

FRE-220M-IL*

inteliLIGHT® LoRaWAN™ compatible luminaire controller embedded module



Upgrade your lamps for smart control and monitoring

Unprecedented intelligence for any street lighting fixture, right from the production line. Designed to minimize occupied space, the new inteliLIGHT® LoRaWAN™ compatible FRE-220-M long range RF controller can be embedded into most luminaire designs, allowing any producer to offer LoRaWAN™ ready smart lighting fixtures.

LoRaWAN™ Compatible

smart upgrade for luminaire manufacturers

detailed lamp & grid **monitoring**

remote individual ON/OFF and **dimming**

astrological calendar for **autonomous** operation

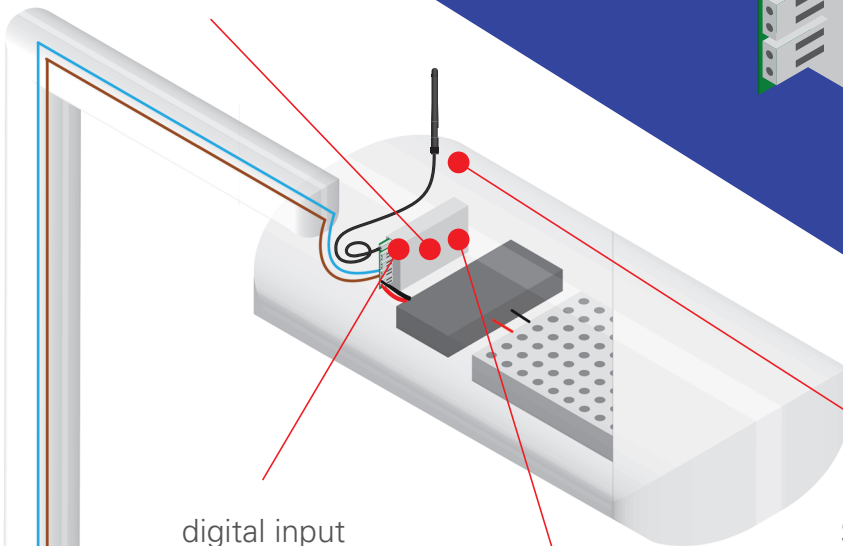
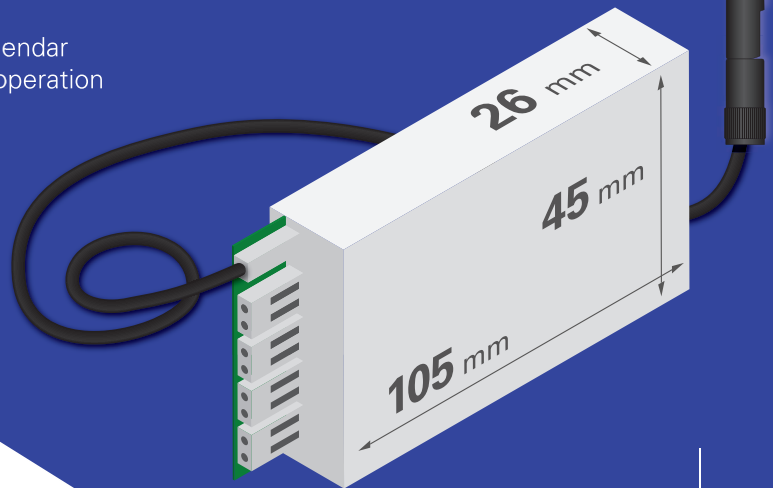
MTBF, average lifetime: **10+ years**

