

signify
interact



Design for sustainable smart cities

Smart lighting that does more than just illuminate



What challenges do cities face?

Density:



5 billion people globally,
will live in cities by the year 2030

Sustainability:



Ensure citizen
safety and well-being



Reduce **environmental impact** of cities



Preserve **night sky**
and natural heritage

Digitalization:



The demand for smart city systems and solutions is estimated to **increase annually by 25%,** with an overall market value of approximately US \$517 billion

[*Source: World City Report 2022 wcr_2022.pdf \(unhabitat.org\)](#)

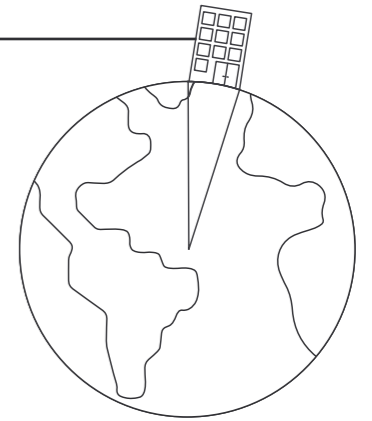
[*Source : https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/](https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/)

Cities have a role to play

Smart cities are the key to a more sustainable future, and getting connected is the best way to optimize operations, improve the safety of citizens, and make progress toward sustainability goals.

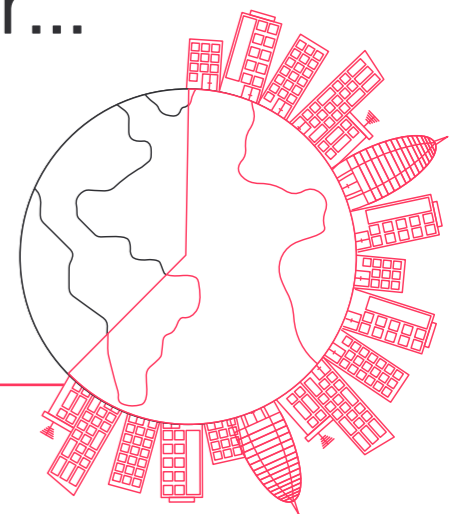
Cities are...

2%
of the world's
landmass

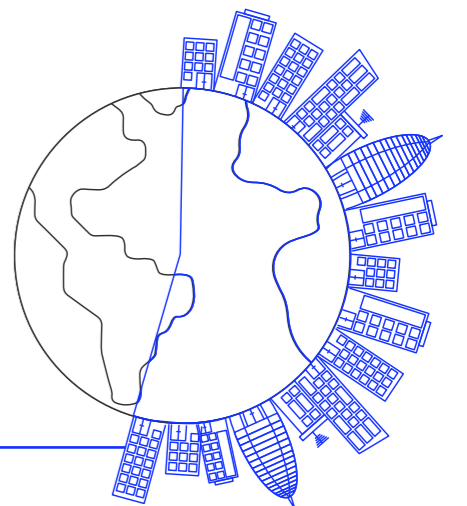


But they account for...

78%
of the world's
energy use



more than
60%
of global CO₂
emissions



Smart lighting

For a more sustainable world

Smart lighting is a key pillar of smart city infrastructure, bringing concrete solutions to cities to help them face their challenges:

- **Well-being and safety:** better lighting reduces crime by up to 20% and road accidents by 30%*
- **Environmental impact:** installing managed and connected LED lighting increases lighting-related energy savings more than 80% over conventional lighting, drastically reducing lighting-related CO₂ emissions
- **Operational efficiency:** save here to invest where it matters (>80% savings on electricity bills)
- **First time right:** effective maintenance can optimize up to 50% of labor and travel costs for operations

