



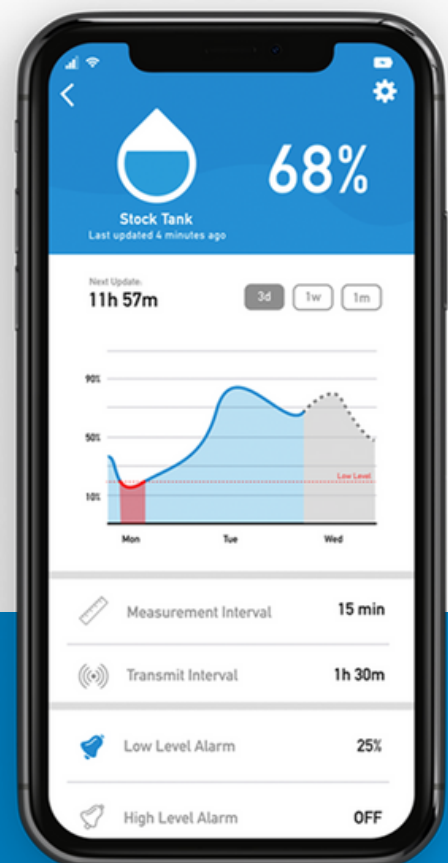
## Radar Level Sensor

- Waterwatch's highest accuracy level sensor with built in telemetry
- Can be used in open or confined spaces
- No temperature, humidity or foaming issues
- Reduce wasted time travelling to check levels

## Internet Connected

- Remote access from your smartphone, tablet, or computer
- Receive notifications for high, low, and rapidly changing levels
- Manage multiple sensors and share access with others

Easy installation using the handy Waterwatch mobile app



## Radar Level Sensor Features

The LS1-R is a highly configurable radar based level sensor. Designed for remote installation the LS1-R is ideal for open channel measurements. Trusted by water utilities, city councils, regional governments and home owners around the world. The LS1-R is Waterwatch's flagship high accuracy sensor designed to effortlessly monitor rivers and streams ensuring your property is protected from the unpredictability of these natural waterways.

Water and UV resistant

Widest network coverage available - works on Spark, Vodafone and Telstra networks

SMS and email notifications

Accuracy 0.2%



No antenna, solar panel or cables required

Battery life 3-10 years based on your selected reporting rate

Maximum ranges of 7 and 12 meters

## Technical Specifications

### CONNECTION OPTIONS

Bluetooth Low Energy  
LTE Cat M/NB-IoT

2.4/2.483GHz:0dB  
LTE Bands 3, 28:<24dB

### ENVIRONMENT

Water and UV resistance  
Operation temperature  
Recommended storage temperature

