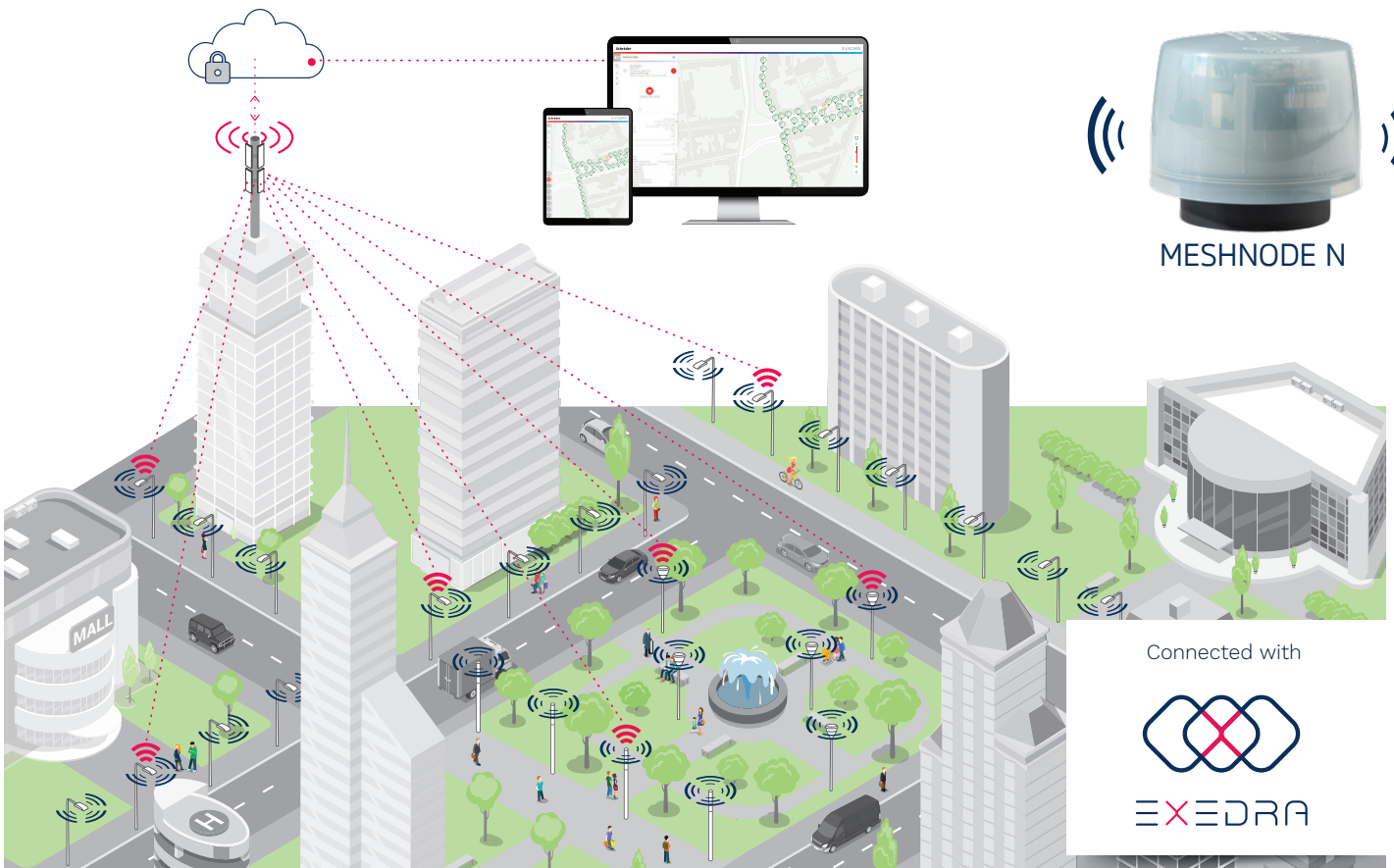


OWLET IV NEMA luminaire controllers

OWLET IV luminaire controllers operate Schröder's luminaires and luminaires from third parties through the NEMA receptacle. They offer easy installation and have fast plug-and-play commissioning. OWLET IV controllers use both cellular and mesh radio networks, optimising geographical coverage and redundancy for continuous operation. DATALIFT use mesh network to aggregate information from a cluster of MESHNODEs, and forward this on to the IoT platform using cellular connectivity.

