

LOGGLAW C SERIES – MODEL COMPARISON

C7-250 vs C7XI

The C7-250 is optimized for long-term shallow-water logging, while the C7XI carries 3-axis accelerometer and geomagnetic sensors for detailed behavioral analysis. Choose the model that best fits your research objectives, target species, and deployment scenario.

LONG-TERM · LIGHTWEIGHT

LoggLaw C7-250

Records depth, temperature, and light for up to 24 months.
Lightweight, compact housing suitable for small animals.

VS

BEHAVIORAL ANALYSIS

LoggLaw C7XI

3-axis accel. / geomagnetic sensors and 512 MB memory enable detailed analysis of activity, feeding, and other behaviors.

01 Detailed Specifications

Side-by-side comparison

ITEM	LoggLaw C7-250	LoggLaw C7XI-9D44
Basic Specifications		
Weight in Air	★ 4.8 g	7.0 g
Dimensions	★ $\phi 9 \times 32$ mm	9 x 44 mm
Depth Rating	1,000 m	1,000 m
Memory	8 MB	★ 512 MB
Time Accuracy	±95 s/yr	±95 s/yr
Sensors		
Depth (pressure)	✓	✓
Internal / External Temperature	✓	✓
Light	✓	✓
Salinity	—	★ ✓
3-axis Accelerometer	—	★ ✓ (up to 64 Hz / ±8 g)
3-axis Geomagnetic Sensor	—	★ ✓ (up to 16 Hz / ±1200 μ T)
Stalk (Ext. Temp / Light sensor)	Optional	Optional (not supported on C7XIR)

★ Each model's standout strengths (specs continue on next page)

01 Detailed Specifications (cont.)

Performance & deployment

ITEM	LoggLaw C7-250	LoggLaw C7XI-9D44
Measurement Performance		
Measurable Depth	~600 m	~600 m
Depth Resolution	≤1 cm	≤1 cm
Interval Settings	1 / 5 / 15 / 30 / 60 / 120 / 300 / 600 s	Duty Cycle / Continuous (up to 64 Hz)
Continuous Burst Sampling	—	★ 5 s × 4–64 Hz × 3 axes
Deployment		
Battery Life	★ 24 months [*1]	18 months [*2] / Continuous: 2 months [*3]
Rechargeable Model	—	C7XIR variant
Primary Use Cases	Long-term geolocation, dive-depth logging	Behavioral analysis (activity / tail beats / feeding / spawning)

★ Each model's standout strengths

[*1] Pressure, internal temperature, external temperature, light intensity (60-sec interval)

[*2] Accelerometer (16 Hz) and geomagnetic (1 Hz) measured for 5 seconds at 60-sec intervals, plus pressure, int. temp., ext. temp., light at 60-sec interval