IP67  
-20°C to +65°C<sup>2</sup>  
+15°C to +25°C

### BATTERY

Life  
Type  
Capacity

3-10 years<sup>1</sup>  
3.6v Lithium primary  
19Ah

### MEASUREMENT

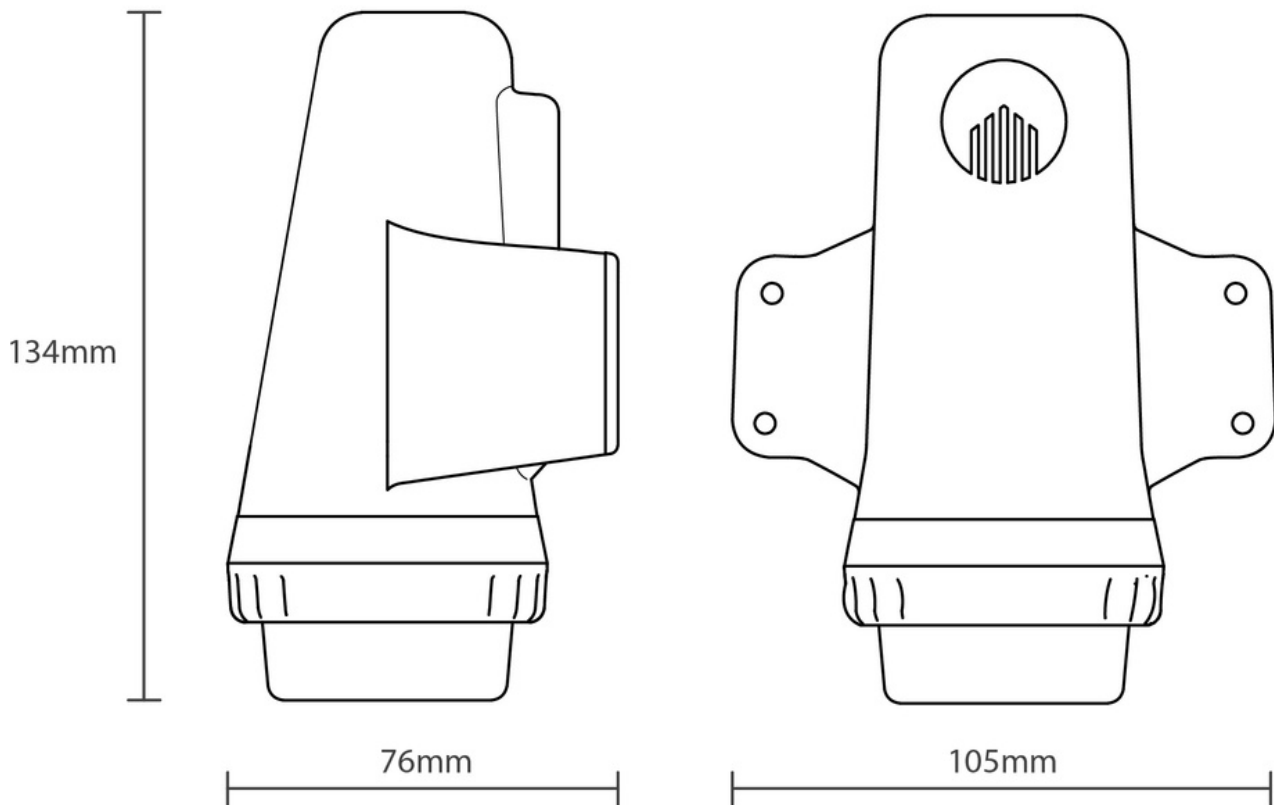
Technology  
Measurement range  
Accuracy  
Resolution  
Beam pattern

60GHz pulsed radar  
7 or 12m  
0.2%  
1mm  
10° HPBW

### PHYSICAL CHARACTERISTICS

Dimensions  
Weight  
Enclosure material  
Mounting

134x76x105mm  
320g  
Polycarbonate + PBT  
M4 screw



**PART NUMBER DESCRIPTOR**

LS1-CEL-R

Model [LS1]

Radio option [CEL]

Sensor technology and range [R7]

level sensor  
Cellular LTE M1/NB1  
60GHz pulsed radar 7m range

**AVAILABLE PART VARIANTS**

LS1-CEL-R7

7 meter range

LS1-CEL-R12

12 meter range

<http://waterwatch.io>

[info@waterwatch.io](mailto:info@waterwatch.io)

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**DATASHEET HISTORY**

	<b>DATE</b>
Initial release	10/09/19
Update to production	15/03/20
Introduce document history	18/06/20
Branding document update	11/10/21
Increased battery capacity, changes to enclosure volume	05/05/21
Sigfox variant removed, R12 and footnotes added	31/05/22

**PART HISTORY**

	<b>VARIANT/DATE</b>
engineering release	LS1-CEL-R-PRE 10/09/19
R7 production release	LS1-xxx-R7 15/03/20
Sigfox production halted	LS1-RCZ4-Rx 20/12/21
R12 production release	LS1-CEL-R12 05/12/21

**FOOTNOTES**

- 1: Battery life varies based on the coverage signal strength and user-programmed device settings.
- 2: Temperatures outside of this range will reduce battery life and system performance and may damage the product.





## ABOUT WATERWATCH

Waterwatch is a Tussock Innovation brand dedicated to providing tools for better management of precious water resources and helping society adapt to a changing environment. The Waterwatch system generates insights for scientists, farmers, and municipalities via a blend of elegant, functional, and robust hardware and software.

Launched in September 2019 the LS1-R radar level sensor is the most recent product in the Waterwatch portfolio and is the first IoT-based product of its type globally. Designed for long-term field deployment the LS1-R tracks level changes with a highly accurate 60GHz radar. This non-invasive, non-corrodible sensor allows the LS1-R to be deployed in a broad range of installation types from water and other liquids to solids. User control of the LS1-R is provided via native iOS, Android, and Web apps. Sensor data is communicated directly to the web and used to provide time-critical alerts and level storage information. The Waterwatch system enables third-party vendors to provide value-added insights like delivery requests and vehicle route optimisation via secure third-party API and Webhook access.

