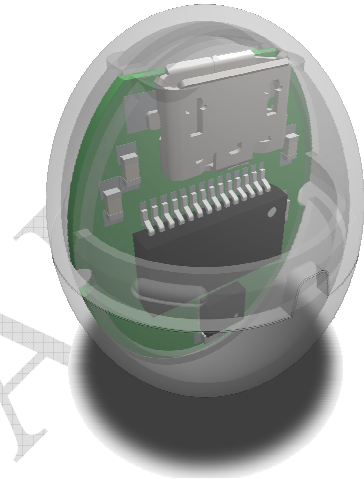# EggLogger product specification

Product overview

EggLogger is a small electronic device that senses the turning of an egg by a breeding bird in a nest. This sensing is done by three small accelerometers that measure gravity in three directions. From these measurements, two tilt angles can be derived. The measurements are stored in the device inside the egg for later analysis. Along with the accelerometer measurements, the temperature of the egg is measured and stored.

The device is powered by a small button-cell battery. After a recording of typically three weeks, the information can be downloaded to a computer by means of a micro-USB cable and a specifically developed computer interface device. Duration of a recording is mainly limited by internal storage capacity. In practise, duration of recording may last from three months for high detail recordings up till six months for low detail recordings. Information can be presented in a graph on the screen and can be stored in a file using a standard file format. This file can be imported in for instance Microsoft-Excel for further processing and analysis.

Current status

The product is still under test and specifications below are preliminary. Production and delivery is expected end January/February 2016.

Scope of delivery

- ✓ White plastic egg, divided in two parts that can be joined together.
- ✓ EggLogger electronic module
- ✓ BR1225 battery

Options

- ✓ Micro-USB cable
- ✓ USB interface device
- ✓ Interface software, free downloadable from the website. Currently only Microsoft Windows XP or higher is supported
- ✓ Manual (pdf-file), free downloadable from the website)

Computer requirements

Any computer with Microsoft Windows XP or higher installed and a spare USB port.

Key specifications

EggLogger	
Egg dimensions: (Other, larger dimensions available on request)	Length 25 mm Diameter 19 mm
Material: (3D printed hollow egg, made up of two halves.)	PA 2200, strong, tough plastic
Egg colour [1] Other available standard colours: White Pink Red Orange Yellow Green Blue Purple	White
Weight	2 gram
Power supply	Standard button-cell battery BR1225, 3V, 50 mAh
Battery life (continuous measurement duration)	3 Months minimum
Operating temperature range [2]	-20 to 60 °C
Sampling rate [3]	12 Hz
Communication/Download	Serial RS232, using a dedicated interface device
Acceleration sensors	
Measurement range	±2 g (±20 m/s^2)
Measurement noise	5 mg (0.05 m/s^2)
Resolution	1 mg (0.01 m/s^2)
Temperature sensor	
Resolution	0.07 °C
Measurement range	

1. *Any other colour can be made available on request, using other materials.*
2. *In general, temperature will always be body temperature*
3. *To reduce the required amount of storage space, a smart sampling algorithm is implemented. Only samples that deviate from the previous sample by a preset level, are stored*