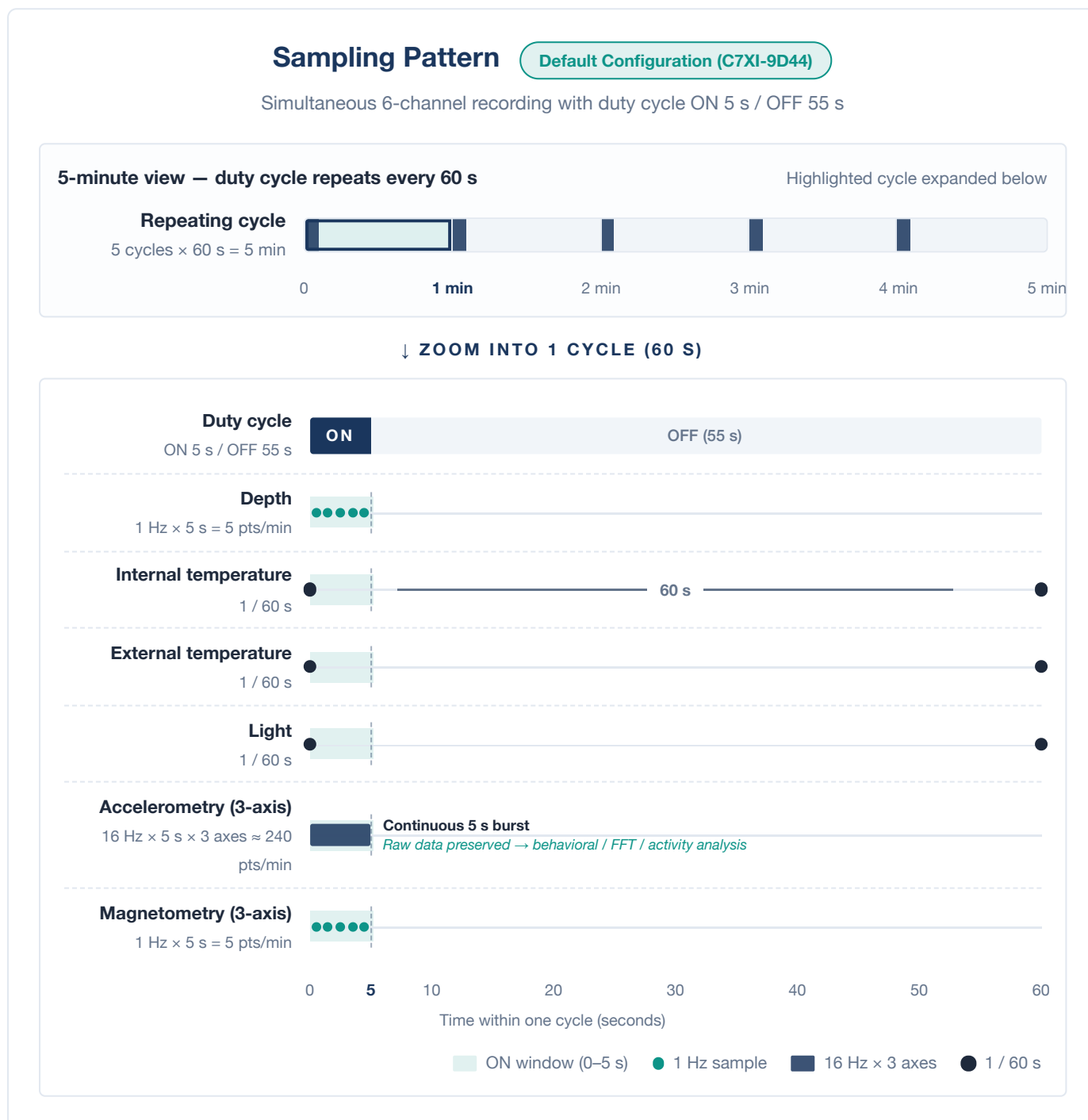
[*3] Depth and geomagnetic at 1 Hz, accelerometer at 16 Hz interval setting

* **Selection guideline:** Choose **C7-250** if your goal is to **log depth, temperature, and light over the long term**; choose **C7XI** if you need **fine-grained behavioral analysis with accelerometer and geomagnetic sensors**. Both share the same depth rating of 1,000 m, depth-sensor range of ~600 m, and depth resolution of ≤1 cm. The next page visualizes the C7XI's **duty-cycle sampling pattern**.

02 C7XI Duty-Cycle Sampling Pattern

Behavioral mode visualization

The C7XI records six sensor channels simultaneously in **Duty Cycle mode**. The standard configuration shown below (ON 5 s / OFF 55 s; per-sensor frequencies labeled in the diagram) achieves up to 18 months of measurement. Duty cycle period, per-sensor sampling frequencies (accelerometer up to 64 Hz), and sensor combinations are selectable to match your use case — battery life varies with settings.



02 Which One to Choose?

Selection Guide

FOR LONG-TERM LOGGING

When LoggLaw C7-250 fits best

- Long deployment cycle of **up to 24 months** from attachment to recovery
- Recording the basic trio of **depth, temperature, and light** — no behavioral analysis required
- Target animals are **small to medium** in size, where the lighter (4.8 g) and smaller (φ9 × 32 mm) housing is preferred
- Migration / movement studies where **geolocation** from light data is the primary objective
- Projects where simple interval sampling (1–600 s) is sufficient

FOR BEHAVIORAL ANALYSIS

When LoggLaw C7XI fits best

- Need detailed analysis of **activity levels, tail-beat frequency, or dive patterns**
- Need to detect short-duration events such as **feeding, spawning, or reproduction** from behavioral data
- Need **16–64 Hz high-frequency sampling** from the accelerometer
- Need **heading / swim-vector analysis** by combining the geomagnetic sensor
- Considering a **continuous recording mode** that takes advantage of the 512 MB memory
- Want a **rechargeable C7XIR** for repeated deployments

03 Shared Strengths

Both models share

DEPTH

1,000 m rated

Both models share a 1,000 m depth rating with a ~600 m depth-sensor range — sufficient performance for shallow- to mid-depth marine research.

RESOLUTION

≤1 cm depth resolution

The high-resolution spec common to the entire C-Series. Captures fine-grained dive patterns and surface-time durations with precision.

TIME

±95 s/yr accuracy

Temperature-compensated high-precision clock keeps drift small over long deployments, preserving geolocation accuracy.

* For attachment methods, deployment design, or any other questions, please feel free to reach out: www.biologging-solutions.com/en/contact

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* Information in this document is current as of the date of issue. Specifications are subject to change without notice for product improvements.