



NB-IoT STREET LIGHTING REMOTE MANAGEMENT & SMART CITY PLATFORM



[FRE-220-M-NB1 - embedded NB-IoT compatible luminaire controller - data sheet]

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Ver 1.5

FRE-220-M-NB1 embedded NB-IoT COMPATIBLE LUMINAIRE CONTROLLER

Upgrade your lamps for smart control and monitoring

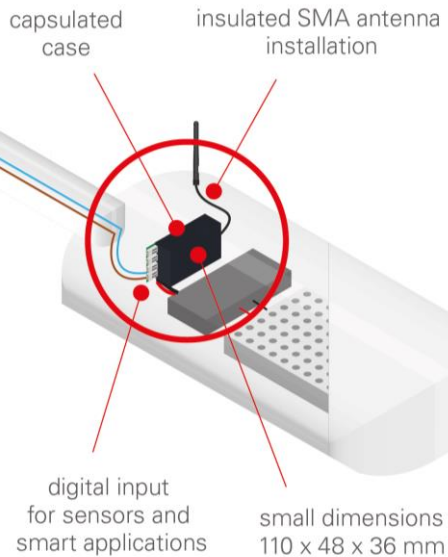
Unprecedented intelligence for any street lighting fixture, right from the production line. Designed to minimize occupied space, the new inteliLIGHT® NB-IoT compatible FRE-220NB-M controller can be embedded into most luminaire designs, allowing any producer to offer NB-IoT ready smart lighting fixtures.

- › Enables **individual remote management** of streetlight lamps with electronic driver up to 400W (ON/ OFF/ Dimming).
- › Specially designed and **optimized for LPWA networks**.
- › **Autonomous operation** based on predefined schedules and digital input (light level sensor and adaptive lighting).
- › **Adaptive lighting** capabilities based on digital input for motion sensing.
- › **Bandwidth efficient** with minimal communication requirements.
- › **Dedicated high-security memory** for encryption keys storage.
- › Wide range of **electrical parameters monitoring**: V, W, A, VAR, Wh, VARh, PF and frequency.
- › **Advanced data synchronization** and notification mechanism.
- › **Battery operated RTC**, protected against unforeseen communication failure.
- › **Local infrared interface** for local configuration.
- › Integrated **digital input**.
- › **Over The Air** (OTA) firmware update.
- › Designed **lifetime: 10+** years.



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OPTIONAL ANTENNAS

ANT-601



ANT-018



ANT-123



FRE-220-M-NB1 embedded

Lamp Type	LED, CF, HID with electronic driver
Maximum lamp power	400W
Functions / Operation mode	ON/ OFF / Dimming
Dimming range	30%-100%
Dimming steps	stepless
Control interface	0-10V/ 1-10V, DALI
Local interface	infrared
Network interface	NB-IoT
Supported frequencies	Band 8, Band 20
Firmware update	IR (infrared) / OTA (over the air)
Security	encrypted communication based on security keys
Power supply	85 - 260VAC / 50Hz-60Hz
Surge protection	10kA
Internal scheduling memory	16 events / day
Power consumption	1W
Precision Real Time Clock (RTC)	Battery operated
IP rating	IP42
Operating temperature range	-25°C to +65°C
Dimensions (length x width x height)	110 x 48 x 36 mm
Compliant standards	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
Certifications	CE FCC (in progress)

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

CONFIGURABLE PARAMETERS:

- › Astronomical calendar scheduler
- › Predefined scheduler
- › Start state (Input / Schedule / Manual)
- › ON/OFF power threshold
- › Over/ under voltage threshold
- › Over/ under current threshold
- › Strike retry count
- › Fade time
- › Lamp warming time
- › Lamp cooldown time
- › Data transmission setup
- › Alert priority setup

ALARMS MONITORED:

- › Over/ under voltage detection
- › Over/ under current detection
- › Lamp or driver fault detection
- › Device failure