

# Sea-Bird Electronics, Inc.

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SENSOR SERIAL NUMBER: 0387  
 CALIBRATION DATE: 19-Oct-12

## SBE 43 OXYGEN CALIBRATION DATA

### COEFFICIENTS

Soc = 0.4669  
 Voffset = -0.4765  
 Tau20 = 1.18

A = -2.1012e-003  
 B = 8.6774e-005  
 C = -1.5709e-006  
 E nominal = 0.036

### NOMINAL DYNAMIC COEFFICIENTS

D1 = 1.92634e-4 H1 = -3.30000e-2  
 D2 = -4.64803e-2 H2 = 5.00000e+3  
 H3 = 1.45000e+3

| BATH OX<br>(ml/l) | BATH TEMP<br>ITS-90 | BATH SAL<br>PSU | INSTRUMENT<br>OUTPUT(VOLTS) | INSTRUMENT<br>OXYGEN(ml/l) | RESIDUAL<br>(ml/l) |
|-------------------|---------------------|-----------------|-----------------------------|----------------------------|--------------------|
| 1.23              | 2.00                | 0.01            | 0.752                       | 1.24                       | 0.01               |
| 1.24              | 6.00                | 0.01            | 0.784                       | 1.24                       | 0.00               |
| 1.24              | 12.00               | 0.01            | 0.833                       | 1.24                       | -0.00              |
| 1.26              | 20.00               | 0.01            | 0.906                       | 1.25                       | -0.00              |
| 1.27              | 26.00               | 0.01            | 0.964                       | 1.26                       | -0.01              |
| 1.27              | 30.00               | 0.01            | 1.003                       | 1.27                       | -0.01              |
| 4.12              | 2.00                | 0.01            | 1.393                       | 4.13                       | 0.00               |
| 4.13              | 6.00                | 0.01            | 1.502                       | 4.13                       | 0.00               |
| 4.14              | 12.00               | 0.01            | 1.671                       | 4.14                       | -0.00              |
| 4.14              | 20.00               | 0.01            | 1.899                       | 4.14                       | -0.00              |
| 4.15              | 26.00               | 0.01            | 2.081                       | 4.15                       | -0.00              |
| 4.19              | 30.00               | 0.01            | 2.218                       | 4.18                       | -0.00              |
| 6.72              | 20.00               | 0.01            | 2.785                       | 6.72                       | 0.00               |
| 6.74              | 26.00               | 0.01            | 3.081                       | 6.74                       | -0.00              |
| 6.76              | 12.00               | 0.01            | 2.426                       | 6.76                       | -0.00              |
| 6.81              | 6.00                | 0.01            | 2.167                       | 6.81                       | -0.00              |
| 6.83              | 30.00               | 0.01            | 3.322                       | 6.83                       | 0.00               |
| 6.85              | 2.00                | 0.01            | 1.998                       | 6.85                       | -0.00              |

$$\text{Oxygen (ml/l)} = \text{Soc} * (\text{V} + \text{Voffset}) * (1.0 + \text{A} * \text{T} + \text{B} * \text{T}^2 + \text{C} * \text{T}^3) * \text{OxSol}(\text{T}, \text{S}) * \exp(\text{E} * \text{P} / \text{K})$$

V = voltage output from SBE43, T = temperature [deg C], S = salinity [PSU], K = temperature [Kelvin]

OxSol(T,S) = oxygen saturation [ml/l], P = pressure [dbar], Residual = instrument oxygen - bath oxygen

Date, Delta Ox (ml/l)

