

# SEA-BIRD ELECTRONICS, INC.

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SENSOR SERIAL NUMBER: 4126  
CALIBRATION DATE: 13-Dec-06

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

g = 4.38527837e-003  
h = 6.45186257e-004  
i = 2.29015161e-005  
j = 2.03712511e-006  
f0 = 1000.0

## ITS-68 COEFFICIENTS

a = 3.68121157e-003  
b = 6.01308369e-004  
c = 1.60097666e-005  
d = 2.03863780e-006  
f0 = 3102.434

| BATH TEMP<br>(ITS-90) | INSTRUMENT FREQ<br>(Hz) | INST TEMP<br>(ITS-90) | RESIDUAL<br>(ITS-90) |
|-----------------------|-------------------------|-----------------------|----------------------|
| -1.4999               | 3102.434                | -1.4999               | -0.00004             |
| 1.0000                | 3280.872                | 1.0000                | 0.00002              |
| 4.5000                | 3543.009                | 4.5001                | 0.00008              |
| 8.0001                | 3819.883                | 8.0001                | 0.00004              |
| 11.5000               | 4111.875                | 11.5000               | -0.00003             |
| 15.0001               | 4419.404                | 15.0000               | -0.00014             |
| 18.5001               | 4742.847                | 18.5001               | -0.00002             |
| 22.0000               | 5082.545                | 22.0001               | 0.00006              |
| 25.4999               | 5438.857                | 25.5000               | 0.00008              |
| 29.0000               | 5812.139                | 29.0000               | 0.00001              |
| 32.5000               | 6202.697                | 32.4999               | -0.00005             |

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 ITS-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

