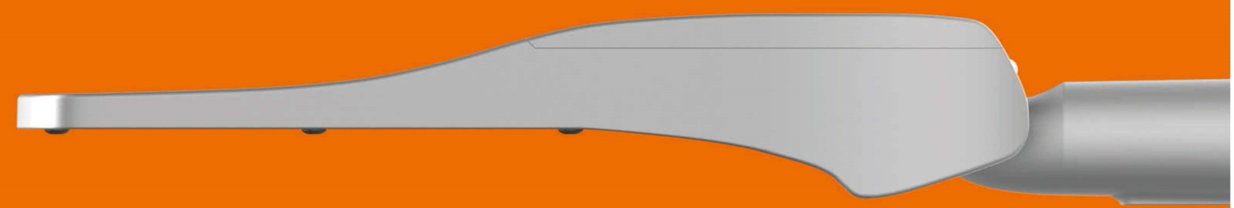
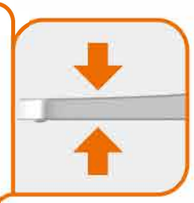
LED STREET LAMP

AURORA



01

- Special heat dissipation design, small size with high power
- Special aluminum material, The Thermal conductivity more than 40 percent higher compare to ADC12 aluminum.
- Special surface spraying method, Can effectively reduce the endothermic effect of sunlight at hot summer, make sure lamp working as begining temperature.



02

- Special structure design for non Light shielding, to make less light loss.
- Internal high density reticular heat dissipation design, make sure the heat rapidly move to outside surface of lamp
- Used high light transmittance Lens and Glass

03

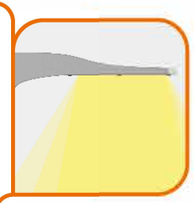
- Superior design, more popular in market

04

- Smart design, compatible with various light control unit (LCU), also perfectly solved waterproof issues

05

- Smooth surface, self-cleaning with no dust
- Streamlined design for low wind-resistance, heat will be more easy be carried away by wind

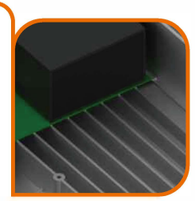


06

- Super high optical efficiency, for saving energy
- Different light distribution suit for variety of road

