

# Boomerang - Transport Log

## Description

The Boomerang Transport Log concept is a complete solution for temperature monitoring and logging during any kind of transportation, e.g. blood transports, human tissue, transportation of drugs and medicine, food transports etc..

Boomerang Transport Log is equally sufficient whether your transports are long range via car/truck/train/air or if it is a short but critical transport between departments in the same building; Boomerang offers a easy-to-use and flexible solution for your quality assurance.

## Cold-chain applications

- Blood Consistent temperatures are critical in preserving sample integrity & accuracy of results
- Tissue / Organs Starting at -80°C; State-of-the-art insulation materials that provide superior thermal protection and ensure that your products are stored at the correct temperature.
- Speciality Pharmacy Our solutions are reliable and ensure that your samples remain at the correct temperature at all times.
- Pharmaceuticals Vaccines must be transported and stored at the proper temperature, this is crucial to maintaining their efficiency.
- Infertility treatment & IVF Transportation at cryogenic temperatures with maintained temperature control is crucial.

...and much more



Part.no	Short description
BTINY-CC	TinySense Cloud Connector
BTINY009	TinySense Transport Logger with start/stop button (down to -30°C)
BTINY005	TinySense Temperature node for external Pt100 sensor with Memory Buffer (down to -196°C)
BTINY003	TinySense Temperature sensor, size only 19x19x3.5 mm (down to -30°C)
TBOX24	24 liter Transportation box, Recycled paper
TBOX55	55 liter Transportation box, Recycled paper
CB001	Cooling elements (down to -80°C)

## Boomerang TinySense Transport Log

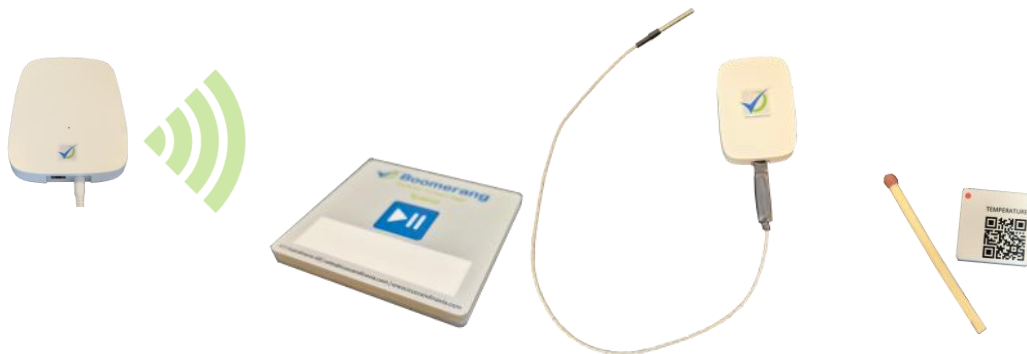
### Description

The TinySense temperature loggers are battery operated and features memory buffer for continuous temperature logging during transportation/shipment. The TinySense logger communicate to the Boomerang cloud when device is within wireless range from a CloudConnector.

TinySense temperature loggers offer logging in temperatures from -196°C, -80°C and up to +120°C.

### Usage scenario

- Start the Mission/Transport using one of these two methods:
  - 1.) from Boomerang web client on a PC or Smartphone, choose immediate or a scheduled start (for all TinySense temperature loggers)
  - 2.) from BTINY009 tactile push button, the BTINY009 must be within wireless range of a CloudConnector
- Put the temperature logger in the package and ship it. (if the logger is within wireless range of a CloudConnector, the temperature will be logged on-line and updated in Boomerang)
- After the package reception, stop the mission, using one of the methods described above. In case of a scheduled mission, it will be stopped automatically at the mission stop time or it may be stopped by the user (using tap on BTINY009 or from the Boomerang web client)
- Bring the sensor into the Cloud Connector range to ensure all logged data are stored in Boomerang.