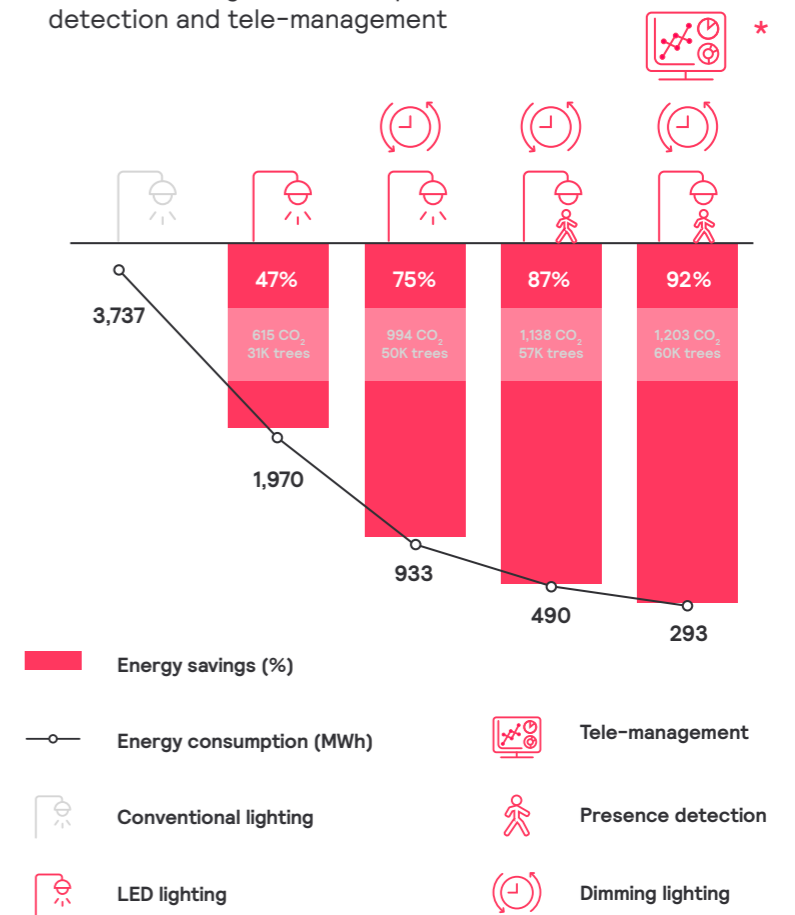
*(Source: The citywide benefits of smart & connected public lighting assessed through WCCD ISO 37120 DATA, 2017)



Savings example

A city of 100,000 inhabitants with 6,100 remaining conventional light points in public lighting applications can annually save:

- \$0.8M just by switching to LED
- \$1.2M by switching to LED with dimming controls
- \$1.3M switching to LED with presence detection
- \$1.4M switching to LED with presence detection and tele-management



There are many benefits to transforming your city into a smart city and smart lighting and connected IoT assets can push the boundaries of what's possible. With greater control over your city's lighting infrastructure, you can optimize operations, find and resolve issues quicker, and manage light levels with ease. A smart city boasts greater levels of safety and faster response times for emergency services thanks to notifications and alerts from IoT assets.

*All figures and data presented here are illustrative and based on forecasts and assumptions including scenarios with most common switch-off and dimming profiles, presence detection settings and tele-management functionalities. Please contact your Signify representative for more details.

How can Interact help?

The most flexible and scalable connected street lighting solution on the market, Interact is managing cities from one light point up to 300,000 and can even scale up to more.

- **Easy:** centralized and remote management of the street lighting network.
- **Open:** monitor and control all luminaires, both on-grid and solar individual light points as well as group management cabinets. Compatible via APIs to any third party partner of Smart City, available on our developer portal.
- **Efficient:** manage your street light assets, optimize energy consumption, and step into the preventive maintenance.
- **Smart:** advanced data analytics and dashboard reporting from the platform and sensing capacities, to take educated decisions on future urbanization.

Your challenges	Individual light point control (Cellular)	MultiSensor capabilities	Partners (Upciti)	Partners (Operations management)	Interact Dashboard
Granularity of lighting management	++	+++	+++	+++	+++
Optimize operations	++	++	/	+++	+++
Reduce luminaire downtime and citizen complaints	++	+++	/	+++	+++
Improve traffic & pedestrian safety	++	+++	+++	+++	/
Protect data and against unauthorized usage	IEC62443-4-1 & ISO27001 Certifications				
Energy savings	++	+++	/	+++	+++
Sustainability	++	+++	+++	+++	+++
Urban sensor data & smart city applications	++	+++	+++	/	++

Interact is a wireless, connected lighting system that brings numerous benefits to your city:

Up to **80%** energy savings to achieve sustainability targets

With LED luminaires that you can manually or automatically adjust based on schedules, ambient light levels, motion detection, or incidents.

Less than **1.0%** downtime of luminaires

Simplify with real-time fault detection and fast resolution responses before complaints are reported.



Connectivity and IoT

Connect IoT-capable assets to the Interact platform, monitor and control them all remotely through a centralized dashboard.

Up to **50%** of your operations can be optimized

Simplify with effective maintenance planning and in-depth knowledge of all asset information



