

# Smart Lighting

Manage and Control Connected Street Lighting

.....

Luminext

# SMART LIGHTING



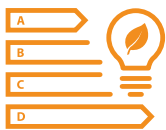
## Dim when possible, illuminate when necessary



Public lighting is one of the largest energy consumers in municipalities, provinces and industries. The latest smart lighting technologies from Luminext ensure that the public lighting is only activated where and when needed. Efficient lighting of the outdoor area results in a lower energy bill and less maintenance costs, while retaining good visibility and ensuring safety in public spaces.

### 3 REASONS TO CHOOSE LUMINEXT SMART LIGHTING

A safe and comfortable living environment pairs perfectly with less illumination. By dimming public lighting as much as possible, we save more than 60% energy compared to conventional lighting. With the dynamic lighting systems from Luminext, the ecological footprint decreases significantly. Smart lighting is an important instrument to achieve the energy saving goals as set out in the Paris climate agreement.



#### 1. Save more than 60% energy by dimming the lights

With Luminext dynamic lighting systems, the streetlights dim during the quiet hours. The light level only increases when it is really necessary, for example during rush hour or at dangerous intersections. By connecting traffic information to the lighting system the light level can be adjusted based on the actual traffic intensity. By using these technologies a lot of energy is saved, while good visibility for everyone is ensured. People feel safe and comfortable on the street.



#### 2. Reduce operational costs by 30%

Smart lighting reduces operational costs. Thanks to automatic fault detection, the labor-intensive inspection of the street lights by night patrols is no longer needed. The automated generation of repair tickets in the work-order process and the solid asset management functions in the Luminizer management and control software add to substantial time saving and cost reduction.



#### 3. A safe and comfortable living environment

Light pollution is a nuisance for citizens and nature and must be prevented. With sustainable smart lighting, there is sufficient light on the roads when needed, while unnecessary light spill and its accompanying inconveniences are minimized. The luminous intensity is adjustable per individual lamppost and with some luminaires even the direction of the light beam can be managed.





## SAVING OPPORTUNITIES - THE FIGURES

There are over 60 million streetlights in Europe, which consume 35 billion kWh of electricity per year. That is equivalent to supplying power to almost 9 million households. Only 5% of the public lighting is smart. If all public street lights in Europe were made smart, over 1.9 billion Euros would be saved annually in energy costs. Additionally, smart lighting enables you to reduce operational costs by 30%. The investment in smart lighting can be returned within 7 years.

## 15-YEAR EXPERIENCE IN SMART LIGHTING

Every day, more than 100 municipalities, provinces and industrial sites in The Netherlands and in Europe use the robust hardware and stable software from Luminext to manage and control their public lighting infrastructure. Our proven reliable smart lighting solutions are designed for large-scale lighting installations in cities, on highways and in outlying areas.

The Luminext team is at your disposal to help and advise you to choose the best solution for your specific goals and needs. In this way we ensure that our solution seamlessly meets your wishes.

Luminext is an independent international player in the field of smart lighting and market leader in The Netherlands.

### Why choose smart lighting

- Save more than 60% energy
- Reduce operational costs by 30%
- Reduce light nuisance experienced by citizens and nature
- Create a safe and comfortable living environment

# THIS IS HOW IT WORKS



## Large-scale applicable smart lighting



The Luminext smart lighting systems are complete, future-proof and applicable to conventional, static and dynamic lighting. The systems are robust and suitable for large-scale use.

### INTELLIGENT NETWORK

A Luminext dynamic lighting system consists of hardware devices - Luminext Outdoor Lamp Controllers and Gateways - and the Luminizer management and control software. They communicate with each other through secure connections.

#### Luminext Outdoor Lamp Controller

Luminext Outdoor Lamp Controllers are installed inside the luminaires, in-factory or on location. They communicate with each other and through the Gateway with the cloud-based Luminizer management and control software. For all situations and every luminaire brand and type a suitable Outdoor Lamp Controller is available.

