

Scientific range

LS1-R

Radar level monitor

Accurate level data for stormwater, flood and surface water sites, including locations that have never been practical to monitor.

Typical applications include open and closed drains, weirs, waterways and stormwater networks.

Shown: LS1-R monitor with optional adjustable arm



Radar

60 GHz

Non-contact technology

Measurement range

Up to **7 m**

1 mm resolution

Battery life

Up to **10 years**

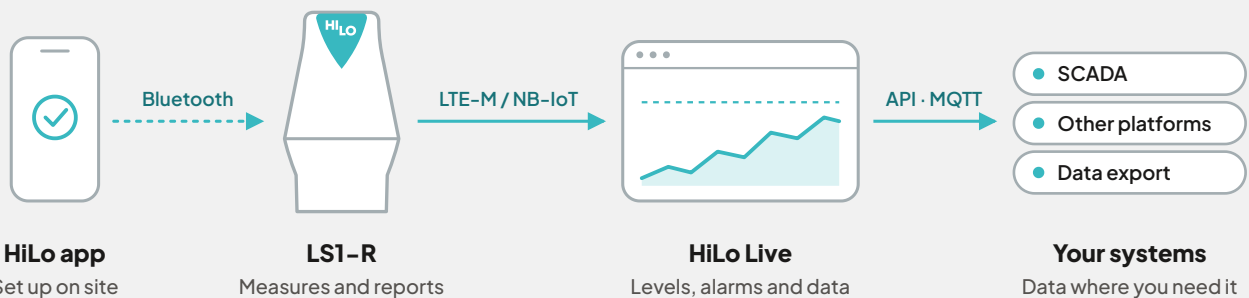
Replaceable on site

Ingress protection

IP68

Submersible to 4 m

Turnkey monitoring with built-in telemetry



HiLo app

Field staff activate the monitor's Bluetooth with a magnet, configure it in the HiLo app for iOS and Android, and confirm readings before they leave site.

HiLo Live

Levels, devices and alarms for the whole network in one place. Low level, high level and rapid change alarms are escalated outside the reporting schedule and sent by SMS and email.

Integration

The HiLo API passes data to other platforms, and data can be exported from the cloud. Self-hosted SCADA integration over MQTT is available for private networks.

● LS1-R radar level monitor

Features and specifications

Key features

Measurement

- Onboard radar algorithms for turbulent water, high humidity and cluttered sites
- Teflon dome keeps readings reliable under condensation
- Readings are time-synchronised across monitors, so sites can be compared directly

Connectivity

- Built-in LTE-M and NB-IoT telemetry, with no separate logger to install
- Readings are held on the device if communications drop
- Customer SIM cards and self-hosting supported

Installation

- Mounts on a 2" BSP thread and lifts off by hand for servicing
- Battery can be changed in the field with a screwdriver
- Supplied with a standard L bracket, with an adjustable arm and other brackets available

Technical specifications

Measurement

Technology	60 GHz pulsed radar with onboard detection algorithms
Measurement range	Up to 7 m
Accuracy	0.2% of measurement range
Resolution	1 mm
Beam pattern	8° HPBW
Sensor face	Teflon dome
Measurement interval	Every 5 minutes, time synchronised across monitors

Connectivity and data

Cellular	LTE-M and NB-IoT, bands 3, 5, 8 and 28, <24 dB ¹
Bluetooth	Bluetooth Low Energy, 2.4 to 2.483 GHz, 0 dB
Reporting	Configurable from 1 to 24 hours, with alarm-based escalation
Alarms	Low level, high level and rapid change
Notifications	SMS and email
Data storage	Up to 1,000 measurements retained during power or communications loss
Platform	HiLo Live, API integration and data export
Self-hosting	SCADA via MQTT, with customer SIM support ³

¹ NB-IoT is limited to bands 28 and 3 in APAC countries, where available.

² Battery life varies with cellular signal strength and the measurement and reporting settings chosen.

