.41	6.40	6.38

pH sensor properties

Dynamic range	pH 4.00 - 8.80
Resolution	Up to 0.01 pH (software)
Accuracy	± 0.25 pH at pH 4.70 - 5.15 ; ± 0.1 pH at pH 5.15 - 7.50 ; ± 0.25 pH at pH 7.50 - 8.00 (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)
	pH sensors are light-sensitive;please protect them from direct light!

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 = MF_pH_DO_calibration_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Microfluidic Flower Plate (MTP-MF32-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	pH -360.45; pH Ser.3513, gain 8
Date of calibration	2021-06-09

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DO calibration parameters Lot No.2014211 (BioLector® XT, filter module ID-528)

Temperature	20°C	21°C	22°C	23°C	24°C	25°C	26°C
A	-3110	-3032	-2955	-2877	-2799	-2722	-2644
B	24271	23656	23041	22426	21812	21197	20582
C	-21787	-21226	-20664	-20102	-19540	-18978	-18416

Temperature	27°C	28°C	29°C	30°C	31°C	32°C	33°C
A	-2567	-2489	-2412	-2334	-2257	-2179	-2101
B	19968	19353	18738	18123	17509	16894	16279
C	-17855	-17293	-16731	-16169	-15607	-15046	-14484

Temperature	34°C	35°C	36°C	37°C	38°C	39°C	40°C
A	-2024	-1946	-1869	-1791	-1714	-1636	-1559
B	15664	15050	14435	13820	13206	12591	11976
C	-13922	-13360	-12798	-12236	-11675	-11113	-10551

DO sensor properties

Dynamic range	0 - 100 % oxygen
Resolution	Up to 0.1 % O2 (software)
Accuracy	± 5% dissolved oxygen (batch calibration)
Drift at 0% oxygen	< 0.5% O2 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-204150648 (at least stable for 7 days with CertiPUR-buffer)
	DO sensors are light-sensitive;please protect them from direct light!

DO calibration

Calibration	0.5 M Sulfite system (Two-point calibration with oxygen-free environment (sodium sulfite) and air-saturated environment)
Settings	BioLector protocol = MF_pH_DO_calibration_BOH3 ,T = 20-40 °C, 800 rpm, 1000 µL/well, shaking diameter 3 mm, MTP-type=Microfluidic Flower Plate (MTP-MF32-BOH2)
Calibration device	Hardware ID: 03166164
Calibration phase offset	DO -360.67; DO Ser.4446, gain 4
Date of calibration	2021-06-09

Sterilization procedure

Sterilization	Beta irradiation (20 kGy)
BGS-certificate No	845636
Date of sterilization	2021-01-11

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