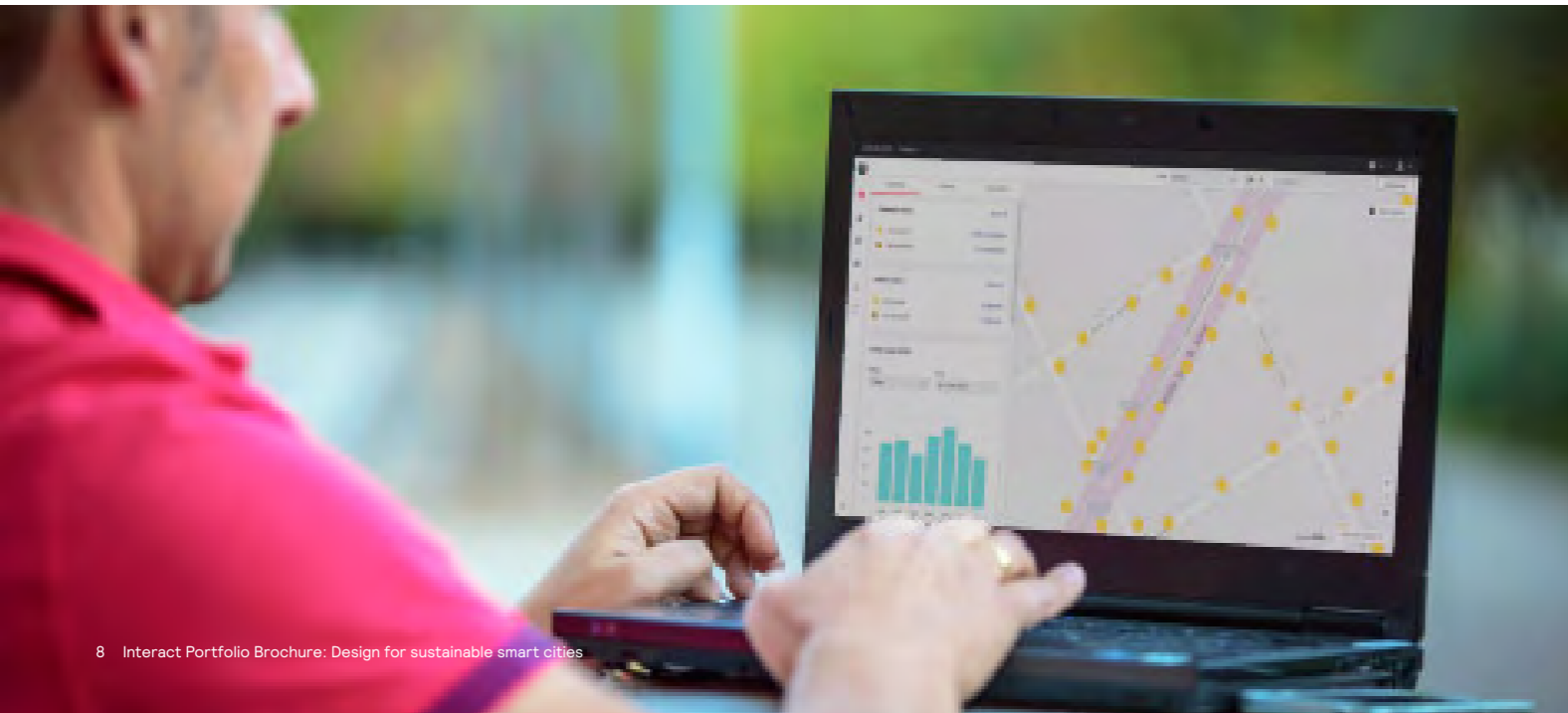
Cleaner, healthier environments with urban sensor data

Monitor ambient temperature, ambient noise, and more, with integrated sensors.



Secure and protect data against security vulnerabilities and unauthorized usage

Certified to IEC62443-4-1. Cybersecurity certification for the product development process and ISO27001 for effective information security management system (ISMS).





Interact works with open standards for a technology-agnostic solution

Prepare your city to interact openly and seamlessly



The global Smart City protocol that enables interoperability between Central Management Software (CMS) and Outdoor Device Networks (ODN) from different vendors.

Interact is a TALQ-certified bridge.

<https://www.talq-consortium.org/>



API MANAGEMENT WITH INTERACT DEVELOPER PORTAL

Our Interact open portal enables 3rd party developers and product owners to view, familiarize and test our API services quicker and easier.

<https://www.developer.interact-lighting.com>



The open source platform components to accelerate the development of smart solutions.

Interact is a FIWARE-certified bridge.

<https://www.fiware.org/>



Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud. AWS is architected to be the most flexible and secure cloud computing environment available today backed by a set of cloud security tools, with over 300 security, compliance, and governance services and features including support for 143 security standards and compliance certifications.

<https://aws.amazon.com/>



Zhaga-D4i certified Signify luminaires

The Signify range of Zhaga-D4i certified luminaires gives customers a future-ready foundation that can be built on whenever they are ready to opt into new advances in technology.

Zhaga-D4i is a standardized smart interface between LED outdoor luminaires and one or two sensors or communication nodes. Its plug-and-play interoperability enables seamless IoT connectivity, and D4i drivers allow for an easy exchange of different IoT nodes or sensors on luminaires.

