inteliLIGHT®

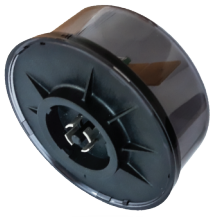## NB-IoT, LTE-M compatible smart street lighting

FRE-24-Zhaga-NB1-M1 -
NB-IoT, LTE-M compatible, luminaire controller

Plug-and-play upgrade for lamps compatible with Zhaga socket (book 18) with full lamp management and feedback functionality.
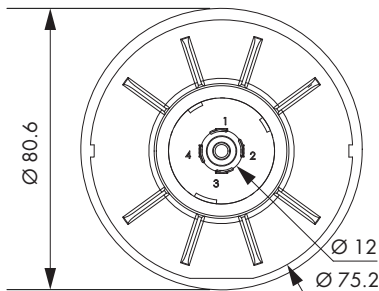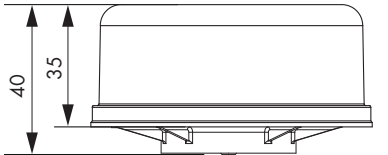
›   ZHAGA socket (book18).
›   Can control additional independent devices via DALI relay.
›   Enables individual remote management, ON / OFF / Dimming of streetlight lamps with DALI 2 / DiiA / Osram DEXAL / Philips SR control gear.
›   Specially designed and optimized for LTE networks.
›   Autonomous operation based on predefined schedules, light level sensor and adaptive lighting.
›   Adaptive lighting capabilities based on DALI digital input for motion sensing.
›   Bandwidth efficient with minimal communication requirements.
›   Secure communication based on encryption keys.
›   Electrical parameters monitoring (measured by DALI2 control gear): V, W, A, Wh, PF, frequency.
›   Advanced data synchronization and notification mechanism.
›   Internal precision Real time clock (RTC) with backup battery.
›   Infrared interface for local configuration.
›   Integrated light level sensor.
›   Over The Air (OTA) firmware update.
›   Designed lifetime: 10+ years.
›   TALQv2 certified solution.

inteliLIGHT Lamp Controllers

Lighting Panel Control and Monitoring Unit

Public Communication Network (Cellular Operator)

IP Communication

Municipal Wireless Network

Electrical Vehicle Chargers

City Sensors

Traffic Monitoring

Security Infrastructure

inteliLIGHT StreetLight Control Software (cloud or local server)

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FRE-24-Zhaga-NB1-M1

Lamp Type	LED, CF, HID with DALI 2 / DiiA / D4i / Osram DEXAL / Philips SR control gear
Maximum lamp power	Depending on the lamp control gear
Additional controlled devices	Yes, independent controlled via DALI relay
Functions / Operation mode	ON / OFF / Dimming
Dimming range	1%-100% (linear or logarithmic depending on control gear settings)
Control interface	DALI 2/ DiiA (IEC 62386)/ D4i/ Philips SR
Power supply	24 VDC (min 21.6 VDC- max 30 VDC)
External interface	infrared
Network interface	NB-IoT / LTE-M
LTE supported frequencies	worldwide
Internet protocol version	IPv4/IPv6
Inter-node mesh communication	Optionally available, with motion sensor add-on
Last gasp	Optional
Firmware update	IR (infrared) / OTA (over the air)
GNSS	Optional- Geolocation and precision time (GPS, GLONASS)
Security	Encrypted communication based on security keys (AES128-bit)
Surge protection	provided by DALI 2 control gear
Internal scheduling memory	128 events (daily / weekdays / weekends / fixed date / exceptions)
Measurement accuracy	Depending on control gear specifications
Average power consumption	0.5W/ 24V
Maximum power consumption	6W/ 24V peak power according to DiiA
Precision Real Time Clock (RTC)	Yes, battery operated
Battery operation time	10 years +
Real-time lamp operation	Yes
Digital input	1x dry contact (for PIR sensor, photocell sensor, open door sensor etc.)
Output	Festive lighting or another occasional consumer (if it is a Dali Bus device)
Tilt sensor	Optional (configurable threshold for tilt & roll)
Light sensor	Integrated. Configurable threshold.
Ingress protection	IP66 (IEC 60529)
Impact protection	IK09 (IEC 62262)
Operating temperature range	-25°C to +70°C
Weight	80 ± 5 g
Dimensions (diameter x height)	80 x 40 mm
Mounting	Zhaga (book 18)
Compliant standards	• RED Directive: LVD Directive & protection of health (EN IEC 62368-1, EN IEC 62479), EMC Directive (ETSI EN 301 489-1, ETSI EN 301 489-52), Efficient use of radio spectrum (ETSI EN 301 908-1, ETSI EN 301 908-13, ETSI EN 303 413) • RoHS Directive • Environmental Testing: EN 60068-2-1, EN 60068-2-2
Certifications	CE, SR Signify

DIMENSIONS (mm):

CERTIFICATIONS:

MEASURED PARAMETERS:
(depending on the lamp control gear)

›   Lamp power
›   Line voltage
›   Current
›   Active power
›   Reactive power
›   Apparent power
›   Power factor
›   Frequency
›   Control gear temperature
›   Energy consumption (active/ reactive)
›   Lamp / controller- running hours counter
›   Lamp On / Off cycles counter
›   Dimming level at the moment of interrogation (optional). It needs to be specified before product shipping.

CONFIGURABLE PARAMETERS:

›   Astronomical calendar scheduler
›   Predefined scheduler
›   Start state (Photocell / Schedule / Manual)
›   Over/ under voltage threshold
›   Over/ under current threshold
›   Fade time
›   Lamp warming time
›   Lamp cooldown time
›   Light level threshold
›   Data transmission setup
›   Alert priority setup
›   Use of necessary light flux (Adjustable Lighting Output)- Only ON/OFF based on photocell value
›   Maintaining of constant light flux (Constant Lumen Output)- depending on the control gear

ALARMS MONITORED:

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

ELECTRICAL CONNECTIONS:

1   +24 V power supply

2   Negative pole for the [DALI] protocol
Ground for +24V power supply (contact 1)
Ground for General Digital IO (contact 4)

3   Positive pole for the [DALI] protocol

4   General Digital I/O (greater than 7V)
(no power supplied by the controller to DALI driver)

DALI 2 luminaire driver with 24V Aux Supply