Among other features, OWLET IV controllers use advance cybersecurity mechanisms to protect the deployment in the city and provide accurate power outage information to city's streetlight managers. OWLET IV controllers are managed with EXEDRA, Schröder's advanced smart lighting management platform.



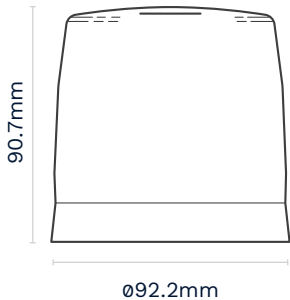
Key advantages

- **Auto-commissioning**
Easy installation and plug-and-play
- **Auto-geolocation**
GPS-location detection and time synchronisation
- **Real time dynamic lighting**
Mesh technology to broadcast sensor triggering event locally within a cluster of luminaire controllers
- **Last gasp messaging**
Power outage detection allowing a last message when power cuts off
- **Asset management**
Automatic device detection via RFID tag or asset data import
- **Tunable white**
Ability to control luminaires with variable colour temperature (DT8)

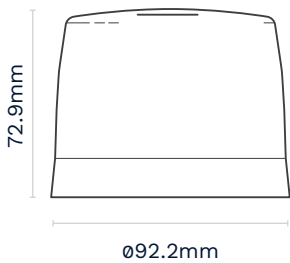
Features

- Gateway less hybrid network architecture using 6LowPAN Mesh network & cellular connectivity
- Built-in GPS
- Built-in RFID reader for asset identification
- Built-in photocell to control each luminaire based on local ambient light level
- Embedded self-test capability to check installation
- Dimming interface automatic detection: DALI or 0-10V
- Extra digital input for auxiliary sensor (occupancy, etc.)
- Offering responsive light-on-demand use cases triggered by local sensors
- +/- 1% metering accuracy
- Surge protection
- Reduced inrush current due to zero-crossing detection
- End-to-end encrypted communication
- Over-the-Air firmware update

TECHNICAL INFORMATION - DATALIFT N & MESHNODE N



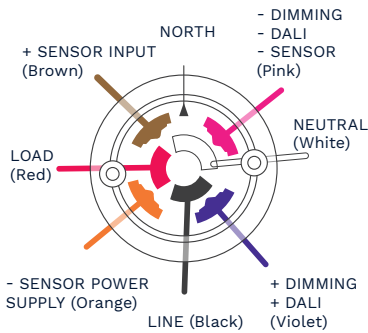
DATALIFT N



MESHNODE N

Electrical connections

NEMA TWIST LOCK (TOP VIEW)
ANSI C 136.41



Metering and accuracy

| | |
|-------------------------------------|---|
| Measured parameters | Power, Voltage, Current, Power Factor, Energy, Dimming level, Cumulative burning hours, Internal temperature |
| Fault monitoring | Abnormal power consumption, Under/over input voltage, Low-power factor, Driver/light source failure, Relay, Temperature |
| Integrated energy metering accuracy | +/- 1% for load >= 15 W +/- 5% for load < 15 W |

Mains voltage

| | |
|-------------------|-------------------------|
| Voltage (L - N) | 110-240Vac ± 10% |
| Frequency | 50/60Hz ± 5% |
| Max. load current | 5A |
| Max. power at 5A | 240V x 5A = 1200W |
| Surge immunity | 2KV (acc. IEC61000-4-5) |

