



ZigBee™ Illuminance Sensor ZLUM

User Manual



Revision: 1.0

Document: UM_ZLUM_20111017_001_01_00

WARRANTY

The device supplied to the buyer and/or the recipient is guaranteed by CLEODE against any malfunctions originating from a design and/or manufacturing flaw, for a period of twelve (12) months following delivery. The buyer and/or recipient is (are) responsible for proving the existence of the said defects or flaws. This warranty is applicable in accordance with articles 1641 to 1648 of the French Civil Code and in compliance with the French statutory warranty. The warranty covers the replacement free of charge of devices and parts affected by a design and/or manufacturing flaw excluding conspicuous defects in the device that are covered by the buyer and/or the recipient.

In order to invoke the warranty, the buyer must immediately send written notice to CLEODE of the flaws that it attributes to the device. It must enable CLEODE to have access to the device to observe these defects and repair them. The warranty provided by CLEODE is strictly limited to the equipment provided and shall only have for effect the replacement or repair, at CLEODE's expense, on its own premises, of all devices or parts that are not functioning as a result of defects or flaws. CLEODE reserves the right to modify the devices in order to comply with the warranty.

The warranty does not apply to replacement or repairs that may result from normal wear and tear of devices, systems or products, damage or accidents resulting from negligence, failure to supervise or maintain, or incorrect use of the devices, systems and/or products.

The maintenance service is provided by CLEODE with all reasonable care possible and in compliance with the current state of the arts.

The exchange of parts or repairs performed under the warranty cannot result in extending the length of the warranty. In no event can the unavailability of the device due to servicing give rise to compensation for any reason whatsoever. The seller is released from all obligations relating to the warranty if the product or device has been modified without prior written consent, or if original parts have been replaced by parts which it has not manufactured without prior consent. If unforeseen damage is caused by the device, it is expressly agreed that the seller can only be liable for the reimbursement of monies received for the purchase of the device if it has been destroyed. Under no circumstances can the seller be held liable for indirect or contingent damage. The seller is released from any liability and the buyer waives any rights against it if an accident or direct or indirect damage is caused to the buyer following a defect, incorrect usage, incorrect maintenance or normal wear of the device sold.

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TABLE OF REVISIONS

Version	Authors(s)	Version description	Date
0.1	CLEODE	Initial version	17/10/2011
1.0	CLEODE	Validated document	26/10/2011

REFERENCE DOCUMENTS

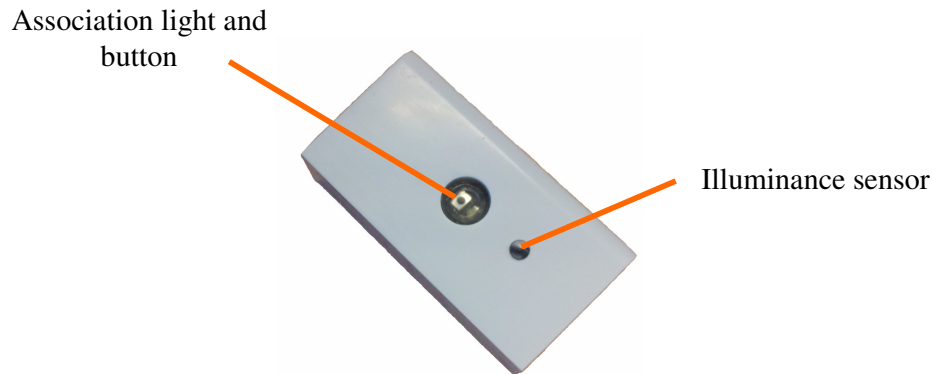
N°	Document	Description
[1]	ZigBee_Cluster_Library_Public	Spécification de la Zigbee Cluster Library
[2]	ZigBee_Home_Automation_Profile	Spécification du profile Home Automation
[3]	ZigBee_Specification	Spécification de la norme ZigBee

I INTRODUCTION

I.1 ZIGBEE ILLUMINANCE SENSOR PRESENTATION

The illuminance sensor ZigBee (ZLUM) contains a light sensor that detects the level of light in a room.