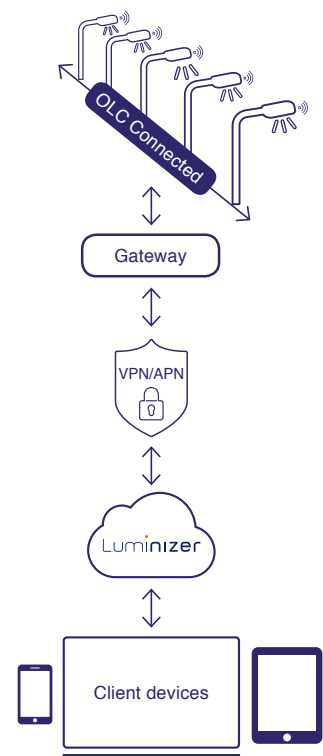
#### 2-way communication

The Luminext systems work on the basis of Radio Frequent communication (RF) via 868MHz or Powerline Communication (PLC). The data transport goes in two directions. Connections with sensors within the network and external data sources are also possible. Different technologies can be combined in the smart lighting system.

#### Luminizer management and control platform

The cloud-based Luminizer management and control software is user friendly and includes all tools for

- Complete asset management
- Efficient maintenance and fault management
- Remote control, dimming and monitoring the public lighting





## ONE SYSTEM TO MANAGE ALL OUTDOOR LIGHTING

The Luminext smart lighting systems are applicable to all situations. Moreover, expansion of the system is always possible. The Luminizer software is cloud-based and is your central cockpit for managing and controlling all public lighting in the area.

### Interoperability

The Luminext smart lighting systems work seamlessly with all brands and types of luminaires, devices and sensors. As a result, you have complete freedom of choice when it comes to luminaires and components, now and in the future.

The open software is designed to interface with external data sources. This makes it possible to control the lighting with the use of external information. For example, online traffic information systems and weather stations can be linked to Luminizer to automatically adjust the light level to actual conditions.

### Robust, stable and Smart City-Ready

The Luminext systems are robust and stable. They are designed for large-scale application and new assets and functionalities can be added later on. With the smart Luminext systems for managing and controlling public lighting, you are investing in a sustainable, future-proof solution that grows along with you. The Luminext smart lighting system is a strong building block for all Smart Cities.

### Secure communication

Daily backups, fully encrypted communication and secure user access are part of the safe and reliable Luminext systems. All area data are and will always be your property. An Escrow arrangement is available to protect your interests and secure your position.

#### Benefits of Luminext dynamic systems

- One system for all your lighting assets
- Robust and secure, can be used on a large scale
- Connects with all brands of lighting components
- Future-proof due to interfaces with other IT systems
- Complete software for management, maintenance and operation
- Smart monitoring and management information

