

SEA-BIRD  
SCIENTIFIC

Sea-Bird Scientific  
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SENSOR SERIAL NUMBER: 2330  
CALIBRATION DATE: 21-Aug-19

SBE 63 OXYGEN TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

TA0 = 7.381181e-004 TA2 = 1.757900e-006  
TA1 = 2.403242e-004 TA3 = 6.466459e-008

BATH TEMP (° C)	INSTRUMENT OUTPUT(V)	INST TEMP (° C)	RESIDUAL (° C)
2.0000	1.12032	2.0001	0.00006
2.0000	1.12032	2.0001	0.00006
2.0000	1.12032	2.0001	0.00006
2.0002	1.12032	2.0001	-0.00014
5.9998	0.99591	5.9997	-0.00007
6.0000	0.99590	6.0001	0.00007
6.0001	0.99591	5.9997	-0.00037
6.0001	0.99589	6.0004	0.00031
11.9999	0.82979	11.9997	-0.00020
11.9999	0.82978	12.0001	0.00019
12.0001	0.82978	12.0001	-0.00001
12.0001	0.82978	12.0001	-0.00001
20.0000	0.64584	20.0003	0.00027
20.0001	0.64585	19.9998	-0.00032
20.0001	0.64584	20.0003	0.00017
20.0002	0.64584	20.0003	0.00007
25.9998	0.53370	25.9999	0.00011
26.0000	0.53370	25.9999	-0.00009
26.0000	0.53370	25.9999	-0.00009
26.0001	0.53370	25.9999	-0.00019
29.9999	0.46980	30.0001	0.00021
30.0001	0.46980	30.0001	0.00001
30.0001	0.46980	30.0001	0.00001
30.0002	0.46980	30.0001	-0.00009

V = Instrument Output (Volts)

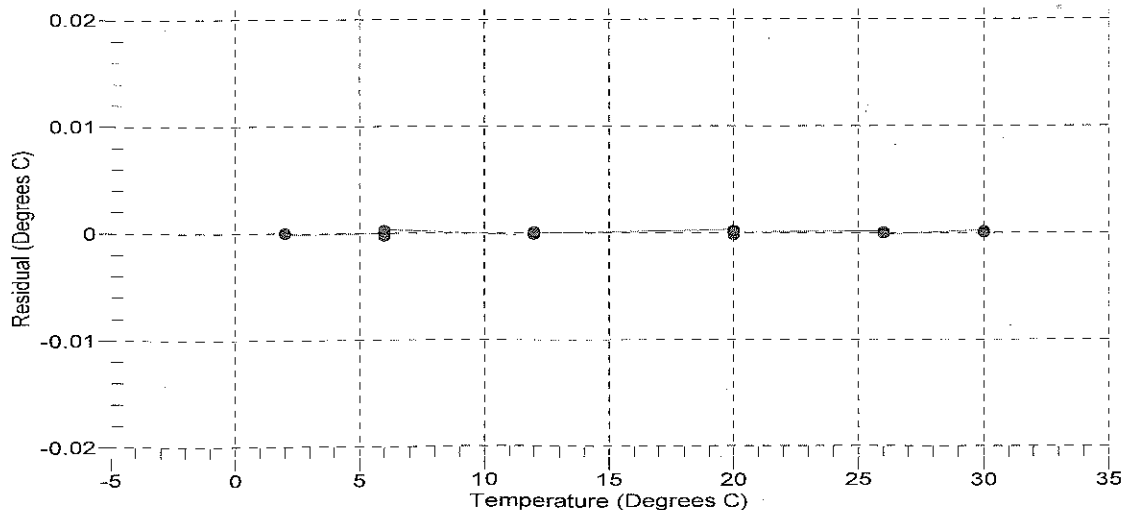
$L = \ln(100000 * V / (3.3 - V))$

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

Residual (°C) = instrument temperature - bath temperature

Date, Offset (mdeg C)

● 21-Aug-19 -0.00





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# SBE 63 OXYGEN CALIBRATION DATA

## COEFFICIENTS:

A0 = 1.0513e+000 B0 = -2.4395e-001 C0 = 1.1192e-001 E = 1.1000e-002  
A1 = -1.5000e-003 B1 = 1.5817e+000 C1 = 4.7692e-003  
A2 = 3.5150e-001 C2 = 6.6664e-005

BATH OXYGEN (ml/l)	BATH TEMPERATURE (° C)	BATH SALINITY (PSU)	INSTRUMENT OUTPUT (µsec)	INSTRUMENT OXYGEN (ml/l)	RESIDUAL (ml/l)
0.696	30.00	0.00	31.15	0.698	0.001
0.729	26.00	0.00	31.75	0.731	0.002
0.782	20.00	0.00	32.71	0.783	0.001
0.867	12.00	0.00	34.06	0.867	-0.000
0.952	6.00	0.00	35.08	0.949	-0.002
1.039	2.00	0.00	35.68	1.034	-0.006
2.148	30.00	0.00	22.81	2.148	-0.000
2.273	26.00	0.00	23.37	2.274	0.001
2.437	20.00	0.00	24.45	2.439	0.003
2.936	12.00	0.00	25.36	2.939	0.003
3.313	6.00	0.00	26.38	3.319	0.005
3.576	30.00	0.00	18.84	3.569	-0.006
3.646	2.00	0.00	27.05	3.649	0.003
3.814	26.00	0.00	19.30	3.809	-0.005
4.256	20.00	0.00	19.98	4.253	-0.003
4.993	12.00	0.00	21.03	4.990	-0.003
5.025	30.00	0.00	16.39	5.028	0.003
5.448	26.00	0.00	16.68	5.452	0.004
5.685	6.00	0.00	21.92	5.687	0.002
6.132	20.00	0.00	17.24	6.132	0.000
6.275	2.00	0.00	22.53	6.278	0.004
7.160	12.00	0.00	18.21	7.161	0.001
8.176	6.00	0.00	19.02	8.172	-0.004
8.664	2.00	0.00	19.90	8.661	-0.003

T = temperature (°C), P = pressure (dbar), U = Instrument output (µsec)

$S_{corr}$  (salinity correction function) = 1.0 for calibration in DI water

See the user manual for more information on  $S_{corr}$  calculation

$$V = U / 39.457071$$

$$\text{Oxygen (ml/l)} = \{((A0 + A1 \cdot T + A2 \cdot V^2) / (B0 + B1 \cdot V) - 1.0) / (C0 + C1 \cdot T + C2 \cdot T^2)\} \cdot S_{corr} \cdot \exp(E \cdot P / (T + 273.15))$$

Residual (ml/l) = instrument oxygen - bath oxygen

Date, Slope Correction

● 21-Aug-19 1.0000

