



NovaLight

Smart street lighting solution



Light up where and when it is
necessary and with the right
luminous power



NovaCity, the integrated platform for a smart and sustainable city

The demographic challenges we are facing are increasing. In general, the climate emergency and pollution imply taking drastic measures to develop ourselves more sustainably. On the one hand, we must follow a sobriety approach requiring behavior and organization changes; on the other hand, technological developments can help maximize our infrastructure's efficiency.

The NovaCity platform provides innovative digital solutions for a city's various public services. These business solutions aim to optimize infrastructures to reduce energy consumption, cut operating costs and improve the quality of life in the city.



They enable companies and governments seeking to reduce their operational costs and carbon footprint to achieve their **environmental goals**. Today, the platform offers a remote management solution for public lighting, “NovaLight”, and a road traffic management solution, “NovaTraffic”. This offer will be extended in the future. The platform integrates the latest industrial standards, thus facilitating the integration of a wide range of multi-manufacturer devices.



Benefits



Control

The NovaLight solution allows real-time remote control and monitoring of each light point from centralized software. Anytime and with only a few clicks, it is possible to check street lighting status, be alerted automatically in case of malfunction, reconfigure devices, check energy consumption, and achieve savings.



Savings

NovaLight enables street lighting remote control accurately and adaptively to light up where and when necessary, with the right luminous power. Energy savings are enormous, from 30% to 80%, depending on the settings, while lighting pollution decreases in the same proportion. NovaLight thus participates in sustainability.



Operational efficiency

Street light remote control and monitoring features allow lighting engineers to be far more efficient in their day-to-day operations. With remote control, it is possible to reconfigure devices in case of citizen comments to detect automatically street light malfunctions or to power on/off street lighting during the day after maintenance operations.



Comfort and security

More accurate and adaptive settings offer better quality lighting and a better experience for drivers and pedestrians. Thanks to street light intensity dimming, NovaLight guarantees suitable lighting quality for a good level of security. Furthermore, with remote control, it is possible to reconfigure devices at any moment.



Smart city

The NovaLight solution has been developed with open Internet standards in view. Furthermore, it evolves with the emerging “Smart City” protocols, allowing interoperability within multi-vendor street lighting remote control solutions and within other smart city solutions (traffic monitoring, screens management, etc.).

Applications

Main streets



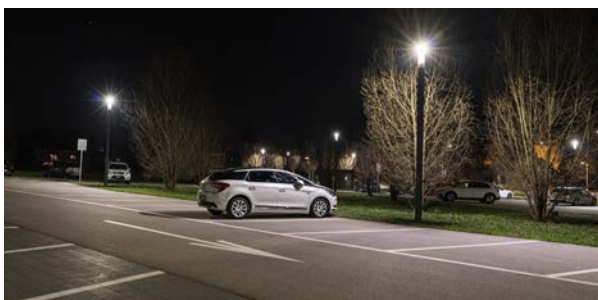
During peak traffic hours, the main roads in the city should be well lit. Based on time schedules or traffic counters, NovaLight reduces the lighting intensity to save energy during the night.

Residential areas



Lighting in residential areas is sensitive because it can disturb residents. With dynamic dimming, the lighting can be dimmed as soon as people have returned home.

Car parking



Parking lots are places where people come and go straight away, leaving their car alone for hours. Energy savings are significant if the lighting is dynamically activated only when a presence is detected.

Public places



With NovaLight, you can create scenes where the intensity of the lights is defined. You can activate these scenes from software or via buttons available on site. NovaLight makes it possible, for example, to turn off the lighting during fireworks.

Solution strengths



Robust network
technology and servers



Open Smart City
Protocols



High level of
security



Wide range of
controllers



Evolving solution

Transport infrastructure



Dynamic lighting with presence detection is particularly interesting for transport infrastructures such as train/bus stations, ports, or petrol stations. These facilities are often empty overnight and must light up as soon as someone arrives.

Modernization



Existing LED streetlights can be retrofitted with intelligent control even if they are not pre-equipped with a standard connector. A NovaLight controller can be installed on the streetlight mast and connected to the light driver control interface from the hatch.

Sport lighting

Today, the lighting of sports fields is the same regardless of the use (leisure, training, matches, etc.). LED floodlights allow the adaptation of the light intensity. Our control solution offers all the necessary tools to adapt the lighting of a sports field to the game situation to save energy and reduce light pollution.