No lock-in

Zhaga-D4i standard provides modularity among multiple certified manufacturers to ensure 100% openness

Efficient every step of the way

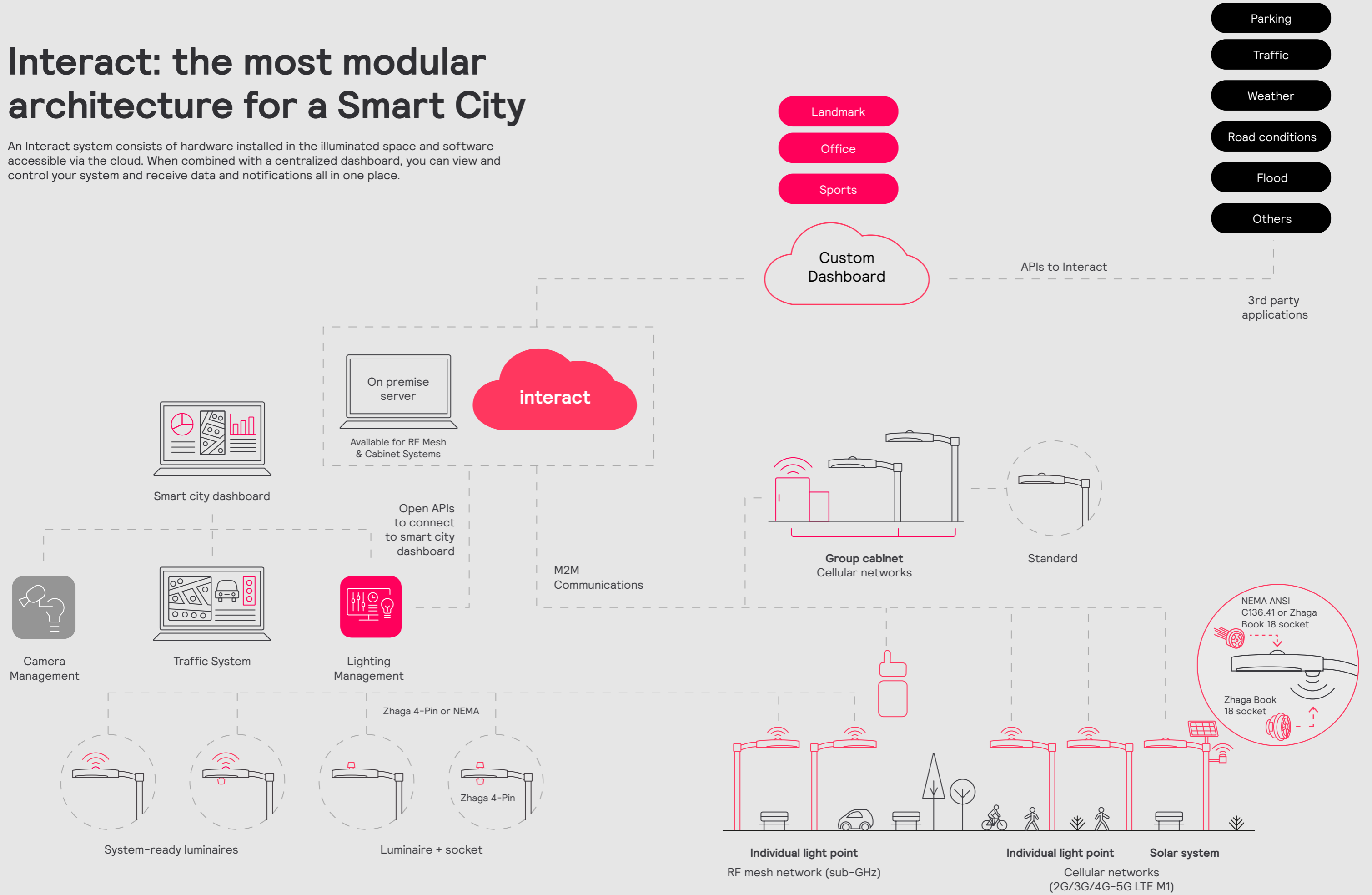
A standardized socket helps to keep things simple in installation, service and maintenance of the assets

Support sustainability ambitions

Built on the principles of circularity, luminaires are upgradeable after installation

Interact: the most modular architecture for a Smart City

An Interact system consists of hardware installed in the illuminated space and software accessible via the cloud. When combined with a centralized dashboard, you can view and control your system and receive data and notifications all in one place.



Plug and play

Individual light point management with cellular architecture.

Key benefits



Plug and play:

- Auto-location of the assets
- No pre-design network needed
- No project size limit



Hassle free :

- No network maintenance
- Over-the-air updates for bug fixes or upgrades



Future ready for Smart Cities, with high data bandwidth



Real time data and overrides

Cellular portfolio

The best of our expertise at your service.

