

# SEA-BIRD ELECTRONICS, INC.

1808 136th Place N.E., Bellevue, Washington, 98005 USA

Phone: (425) 643 - 9866 Fax (425) 643 - 9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 1008  
CALIBRATION DATE: 27-Jan-09

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

### ITS-90 COEFFICIENTS

g = 4.80463571e-003  
h = 6.75078625e-004  
i = 2.72571308e-005  
j = 2.23736484e-006  
f0 = 1000.0

### IPTS-68 COEFFICIENTS

a = 3.68121344e-003  
b = 5.99683982e-004  
c = 1.53868338e-005  
d = 2.23885546e-006  
f0 = 5885.806

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
-1.5001	5885.806	-1.5001	0.00002
0.9999	6225.255	0.9999	-0.00003
4.4999	6723.947	4.4999	0.00001
7.9999	7250.682	7.9999	0.00000
11.4999	7806.216	11.4999	0.00002
15.0000	8391.278	15.0000	-0.00001
18.4999	9006.530	18.4999	-0.00000
21.9999	9652.690	21.9999	-0.00001
25.4999	10330.400	25.4999	0.00001
28.9999	11040.272	28.9999	0.00001
32.4999	11782.904	32.4999	-0.00000

$$\text{Temperature ITS-90} = 1/\{g + h[\ln(f_0/f)] + i[\ln^2(f_0/f)] + j[\ln^3(f_0/f)]\} - 273.15 \text{ (}^\circ\text{C)}$$

$$\text{Temperature IPTS-68} = 1/\{a + b[\ln(f_0/f)] + c[\ln^2(f_0/f)] + d[\ln^3(f_0/f)]\} - 273.15 \text{ (}^\circ\text{C)}$$

Following the recommendation of JPOTS:  $T_{68}$  is assumed to be  $1.00024 * T_{90}$  (-2 to 35 °C)

Residual = instrument temperature - bath temperature