Power

Battery	3.6 V lithium primary, replaceable
Capacity	19 Ah
Battery life	3 to 10 years ²

Environment

Ingress protection	IP68, immersion at 4 m for 4 days
Operating temperature	-20°C to +55°C
Storage temperature	+15°C to +25°C
Chemical resistance	Suited to chemical applications ⁴ , UV resistant

Physical and setup

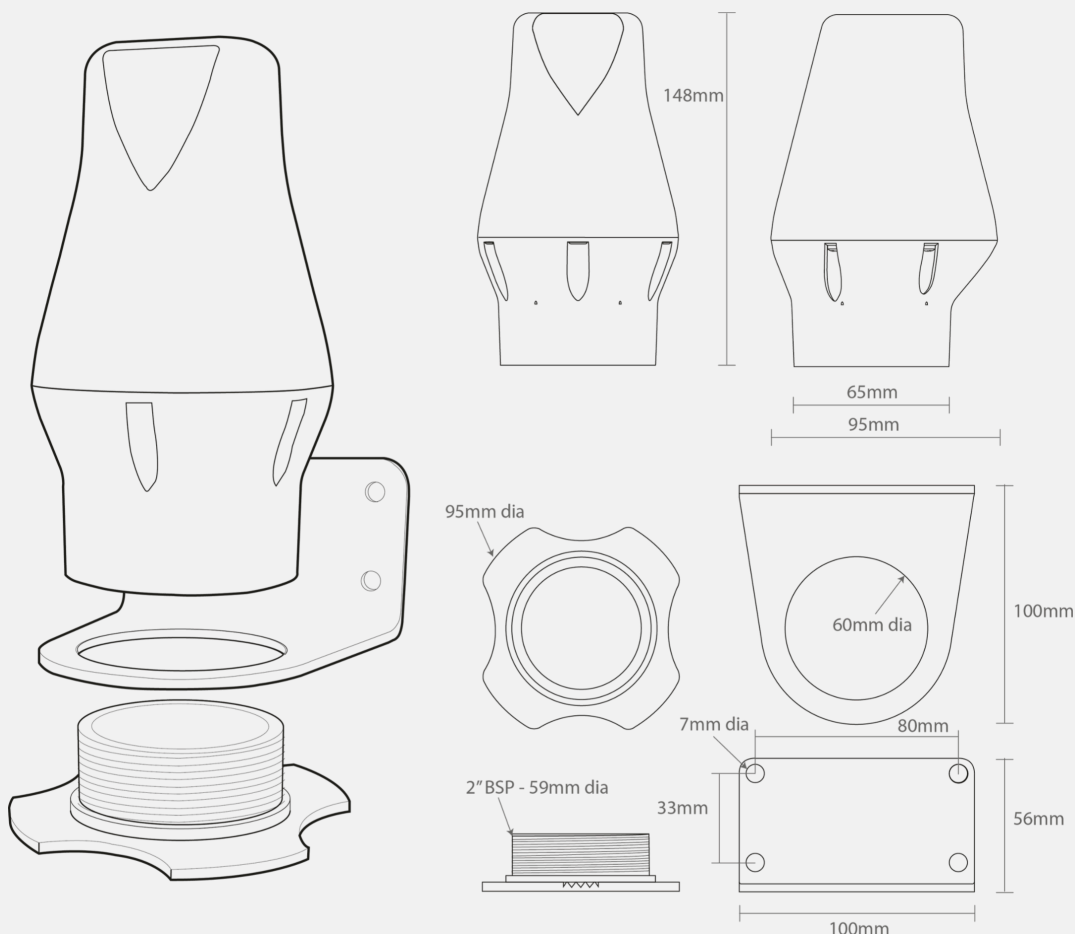
Dimensions	148 x 95 mm
Weight	500 g
Enclosure	PC + PBT
Mounting	2" BSP thread, hand-removable
Brackets	Standard L bracket supplied; adjustable arm and other brackets available
Antenna	Internal
Hazardous areas	Not for use in Ex zones
Commissioning	HiLo app for iOS and Android, Bluetooth activated by magnet

³ The self-hosted variant requires an MQTT broker, an NTP server and a customer SIM for device connection. Available through enterprise sales only.

⁴ pH range 3 to 9 at an ambient temperature of 23°C.

● LS1-R radar level monitor

Dimensions and mounting



Ordering information

Model	SKU	Range	Hazardous areas	Antenna
LS1-R	LS1-CEL-R	Up to 7 m	Not for Ex zones	Internal

SKU key: LS1 scientific level monitor · CEL cellular LTE-M/NB-IoT · R radar

For sewer and hazardous sites, see the LS1-R PLUS datasheet.

Planning your monitoring network

HiLo's engineers work with each customer to plan a setup that suits their network, from choosing sites and mounting to setting reporting and connecting data to existing systems.

HiLo flood monitoring equipment is deployed across thousands of sites with councils and infrastructure operators throughout New Zealand and Australia.

● **Australia**

AUTOMATIONGROUP

Supplied and supported by Automation Group, HiLo's exclusive distribution partner for the Scientific range.

automationgroup.com.au

● **New Zealand**

HiLo

Supplied by HiLo directly and through a number of trusted resellers, with engineering and support based in Dunedin. Get in touch to learn more.

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