Efficient maintenance

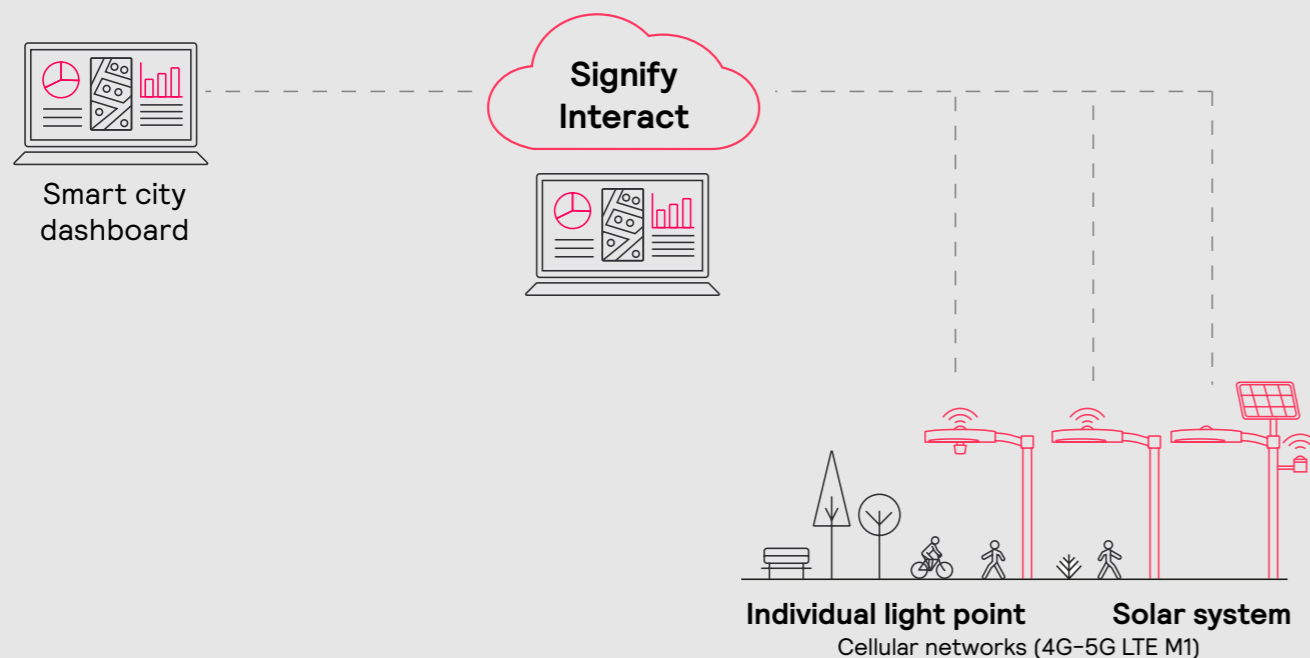
- Connect IoT assets with cellular 4G LTE Cat1/5G LTE-M1
- Read street light asset information with DALI part 251 memory bank 1
- Over-the-air firmware updates for bug fixes, security patches and future feature upgrades
- Receive notifications when there is a power outage on individual light points or hardware failures in the luminaire are detected

Energy saving

- Supports multiple switch regime options from dusk to dawn, based on ambient light or astronomical clock with built-in photosensor and GPS

Beyond lighting

- Enable safety notifications if street light/pole is out of position with built-in tilt sensor
- Combine with Zhaga-D4i sensors on the street light, compliant with Zhaga-D4i standard



Signify cellular outdoor light controllers

	ZDi	NEMA
Product		
Type	LLC781X LLC782X	LLC789X
Interface	NEMA 5-pin	Pole-mounted kit
Housing color options	Light gray, black	Dark gray
D4i compliant	Yes	No
Dimming	DALI / 1-10V	DALI
Drivers supported	SR/D4i/DALI/Fixed driver	DALI driver
Energy metering accuracy	0.5%	2%
Sensors	Photocell, GPS, Tilt, Knockdown	Photocell, GPS
Connectivity	4G Cat1/5G (LTE-M)	4G/5G (LTE-M)
Power supply	120-277 VAC 120-240VAC 347-408VAC	120-240 VAC
Use with Philips outdoor multisensor	Yes	No

Smart and adaptive lighting with sensing

Safer, smarter and more efficient lighting with our Philips Outdoor MultiSensor.

Key benefits



Plug and play with the Zhaga D4i interface



1 sensor to adjust lighting and monitor

- Movements (cars, bikes, pedestrians)
- Safety (tilt and impact of the pole)
- Ambient noise and temperature



Up to 50% additional energy savings vs dimming calendar

Outdoor MultiSensor

The best of our expertise at your service.

