

# 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: 2900  
CALIBRATION DATE: 15-May-09

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

g = 4.32932377e-003  
h = 6.44553402e-004  
i = 2.36031847e-005  
j = 2.32615052e-006  
f0 = 1000.0

## IPTS-68 COEFFICIENTS

a = 3.68121345e-003  
b = 6.03115444e-004  
c = 1.63652704e-005  
d = 2.32773492e-006  
f0 = 2832.467

| BATH TEMP<br>(ITS-90) | INSTRUMENT FREQ<br>(Hz) | INST TEMP<br>(ITS-90) | RESIDUAL<br>(ITS-90) |
|-----------------------|-------------------------|-----------------------|----------------------|
| -1.5001               | 2832.467                | -1.5001               | 0.00002              |
| 0.9999                | 2994.880                | 0.9999                | -0.00002             |
| 4.4999                | 3233.436                | 4.4999                | -0.00000             |
| 7.9999                | 3485.356                | 7.9999                | -0.00001             |
| 11.4999               | 3750.998                | 11.4999               | -0.00001             |
| 14.9999               | 4030.711                | 14.9999               | 0.00003              |
| 18.4999               | 4324.820                | 18.4999               | 0.00000              |
| 21.9999               | 4633.659                | 21.9999               | 0.00004              |
| 25.4999               | 4957.521                | 25.4998               | -0.00006             |
| 28.9999               | 5296.731                | 28.9999               | -0.00001             |
| 32.4999               | 5651.558                | 32.4999               | 0.00002              |

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

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