07

- Smart design: one key open more easy for maintenance

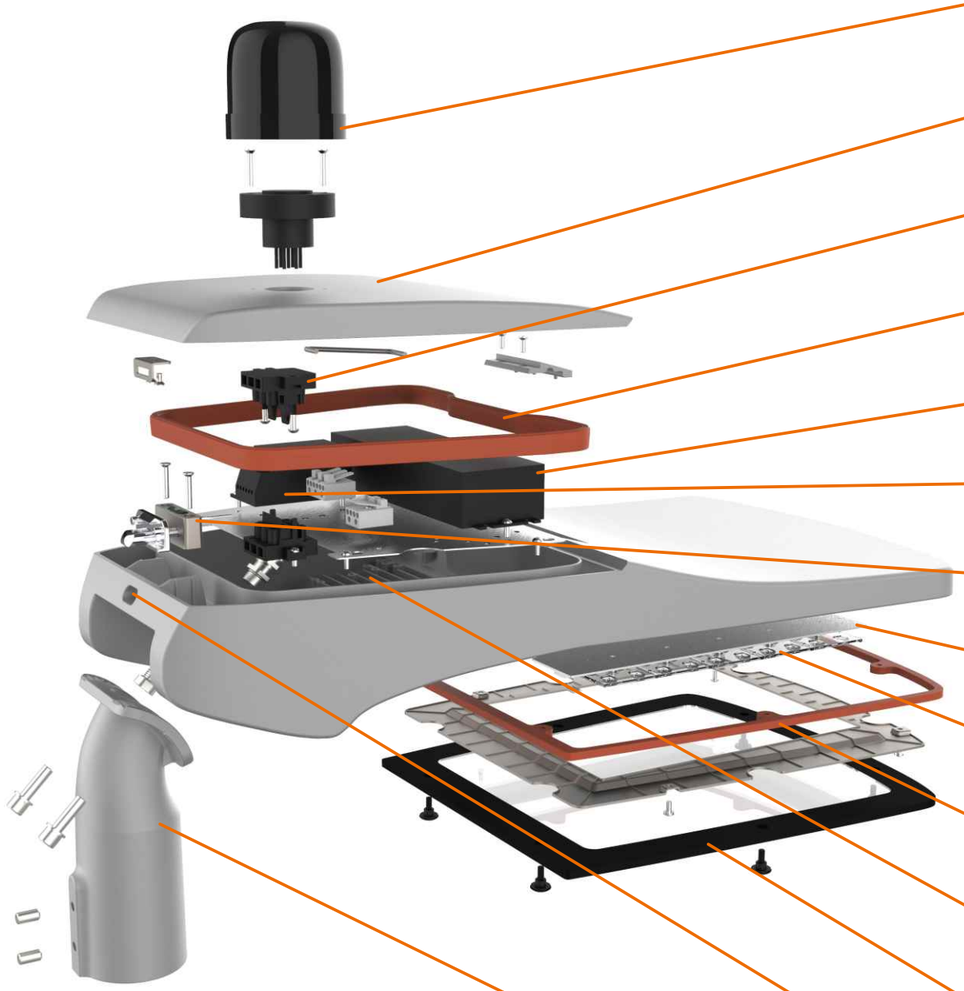


08

- Special design for driver heat dissipation, keep fixture long lifespan

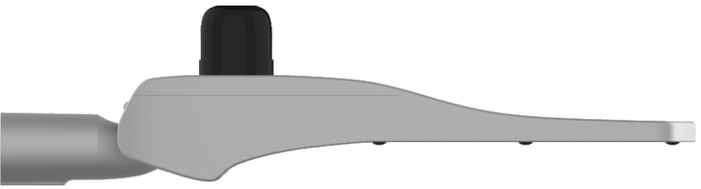
8S

AURORA



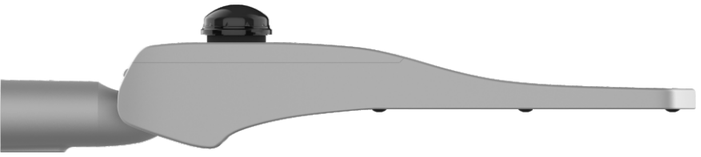
- Smart control module , Optional Zigbee , LORA , NB-IOT available
- Maintenance opening for quick access to the driver compartment
- Circuit interrupter for secure maintenance access
- Industrial rated silicon gasket for an IP66.
- The internal isolated power driver is well protected against all weather conditions
- Standard 10KV surge protection Optional 20KV available
- Gradienter to make sure fixture be installed in horizontal line
- Aluminum PCB with a high thermal conductivity rating
- high transmittance Lens with different beam angels for different areas of application
- Industrial rated silicon gasket for an IP66.
- Heat dissipation skin to help led driver quickly remove heat
- Durable 6mm tempered glass with black finish around the light output area , ultra clear glass to increase light output.
- One Key open , No tools to maintenance ,more convenient and fast .
- Slip-fitters available for different pole size

