

v. 1.0.0  
DATASHEET

# RFTZ MODULE



## Born to be smart

Urbana RFTZ Module is a Plug&Play control device for smart lighting applications. The device incorporates the multifunctional control unit with implement the DALI 2.0 protocol to communicate with the smart driver. It is able to track power parameters and set operating values. The device is compliant with the Zhaga Book 18 guidelines and is a plug-and-play solution for integrating any luminaire into Urbana IoT Platform.

## Streetlights are no more simple lights, they are IoT end devices with some smartness inside

The device deploys LoRa® radio technology for last mile

communication. This innovative low-power and long-range technology is used by the local controller for communicating with Urbana Lamps. It operates under LoRaWAN® 1.0.3 standard with coverage radius up to 5 Km for indoor scenarios and up to 10 Km for outdoor. LoRa® technology provides the best performances for radio communication in terms of reliability, scalability and obstacles penetration with low power consumption.

## Best in class for energy efficiency

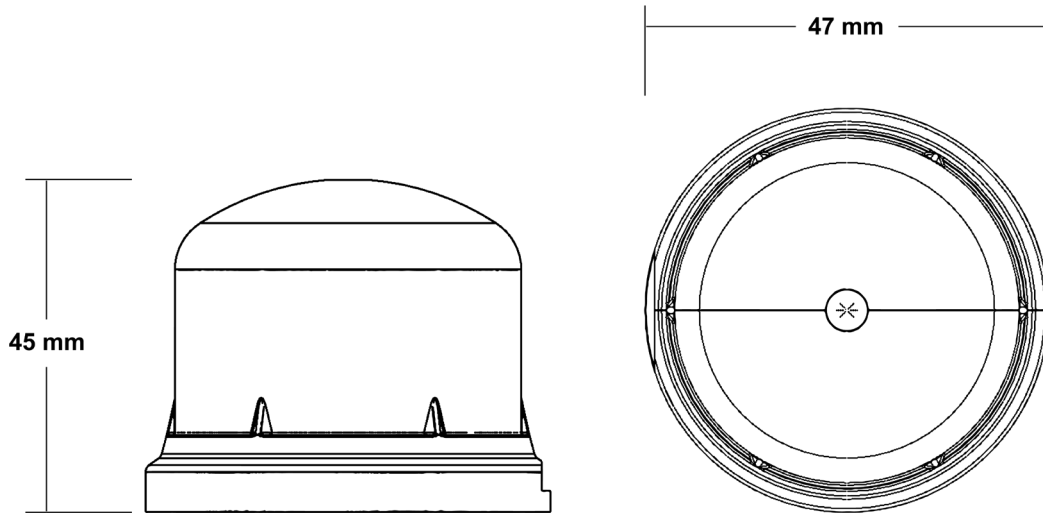
Adapt current flow according to physical parameters of the lamp.

Customize power and light level dynamically and in real-time to the preferred power level.

## Real-time optimization through Urbana IoT Platform

All lamps, thanks to Urbana RFTZ Module, can be programmed and reprogrammed whenever needed with a personalized lighting plan so the lamp will shine according to the requirements.

# DEVICE DIMENSION



# TECHNICAL SPECIFICATION

## MECHANICAL

<b>Housing:</b>	Solid Case
<b>Material:</b>	PBT Receptacle, Polycarbonate Domes
<b>Dimensions (mm):</b>	47 x 45 mm
<b>Installation:</b>	Luminaire
<b>Load Bearing:</b>	Zhaga Book 18

## ELECTRICAL

<b>Input Voltage:</b>	+9 ~ + 28 VDC
<b>DALI 2.0:</b>	DA + / DA -

## ENVIROMENTAL

<b>Operating Temperature:</b>	-40°C ~ +70°C
<b>Storage Temperature:</b>	-50°C ~ +80°C
<b>Operating Relative Humidity (Max):</b>	100%
<b>IP Rating:</b>	IP66
<b>Certification:</b>	CE, RoHs

## INTERFACES AND PROTOCOLS

<b>Control Input/Output Interface:</b>	DALI 2.0
<b>Radio Interface:</b>	LoRaWAN®
<b>LoRaWAN® Protocol:</b>	Version 1.0.3

## MONITORING PARAMETERS

Power Consumption (active power*, apparent power*, active energy*, apparent energy*)
Drivers Status
Lamp Dimming Level
Ambient Light Level
Ambient Light Level for Emergency Mode**

\* if supported by the driver

\*\* emergency mode = in case of a network or internal failure, the on or off control is performed by comparing the lux level detected by sensor with the activation threshold set in the node (which can be modified by the user).

## FUNCTIONALITIES

Weekly Lighting Schedule (up to 16 dimming points per day)
Temporary Dimming
Set Threshold for Emergency Mode
Internal RTC with Coin Battery
Drivers Errors Monitoring
Astroclock

## LORA® INTERFACE

<b>Frequency:</b>	LoRaWAN®1.0.3 Regional Parameters
<b>Modulation:</b>	LoRa®
<b>Stack:</b>	LoRaWAN® 1.0.3
<b>Sensitivity:</b>	-135.5 dBm (SF 12; SB 125 kHz, CR 4/6) -133 dBm (SF 12; SB 250 kHz, CR 4/6)
<b>Output Power (Max):</b>	+18.5 dBm
<b>RF Data Rate:</b>	0.24 to 37.5 kbps
<b>RF Range:</b>	Up to 15000 m (line of sight)
<b>Transmission Current:</b>	128 mA (18.5 dBm)
<b>Receive Current:</b>	21.5 mA (@125 kHz BW)
<b>Stand-by Current:</b>	<1.8 uA

