

# Sea-Bird GmbH

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SENSOR SERIAL NUMBER: 5146  
CALIBRATION DATE: 28-Mar-13

SBE3 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

g = 4.36716420e-003  
h = 6.40623275e-004  
i = 2.23733802e-005  
j = 2.11631909e-006  
f0 = 1000.0

## IPTS-68 COEFFICIENTS

a = 3.68121255e-003  
b = 5.98945932e-004  
c = 1.53580752e-005  
d = 2.11778933e-006  
f0 = 3032.011

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
-1.5000	3032.011	-1.5000	-0.00002
1.0000	3207.103	1.0000	0.00003
4.5000	3464.343	4.5000	-0.00000
8.0000	3736.084	8.0000	0.00000
11.5000	4022.710	11.5000	-0.00003
15.0000	4324.609	15.0000	0.00001
18.5000	4642.136	18.5000	-0.00000
22.0000	4975.652	22.0000	-0.00001
25.5000	5325.503	25.5000	0.00004
29.0000	5691.998	29.0000	-0.00004
32.5000	6075.478	32.5000	0.00001

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