SMART STREET LIGHT SOLUTION



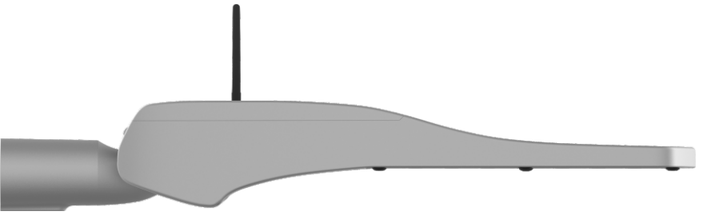
NEMA

ROLA Zigbee NB-IOT



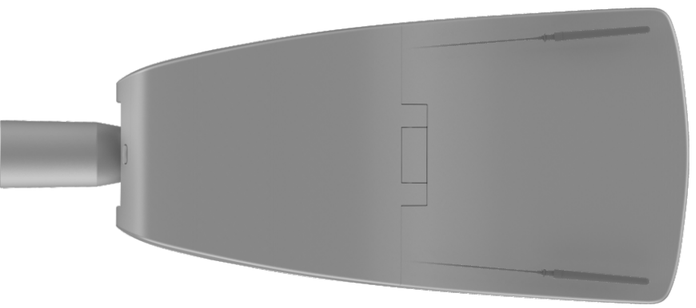
ZHAGA

ROLA Zigbee NB-IOT



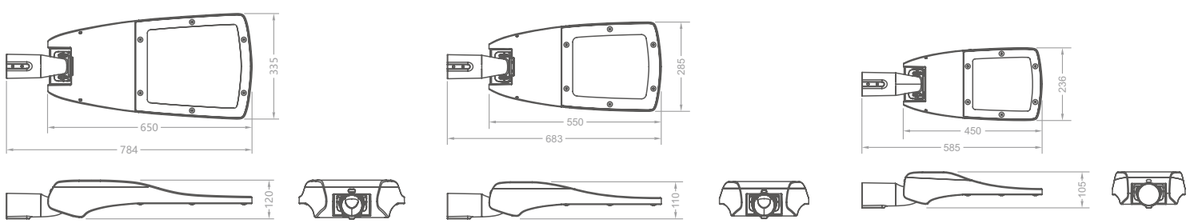
Eternal Antenna

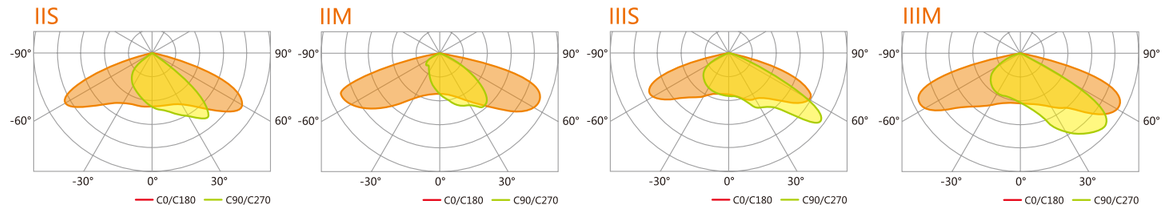
ROLA Zigbee NB-IOT



Built-in Antenna

ROLA Zigbee NB-IOT





LED Qty	80		64		48		36		36		24		12	
Current (mA)	350	270	350	270	350	270	350	270	350	270	350	270	350	270
Power	180	139	146	112	110	85	84	64	84	64	56	43	28	21
Lumen	25200	20155	20440	16240	15092	12070	11508	9088	11508	9088	7504	5984	3752	2919
Light Source	LUMILEDS 5050 as standard , OSRAM , CREE chips as optional													
CRI	＞70 as standard , ＞80 as standard													
Luminaire Efficiency	134−145Lm/W @ Ultra clear Tempered glass													
Lumen Maintenance (L70)	⩾100,000 hrs													
Lumen Maintenance (L90B10)	⩾50,000 hrs													
Optics Material	PC/PMMA (LEDIL , LEDLINK)													
Optics Cover	6mm Ultra clear Tempered glass													
Hardware Interface for LCU	NEMA ; ZHAGA As Request													
Antenna solution	Build in NEMA or ZHAGA based LCU ; Build in housing ; Out of housing as reqeust													
Smart System Communication Protocol	Zigbee ; Lora ; NB-IOT													
LED Driver	MW as standard , Philips , OSRAM as request													
Electrical Class	Class I as standard , Class II as request													
Operating Temperature Range	-40℃～+55℃													
Surge Protection	10KV ; 20KV as request													
IP Rating	IP 66													
IK Rating	IK 09													
Certification	CE CB RoHS IP66 LM79 In Process													

Novalume's Lumintell™ is a state-of-the-art wireless Light Management System and Smart City platform. Lumintell™ allows you to reduce your city's lighting energy and maintenance costs by up to 75%. Since its creation, Lumintell™ systems have accumulated a total of 2 billion running hours and is installed in several municipalities worldwide.

Light Management System

Lumintell™ provides a reliable and efficient platform to remotely control and monitor an unlimited number of streetlights – individually or in groups. Each streetlight is connected wirelessly with the cloud and an online application. As well as accessing smart grouping options for applying dimming profiles, the Front End lets users manage alerts, live notifications, performance graphs and analytic tools.

