

# Sea-Bird Electronics, Inc.

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SENSOR SERIAL NUMBER: 1876

SBE 43 OXYGEN CALIBRATION DATA

CALIBRATION DATE: 11-Mar-15

## COEFFICIENTS:

Soc = 0.5293

Voffset = -0.5208

Tau20 = 1.47

A = -2.9435e-003

B = 1.6728e-004

C = -2.6688e-006

E nominal = 0.036

## NOMINAL DYNAMIC COEFFICIENTS

D1 = 1.92634e-4

D2 = -4.64803e-2

H1 = -3.300000e-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) |
|-------------------|-----------------------|-------------------|------------------------------|-----------------------------|--------------------|
| 1.33              | 20.00                 | 0.00              | 0.920                        | 1.33                        | 0.00               |
| 1.33              | 12.00                 | 0.00              | 0.859                        | 1.33                        | -0.00              |
| 1.33              | 26.00                 | 0.00              | 0.971                        | 1.34                        | 0.00               |
| 1.34              | 30.00                 | 0.00              | 1.005                        | 1.34                        | 0.00               |
| 1.35              | 6.00                  | 0.00              | 0.817                        | 1.35                        | -0.00              |
| 1.36              | 2.00                  | 0.00              | 0.787                        | 1.36                        | -0.01              |
| 4.11              | 12.00                 | 0.00              | 1.567                        | 4.11                        | 0.00               |
| 4.11              | 2.00                  | 0.00              | 1.328                        | 4.11                        | -0.00              |
| 4.14              | 6.00                  | 0.00              | 1.430                        | 4.14                        | 0.00               |
| 4.15              | 30.00                 | 0.00              | 2.017                        | 4.15                        | 0.00               |
| 4.15              | 20.00                 | 0.00              | 1.770                        | 4.15                        | 0.00               |
| 4.17              | 26.00                 | 0.00              | 1.922                        | 4.17                        | 0.00               |
| 6.86              | 2.00                  | 0.00              | 1.868                        | 6.86                        | 0.00               |
| 6.90              | 6.00                  | 0.00              | 2.037                        | 6.90                        | -0.00              |
| 6.93              | 12.00                 | 0.00              | 2.285                        | 6.93                        | -0.00              |
| 6.95              | 20.00                 | 0.00              | 2.611                        | 6.95                        | -0.00              |
| 7.01              | 26.00                 | 0.00              | 2.879                        | 7.01                        | 0.00               |
| 7.01              | 30.00                 | 0.00              | 3.050                        | 7.01                        | -0.00              |

Oxygen (ml/l) = Soc \* (V + Voffset) \* (1.0 + A \* T + B \* T<sup>2</sup> + C \* T<sup>3</sup>) \* OxSol(T,S) \* exp(E \* P / K)

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

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

Residual = instrument oxygen - bath oxygen