Firefox Bestand Bewerken Beeld Geschiedenis Bladwijzers Extra Venster Help

Luminizer 5 localhost/dashboard/view?autoRefresh=false

**Luminizer** Area ▾ Dashboards ▾ Asset Management ▾ Connect & Control ▾ Maintenance ▾

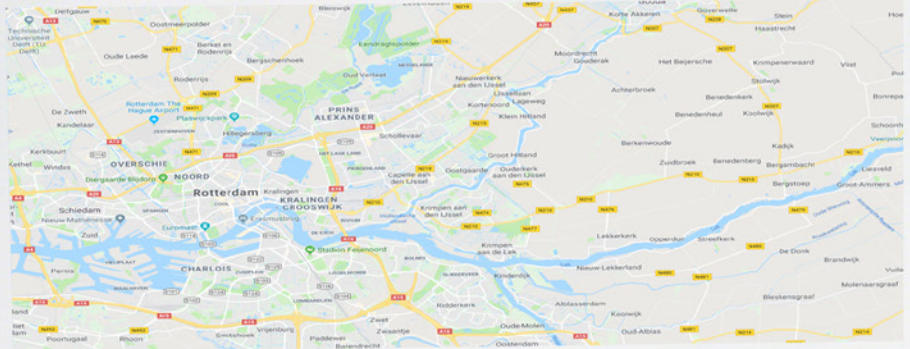
Gateways offline  
**1 / 180**

Het aantal gateways dat offline is

Aantal VSA's met een fout

Gateway-code	Last communication
N225-069	09-04-2018 13:20:59
N301-006	09-04-2018 13:20:59
N301-009	09-04-2018 13:20:59
N302-003	09-04-2018 13:20:59
N302-024	09-04-2018 13:20:59
N302-006	09-04-2018 13:20:59

OLC's offline



Locatie van offline OLC's


*'Minimum energy consumption and yet sufficient light; that is perfect!'*

# MANAGEMENT AND CONTROL SOFTWARE

## Unlimited possibilities with Luminizer



**Luminizer  
Asset Management**  
.....



**Complete asset management**  
Easily manage asset data.  
All data are up to date, always  
and everywhere.

**Luminizer  
Connect & Control**  
.....



**Operating and monitoring**  
Remotely managing the light intensity  
and monitoring the operation and  
energy consumption.

**Luminizer  
Maintenance**  
.....



**Repair and maintenance**  
Smart maintenance management  
and control over work orders  
and costs.

With the Luminizer software platform, you have all the tools at your disposal to manage your public lighting devices in the area and all maintenance processes. With Luminizer you monitor, dim and control the lights remotely. The open software can be connected to external IT systems.

### COMPLEMENTARY SOFTWARE MODULES

The Luminizer management and control software consists of three modules that easily fit together. With Luminizer Asset Management, you can manage all lighting assets, which is essential for every lighting area. You can use Luminizer Maintenance for efficient maintenance management, and with Luminizer Connect & Control you can dim and control public lighting remotely. The reports provide insight into your business operations and directions for process optimization.

#### Open software & connections

Luminizer is a complete management and control platform for all luminaires and hardware in your public lighting installation. The possibilities for external software connections are numerous. For example, connections with internal systems such as the Customer Contact Center, GIS, ERP and financial systems, as well as connections to remote data systems such as traffic systems, police systems or crowd management software.

#### Available everywhere, whenever you need it

The user-friendly cloud-based Luminizer software is accessible through all devices. Additional to office use Luminizer is also equipped for mobile use on location, for adjusting the asset details and maintenance information on sight via laptop, tablet or smartphone.

#### All modules in one system

The Luminext smart lighting systems function seamlessly with all brands and types of street lighting devices and sensors. With the Luminizer software, you have all the tools at your disposal for managing and controlling the public lighting area. The dashboard and smart reports provide full insight into the status of the lighting components and the energy consumption. This helps you to optimize your operations.



