

SATURN-01 CHLOROPHYLL SENSOR CALIBRATION EVALUATION (04/01/08 - 06/15/12)

CALIBRATION INFORMATION				
WETLabs calibration	standard type	cal type	SF	DC
2008	solid	cal	0.0128	55
2013	solid	pre-cal*	0.0119	58

$$CHL (\mu g/L) = SF * (Output - DC)$$

*pre-cal: post deployment calibration prior to servicing and recalibration of the instrument

CALCULATIONS OF CHLOROPHYLL CONCENTRATION ACROSS RANGE OF INSTRUMENT OUTPUT USING 2008 & 2012 CALIBRATIONS

instrument output (counts):	100	250	500	750	1000	1126	1500	2000	2238	2500	3000	2500	3349	4000
CHL(ug/L) using 2008 cal.:	0.6	2.5	5.7	8.9	12.1	13.7	18.5	24.9	27.9	31.3	37.7	31.3	42.2	50.5
CHL(ug/L) using 2013 cal.:	0.5	2.3	5.3	8.2	11.2	12.7	17.2	23.1	25.9	29.1	35.0	29.1	39.2	46.9
diff. between 2008 & 2012 (ug/L):	0.1	0.2	0.4	0.7	0.9	1.0	1.3	1.8	2.0	2.2	2.7	2.2	3.0	3.6
% change between 2008 & 2012:	13.2	8.5	7.7	7.4	7.3	7.3	7.2	7.2	7.2	7.1	7.1	7.1	7.1	7.1

04/01/2008 – 06/15/2012: This FLNTU sensor was returned to WETLabs after more than 4 years of deployment. Prior to servicing and re-calibrating the sensor, WETLabs performed a calibration (pre-cal) in order to evaluate the extent of sensor drift. For chlorophyll levels less than ~13 ug/L the maximum sensor drift was less than 1ug/L; for chlorophyll levels > 13 ug/L and < ~26ug/l the maximum sensor drift was 1 - 2ug/L; and for chlorophyll levels > ~26 ug/L and < ~40ug/l the maximum sensor drift was 2-3ug/L. These values represent the maximum extent of drift over the more than 4 years of deployment. Drift will likely have been less earlier in the sensor's deployment. No correction has been applied to the data.