

# Sea-Bird Electronics, Inc.

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SENSOR SERIAL NUMBER: 1370  
CALIBRATION DATE: 26-Mar-13

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

g = 4.84107536e-003  
h = 6.75876227e-004  
i = 2.42522996e-005  
j = 1.72240076e-006  
f0 = 1000.0

## IPTS-68 COEFFICIENTS

a = 3.68120976e-003  
b = 6.04873907e-004  
c = 1.48778350e-005  
d = 1.72379544e-006  
f0 = 6169.057

| BATH TEMP<br>(ITS-90) | INSTRUMENT FREQ<br>(Hz) | INST TEMP<br>(ITS-90) | RESIDUAL<br>(ITS-90) |
|-----------------------|-------------------------|-----------------------|----------------------|
| -1.5000               | 6169.057                | -1.4998               | 0.00019              |
| 1.0000                | 6521.632                | 0.9998                | -0.00018             |
| 4.5000                | 7039.283                | 4.4998                | -0.00021             |
| 8.0000                | 7585.634                | 7.9999                | -0.00006             |
| 11.5000               | 8161.428                | 11.5002               | 0.00023              |
| 15.0000               | 8767.372                | 15.0005               | 0.00051              |
| 18.5000               | 9403.949                | 18.4996               | -0.00040             |
| 22.0000               | 10072.269               | 21.9998               | -0.00016             |
| 25.5000               | 10772.760               | 25.5000               | -0.00003             |
| 29.0000               | 11506.077               | 29.0001               | 0.00009              |
| 32.5000               | 12272.788               | 32.5000               | 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

