

Certificate no: 4831_988_00192984
Foil batch no: 1824M

Product: 4831
Calibration date: 04.02.2022

Serial no: 988
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Index	Temperature reference(°C)	[O2] Reference(μM)	Temperature raw data(mV)	Phase reading(°)
0	30.227	2.13	-36.527	59.97
1	19.889	1.06	298.187	61.13
2	10.053	0.51	611.393	61.89
3	0.831	-0.12	878.567	62.53
4	0.846	19.38	878.160	59.93
5	0.860	40.51	877.793	57.41
6	0.870	62.32	877.520	55.09
7	0.881	103.39	877.193	51.31
8	0.892	147.66	876.927	47.93
9	0.905	210.46	876.587	44.07
10	0.922	317.66	876.100	39.10
11	0.934	423.74	875.780	35.54
12	0.941	528.15	875.613	32.87
13	10.062	14.80	611.087	59.12
14	10.038	31.32	611.847	56.34
15	10.018	48.42	612.440	53.79
16	9.998	81.14	613.060	49.70
17	9.989	115.79	613.307	46.17
18	9.990	164.04	613.300	42.26
19	9.987	248.48	613.380	37.25
20	9.971	334.65	613.873	33.64
21	9.955	414.85	614.367	31.14
22	20.200	11.78	288.027	58.09
23	20.139	25.00	290.007	54.96
24	20.098	38.22	291.333	52.27
25	20.064	65.69	292.473	47.66
26	20.034	90.82	293.440	44.32
27	20.009	130.57	294.247	40.17
28	19.992	198.80	294.807	35.13
29	19.980	265.61	295.200	31.72
30	19.975	332.80	295.393	29.21
31	30.366	9.59	-40.973	57.09
32	30.321	19.85	-39.547	53.78
33	30.292	31.25	-38.587	50.67
34	30.276	53.02	-38.080	45.95
35	30.267	73.62	-37.813	42.47
36	30.263	108.24	-37.700	38.00
37	30.259	163.29	-37.573	33.15
38	30.259	216.62	-37.567	29.95
39	30.260	273.38	-37.593	27.50

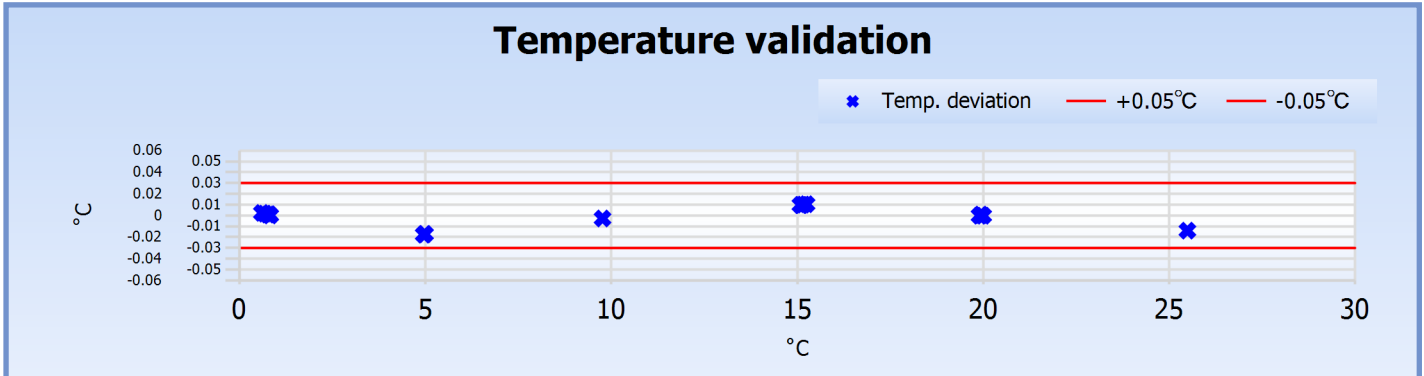
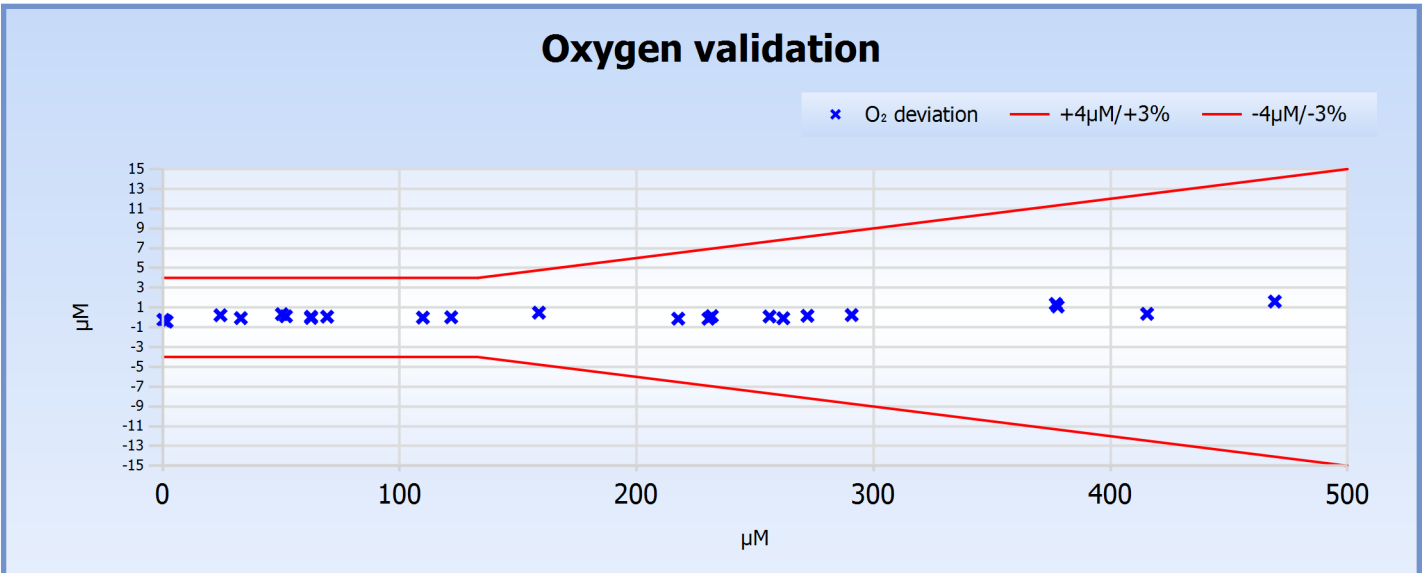
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Giving these coefficients

