

Comparison of Technology



Comparison: fluorescence sensors to detect algae and cyanobacteria in surface water

Technical Specifications

Feature	Floating device (depth-adjustable)	Ambient light protection	Distinction between algal groups*	Accuracy of measurement (comparability with laboratory methods)	Cross-sensitivity and signal interference	Drift and countermeasures	Ease of calibration	Anti-fouling options	Autonomous operation	Robustness of housing material	Sensileau Score (max. 490)
Supplier A, Type 1	yes	no	1, 2, 3	0.1 µg/L	Cryptophytes	0.1-5µg/L	User instruction	Optional	66 days	IP68	374
Supplier A, Type 2	yes	no	1, 2, 3	0.1 µg/L	Cryptophytes	0.1-5µg/L	User instruction	yes	61 days	IP68	398
Supplier B, Type 1	yes	PSD*	5-9	0.1 µg/L	fOM	LED check	1x/yr by supplier	yes	90 days	IP68	412
Supplier B, Type 2	no	PSD*	4, 5	0.1 µg/L	-	turbidity correction	1x/yr by supplier	no	1,5 years	IP68	316
Supplier C	no	PSD*	5-9	98% when calibrated	-	< 1% over several months when calibrated	1x/2yr by supplier	yes	Solar powered battery	IP68	422
Supplier D	yes	no	1, 4	0.1 µg/L	Turbidity, temperature fDOM	0.1-5µg/L	user instruction (rhodamine measurement)	yes	Solar power	IP68	400

*Phase-sensitive detection
*: 1: Phycocyanin; 2: Phycoerythrin; 3: Chlorophyll-a; 4: Total Chlorophyll-a; 5: Cyanobacteria; 6: Green algae; 7: Diatoms; 8: Cryptophytes; 9: Dinoflagellates



Data collection and Transmission

Feature		Options to minimise loss of data	RTC (real-time clock) for unique timestamp per data point	Minimal measurement and data transfer frequency	Data transmission	Data platform	Security protocol
Supplier A, Type 1	modem + logger	yes	adjustable	GPRS	API/ APN	yes	
Supplier A, Type 2	modem + logger	yes	adjustable	GPRS	API/ APN	yes	
Supplier B, Type 1	modem + internal logger	yes	adjustable	GPRS	API/ APN	yes	
Supplier B, Type 2	modem + logger	yes	adjustable	GPRS	API/ APN	yes	
Supplier C	30-day data storage + 16gb sd card	yes	every 15 minutes	3G/ GPRS	Cloud web portal	secure TCP/IP data links	
Supplier D	internal memory	yes			Cloud web portal	yes	