capsulated metalcase

digital input for sensors and smart applications

insulated SMA antenna installation

small dimensions
105 x45 x26 mm

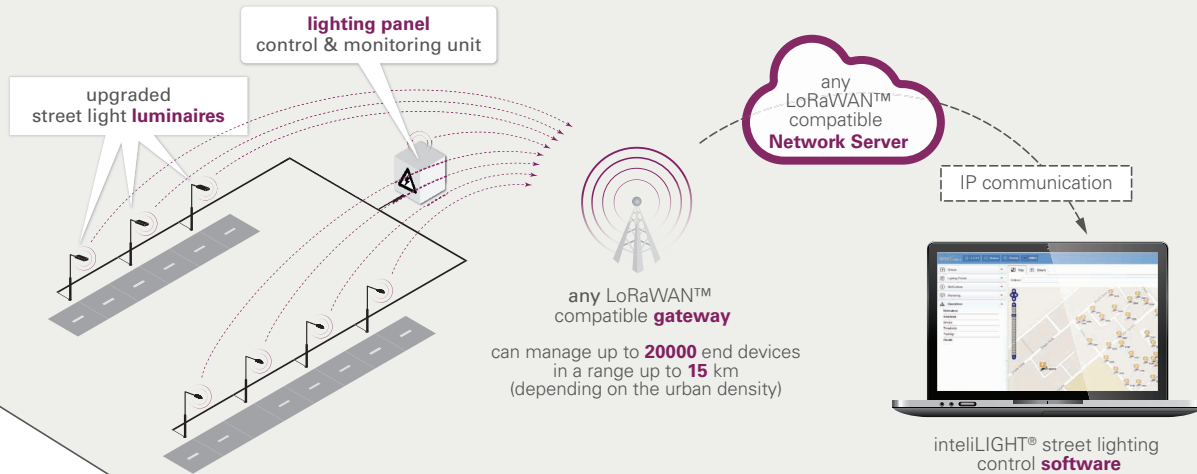


*Product subjected to development according to published LoRaWAN regional specification

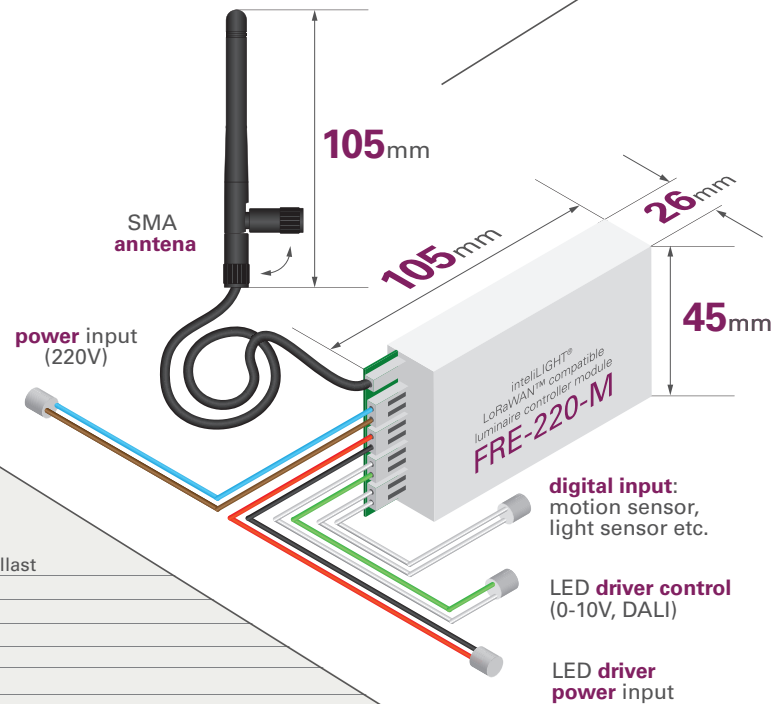
system architecture

inteliLIGHT® is a street lighting **remote control management** system that offers detailed, individual lamp control of every fixture in any city with LoRaWAN™ compatible coverage. Up to 85% energy savings can be achieved through **dimming** and **smart scheduling**. Additionally, **real-time grid monitoring** and **advanced maintenance and optimization tools** can further cut operational costs with up to 42%. LoRaWAN™ is a **Low Power Wide Area Network (LPWAN)** specification intended for Internet of Things applications in local, regional, national or global networks.

LoRaWAN™ network architecture is typically laid out in a star topology in which gateways are relaying messages between end-devices and a central network server in the back-end. Gateways are connected to the network server via secure IP connections while end-devices use single-hop wireless communication to one or many gateways.



dimensions & connection diagram



technical details

Lamp Type	LED, CF, HID with electronic ballast
Maximum lamp power	up to 400W
ON/ OFF/ Dimming	✓
Dimming range	30% - 100%
Control interface	0 - 10V / DALI
Frequency band	915MHz-917MHz
TX Power	100mW
Communication protocol	LoRaWAN™ : Class C (compliant), Class A (compatible)
Security	Dedicated high-security memory for encryption keys storage
Power supply	85 - 260VAC / 50Hz-60Hz
Internal memory	✓
Power consumption	max. 0.5W
Precision Real Time Clock (RTC)	Battery operated
Real - time lamp operation	LoRaWAN™ Class C networks only
IP rating	IP41
Operating temperature	-25°C to +65°C
Compliant standards	CE, RoHS, EN 61000-3-2(2014), EN 61547(2009), EN 60068-2-1(2007), EN 60068-2-2(2007), Prequalified according to ETSI EN 300 220
Measured parameters	lamp power, line voltage, current, active power, reactive power, apparent power, power factor, energy consumption (active/ reactive), lamp / controller - running hours counter, lamp on / off cycles counter
Alarms monitored in real-time	overvoltage detection, overcurrent detection, lamp or ballast fault detection, device failure
Configurable parameters	astrologic calendar scheduler, start state: digital input, on/off power threshold, over/ under voltage threshold, over/ under current threshold, strike retry count, fade time, lamp warming time, lamp cooldown time