Users with administrative privileges can access the Back End application to make changes to the network and orchestrate maintenance. The Deployment and Maintenance App facilitates communication between maintenance workers in the field and the

Back End for a more efficient workflow.

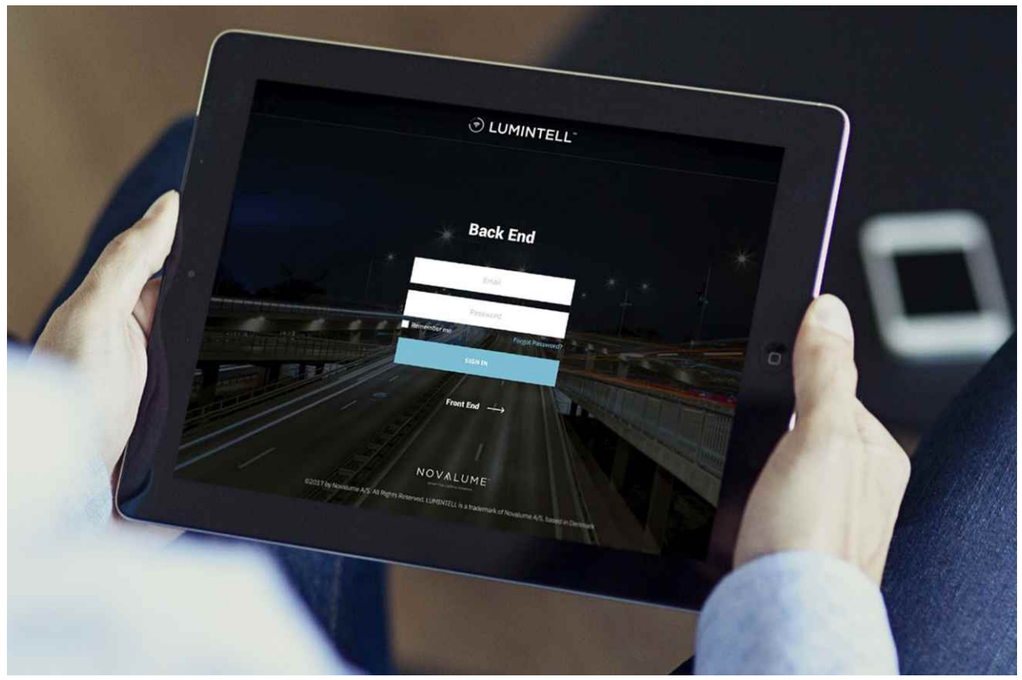
Smart City IoT-ready network

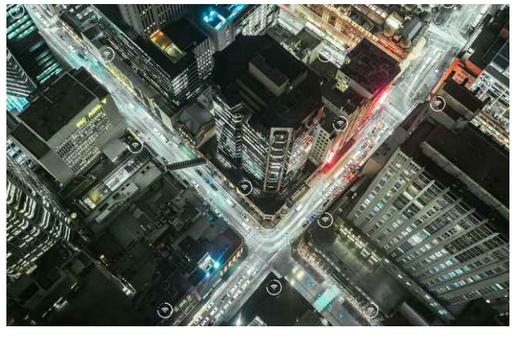
City Light Management is just the beginning. Lumintell™ provides an IoT-ready network – thanks to the Lumintell™ Node – to make cities even smarter.

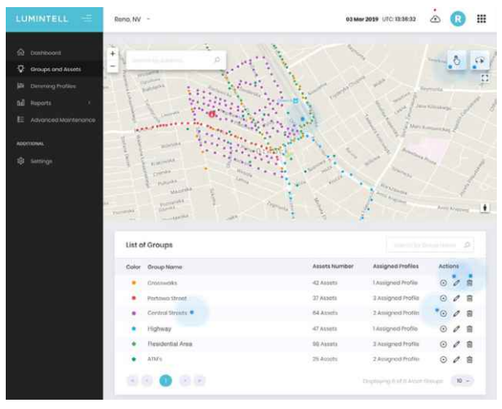
Whether the priority is sustainability, energy efficiency, savings or improving the quality of life of citizens, we can design a Lumintell™ network to your exact requirements using sensors provided by our partner ecosystem. Data from these sensors can be easily accessed directly via your Lumintell™ Smart City application.

