SENSECAP

An Industrial Wireless Sensor Network Solution

LoRaWAN Light Sensor

Features

- Support LoRaWAN™(*) protocol Class A
- High reliability and stability
- An ultra-wide 22-bit dynamic range
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in urban scene
- Battery life ≥ 3 years
- Rapid installation and deployment
- IP66 enclosure, suitable for outdoor applications

Applications

- Smart Agriculture
- Smart Building and Industrial Control
- Environmental Monitoring
- Other Wireless Sensing Applications

Introduction

With a built-in wireless LoRa module, this Light Sensor transmits the collected light intensity data to the base station and then to the server. Based on an ultra-low-power light-sensing chip, it supports a super-wide measurement range of 22 bits, applicable for industrial environmental sensing. The built-in independent battery can last for 3 years in ultra-low-power-consumption working mode. The enclosure is made from PC + PBT materials, protecting the device from UV radiation, rain and sunlight exposure, etc.

Specifications

Light Intensity	
Range	0 to 188000 Lux
Sensitivity	0.045 Lux/LSB
Resolution	0.045 Lux

Enclosure Material	PC+PBT
Operating Temperature	-40 ℃ to +85 ℃
Operating Humidity	0 to 100 %RH
Device Weight	288g

Parameters	
Product Model	LoRa-S-470/868/915-Light-01
Microcontroller	Ultra-low-power MCU
Support Protocol	Based on LoRaWAN™ v1.0.2 protocol
LoRa Channel Plan	CN470 / EU868 / US915
LoRa Power Output	16 dBm (EIRP)
Sensitivity	470MHz: -140dBm(SF12, BW125KHz) 868MHz: -137.5dBm(SF12, BW125KHz) 915MHz: -136.5dBm(SF12, BW125KHz)
Current Consumption	5 μA (sleep mode) 120 mA (active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1

The device is designed with a fixed LoRa channel, which can not be modified by users. The supported channels are as the follows. Please refer to the user manual for how to connect this device with a LoRaWAN™ gateway.

CN470	
Uplink	Channels:[80,81,82,83,84,85,86,87] Frequency(MHz): 486.3, 486.5, 486.7, 486.9, 487.1, 487.3, 487.5, 487.7 (SF7BW125 to SF12BW125)
Downlink	Frequency(MHz): 506.7, 506.9, 507.1, 507.3, 507.5, 507.7, 507.9, 508.1 (SF7BW125 to SF12BW125) 505.3 -SF12BW125 (RX2 downlink only)

EU868	
Uplink	Channels: [0,1,2,3,4,5,6,7] Frequency(MHz): 868.1, 868.3, 868.5, 867.1, 867.3, 867.5, 867.7, 867.9 (SF7BW125 to SF12BW125)
Downlink	Multiplexing the frequency points of the 8 uplink channels. 869.525MHz -SF9BW125 (RX2 downlink only)

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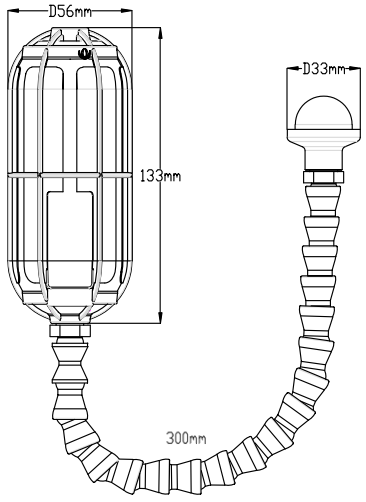
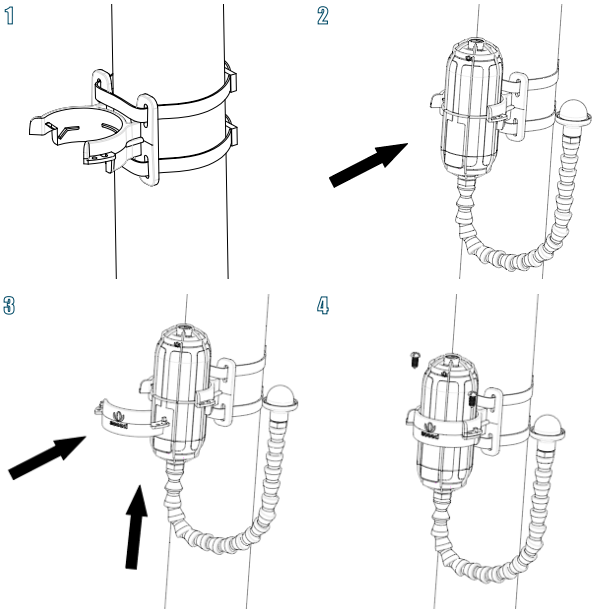
US915	
Uplink	Channels:[8,9,10,11,12,13,14,15] Frequency(MHz): 903.9, 904.1, 904.3, 904.5, 904.7, 904.9, 905.1, 905.3 (SF7BW125 to SF10BW125)
Downlink	Frequency(MHz): 923.3, 923.9, 924.5, 925.1, 925.7, 926.3, 926.9, 927.5 (SF7BW500 to SF12BW500)

Device Dimensions



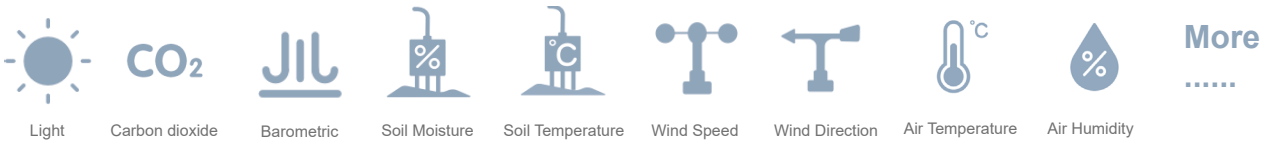
Installation

Please refer to the user manual for more details.



SenseCAP Series

SenseCAP is an industrial wireless sensor network that integrates easy-to-deploy hardware and data API services, enabling low-power, long-distance environmental data collection. Currently SenseCAP consists of two versions: LoRaWAN™ and NB-IoT. SenseCAP LoRaWAN™ version products include LoRaWAN™ Gateways and Sensor Nodes. NB-IoT version products include Sensor Nodes.They can collect various physical data:



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- Purchase: https://solution.seeed.cc/product/sensecap

You can also contact Seeed sales representatives in your local district. The following is the contact information:
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