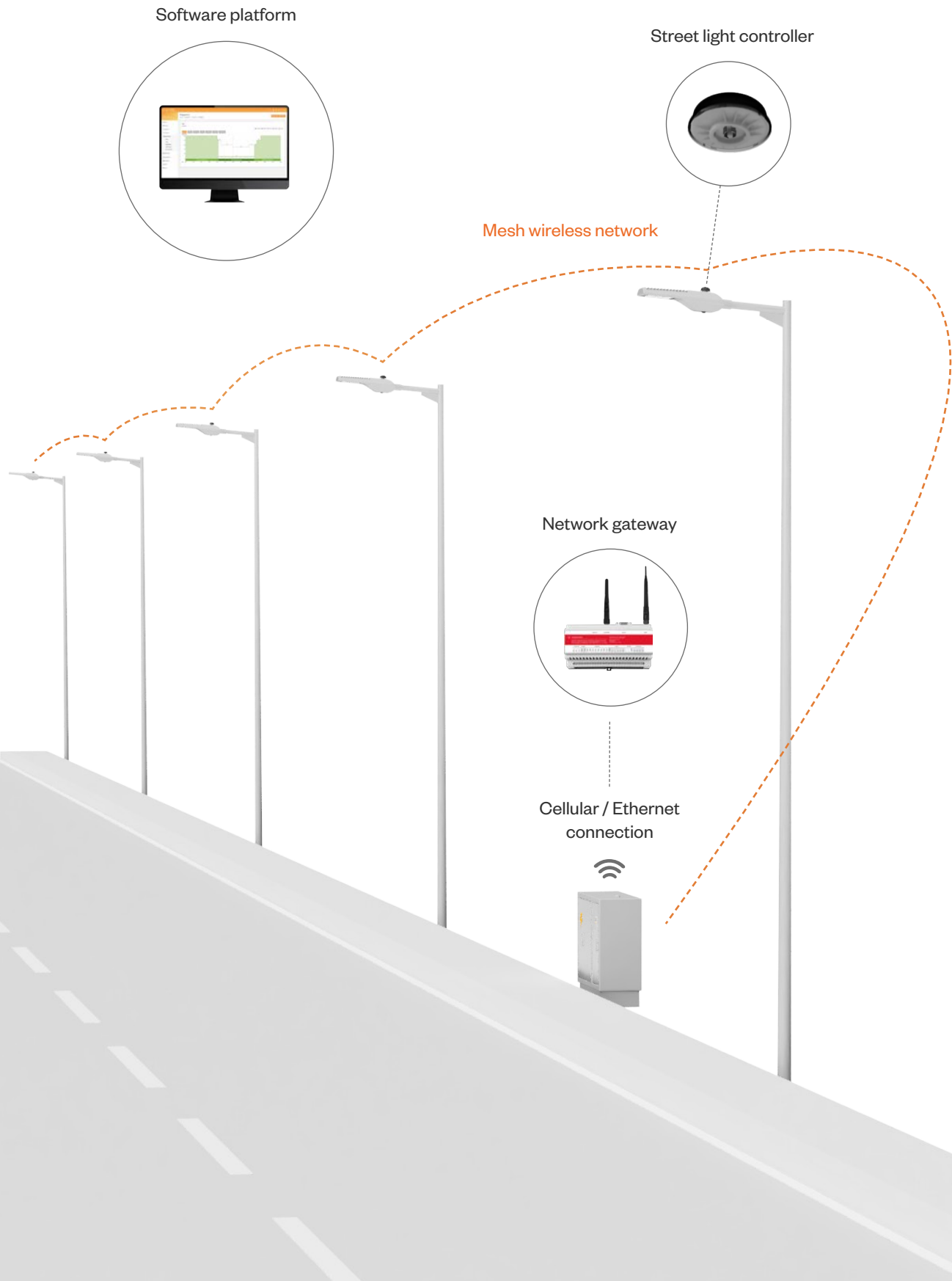
Outside of competitions, the intensity of the floodlights can be reduced by up to 50%. Over the year, this represents significant energy savings. Light pollution is reduced by the same amount: a positive point for the neighborhood.

Thanks to the “scenes” feature, you can create several configurations to pre-determine the light intensity to be applied according to the different game situations. You can activate those scene configurations from the online software or on-site. For instance, you can install the NovaLight gateway in the refreshment stand next to the field and manage up to four switches.



System operation

The NovaLight solution allows controlling and monitoring each light point autonomously. A controller is installed on each streetlight. Depending on your needs in terms of functionalities and type of installation, you can choose the ad hoc controller among several NovaLight controllers. The controllers communicate with each other through a low-frequency wireless network. A network gateway installed in an electrical cabinet or within a power station connects the system in the field to an online software platform.

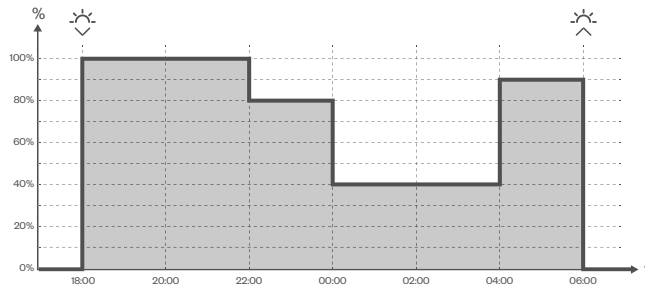


Dimming strategies

NovaLight is one of the few control solutions capable of dimming streetlights according to three different policies:

Scheduled dimming

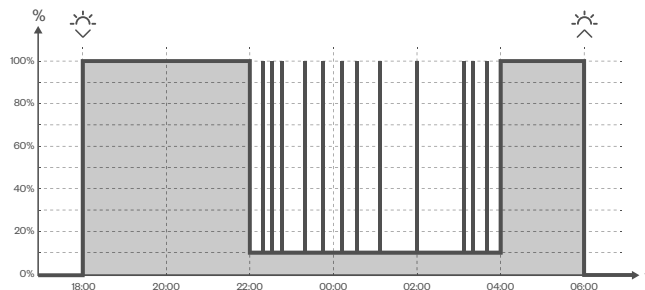
With the scheduled dimming, the intensity of the lights varies according to a pre-defined schedule. You can define and plan daily profiles for a geographical area, one or several days of the week, and a specific year period.



