Product Brief

Luna Climate Control

with Room Maintenance & Energy Usage Management

Monitor and Control

- LoRaWAN® low-power long-range connectivity
- Room usage detection (motion & light)
- Infrared controller manages air-conditioner usage
- Monitor room climate to prevent mould growth
- Save energy by turning off A/C in unused rooms
- Server-based controls override for advanced rule-sets
- (optional) Infrared array sensor for occupancy detection
- Battery powered with long battery life

Product Description

Definium's Luna Climate Control is a drop-in solution for reducing the costs associated with accommodation room air conditioning. The built-in infrared controller can command any air conditioner, allowing for intelligent IoT control of existing equipment.

The Climate Control proactively monitors the room for motion, turning off the air conditioner when the room is no longer in active use to reduce energy costs. The unit features an environmental monitoring sensor suite which it uses—along with its air conditioner controls—to maintain a stable environment in the room.

Room usage is monitored using a combination of motion detection and light usage patterns. The Climate Control determines when it last witnessed an occupant and uses that information to schedule the air conditioner to turn off to save energy. An optional thermal array sensor performs a thermal sweep of the room prior to turning off the air conditioner, verifying that there are no heat signatures in sight before performing any action.

The Climate Control reduces the risk of mould growth and other issues by maintaining strict climate limits. Any deviation from configurable limits commands the air conditioner to correct the problem, increasing room safety and reducing maintenance costs.

All data is available remotely for analysis and integration with artificial intelligence and machine learning systems. Integrating the Climate Control allows for the application of more advanced rule-sets, such as intelligently re-activating the air conditioner prior to residents returning to their rooms—maximising comfort levels.

The Climate Control design is implemented on top of Definium's Internet of Things sensor platform, utilising robust long-range low-power LoRa® radio to achieve internet connectivity with long battery life. The unit uses commercially available batteries which are quick to swap out when necessary. Each sensor comes preconfigured and ready to deploy with a simple training process.

Definium Technologies designs and manufactures its devices in-house in Launceston, Tasmania. Definium produces a broad range of gateways and sensors to use in any IoT network.

Product Selector

Model	Region				Sensors				Radios		Interfaces			Features			Enclosure
	AU915 (Australia)	AS923 (NZ, Asia)	US915 (United States)	EU868 (Europe)	Motion Detector	Infrared Controller	Environmental Monitoring	Infrared Array Sensor	LoRa®, LoRaWAN™, FSK	LTE Cat M1/NB1	USB Serial Console	LoRaWAN Remote Config	Short-range Radio	Periodic Reporting	Autonomous Control	Battery Powered	Polycarbonate Rectangular
DT1174-RS	○	○	○	○	●	●	●		●		●	●		●	●	●	●
DT1174-RSA	○	○	○	○	●	●	●	●	●		●	●		●	●	●	●

Ensure you order the correct product for your LoRaWAN region. ● = Included. ○ = Differs with product variants.

Definium Technologies

Luna Climate Control

Features

Room Management	Manage A/C energy when no room usage detected Prevent mould growth through A/C control Provide insight into room usage
Motion	Infrared motion detector Optional infrared thermal array sensor
Environment	±0.5°C temperature ±3% relative humidity
Reporting	Periodic reporting of counter values Temperature Alarm
LoRaWAN	Class A LoRaWAN™1.0.2 Support Supports multiple regions (firmware variants) Supports adaptive data rate Device settings configurable via downlink Unique QR-code affixed to device (datamatrix) Pre-configured EUI and keys Reconfigurable LoRaWAN keys via USB serial

Electrical Data

Power Input limit	LiSOCl$_2$ or LiFeS$_2$ AA batteries 0 V minimum, 6 V maximum
Consumption	Up to 120 mA (transmitting) Below 5 uA (sleeping) Over 1 year battery life (varies with report frequency)

Enclosure

Polycarbonate Rectangular	Smaller than 100 × 200 × 50 mm, <500 g

Environmental data, quality & reliability

Operating range	−20°C to 60°C
RoHS compliant (lead-free)	

Security

Secure internal storage of keys	
Radio noise-based random number generator	

Certifications and approvals

AS/NZS 60950.1:2011, AS/NZS 4268:2012 Pending: IEC 60950–1, CEN-ELEC EN 60950–1, 47 CFR 15.247, 47 CFR 15.207, 47 CFR 15.247, 47 CFR 15.215, IDA TS SRD

Support products

DT1046	Nexus 8 LoRaWAN Gateway with CAN, LTE, PoE
LoRaWAN network provision and hosting via partners	

Product Notes

Enclosure	Enclosure will vary without restriction to meet design requirements.
Power	Unit supplied with batteries.

Changes can be requested for volume orders.

Further Information

For conact information, see www.definium.net/contact.

For more product details and ordering information, see the product data sheet.

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