

# Sea-Bird Electronics, Inc.

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SENSOR SERIAL NUMBER: 1384  
CALIBRATION DATE: 31-Jul-12

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

g = 4.87009672e-003  
h = 6.80764003e-004  
i = 2.71752442e-005  
j = 2.16381211e-006  
f0 = 1000.0

## IPTS-68 COEFFICIENTS

a = 3.68121234e-003  
b = 6.02137615e-004  
c = 1.50987271e-005  
d = 2.16527594e-006  
f0 = 6453.251

| BATH TEMP<br>(ITS-90) | INSTRUMENT FREQ<br>(Hz) | INST TEMP<br>(ITS-90) | RESIDUAL<br>(ITS-90) |
|-----------------------|-------------------------|-----------------------|----------------------|
| -1.5000               | 6453.251                | -1.5000               | -0.00000             |
| 1.0000                | 6823.861                | 1.0000                | 0.00001              |
| 4.5000                | 7368.115                | 4.5000                | 0.00001              |
| 8.0000                | 7942.728                | 7.9999                | -0.00005             |
| 11.5000               | 8548.521                | 11.5000               | -0.00001             |
| 14.9999               | 9186.228                | 14.9999               | 0.00004              |
| 18.4999               | 9856.615                | 18.4999               | 0.00004              |
| 22.0000               | 10560.397               | 22.0000               | -0.00002             |
| 25.5000               | 11298.247               | 25.5000               | -0.00001             |
| 29.0000               | 12070.822               | 29.0000               | -0.00003             |
| 32.5000               | 12878.774               | 32.5000               | 0.00003              |

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