30 to 40% energy savings

Dynamic dimming

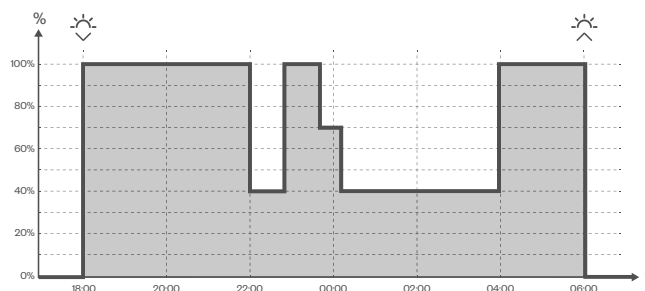
The dynamic dimming allows the most remarkable light power reduction, up to 80% depending on the settings. Based on motion sensors installed on each streetlight, the lighting intensity is reduced as soon as no road user is detected. Dynamic lighting is ideally suited for residential areas or streets with a driving speed of up to 50km/h.



60 to 80% energy savings

Volumetric dimming

The volumetric dimming strategy allows the lighting intensity control of roads according to the traffic measured in real-time by a Doppler radar. If the traffic density on a specific street drops below certain thresholds, all the corresponding street lighting is reduced accordingly. This solution is a good compromise between dynamic lighting requiring the installation of sensors on each lamppost and scheduled lighting, which does not vary dynamically.



40 to 50% energy savings

Energy savings simulator

On the Novaccess website, a simulator is available to calculate the energy savings achievable with the NovaLight solution. You will find it at the following URL:

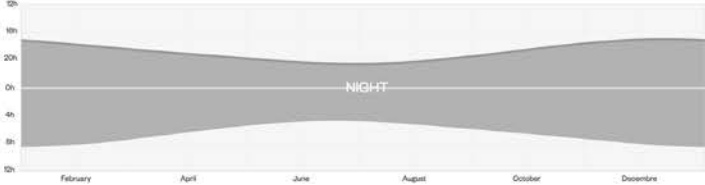
<https://www.novaccess.ch/en/ovalight-simulator/>

Intelligent Public Lighting Em... x +
novaccess.ch/en/ovalight-simulator/

Position: Lausanne, Suisse



Time (UTC)



Electricity: 0.2 CHF Per kWh

Lamps: ☒ Lamp replacement

Old lamps:

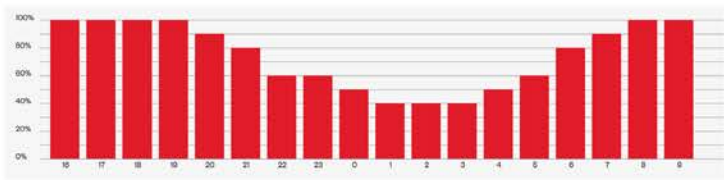
Lamp Type	Power (W)	Quantity
Mercury	25	200
Sodium	75	70

New lamps:

Lamp Type	Power (W)	Quantity
LED	25	70
LED	75	30

Dimming through remote management: ☒ Use dimming

Eco profile



Hour	Dimming Level (%)
16:00	100
17:00	100
18:00	100
19:00	100
20:00	90
21:00	80
22:00	60
23:00	60
0:00	40
1:00	40
2:00	40
3:00	50
4:00	60
5:00	80
6:00	90
7:00	100
8:00	100
9:00	100

Your yearly savings estimation

Electricity	CO2	Costs
-31'234 kWh -70.9%	-4'279.1 t	-6'250 CHF

Features

NovaLight controllers offer several luminaire control and monitoring features. The availability of these features varies depending on the type of controller.



Street light control

The controller communicates with the ballast of the streetlight using a 1-10V or DALI interface. When the 1-10V only allows reducing the lighting intensity, the DALI offers further functionalities like malfunctions detection by the ballast.



Streetlight powering

Streetlight powering is automated thanks to the integrated astronomical clock. Based on the streetlight coordinates, the clock calculates a sunset and sunrise time to which you can add an offset based on field measurements.



Dimming

Dimming profiles for light intensity can easily be configured on the software and synchronized to the controller. For each evening and night hour, you can define the lighting intensity according to the day of the week.



Failures detection

Based on the DALI Interface or measured electrical values, the controller can detect streetlight incidents that are automatically transmitted to the software.



Energy measurements

The integrated energy meter (or the ballast one) enables measuring energy consumption and savings. Furthermore, you can collect instant measurements on demand: frequency, voltage, current, power, and power factor.



Power supply control

Some controllers are equipped with power relays and can cut power during the day while maintaining the communication network for other applications. You can also use this power control feature to control decorative, accent, or old light sources.



Detection

Based on motion detection, controllers equipped with detectors (or connected to a remote sensor under the luminaire head) dynamically increase the lighting intensity of the streetlight and the ones around it. NovaLight thus creates a light path for pedestrians.

NovaLight controllers

Depending on your needs and use cases, a wide range of controllers are available. You can foresee several types of installations: on the heads of luminaires (standardized sockets), poles, or walls. In addition, some controllers are equipped with motion detectors to dim the lighting dynamically. It is also possible to vary a complete street according to the traffic levels measured by a counting radar (see page 25). It is important to note that we manufacture our NovaLight controllers in Switzerland.

