

# Actiheart



The Actiheart is a compact, chest-worn monitoring device that records heart rate, Inter-Beat-Interval (IBI), and physical activity in one combined, lightweight waterproof unit. It is designed for capturing HRV data and for calculating and measuring Activity Energy Expenditure.

## Key features

- Record Heart rate and activity for up to 21 days
- Record IBI for up to 440,000 beats (3.5 days @ 76bpm)
- Compact and lightweight: less than 10 grams
- Clips onto two ECG electrodes worn on the chest
- Can also be worn on a belt, similar to a Polar wearlink belt
- Noninvasive technology
- Waterproof design
- Nonvolatile memory
- Available as a paediatric monitor
- The new gold standard for measuring Activity Energy Expenditure: **validated** against **Doubly Labeled Water**

## How does the Actiheart work?

The Actiheart has two clips which attach directly to standard ECG electrodes. Usually one electrode is adhered at V1 or V2 (4th intercostal) and the second electrode is placed approximately 10cm away on the left side at V4 or V5, although this placement can be adjusted to be comfortable for the subject. The number of R-waves detected is recorded in 15, 30, or 60 second epochs. Simultaneously, an internal accelerometer senses the frequency and intensity of the subject's torso movements.



HRV or IBI data can be logged for up to 440,000 beats. For further information on measuring HRV data with the Actiheart please see [the page on Heart Rate Variability](#).

Energy expenditure is calculated from both the activity and the heart rate data and the total recording time available depends on the options selected (please see the table below for more details). For further details on how the Actiheart calculates energy expenditure, please see [the page on calculating Activity Energy Expenditure](#).

## Actiheart Recording Times

The Actiheart is ideal for use in both short and long term monitoring situations. The following table shows the maximum recording times available in different modes:

Epoch	15 seconds	30 seconds	1 minute
Recording time HR+Act	21 days	21 days	21 days
Recording time HR+Act +IBI Max-Min	10 days	20 days	21 days
IBI recording capacity (Beats)	440,000	N/A	N/A

## Actiwatch Mini

The Actiwatch Mini is a miniature Actiwatch specifically designed for use with animals in veterinary applications. Its small size means that it can be used to record sleep, activity and circadian rhythm on animals of all sizes.

### Key features

- Wrist worn or collar-worn light-weight sleep and activity monitor for ambulatory monitoring of activity for veterinary applications
- Recording of physical activity by means of an accelerometer
- Records for up to 90 days with a 1 minute epoch
- Suitable for use in sleep monitoring and circadian rhythm studies
- All data stored in the software is fully exportable for analysis in a third party program

### Recording times

Epoch Length	2 sec	5 sec	10 sec	15 sec	30 sec	1 min
Recording Time	72 hours	180 hours	15 days	22.5 days	45 days	90 days

### Technical specifications

Weight	7.5 grams
Battery life	500 days
Battery type	CR1220
Memory	128KB
Splash-proof	Yes
Waterproof	Yes
Warranty	2 years
Size (mm)	24x7
Epoch Range	2s - 15min
PC Analysis	Windows Vista, XP and 7