

## NBM3 Helmet Sensor

The Lansitec NBM3 Helmet Sensor integrates NB-IoT/LTE-M, GNSS, and Bluetooth 5.0 for real-time personnel tracking and safety alerts in demanding industrial or commercial settings. Equipped with a 3D accelerometer, barometer, and smart sensing features (fall detection, panic alarm, overstay alerts), it automatically adjusts power usage based on movement. Rated IP66 and IK10, this rugged device easily fits into construction, factory, and distribution center operations, enabling managers to locate and protect workers or visitors at all times.



### Dual Indoor/Outdoor Tracking

GNSS (<2.5 m accuracy) for outdoor location, and Bluetooth (~3 m accuracy) for indoor tracking.

### Safety-Focused Alerts

Includes fall detection, panic button, zone detection, and overstay alarms, bolstering worker protection.

### Rugged Design

IP66 and IK10 ratings resist dust, water, and impacts from -10 °C to +65 °C.

### Efficient Power Usage

1,200 mAh battery plus motion-based activation; up to 8,000 GNSS reports or 33,000 Bluetooth position updates.

### Barometer & 3D Accelerometer

Detect altitude changes ( $\pm 1$  m) and motion states for improved safety and usage metrics.

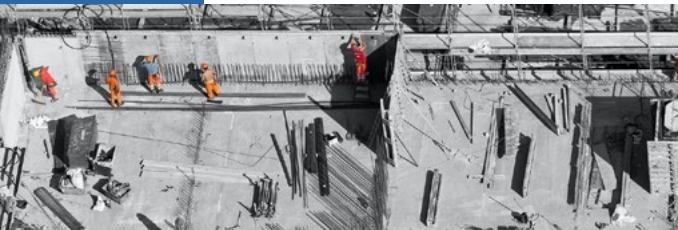
### FOTA & NFC

Firmware-over-the-air via Bluetooth and optional NFC enable swift device updates and easy provisioning.

### iBeacon Broadcasting

The device supports Bluetooth broadcasting using the iBeacon protocol, with a default UUID of F2-A5-2D-43-E0-AB-48-9C-B6-4C-4A-83-00-14-67-FD, and Major/Minor values are the last 4 bytes of the device's DevEUI. The UUID, Major, Minor, Interval, and TX power in the broadcast are all configurable.

## SCENARIO



CONSTRUCTION WORKER TRACKING

Equip workers on building sites with helmet sensors for fall detection and overstay alarms. Managers receive near real-time alerts, improving safety compliance and rapid emergency response.



FACTORY PERSONNEL TRACKING

Monitor staff locations and movements in production lines or warehouses. Barometric data helps identify employees working at elevated platforms, enhancing safety and ensuring quick intervention if unexpected drops occur.



Deploy sensors at major events, stadiums, or airports. The panic alarm feature helps staff quickly signal emergencies, while GNSS/Bluetooth location data streamlines crowd control and resource allocation.

Track workers entering tunnels, tanks, or basements where visibility and cellular connectivity can be limited. The sensor's IP66 enclosure and fall-detection alerts bolster safety, preventing prolonged incidents in inaccessible areas.

## SPECIFICATIONS

### CONNECTIVITY

<b>Protocol</b>	MQTT, HTTP(S)
<b>Encryption</b>	AES128

LTE-FDD	Band	Data Rate (Peak)
<b>LTE-M</b>	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85	588 (DL) 1119 (UL)
<b>NB-IoT</b>	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85	Cat NB2: 127 (DL) 158.5 (UL) Cat NB1: Max. 32 (DL) Max. 70 (UL)
<b>Wifi</b>	Optional, 2.4GHz, positioning only	N/A
<b>SIM Card</b>	Nano and eSIM	N/A

### BLUETOOTH

<b>Bluetooth Protocol</b>	5.0, iBeacon
<b>Bluetooth TX Power</b>	-20 to +4 dBm TX power, configurable in 4 dBm steps
<b>Bluetooth Sensitivity</b>	-96dBm
<b>Bluetooth Positioning Accuracy</b>	3m
<b>Advertise Interval</b>	100ms ~ 10s adjustable
<b>Coverage Range</b>	150m sight distance

### GNSS

<b>GNSS</b>	BDS/GPS/GLONASS/QZSS/SBAS
<b>GNSS Position Accuracy</b>	<2.5m(CEP50)
<b>Cold Start Duration</b>	30~120s
<b>AGPS</b>	Support

### MECHANICS

<b>Dimension</b>	80*80*35mm
<b>Operating Temperature</b>	-10°C~+65°C
<b>Charging Temperature</b>	0°C~+50°C
<b>Storage Temperature</b>	-20°C~+80°C
<b>Operating Humidity</b>	5% ~ 95% (non-condensing)
<b>Weight</b>	90g

<b>Housing Material</b>	ABS and PC
<b>Ingress Protection</b>	IP66
<b>Impact Protection</b>	IK10

## POWER

<b>Standby Current</b>	90µA
<b>Maximum Current</b>	350mA
<b>Status LED</b>	Support
<b>Battery</b>	Li-ion rechargeable battery 1200mAh
<b>GNSS (report interval &gt;10minutes)</b>	Approx. 1800 times
<b>Bluetooth Position</b>	Approx. 4500 times

## FUNCTIONS

<b>Adjustable Position Report Interval</b>	5s x n (1 to 65536)
<b>Heartbeat Report Interval</b>	30s x n (1 to 65536)
<b>GNSS Position Report Interval</b>	5s x n (1 to 65536)
<b>FOTA over Bluetooth</b>	Support
<b>Movement Duration</b>	Support
<b>Fall Detection</b>	Support
<b>G-sensor</b>	Support
<b>Barometer</b>	Support, 1m altitude accuracy
<b>Battery Level Report</b>	Support
<b>Proximity Detection</b>	Support
<b>Switch</b>	Button x 2
<b>NFC Tag (optional)</b>	1KB
<b>Configurable Bluetooth data filter and payload report</b>	Filter any data bytes in a Bluetooth payload and report any via NB-IoT and LTE-M
<b>Bluetooth data compression</b>	Support

## ORDERING INFORMATION

<b>Product Description</b>	<b>Part Number</b>
Sensor, Helmet use, NB-IoT, LTE-M, BLE5.0, GNSS, 1200mAh	100-ONBM3