Mast controllers

OLC Pole
Detect



Page 14

OLC Pole



Page 16

Wall controllers

OLC Wall



Page 17

OLC Wall
Detect



Page 18

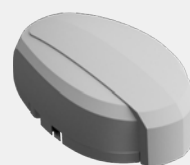
Controllers with standardized connectors

OLC Zhaga



Page 21

OLC NEMA
Legacy



Page 22

OLC Pole Detect

NL-OLCPDX-LX-XX-010

The OLC Pole Detect is straightforward to install on public lighting poles thanks to its magnetic attachment for steel poles or a ligature. It is connected through the hatch of the mast and can perform phase control in on/off mode. You can dim the light intensity when connecting the OLC Pole Detect to the DALI or 1-10V bus (control interface to be specified when ordering). The OLC Pole Detect is equipped with three infrared detectors. Thanks to those detectors, you can create light paths. When movement is detected, you can vary the intensity of a light fixture and its neighbors.



Features



Relay



1-10V / DALI



Energy meter



Infrared sensors



Astronomical clock

Variants

Control interface

1-10V / DALI



Color

Light gray or dark gray



Mast size

Standard or large mast ($\varnothing > 100\text{mm}$)

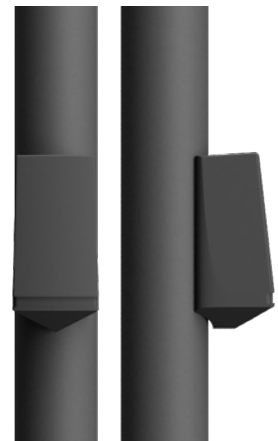




OLC Pole

NL-OLCPX-LX-XX-010

The OLC Pole is straightforward to install on public lighting poles thanks to its magnetic attachment for steel poles or thanks to a ligature. You can connect it through the hatch of the mast and can perform phase control in on/off mode or dimming through the DALI bus or via 1-10V (control interface to be specified when ordering). You can also use the OLC Pole to add remote control features to existing LED luminaires that are not pre-equipped with standardized connectors on the luminaire head.



Features



Relay



1-10V / DALI



Energy meter



Astronomical clock

Variants

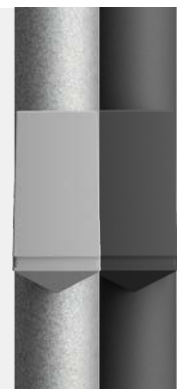
Control interface

1-10V / DALI



Color

Light gray or dark gray



Mast size

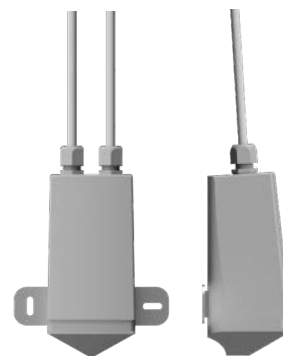
Standard or large mast ($\varnothing > 100\text{mm}$)



OLC Wall

NL-OLCW-LX-XX-010

The OLC Wall is straightforward to install on a facade thanks to its stainless-steel support and allows the adaptation of the light intensity of a luminaire. It controls the luminaire via a DALI or 1-10V interface (control interface to be specified when ordering). You can also use it to power an outdoor outlet in on/off mode, such as decorative lighting.



Features



Relay



1-10V / DALI

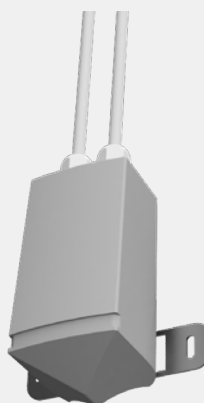


Energy meter



Astronomical clock

Variants



Control interface

1-10V / DALI



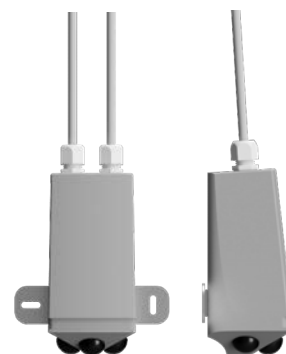
Color

Light gray or dark gray

OLC Wall Detect

NL-OLCWD-LX-XX-010

The OLC Wall Detect is effortless to install on a facade thanks to its stainless-steel support and allows the adaptation of the light intensity of a luminaire. It controls the luminaire via a DALI or 1-10V interface (control interface to be specified when ordering). The OLC Wall Detect is equipped with three infrared detectors and allows the creation of light paths where the intensity of a light fixture and its neighbors increases when movement is detected. You can also use it to control an outdoor outlet in on/off mode, such as decorative lighting.



Features



Relay



1-10V / DALI



Energy meter

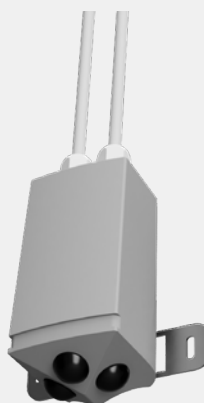


Infrared sensors



Astronomical clock

Variants



Control interface

1-10V / DALI



Color

Light gray or dark gray





OLC Zhaga

NL-OLCZ-XX-010

You can install the OLC Zhaga in no time on a luminaire head equipped with a Zhaga connector. It is available with a D4i or SR interface, allowing, for example, to dim the lighting, get energy measurements or detect malfunctions. Its sleek and small-sized case will perfectly match the aesthetics of your street furniture.