The ZLUM has this form:



The ZLUM module Zigbee™ works in conjunction with a Zigbee coordinator™ compatible stack pro 2007.

CLEODE also markets Coordinators Zigbee™.

Contact : support@cleode.com ou Web : www.cleode.fr for more information

I.2 COPYRIGHT

The CLEODE trademark and the CLEODE logo are properties of CLEODE SA, France. This document also refers to trademarks and other product names that are registered trademarks of their respective owners.

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II ILLUMINANCE SENSOR DESCRIPTION

II.1 ZIGBEE PRESENTATION

The ZigBee™ illuminance sensor is based on the *Light Sensor* application defined in the ZigBee™ Home Automation profile.

This node is fully compliant with the ZigBee™ PRO 2007 and Home Automation profile. For more detail on the data exchange between device and network, see documents [1], [2] and [3].

II.2 ILLUMINANCE MEASUREMENT APPLICATION

The illuminance measurement is made by reporting a value of attribute in the *Illuminance Measurement* cluster. This application is a part of the profile Home Automation.

II.2.1 ILLUMINANCE MEASUREMENT APPLICATION DESCRIPTION

- Device ID : Light Sensor
- Endpoint number: 1
- Clusters :

Server	Cleint
Basic (0x00)	/
Power_Configuration (0x01)	/
Identify (0x03)	/
Alarms (0x09)	/
Illuminance Measurement (0x400)	/

II.2.2 CLUSTERS DESCRIPTION

This is a terse description of clusters and attributes which are implemented in the ZLUM. For more detail on these, see document [1].

- Basic cluster :

This cluster is used to determine basic information about the device.

Attribute	Attribute ID
ZCLVersion	0x0000
ApplicationVersion	0x0001
StackVersion	0x0002
HWVersion	0x0003
ManufacturerName	0x0004
ModelIdentifier	0x0005
DateCode	0x0006
PowerSource	0x0007
LocationDescription	0x0010
PhysicalEnvironment	0x0011
DeviceEnabled	0x0012
AlarmMask	0x0013

- Cluster Power Configuration :

This cluster is used to specify the min threshold of battery level by setting the *BatteryVoltageMinThreshold* attribute value.

Attribute	Attribute ID
BatteryAlarmMask	0x0035
BatteryVoltageMinThreshold	0x0036

- Identify cluster :

This cluster is used to put a device into an identification mode. By writing the *IdentifyTime* attribute value, the user asks the device to blink the light, during a number of seconds specified by this value.

Attribute	Attribute ID
IdentifyTime	0x0000

- Alarms cluster:

This cluster is used to signal an alarm. In the case of ZLUM, only the low battery power level is processed. If the battery power level is too low (under 2,4V) the *AlarmCount* value changes to 1 and a command message is send to coordinator.

Attribute	Attribute ID
AlarmCount	0x0000

- Illuminance measurement:

This cluster provides illuminance in the room in lux by the value of the attribute Measuredvalue.

Attribut	Identifiant de l'attribut
Measuredvalue	0x0000
MinMeasuredvalue	0x0001
MaxMeasuredvalue	0x0002

Among the attributes of the cluster Illuminance measurement, the attribute MeasuredValue passes on its value in a following way:

- Every hour if the temperature does not evolve furthermore of 100 Lux
- At the end of 2 minutes if the temperature changed furthermore of 100 Lux

The configuration of the parameters of report (time min, time max, reportable change) is completely configurable by the user.