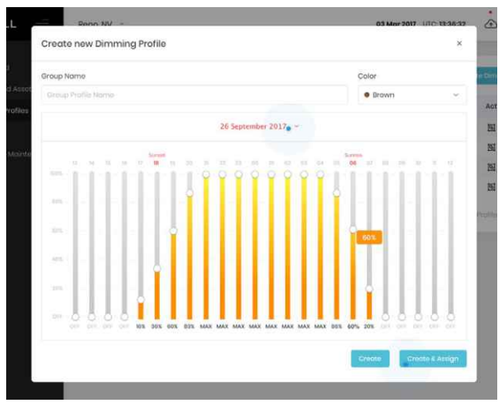
Easy and fast deployment

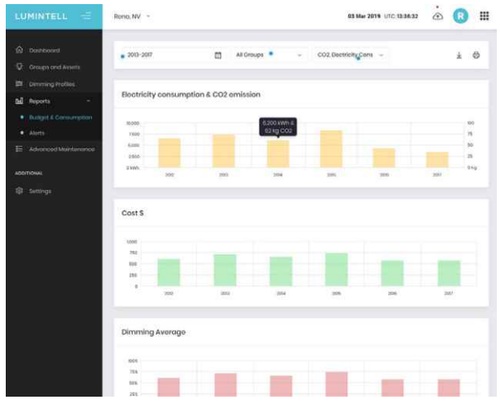
Thanks to its completely wireless operation, plug-and-play network node and time-saving Maintenance and Deployment App, deployment of Lumintell™ is fast, cost-effective and easily managed.

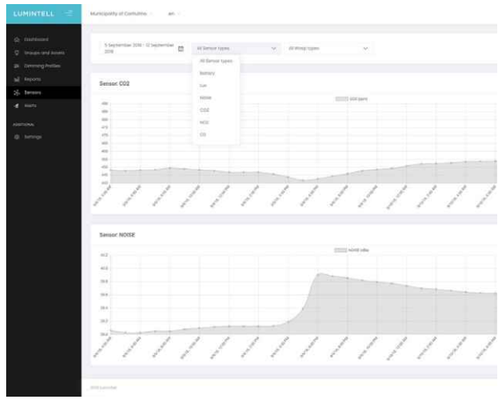












The flexible Lumintell™ Node with two installation options

The Lumintell™ Node (LCU&CCU) is easily and quickly plugged into a luminaire via a NEMA socket and connects automatically to the Lumintell™ system. Each Node can be installed with two types of installation: on the lamp or on the pole – via the Lumintell™ Node Pole Adaptor:

GENERAL SPECIFICATIONS

- Cost-effective 'plug-and-play' NEMA socket with two installation options
- Significant additional energy savings thanks to Lumintell™ – up to 20% on top of the savings from switching to LED lighting
- The Lumintell™ Node comes as an LCU and a CCU. No need for additional base stations, cabinets or Ethernet connection.
- Fast deployment with easier and quicker gateways planning
- Wireless technologies: LoRa® (under development), Zigbee® 3/4G and 5G (2020)
- Automatically connects to the network, reducing commissioning time
- Built-in GPS auto-positioning
- Real-time data synchronization and notification
- Wide range of electrical parameter monitoring (V, W, A, VAR, Wh, VARh, PF and frequency)
- NFC for easy programming, keys transfer and local configuration
- Lumintell™ Network collects and presents sensor data in the Lumintell™ application (www.lumintell.city)
- Scenario scheduling and live remote control of each luminaire or groups of luminaires
- Enables individual remote management of streetlights with electronic driver up to 400W
- Autonomous operation based on predefinied schedules, profiles and adaptative lighting
- Withstands voltage up to 305 V
- Electricity metering equipment (EN50470)
- CISPR-11 Compliant