Features



DALI2, D4i or SR digital interface



Energy meter integrated into the driver

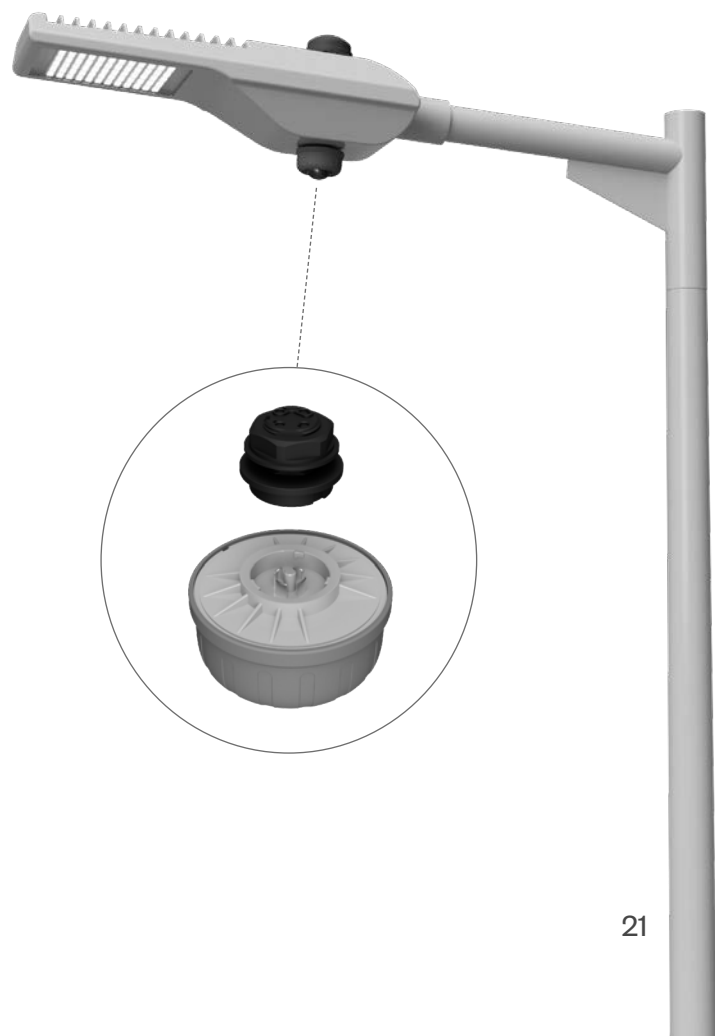


Astronomical clock

D4i sensors

The Zhaga-D4i standard defines the mechanical and electrical interface between a controller and a luminaire head and how to communicate digitally with the driver to, for example, control the light intensity or retrieve energy measurements. But that's not all! The standard also includes support for additional "sensors" that you can connect through a second Zhaga plug under the luminaire's head; these sensors, which are emerging on the market, are diverse and allow, among other things, the detection of movement or the measurement of ambient brightness (photocell).

Following a commitment to openness and interoperability, Novaccess is compatible with Zhaga-D4i motion sensors, and the solution will gradually open up to other types of sensors. This interoperability capability will allow customers to freely choose the sensor that best meets their needs. In any case, it is advisable to order luminaires with two Zhaga sockets (one on the head of the luminaire and one underneath) in anticipation of the installation of sensors.



OLC NEMA Legacy

NL-OLCN-L-XX-010

You can easily install the OLC NEMA on a luminaire head equipped with a NEMA socket. It is available with a combined 1-10V and DALI interface, for example, to dim the lighting or to detect malfunctions. Its sleek and flat design case will match the aesthetics of your street furniture, and it is available in light gray or dark gray. The NEMA OLC comes with a gasket ensuring the controller's and fixture's long-term operation.



Features



Relay



1-10V / DALI



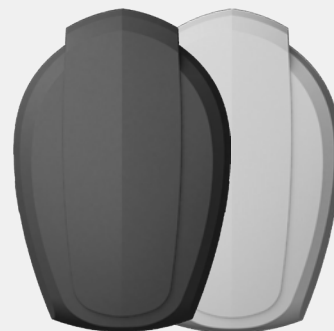
Energy meter



Astronomical clock

Color

Light gray or dark gray



NovaLight Gateway

NL-G-023NCE

The NovaLight Gateway is the communication gateway for the NovaCom network. NovaCom is a low-speed, low-power wireless network specializing in the connectivity of Smart City equipment. The NovaLight Gateway is in direct communication (via cellular network or Ethernet) with the NovaServer: the NovaCom network's orchestrator. The gateway also has input/output contacts that you can use to monitor or control third-party devices. In addition to its role as a network gateway, you can also use it as an electrical cabinet controller.