III INSTALLATION AND NETWORK ASSOCIATION

III.1 INSTALLATION

III.1.1 DOUBLE-SIDED TAPE INSTALLATION

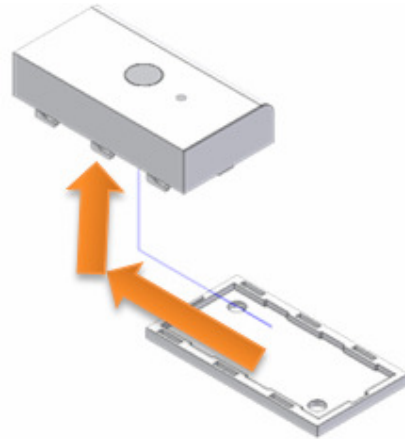
To mount the ZLUM with a double-sided tape, follow this:

- 1) Stick a double-sided tape on the ZLUM bottom
- 2) Dust the wall
- 3) Mount the ZLUM on the wall

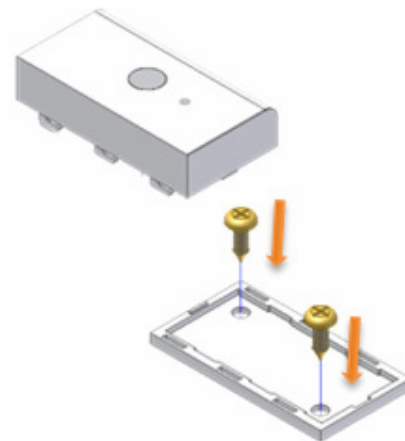
III.1.2 SCREW INSTALLATION

To fix the ZLUM by means of the system of screw, follow the following procedure.

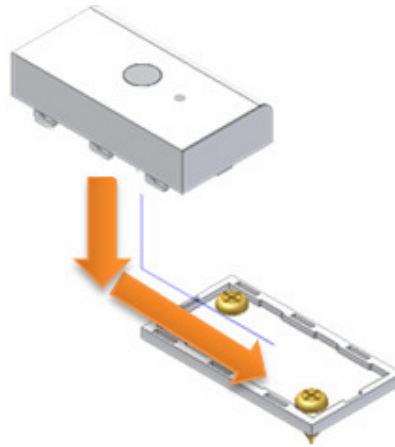
Remove the bottom of the case as indicated on the photo.



Locate the position of holes and drill the wall by taking into accounts your system of fixation (ankle + screw). Push ankles in the holes make previously. Position the support ZLUM and screw saws as on the photo.



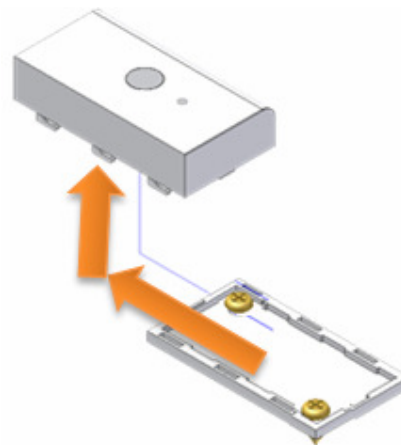
Go back up the ZLUM on its support as indicated on the photo.



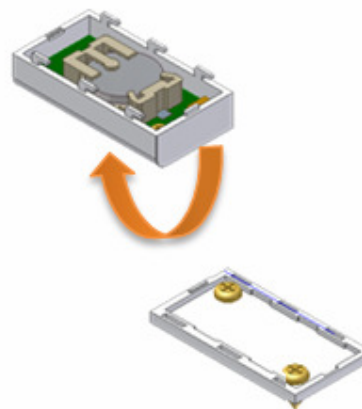
III.1.3 CHANGING BATTERIES

The ZLUM is fed by a battery button (CR2032) situated in the support of battery in the back of the card. To change the battery, follow the following instructions.

Open the case as indicated on the photo.

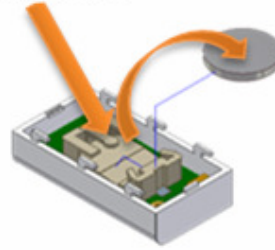


Turn the ZLUM once opened.



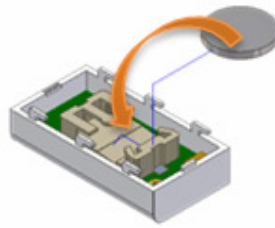
Press on the central leg of the support of battery to remove the battery.