Housing

| | |
|-------------------|--|
| Material | Makrolon 6557 Transparent, UV stable, Flame retardant |
| Colour | RAL 7042 traffic grey |
| Protection class | Ingress protection rating IP66 / DIN EN 60529 |
| Impact protection | IK 08 |

Average power consumption

| | |
|-------------------|-----|
| Operating wattage | <2W |
|-------------------|-----|

Operating conditions

| | |
|--------------------------|----------------------------------|
| Ambient temperature (ta) | -40°C to +65°C -40°F to 149°F |
| Relative humidity | 5% to 90% |

Standards & certificates

| | |
|-------------------|---|
| Approvals | CE / RCM / UKCA |
| Standards | RE Directive (2014/53/EU) 2011/65/EU (RoHS) and its amendments (EU) 2015/863, (EU) 2017/2102 |
| EMC | ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4 ETSI EN 301 489-19 V2.1.1 Draft ETSI EN 301489-52 V1.1.2 |
| Radio | ETSI EN 300 328 V2.2.2 ETSI EN 300 330 V2.1.1 ETSI EN 301 511 V12.5.1 ETSI EN 301 908-1 V11.1.1 ETSI EN 301 908-2 V11.1.2 ETSI EN 301 908-13 V11.1.2 ETSI EN 303 413 V1.1.1 |
| DALI | IEC62386-101/103 |
| Human exposure | EN 62311 |
| Connector | ANSI C136.10 and ANSI C136.41 |
| Electrical safety | EN 61347-1:2015 (Part 1) EN 61347-2-11:2001 (Part 2-11) |

Radio communications

| | |
|--------------------------------|--|
| Low-power mesh | IPv6, RPL, 6LowPAN, MAC - IEEE 802.15.4e, PHY - IEEE 802.15.4.g, 2400 MHz @ +10 dBm |
| Cellular modem (DATALIFT only) | GSM: 1800MHz/900MHz UMTS: B1 (2100MHz) / B8 (900MHz) LTE-FDD: B1 (2100MHz) / B3 (1800MHz) / B7 (2600 MHz) / B8 (900MHz) / B20 (800MHz) |
| RFID | 13.56MHz (ISO/IEC 15693) |

DALI interface

| | |
|----------------------------------|--|
| Protocol | Compliant to IEC62386 Ed. 2 |
| ESD rating | 4kV (according to EN61000-4-2) |
| Protection | Interface is short circuit protected |
| Isolation | 3108V to AC mains |
| Built-in DALI Bus supply current | maximum 250mA / guaranteed 16mA (4 DALI devices) |

0-10V interface

| | |
|----------------------|--|
| Protocol | Designed according to IEC60929 (Annex E) |
| Min. control voltage | 0.3V |
| Load capacity | 8 drivers |
| ESD rating | 4kV (according to EN61000-4-2) |
| Isolation | 3108V to AC mains |

Sensor auxiliary power supply

| |
|---------------------|
| 12Vdc ±1V, 4mA max. |
|---------------------|

GNSS (Global Navigation Satellite System)

| | |
|-------------------|--|
| Supports | GPS system (L1C/A signals), Glonass system (L1OF signal), and SBAS (Satellite Based Augmentation System) |
| Position accuracy | Up to 2.5m/8ft (with > 6 satellites) |

Security features

| | |
|----------------|--|
| Authentication | Based on unique X.509v3 device certificates Mesh Access Control using IEEE802.1x and EAP-TLS |
| Encryption | ECC P256 used in TLS X509v3 AES-CCM-128 based Mesh Frame Security RSA-2048 used for firmware signing |
| Cipher suites | TLS_ECDHE_ECDSA_WITH_AES_128_GCM |

Ordering information

| Model | Part number | Description |
|------------|-------------|---------------------------|
| DATALIFT N | 01-78-662 | 2.4GHz Mesh, Cellular LTE |
| MESHNODE N | 01-78-663 | 2.4GHz Mesh |