Index	0	1	2	3	4	5	6
SVUFoilCoef	2.72300E-03	1.14866E-04	2.41060E-06	2.10210E02	-2.62989E-01	-4.29229E01	4.24796E00
TempCoef	2.90736E01	-3.14160E-02	3.53694E-06	-4.97100E-09	0.00000E00	0.00000E00	



With following settings

Index	0	1	2	3
PhaseCoef	-2.96700E00	1.00000E00	0.00000E00	0.00000E00

Index	0 (Offset)	1 (Slope)
ConcCoef	0.00000E00	1.00000E00
Salinity	0.00	

Firmware Version	5.3.1
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Date:04.02.2022

Tor-Ove Kvalvaag
Tor-Ove Kvalvaag, Calibration Engineer

Program Version: V5.3.1

Product: Oxygen Optode 4831

Serial No: 988

Visual and Mechanical Checks:

- 1.1 Soldering quality
- 1.2 Visual surface
- 1.3 Galvanic isolation between housing and electronics

Current Drain and Voltages:

2.1	Average current drain at 0.5 Hz sampling (Max.: 33 mA)	22.9	mA
2.2	CANBus Current drain at 0.5 Hz sampling (Max.: 33 mA)		mA
2.3	Current drain in sleep (Max.: 270 μ A)	223	μ A
2.4	CANBus Current drain in sleep (Max.: 180 μ A)		μ A
2.5	DSP IO voltage, J4.18 (3.3 \pm 0.15V)	3.28	V
2.6	DSP Core voltage, J4.17(1.8 \pm 0.05 V)	1.82	V
2.7	Excitation driver voltage, C4 Analog Board (4.3 \pm 0.1 V)	4.33	V

Performance test:

	Channel:	Blue	Red
3.1	Average of Receiver readings (0 \pm 150mV)	-7.6 mV	-5.5 mV
3.2	Standard Deviation of Receiver readings (Max.: 45mV/10mV)	1.05 mV	0.30 mV
3.3	Amplitude measurement with non-fluorescence foil (<60mV/650-1200mV)	11.4 mV	964.7 mV
3.4	CANBus Output test		

Function test from 0 to 40°C:

	Channel:	Blue	Red
4.1	Minimum amplitude measurement (Blue: >550 mV, Red >550 mV)	717.7 mV	801.2 mV
4.2	Maximum amplitude measurement (Blue: <1600 mV, Red <1400 mV)	1121.4 mV	1281.5 mV
4.3	Minimum phase measurement (Blue: >32°, Red: >3°)	34.04 °	5.97 °
4.4	Maximum phase measurement (Blue: <45°, Red: <10°)	40.46 °	7.03 °
4.5	Maximum standard deviation of Phase measurement: (< 0.07°)	0.05 °	0.04 °
4.6	Minimum temperature raw data measurement: (<-200 mV)		-370.2 mV
4.7	Maximum temperature raw data measurement: (>450 mV)		784 mV

Date: 09 Mar 2022

Sign:

Laila A. Skålnes

Laila Skålnes, Production Engineer

Product: Oxygen Optode 4831
Serial No: 988
Date: 11.02.2022

Certificate No: 193299260988

This is to certify that this product has been pressure tested with the following instrument, and we confirm that no irregularities were found during the test:

Autoklav 800 bar – sn: 0210005

Pressure readings:

Pressure (Bar)	Pressure time (hour)
30	1

Date: 14 Feb 2022

Sign:

Laila A. Skålnes

Laila Skålnes, Production Engineer