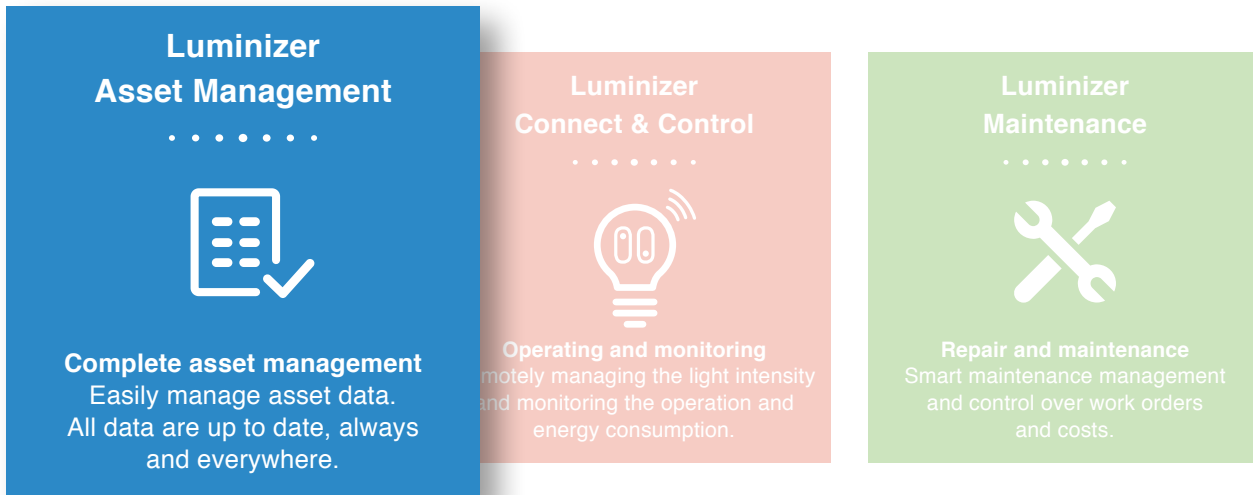


*'Purchase a solid management and control system; that is essential to build on'*



# LUMINIZER ASSET MANAGEMENT

## Manage all street lighting objects



Keeping track of all asset information is essential to manage and control the public lighting. In Luminizer Asset Management, you register and manage the asset information of each object in the area.

### ALL INFORMATION ALWAYS UP TO DATE

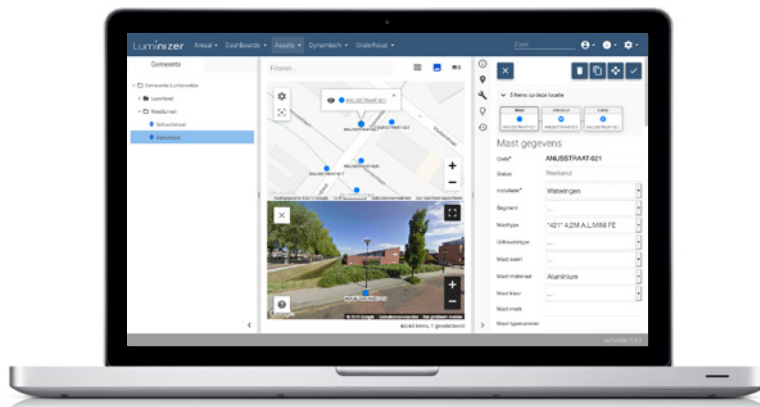
At the office or on the road, with Luminizer Asset Management you have direct access to all asset information at all times. You determine which data are important and which you include in the database. To inventorize and select assets is easy, by hovering the mouse over the map or creating selection tables.

#### Easily update, combine and compare data

With Luminizer Asset Management you can easily import, export and update data. Combining, comparing and filtering data can be done with a push of a button. The data appear on the map or in a table as desired. The bulk change feature allows you to adjust data from multiple assets at once, which saves you a lot of time.

#### Reports help with planning

Reports provide you with information for business operations and to obtain an overview of a project. By combining data from different luminaires, you can plan projects and maintenance work, and you can budget accurately. For example, if you would like to know which luminaires from a specific brand in the chosen area are ready for replacement, you combine the brand, the area and the installation date together with the maintenance history.



# LUMINIZER CONNECT & CONTROL

## Control and monitor street lighting



With Luminizer Connect & Control you control the light level remotely and monitor the current status of the devices. By only providing light when needed, you save energy and extend the life of the lighting components.