Technical data	BTINY009	BTINY005	BTINY003
Size (L×H×W)	70×70×7 mm	95×66×25 mm (116 gram)	19×19×3.5 mm
Start/stop transport/mission	Start/Stop push button	From Boomerang	From Boomerang
Battery life	Up to 15 years	2×AA (up to 15 years)	Up to 15 years
Range	-30°C to +50°C	-80°C to +120°C ext.Pt100	-30°C to +50°C
Accuracy	Better than ±0.5°C	Better than ±0.5°C	Better than ±0.5°C
Transmit interval	Min. 5 minutes	Min. 5 minutes	Min. 5 minutes
Log Interval	Down to 1 minute	Down to 1 minute	Down to 1 minute
Buffer memory (BTINY003)	Up to 100 000 logs	Up to 50 000 logs	Up to 100 000 logs
Wireless range	Up to 60 meter	Up to 200 meter	Up to 40 meter
Internet access	Cloud Connector	Cloud Connector	Cloud Connector

### Suggested sensors for BTINY005 -200°C to +120°C

Part no.	Probe	Temperature range
FT032/010	50 mm	-80°C to +120°C
FT004/010	600 mm	Down to -196°C





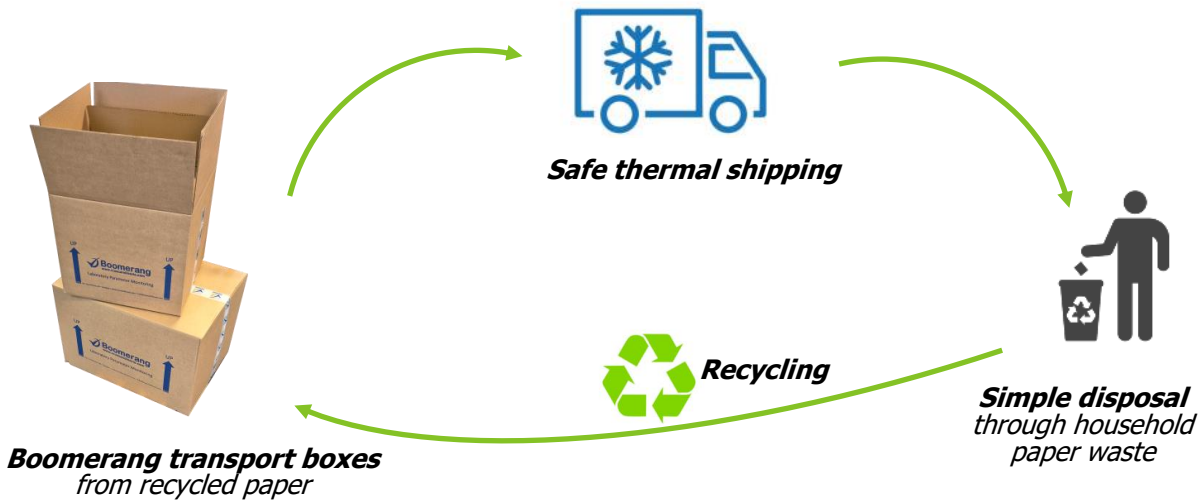
**TBox24 & Tbox55** - Boomerang Transportation paper thermo boxes

**Description**

The Boomerang Transportation paper thermo boxes are produced from almost 100% recycled paper and can be easily recycled with your household paper waste.

TBox 24 and TBox55 features a thicker inner wall for enhanced thermal protection and offers excellent insulating properties (comparable to EPS and other natural fibers).

In combination with our cooling elements CB001, TBox24 and TBox55 can maintain temperatures below -45°C up to 15 hours (starting at -80°C).