LCU & CCU SPECIFICATIONS

Figure 2a: LCU Node

Figure 2b: CCU Node

ZIGBEE NETWORK		GSM NETWORK MODEM
Standard:	IEEE 802.15.4	IEEE 802.21
Frequency:	2,4 GHzv	850 / 900 / 1800 / 1900 MHz
Bandwidth:	250 kbps	250 kbps
Range:	Up to 250 meters between each node	Up to 250 meters between each node
Maximum LCUs per CCU:	250	250
Firmware update:	OTA	OTA
Antenna:	Internal	Internal

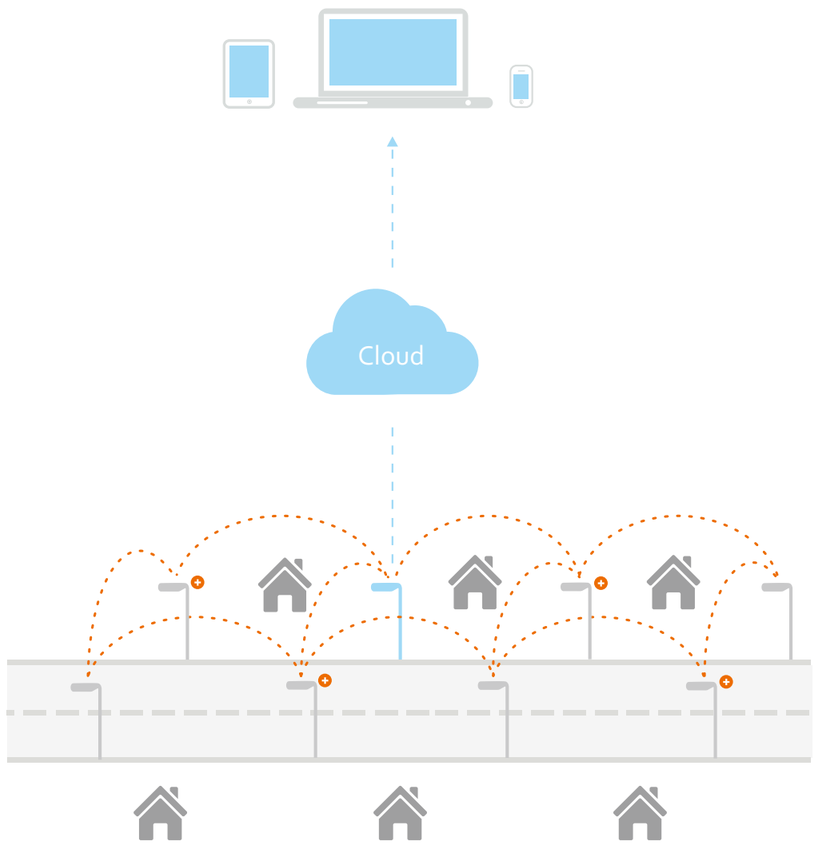
Please refer to latest Lumintell™ Node datasheet for more technical details.

Communication protocol : ZIGBEE , NB-IOT and LORA

In the below two pictures, you will know about the LUMINTELL light control system and the main component. They have two different communication protocol: Zigbee , LoRa and NB-IOL

RUIJU lighting cooperate with NOVLUME will support your smart city lighting solutions together.

Zigbee®



NOVALUME CLUSTER
CONTROL UNIT (CCU)
Zigbee Radio Gateway,
Power Metering, Control Unit