Efficient maintenance

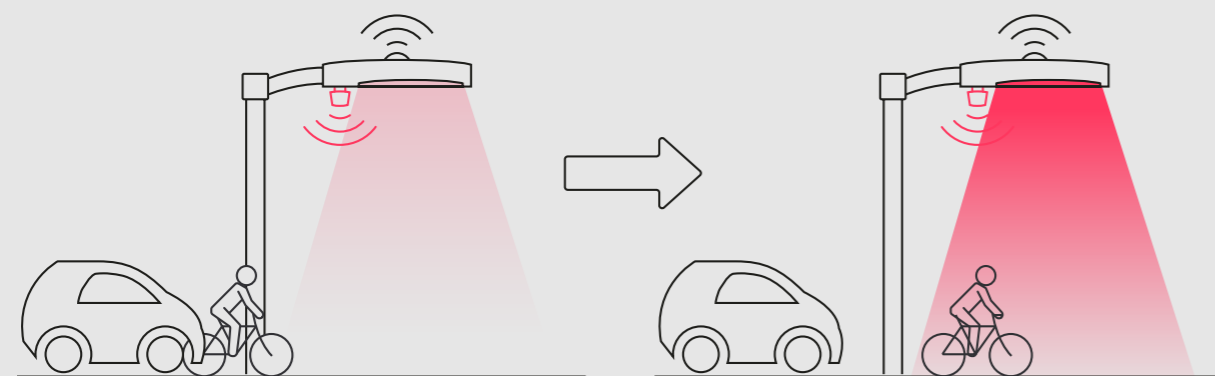
- Receive alerts about lighting failures through real-time fault notifications
- With predictive maintenance, replace bulbs before they burn out
- Control and monitor assets remotely through one dashboard

Light management

- Automate light points to react to motion, and to dim/switch off when daylight levels reach a minimum threshold
- Achieve energy savings of up to 80% over conventional lighting
- Sensors collect both lighting- and non-lighting-related data

Security

- Automatically trigger behaviors such as raising light levels and sending alerts to first responders
- Maintain road user safety with tilt and impact alarms in case of damage to the luminaire
- All collected data is safe and secure with Interact's robust cybersecurity



Traffic and weather adaptive lighting

Interact empowers cities and communities to optimize streetlighting through a powerful rule engine that dynamically adjusts dimming levels according to real-time traffic and weather conditions. By integrating adaptive lighting, municipalities can ensure safety and visibility while maximizing energy savings while ensuring safety.

With seamless configuration, users can set rules such as increasing brightness during high traffic or adverse weather, and dimming lights during low-traffic periods or clear conditions. This flexibility not only supports sustainability goals but also helps create safer, more responsive, and cost-effective urban environments.