### CONTROL THE LIGHT INTENSITY

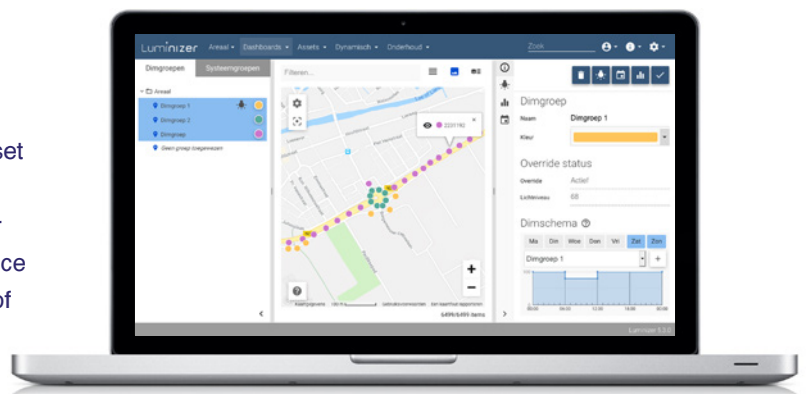
With Luminizer Connect & Control, you are able to control the light intensity remotely and adjust it to the need for light on site. For example, you can choose for a high light level during rush hour, on dangerous roundabouts and intersections and you can dim the street lighting late at night when most people are asleep. Near nature reserve areas, lights can be dimmed to ensure that flora and fauna are not being disturbed.

Adjusting the light level to the needs of road users and residents is possible in various ways. You can control the light intensity remotely by using time schedules. Dimming is also possible based on sensor-data or data from external data sources. Emergency lighting can be applied to quickly increase the light in case of emergencies.



### Dynamic lighting with dimming schedules

To dim the street lighting remotely, a dimming schedule for each group of lampposts can be set by using the handy dimming schedule editor. Each dimming schedule is given its own color on the map. In this way you can see at a glance which dimming schedule is set in which part of the area.



Exceptions to the dimming schedules are useful during the holidays and during road works. In the event of an emergency, you can immediately increase the luminous intensity on site with a temporary override.

### On-demand lighting with sensors

Luminizer Connect & Control makes it easy to provide light on demand by using local motion sensors or connecting traffic measurement sensors. By connecting these sensors the light level on site will be adjusted to the traffic and the need for light at that moment. This ensures safety on the road and good visibility.

With on-demand lighting, the light level increases as soon as the motion sensor detects a road user. It is even possible to distinguish between pedestrians, cyclists and cars and to provide light scenarios tailored to the type of traffic. As soon as the road is clear again, the lights dim back automatically. Because the street lighting is dimmed as much as possible, up to 80% of energy can be saved. At the same time, light nuisance for residents is minimized.

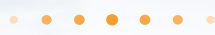
### More safety with emergency lighting

In the event of an accident or disturbances in the city, there is more need for light. With emergency lighting, the light level of regular dynamic lighting and special emergency spotlights can be increased immediately. This can be done by pushing an emergency button, sending a text message or using police communication systems.

The bright street lighting provides emergency services with better visibility and ensures clear camera images. People feel safer on the street, which improves the overall public image of the city.



*'With Luminizer software I can control the public lighting smoothly and effortless'*



## OPTIMIZE PROCESSES

Luminizer Connect & Control monitors public lighting continuously, such as fault detection, the functioning of the lighting components and energy consumption. This information contributes to optimizing the operation processes, budgeting and planning.

### Automatic fault detection saves time and costs

With Luminizer Connect & Control, night patrols to track down malfunctions are no longer necessary. The software detects a defective lamp or driver right away. The automatic fault detection enables the operations manager to start the repair immediately. As a result the lamp works again within a short time, which increases the safety on the street.



### Monitoring energy consumption

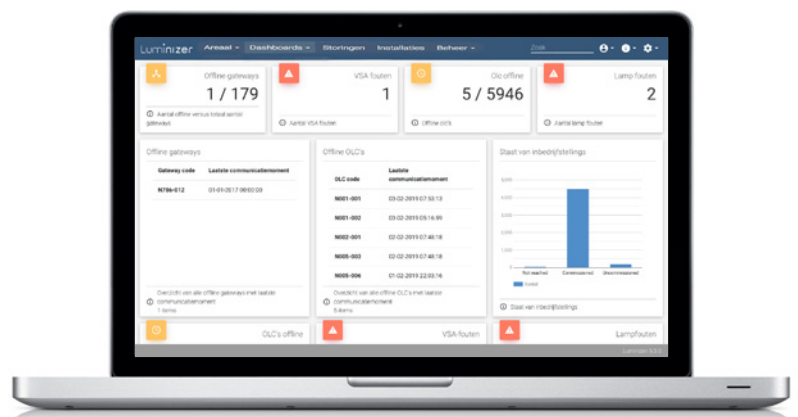
Luminizer Connect & Control provides insight into the actual energy consumption of each lamppost in the public lighting installation. Smart reports provide input to make the right saving choices, determine the expected lifetime of the luminaires and optimize the dimming policies.