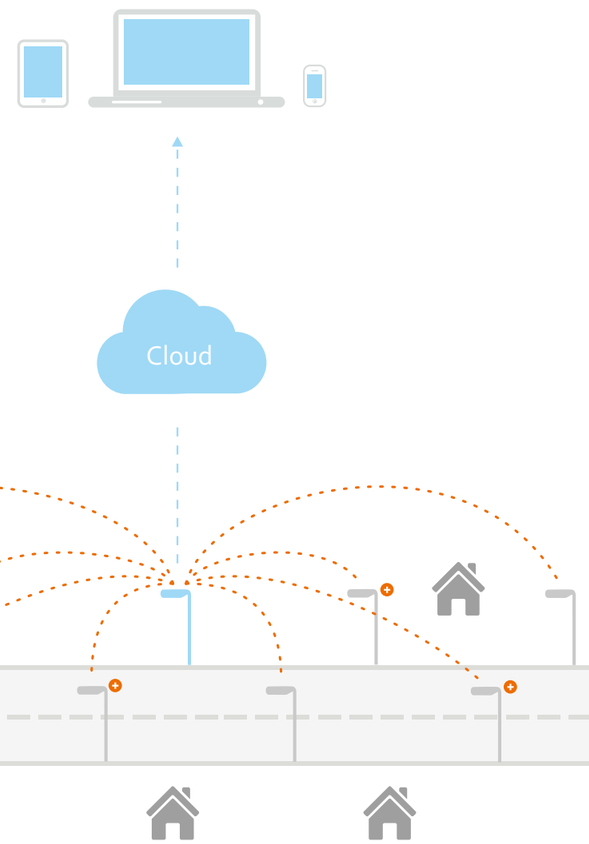
IoT & SENSORS
Sensors for air quality & pollution monitoring, security, license plate recognition, noise nuisance, weather situations, road conditions, and other on-demand city services.

NOVALUME LIGHT
CONTROL UNIT (LCU)
Zigbee Radio, Power Metering,
Control Unit

Wireless GSM Connection

ZIGBEE®
Wireless Communication Protocol

LoRa®



NOVALUME CLUSTER
CONTROL UNIT (CCU)
Zigbee Radio Gateway,
Power Metering, Control Unit

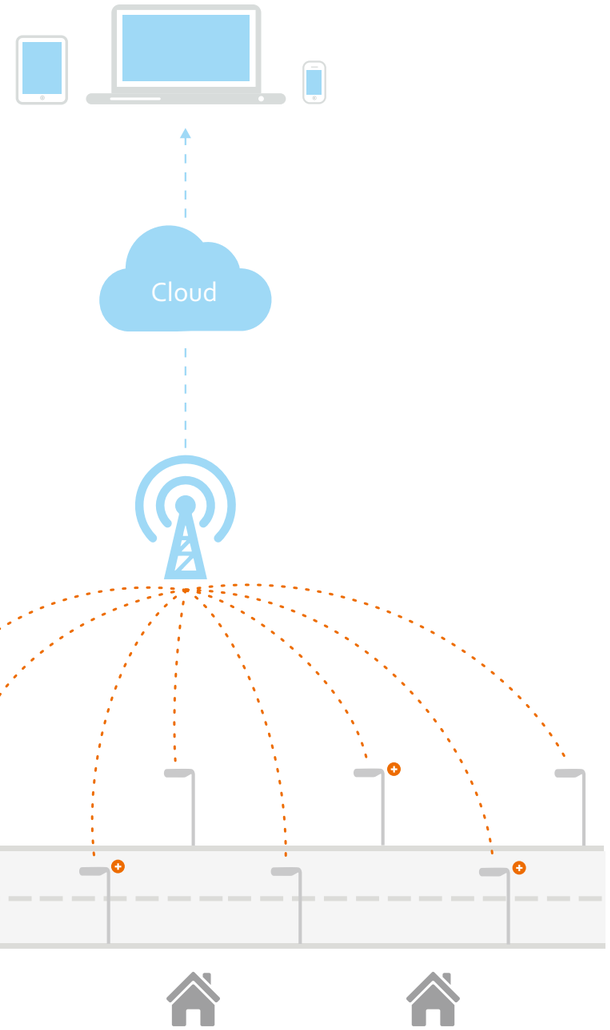
IoT & SENSORS
Sensors for air quality & pollution monitoring, security, license plate recognition, noise nuisance, weather situations, road conditions, and other on-demand city services.

NOVALUME LIGHT
CONTROL UNIT (LCU)
Zigbee Radio, Power Metering,
Control Unit

Wireless GSM Connection

LORA® Long Range
Wireless Communication Protocol

NB-IOT®



2G Telecom Base Station

IoT & SENSORS
Sensors for air quality & pollution monitoring, security, license plate recognition, noise nuisance, weather situations, road conditions, and other on-demand city services.

NOVALUME LIGHT CONTROL UNIT (LCU)
2G signal , Power metering , Control unit

Wireless GSM Connection