Features



IEEE 802.15.4 868 MHz NovaCom



Low-data-rate and low consumption



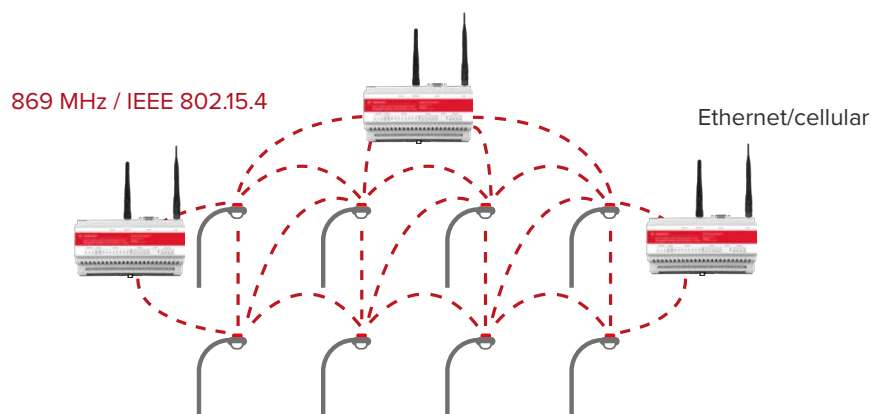
Cellular/LAN



4 input contacts / 4 output contacts



Remote reprogramming



Network strengths



Robust and scalable network, long range



Multi applications network



High security level



Point to point communication

NovaCity Outdoor Gateway

NC-OG-023NCE

The NovaCity Outdoor Gateway is the communication gateway for the NovaCom network that you can install outdoors. You can install it against a public lighting pole or on a facade. The gateway also offers switches connected to its inputs to trigger lighting scenes. A Doppler radar can also be connected to the gateway to count vehicle passes and change street lighting accordingly.



Features



IEEE 802.15.4 868 MHz NovaCom



Low-data-rate and low consumption



Cellular



Extensions (switches, counting radars)



Remote reprogramming



NovaCity Outdoor Gateway and traffic counter

NC-OG-023NCE + NT-MR2-010

You can couple the NovaCity Outdoor gateway with a Doppler radar, allowing you to count the road traffic to make statistics of passage and to adapt the luminous intensity of the public lighting of a given section accordingly. You can install this product either on a mast or a facade using a mounting bracket specially designed by Novaccess. You can easily configure this radar on-site to set the minimum speed to detect, the detection sensitivity, or the use of a LED. The radar's sensitivity allows a detection distance of 100 to 150 meters.



Features



CW Doppler radar



Detection on 2 traffic lanes



Detection up to 150m



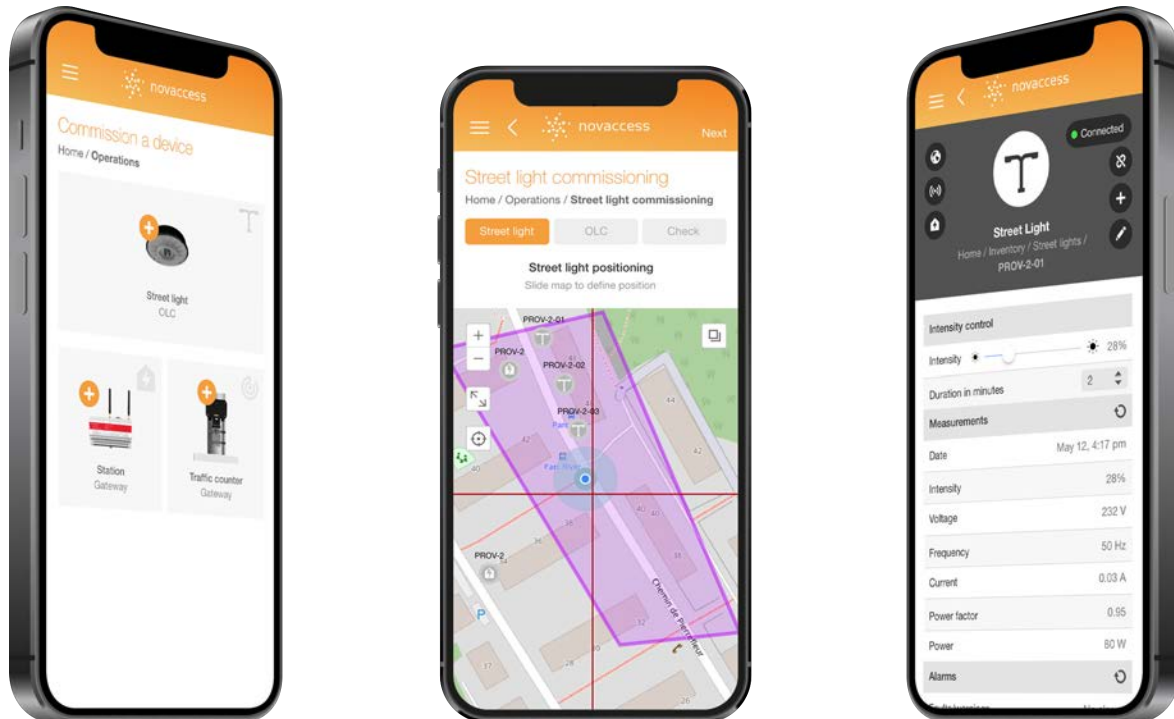
Trigger thresholds from 4 to 150 km/h



Mounting of several radars on the same mast



Mobile application



The NovaLight mobile application enables the commissioning of controllers in the field, and the aim is to speed up this procedure as much as possible to limit costs. The application can identify a product based on a bar code scan, position it on a map using the phone's GPS, and test the installation using manual intensity update commands or taking measurements.

Devices commissioning

Before the physical installation of a gateway, streetlight controller, or traffic counter, the mobile application allows to easily retrieve, thanks to the bar code scanner, the device serial number to add it to the system. Thanks to the mobile application, you can retrieve all the devices in the NovaLight inventory.

Tests in the field

As soon as the devices have been added to the software and installed, the mobile application can monitor the devices' connectivity status. You can therefore invoke intensity update and retrieve measurement data. You can use those tests to check the good working condition of the installation.

Devices location

The mobile application enables one to locate devices thanks to the smartphone GPS. An interactive map shows the streetlights, electrical cabinets, and traffic counters.