Key benefits



Additional energy savings



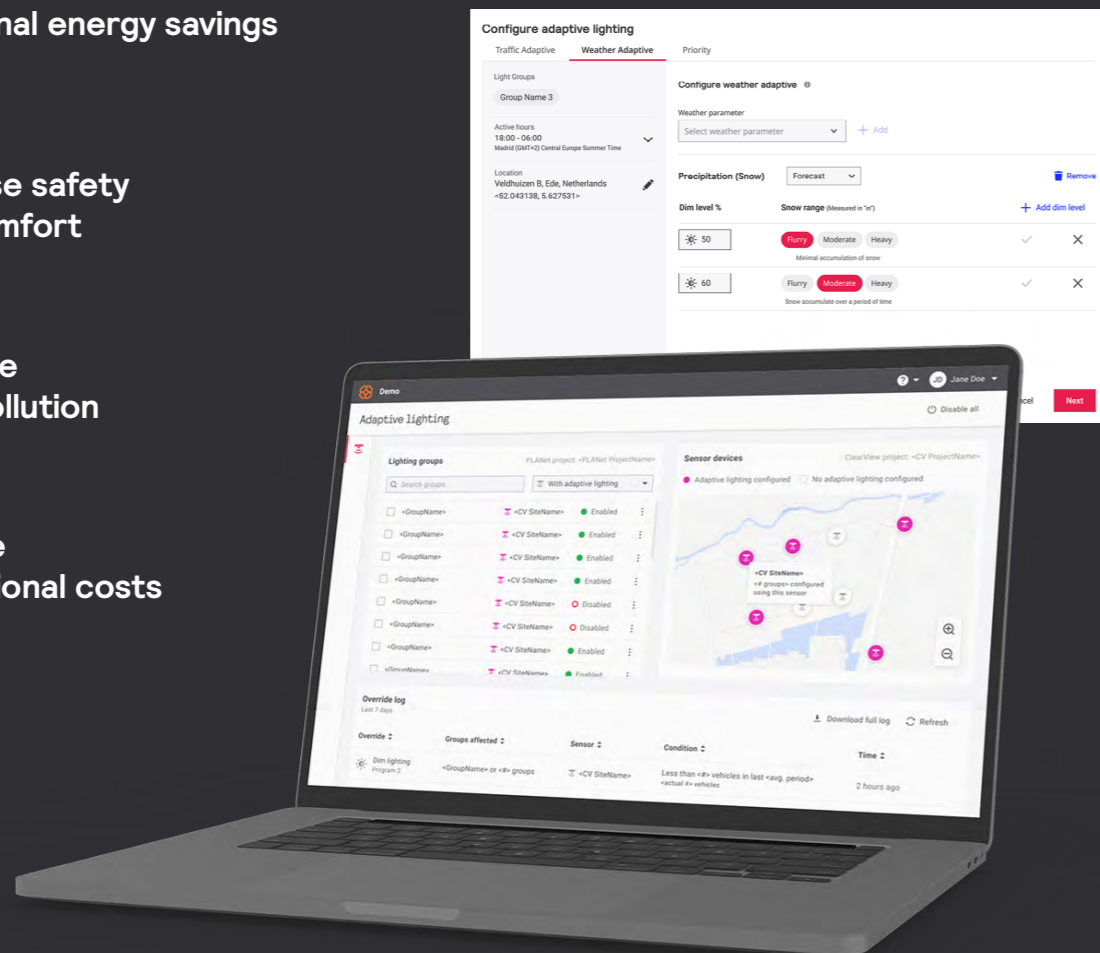
Increase safety and comfort



Minimize light pollution



Reduce operational costs



Connected solar

Transform outdoor lighting with Interact connected for solar luminaires

Imagine a world where city lighting is not just smart, but also sustainable and cost-effective. With Interact, you can seamlessly manage your solar-powered streetlighting systems from anywhere—centrally and remotely—unlocking powerful insights that drive efficiency and maximize business value.

Why connected solar streetlighting?

Accelerate your carbon-neutral journey

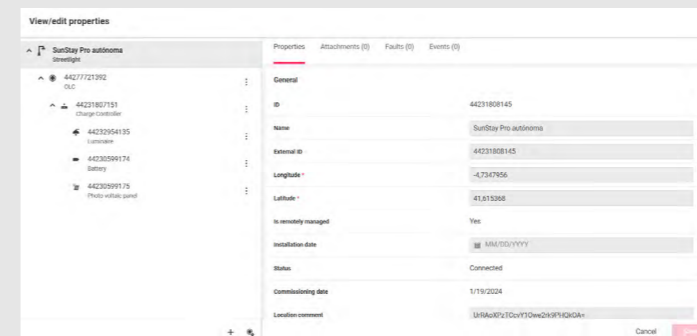
As cities and communities strive to meet ambitious carbon-neutral targets, reducing the carbon footprint of public infrastructure is more critical than ever. Interact's connected solar solutions help you align with the latest CO₂ reduction policies, making a real impact on both urban and rural environments.

Combat rising energy costs

The global energy crisis has made traditional streetlighting increasingly expensive to operate. By switching to connected solar, municipalities can dramatically cut energy expenses while maintaining safe, well-lit streets.

Break the myths—solar works everywhere

It's a common misconception that solar streetlights are costly or only effective in sunny climates. In reality, modern solar technology is efficient, affordable, and reliable—even in less sunny regions. Installation, operation, and upgrades are simpler and more cost-effective than ever before.



Light the way to a greener future—with Interact, sustainable streetlighting is within everyone's reach

User-friendly dashboard for cities

View, control, monitor and get reports of the connected lighting assets.

Key benefits



1 single dashboard to remotely control all your sites.



Manage all your assets: individual light points, cabinets, on-grid or solar systems, as well as sensors.



Maximize operational efficiency with a strong query engine, data visualization capabilities, and reports.



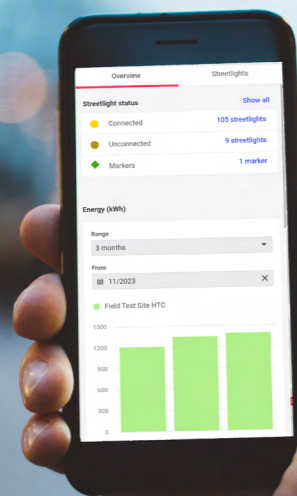
Assign users different levels of access and control.



High level of security with two-factor authentication.



USER INTERFACE



Interact dashboard for cities

The best of our expertise at your service.

Efficient maintenance

- Get online help and detailed guidance, and easily troubleshoot
- Easily reposition street lights
- Allow full control of user management, data visibility, and more, with project configuration

Security

- Get end-to-end security designed for your needs, certified to IEC62443-4-1 and IEC/ISO27001 standards

Light management

- Remotely control or manually override lighting levels to maximize energy savings and maintain safety
- Manage assets, visualize data and assets through the intuitive user interface, and get on-demand real-time properties read for each asset
- Get alerts for faults, and view and analyze them to streamline operations
- Optimize your stock and reduce supply and installation complexity thanks to virtual light output



