MIMOS Luminaires Monitoring Mesh Network (Mi-LUMENS)

Mi-LUMENS turns any ordinary streetlight into intelligent one by enabling users to switch it on/off, adjust dimming levels and monitor its real-time operational state and power consumption from remote offices over the Internet. This ensures more efficient streetlight maintenance and management.

Overview

Mi-LUMENS is a smart controller that eases the maintenance and management of LED streetlights. It allows user to switch the streetlight on/off, adjust its dimming levels (for compatible LED streetlights), monitor its real-time power consumption and be alerted when the streetlight is faulty. All these operations are administered remotely over the Internet via an intuitive and user-friendly web dashboard.

Mi-LUMENS uses 6LowPAN, which is a low-power wireless network technology where each device has its own IP address. This allows the device to easily exchange data with remote hosts over the Internet or wireless local area network through a gateway. Communication between device and gateway uses sub-GHz ISM radio band (919-923MHz). This enables longer communication range with less RF interference compared to 2.4GHz band. Mi-LUMENS device is also capable of forming ad-hoc mesh network with nearby Mi-LUMENS devices to further extend the communication range.

Features

Mi-LUMENS comprise the following features:

- **Rated for 100-250 VAC, 50/60Hz**
  Support supply voltage of 100 to 250 VAC and maximum load current of 10A.
- **IP67 Outdoor Protection**
  Designed for outdoor use and harsh environment.
- **Operational State and Energy Consumption Reporting**
  Monitor real-time operational state and energy consumption of individual streetlight.
- **Remote and Scheduled On/Off and Brightness Control**
  Allows switching on/off and dimming individual streetlight from remote locations, as well as setting predetermined schedule

Technology Benefits

The benefits of Mi-LUMENS are:

- **Long Range Communications**
  Mi-LUMENS operates at sub-GHz frequency where signal absorption by the environment is less compared to its higher frequency counterpart. Thus, long range communication over difficult terrain and non-LoS condition is possible.
- **Less RF Interference**
  Compared to the 2.4GHz ISM band, the sub-GHz band is less crowded and relatively interference-free.
- **IP-based Low Power Wireless Mesh Network**
  Mi-LUMENS is a low power embedded device that can form an ad-hoc wireless mesh network and able to communicate over the Internet via gateway. This allows the device to send and receive data with the cloud, as well as eases OTA firmware update.

Technology Summary

Mi-LUMENS

A smart controller that controls individual streetlight on/off state and light brightness, as well as monitor its operational state and energy consumption in real-time from remote offices.

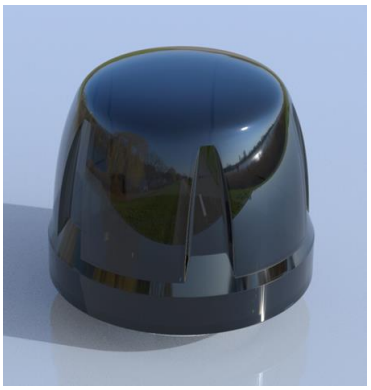
Industries: Streetlight Manufacturer, Local Councils, Maintenance Contractors

Features

- Rated for 100-250VAC, 50/60Hz, max load 10A
- IP67 outdoor protection
- Operational state and energy consumption reporting
- Remote and scheduled on/off control
- Brightness control

Technology Benefits

- Long range communication
- Less RF interference
- IP-based low power wireless mesh network



Mi-LUMENS (illustration purpose only)

Specifications

Mi-LUMENS	
Specifications	
Supply Voltage (VAC)	100 – 250, 50/60Hz
Max Load Current (A)	10
Frequency Band (MHz)	919-923
Data Rate (kbps)	50
Lowest RX Current (mA)	5.5
Receive Sensitivity (dBm)	-124
Max TX Power (dBm)	14