Troubleshooting

The mobile app reports detected faults on the streetlights with explanations to help with troubleshooting.

Software

NovaLight Software is the centralized software platform for the NovaLight street lighting remote management system. It directly connects with objects in the field and offers remote control and monitoring functions. You can install the NovaLight software in the Novaccess cloud or the customer's IT infrastructure.

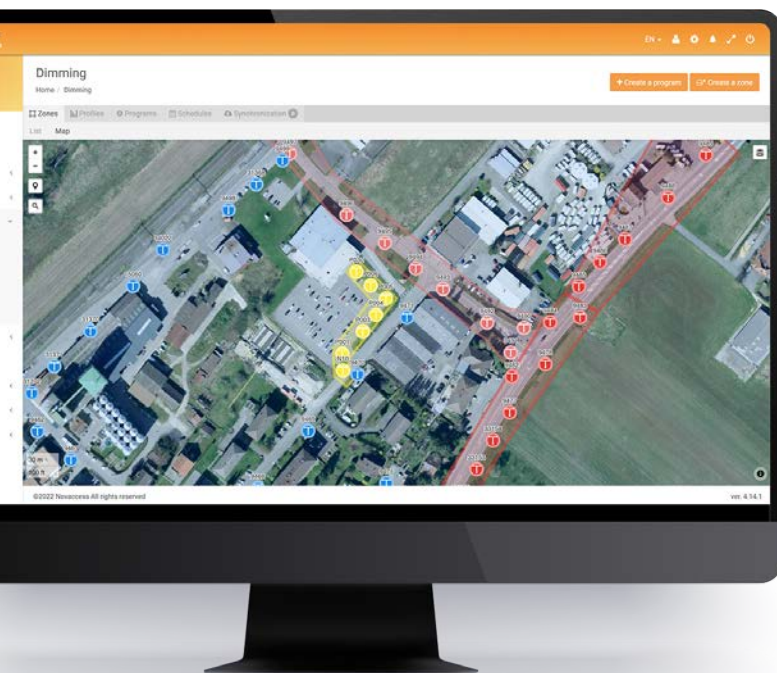
Map and inventory

NovaLight offers a fully configurable inventory tool where each customer can define the list of fields he wishes to fill in. The objects (controllers, electrical cabinets, etc.) are visible on an interactive map where the map layers can be configured. Moreover, it is possible to integrate data layers from a third-party system.



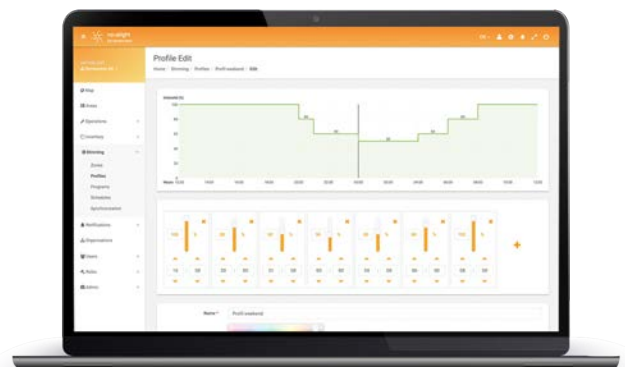
Dimming zones

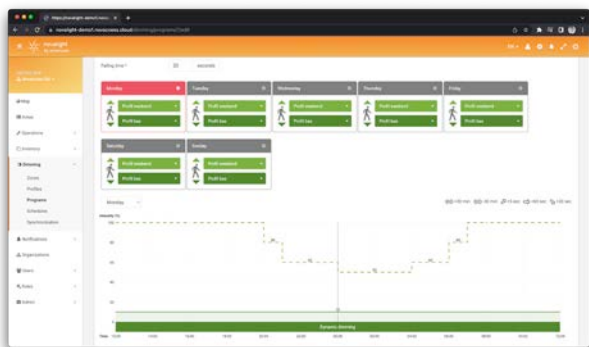
You can achieve dimming configuration via geographical zones. These programmable zones allow selecting one or several streets, parks, or neighborhoods sharing similar lighting parameters. Furthermore, it is possible to overlap the zones with priority levels.



Scheduled dimming profiles

You can easily configure light intensity dimming profiles in the software. Those profiles define the intensity you want to apply to the streetlights hourly. This profile strategy is the first dimming strategy available in NovaLight for large roads where traffic statistics are well known.