## COMPLIANCES

**The device is in conformity with the relevant Union harmonization legislation:**

Directive EU 2015/53

Delegated Directive EU 2015/863

**The following harmonized standards and technical specifications have been applied:**

EN 55024:2010-11

EN 55024/A1:2015-06

EN 60950-1:2006-04

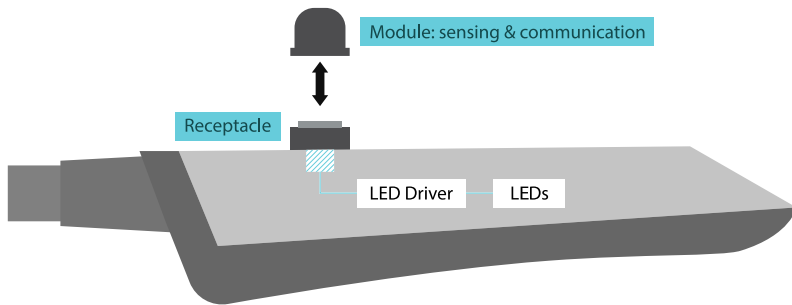
EN 60950-22:2006-04

EN 55032:2015-07

EN 61000-3-3: 2013-08

ETSI 301 489-1:2017-02

# CONNECTION SCHEME - ZHAGA BOOK 18



Top view



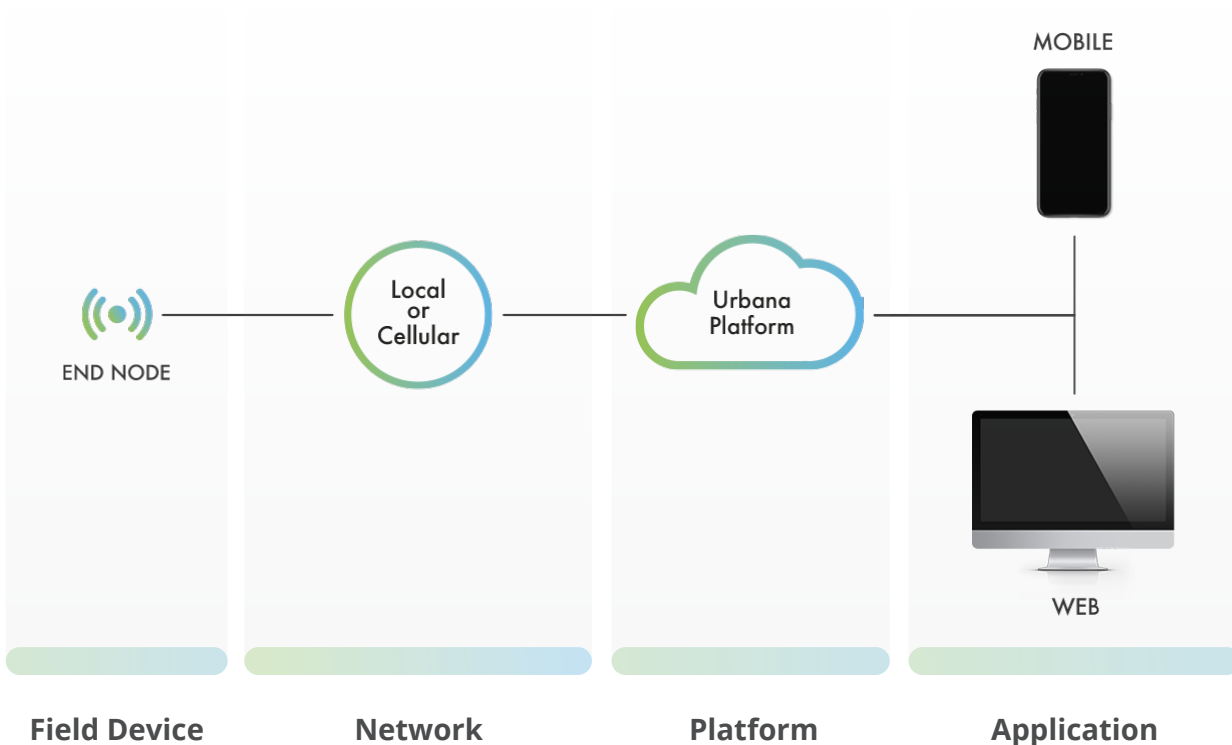
Bottom view



Part to be installed on the luminaire

# URBANA IoT PLATFORM

Urbana platform is designed to provide end-to-end IoT solutions from hardware to software. The core structure of the platform is based on a scalable distributed and containerised infrastructure maintaining the requirements of clients to scale up whenever needed. The tech stack used in Urbana allows us to have no restriction based on number of devices, features, users and availability. With use of these highly scalable and available databases, Urbana IoT Platform is able to provide advanced reporting and fallback mechanism to provide high level of reliability. One of the most important components of the Urbana IoT Platform is the MQTT broker (server). The MQTT layer is the gate that connects the cloud-based part of the infrastructure to the local field network of devices. It plays a critical role both in terms of security and scalability but also in terms of interoperability. Urbana infrastructure can interface with any device compliant with LoRaWAN® network protocol as standardized by the LoRa Alliance®. Urbana Smart Solutions, being an end-to-end provider, have in-house LoRaWAN® gateways readily for the clients if needed, which are plug and play compliant with all the Urbana devices.



- EFFICIENCY PLATFORM
- + EFFICIENCY LIGHTING
- + EFFICIENCY MAINTENANCE
- + APP URBANA TOOLKIT

RFTZ Module  
Datasheet

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