Technical data	TBOX24	TBOX55
External size (L×H×W)	439×353×379 mm	614×413×439 mm
Internal size (L×H×W)	350×235×290 mm	530×295×350 mm
Payload volume	24 liter	55 liter
Wall thickness	30 mm	30 mm
Weight	1700 gram	2550 gram
Number of cooling elements (CB001)	Six (6)	Ten (10)



Technical data	CB001
External size (L×H×W)	280×235×26 mm
Temperature	Down to -80°C
Weight	1500 gram

*Note: The complex liquid mixture based on calcium chloride, contains calcium chloride hexahydrate*



**BTINY-CC - Boomerang Cloud Connector**
**Description**

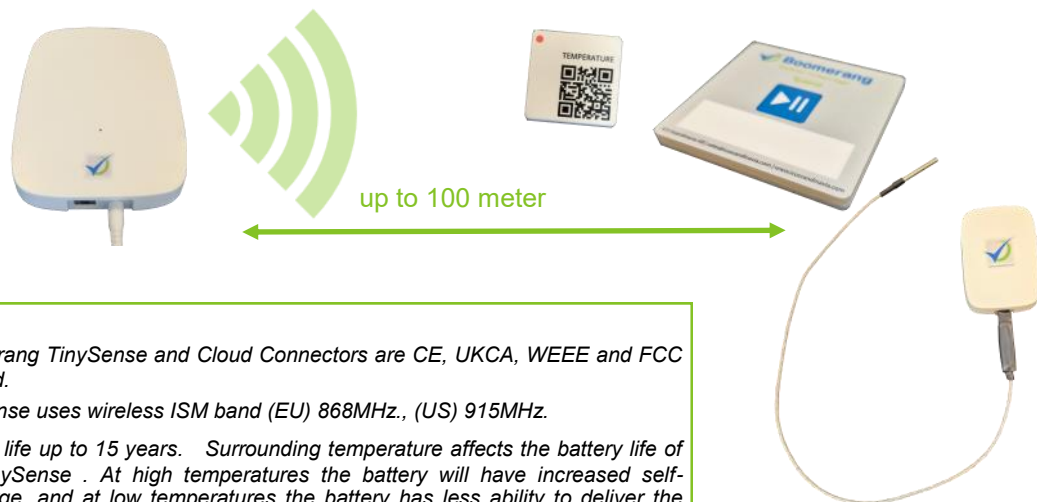
The Cloud Connector connects the whole range of Boomerang TinySense sensors to the Internet and to the Boomerang Cloud. The Cloud Connector operates via 4G/LTE mobile networks and has cellular roaming with in Europe (and other version for North America). Internet connection via Ethernet (PoE) is also available.

Seamless roaming over 4G / Ethernet, as well as between all BTINY sensors. Hundreds of sensors can connect to each Cloud Connector and numerous Cloud Connectors can be used for wireless coverage of larger areas.

The BTINY-CC is powered from the mains (230VAC) or

**Technical data**

Size (L×H×W)	153×114×30 mm (200 gram)
Roaming	Europé & North America
SIM	Internal eSIM
Transmit power	< 100 mW
Operating cond.	0 to 70°C, 10 to 90% RH
Power consumption	< 3W (average, but will vary)


**General**

- *Boomerang TinySense and Cloud Connectors are CE, UKCA, WEEE and FCC certified.*
- *TinySense uses wireless ISM band (EU) 868MHz., (US) 915MHz.*
- *Battery life up to 15 years. Surrounding temperature affects the battery life of the TinySense. At high temperatures the battery will have increased self-discharge, and at low temperatures the battery has less ability to deliver the total amount of its stored energy. Radio transmission is the most energy-consuming activity and of course the transmitting interval has a large impact on battery life. Also the radio signal conditions are important, a poor wireless connection to the BTINY-CC will decrease the battery life.*
- *Typical wireless range: 40 m from BTINY-CC (up to 100m with Range Extender or BTINY005)  
Wireless range always depends on surrounding environment, typically metal in walls and shelves affects the range. Magnetic power fields also affects. On the other hand, free space or line-of-sight works well for the wireless range and distances up to hundred meters and more might be achievable.*