### Current lamp status overview

The smart device management dashboard in Luminizer Connect & Control provides insight into the statuses of all luminaires and lighting components in the dynamic lighting network. At a glance you can see whether there is a lamp fault, a driver failure, an offline gateway, a sensor malfunctioning or a communication failure. The dashboard shows which luminaire is not working and why. The management and control system also checks whether the dimming schedules have actually been executed in the way you have preset them.

### Insight into costs and efficiency

Luminizer provides insight into the costs for maintenance and fault recovery. Useful reports will support you to make decisions when it comes to operational management and efficiency. Thereby, processes for budgeting, invoicing and controlling will be simplified significantly.





*'The biggest saving? I need fewer people to work outside'*



# LUMINIZER MAINTENANCE

## Efficient fault & maintenance management



**Luminizer  
Asset Management**  
.....



**Complete asset management**  
Easily manage asset data.  
All data are up to date, always  
and everywhere.

**Luminizer  
Connect & Control**  
.....



**Operating and monitoring**  
Remotely managing the light intensity  
and monitoring the operation and  
energy consumption.

**Luminizer  
Maintenance**  
.....



**Repair and maintenance**  
Smart maintenance management  
and control over work orders  
and costs.

With Luminizer Maintenance, you organize the repair work and maintenance process of your public lighting installations, from creating a work-order to reporting. Everything well organized in one system and stored with your asset data.

### EFFICIENT MAINTENANCE PLANNING

With Luminizer Maintenance, you can easily plan repair work and maintenance. By combining the fault and maintenance history with the asset data, it becomes clear when it is time for scheduled maintenance or replacement.

#### Smart fault management

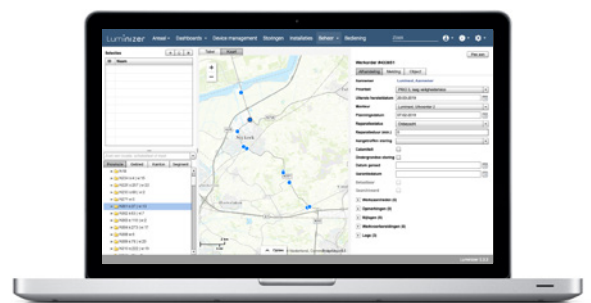
In the event of a fault report, the administrator initiates the work-order in Luminizer Maintenance. In order to achieve short repair times, the fault is assigned to the contractor as soon as possible.

#### Work-order processing on location

All required asset and fault information can be viewed by the service engineer in Luminizer Maintenance. This enables him to bring the right materials for the job. During the repair, the service engineer on site directly registers the activities in Luminizer Maintenance. He can also add photos and comments for clarification. In this way, everyone is always informed of the status and the progress of the repair work and no subsequent registration at the office is necessary.

#### Monitoring activities

The dashboard in Luminizer Maintenance shows the status of all work-orders. This enables you to take action when necessary. You can see how many work-orders are open, how many have been completed and which have exceeded the deadline. In each work-order you can monitor the progress of the work. The service engineer ensures that the light functions well again as soon as possible and after that he will set the work-order to be 'approved for payment'.



## Luminizer Asset Management

.....



## Luminizer Maintenance

.....



## Luminizer Connect & Control

.....



### More information

Call or e-mail us with your questions. We will be happy to help you.

#### Luminext

Schoudermantel 37, 3981 AE Bunnik

The Netherlands

Tel. +31 30 207 2017

info@luminext.eu

www.luminext.eu



Luminext