Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA

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SENSOR SERIAL NUMBER: 1074 SBE 63 OXYGEN CALIBRATION DATA

CALIBRATION DATE: 14-May-15

COEFFICIENTS:

A0 = 1.0513e+000	B0 = -2.2238e-001	C0 = 9.7678e-002	E = 1.1000e-002
A1 = -1.5000e-003	B1 = 1.6434e+000	C1 = 4.1613e-003	
A2 = 4.2979e-001		C2 = 5.4351e-005	

BATH OX (ml/l)	BATH TEMP (ITS-90)	BATH SAL (PSU)	INSTRUMENT OUTPUT (U)	INSTRUMENT OXYGEN (ml/l)	RESIDUAL (ml/l)
0.873	30.00	0.00	29.43	0.889	0.017
0.904	26.00	0.00	30.16	0.916	0.012
0.957	20.00	0.00	31.29	0.962	0.005
1.043	12.00	0.00	32.87	1.038	-0.005
1.157	6.00	0.00	33.88	1.151	-0.005
1.248	2.00	0.00	34.58	1.241	-0.007
2.401	30.00	0.00	21.83	2.420	0.019
2.538	26.00	0.00	22.40	2.553	0.015
2.686	20.00	0.00	23.59	2.694	0.008
3.200	12.00	0.00	24.58	3.199	-0.001
3.618	6.00	0.00	25.58	3.616	-0.002
3.892	30.00	0.00	18.15	3.893	0.001
3.983	2.00	0.00	26.24	3.980	-0.004
4.157	26.00	0.00	18.58	4.158	0.001
4.580	20.00	0.00	19.35	4.576	-0.004
5.342	12.00	0.00	20.41	5.335	-0.007
5.514	30.00	0.00	15.68	5.503	-0.011
5.906	26.00	0.00	16.04	5.894	-0.011
6.088	6.00	0.00	21.28	6.086	-0.002
6.628	20.00	0.00	16.58	6.631	0.002
6.709	2.00	0.00	21.90	6.703	-0.006
7.664	12.00	0.00	17.60	7.664	0.001
8.671	6.00	0.00	18.45	8.678	0.008
9.119	2.00	0.00	19.39	9.124	0.005

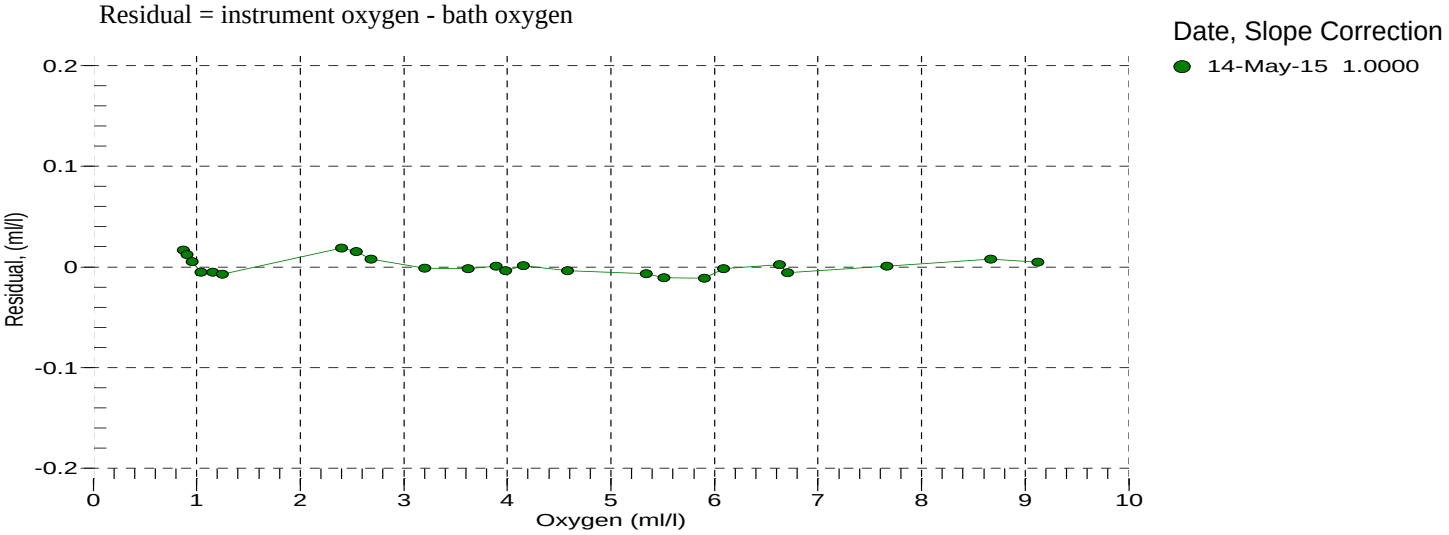
$V = U / 39.457071$

$$\text{Oxygen (ml/l)} = \{((A0 + A1*T + A2 * V^2)/(B0 + B1 * V) - 1.0)/(C0 + C1 * T + C2 * T^2)\} * [\text{Scorr}] * \exp(E * P / K)$$

Note: [Scorr] = salinity correction function = 1.0 for calibration in DI water

T = temperature [deg C], K = temperature [Kelvin], P = pressure [dbar]

Residual = instrument oxygen - bath oxygen



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CALIBRATION DATE: 14-May-15

SBE 63 OXYGEN TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

TA0 = 7.142489e-004 TA2 = 9.884156e-007
TA1 = 2.476494e-004 TA3 = 9.231336e-008

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT(V)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.9999	1.11949	2.0001	0.00020
2.0000	1.11949	2.0001	0.00010
2.0000	1.11949	2.0001	0.00010
2.0001	1.11950	1.9998	-0.00031
5.9999	0.99527	5.9999	0.00003
6.0000	0.99527	5.9999	-0.00007
6.0000	0.99527	5.9999	-0.00007
6.0000	0.99527	5.9999	-0.00007
11.9999	0.82938	12.0000	0.00013
12.0000	0.82938	12.0000	0.00003
12.0000	0.82938	12.0000	0.00003
12.0001	0.82938	12.0000	-0.00007
19.9999	0.64566	19.9999	0.00003
19.9999	0.64566	19.9999	0.00003
19.9999	0.64566	19.9999	0.00003
19.9999	0.64566	19.9999	0.00003
26.0000	0.53362	25.9998	-0.00018
26.0000	0.53361	26.0004	0.00041
26.0000	0.53362	25.9998	-0.00018
26.0001	0.53362	25.9998	-0.00028
30.0000	0.46977	30.0001	0.00008
30.0000	0.46977	30.0001	0.00008
30.0001	0.46978	29.9994	-0.00069
30.0001	0.46976	30.0007	0.00065

Temperature ITS-90 = $1 / (TA0 + TA1 * L + TA2 * L^2 + TA3 * L^3) - 273.15$ (°C)

L = *ln* (100000 * V / (3.3 - V)); V = thermistor voltage

Residual = instrument temperature - bath temperature