Push here

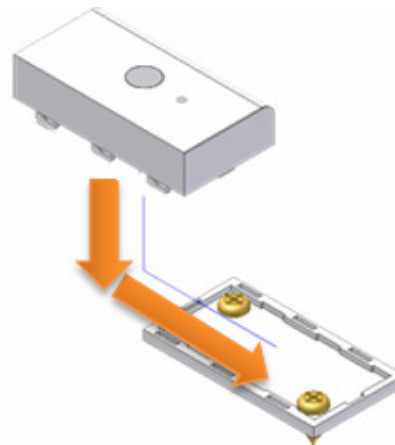


Position a new battery.

At this moment the ZLUM restarts. If it was associated with a network before going out it is going to try to join this network. Otherwise, if it was never associated it is going to look for an available network.

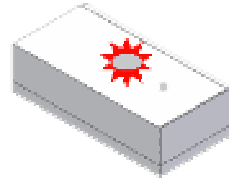


Close the case of the ZLUM.

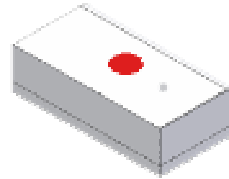


III.2 STARTING UP ZLUM

In the switched on of the object, it tries to join during about seconds and flashes twice.



If a coordinator is present and what it authorizes the ZLUM to join the network, the light of the ZLUM flashing during 2 seconds then turn off.

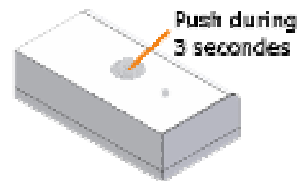


In the cases where the association is not possible, the object is going to put itself in sleep and to try automatically to join at the end of 15 minutes. This time will increase twofold in every new failure of the association.

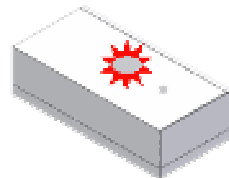
III.3 RESTART OF THE ASSOCIATION PHASE

If the ZLUM is not associated, the user can ask him at any time to join a network.

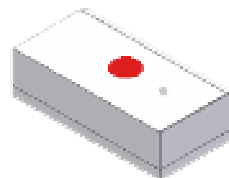
For this, the user has to press during 3 seconds on the button.



If the ZLUM was not associated it begins flashing quickly during 20 seconds. The ZLUM looks for a coordinator during this blinking.



If the association is success, the light of the ZLUM flashing during 2 seconds and turn off.

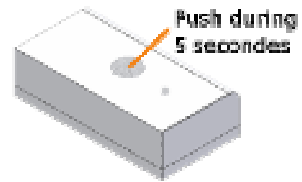


If the light of the ZLUM does not flash after pressing on the button during 3 seconds, this means that he is already associated in a network.

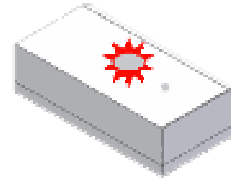
III.4 RESET

If need, the user can reset the ZLUM.

For this, he has to press on the button during 5 seconds..



When the ZLUM reset, the LED flashes twice and turn off.



IV TECHNICAL FEATURES

Weight	30 g (without battery)
Power Supply	1 CR2032 battery
Range of measure	1 Lux to 65536 Lux
Battery Life	> 1 year
Transmission range	100 m outdoor 30 m indoor
Managed channels (frequency)	16 ZigBee™ channels (2.405 to 2.480 GHz)

REPAIR AND MAINTENANCE

Defective equipments shall be first reported to the CLEODE support team in order to be assigned an RMA number. Be prepared to state your name, company and the serial number of the defective item to the support personnel.

The item shall then be returned to CLEODE with the following documents:

- The RMA number
- A copy of the delivery slip
- A detailed description of the default and the test context

The maintenance period is typically four (4) weeks starting from the date of reception of the equipment at the CLEODE headquarters.



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