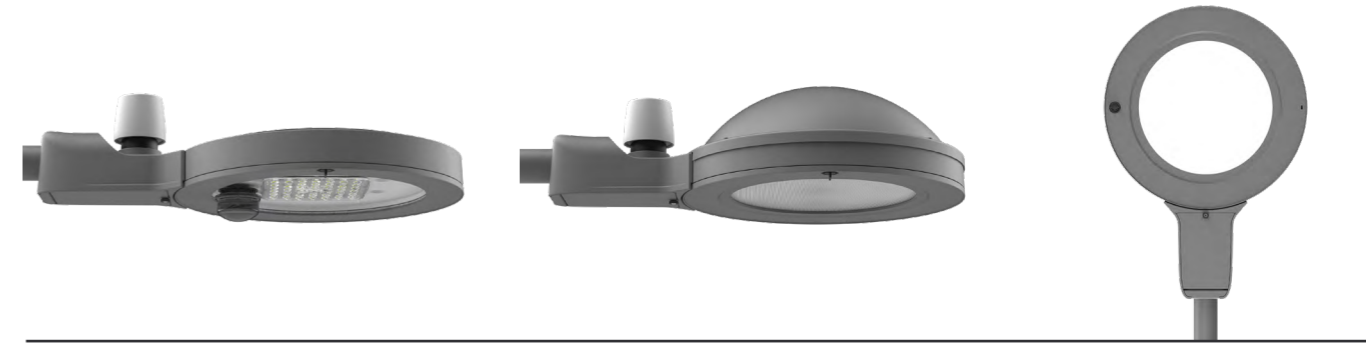
Features

- Wireless and remote control over one or multiple sites
- Multi-region management within a single site for different contracting vendors
- Remotely set switch regime, calendar, dim shape assignment, and programming schedule for connected street lights and group cabinets
- Support troubleshooting and resolutions with fault notifications, real-time properties, and switch logs visualization
- User interface available in over 20 languages
- Dimming by lumens based on street light configuration to optimize energy consumption
- Light-on-demand motion sensor override with Zhaga-D4i sensors
- Read and visualize street light and sensor asset data
- Supports light point commissioning and replacements from third-party systems

Luminaire portfolio

Genlyte Solutions — a Signify business, has an extensive range of “connect-ready” luminaires available that have the option of fitting a socket directly upon ordering. A connected node can be added at this time or at a later stage. Interact City is luminaire-agnostic and compatible with virtually all luminaire types.

Listed below are the core ranges available in different regions. There is a broad choice of other luminaires, each designed to suit a unique set of requirements, that also have the connect-ready option available. For more information, please reach out to your Genlyte contact.



Lumec RoadScape and RoadScape Comfort Edge



Lumec OmniScape

North American portfolio:



Lumec RoadFocus Plus



Lumec HighFocus Plus



Lumec RoadStar



Hadco TownView

Hadco Refractive Globe



Gardco OptiForm

Signify's global reach

As of today, Signify has more than more than 4,000 customer project sites with over 7 million connected street lights across 62 countries.



Here are some countries already benefitting from Interact:

- | | | | | | | | |
|-------------|---------------|-----------|----------|------------|-----------|----------------------|--------------------------|
| Malaysia | Austria | Croatia | Czechia | Spain | Argentina | Bolivia | Norway |
| Philippines | Germany | Hungary | Estonia | Italy | Brazil | Saudi Arabia | Sweden |
| Thailand | Liechtenstein | Lithuania | France | Indonesia | Chile | United Arab Emirates | Australia |
| Singapore | Switzerland | Poland | China | India | Mexico | Oman | Ireland |
| Belgium | Azerbaijan | Romania | Taiwan | Bangladesh | Peru | Denmark | United Kingdom |
| Netherlands | Bulgaria | Slovakia | Portugal | Nepal | Uruguay | Finland | United States of America |
| Canada | | | | | | | |

Choose Signify, your leading partner in sustainability

Signify has reduced more than 70% of its absolute operational carbon footprint since 2010

- We recycle up to 90% of our manufacturing waste
- Our paper packaging for LED lamps and luminaires is saving over 500,000 kilos of plastic waste per year

We shifted to 100% renewable electricity

- Virtual power purchase agreements in US and Poland
- Solar energy in Gulf region
- Offsetting projects with clear societal and environmental benefits, such as our own off-grid solar energy in rural India



100% renewable electricity



2.9 billion LED light points delivered



Zero waste to landfill



84% sustainable revenues



99% supplier performance



67% fewer safety incidents

We reduced the emissions of our operational footprint

Manufacturing:
46% less emissions

through LED, optimized HVAC, process optimization

Offices:
92% less emissions

through increased office space utilization and automated building processes

Logistics:
52% less emissions

through more sea freight and increased efficiency

Business travel:
80% less emissions

through more sustainable travel

Recognized on the Climate A list for our leadership in environmental performance.



Member of the DJSI World index as industry leader.

Member of
Dow Jones Sustainability Indices

Powered by the S&P Global CSA

Recognized as industry leader with a low ESG risk.



Awarded with the UN Climate Action Award.



Platinum and Top 1%





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