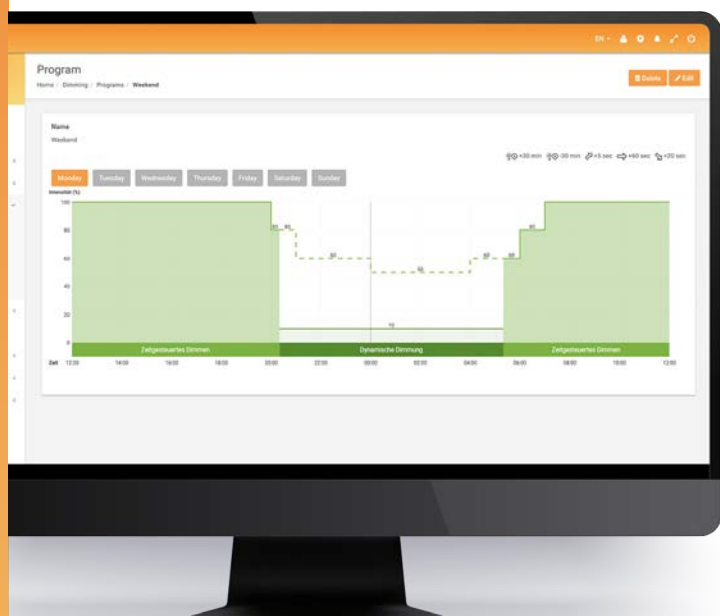
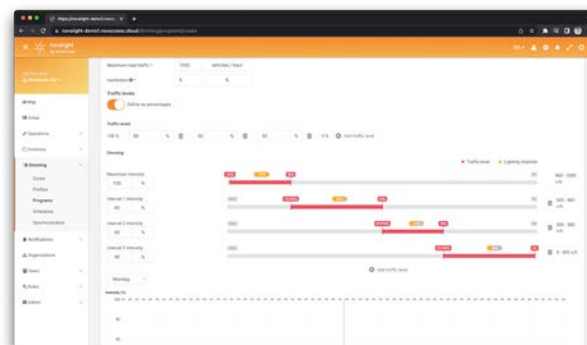


Dynamic dimming profiles

For residential areas where it is difficult to predict the passage of vehicles or pedestrians, dynamic dimming allows you to configure a low level of lighting intensity when the street is empty and a high-level one when a presence is detected.

Volumetric dimming profiles

You can dim the lighting of large roads according to the traffic levels measured by a counting radar. This strategy is an excellent compromise between scheduled dimming and dynamic dimming, which requires a motion detector at each light point. It gives optimized results in terms of energy savings by lighting the road according to the proper traffic needs.

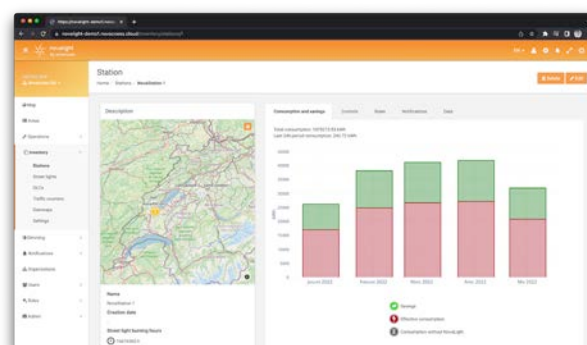


Programs

Programs are a powerful dimming configuration tool. You can choose which profiles to use according to the days of the week. You can activate or not the lighting through the astronomical clock. You can also configure the dimming strategies according to the hours of the day (scheduled, dynamic, or volumetric).

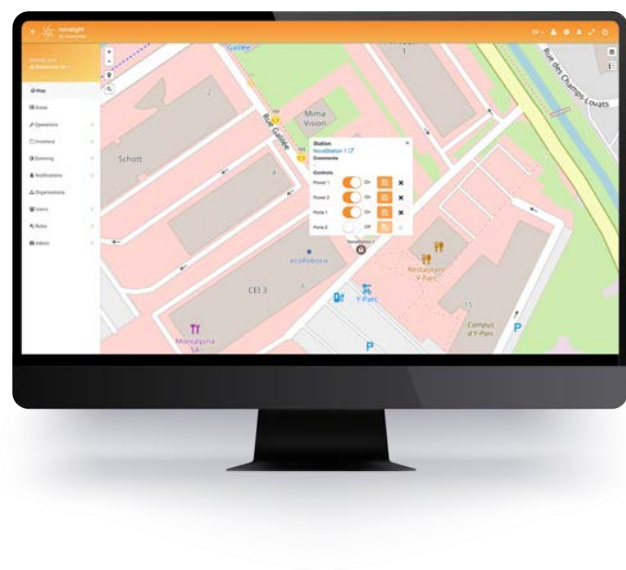
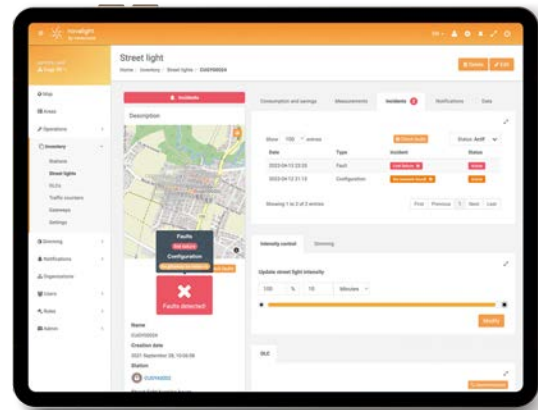
Power consumption and savings

The controllers measure the energy consumption of streetlights, and it is thus possible to analyze the consumption and the savings made thanks to the solution. You can also retrieve instant electrical measurements such as current, voltage, frequency, active power, and power factor.



Fault detection

Controllers can detect malfunctions on streetlights, and the information is then transmitted in real-time to the centralized system to alert users about the issue. The failures are then converted into incidents allowing a coherent follow-up of the defects and their resolution.



Power control

You can use the gateway outputs for remote control. It is then possible, for example, to force the activation of a streetlight segment during the day after a maintenance operation for verification purposes.

Software strengths



Simple access via a web browser



Easy to use



Multi supports



Easy management with geographical zones



Inventory management tool



Sleek design

Services

Our team is at your disposal to help you install the solution in your city (software installation, network installation, controller installation). We also offer training for installers and users.

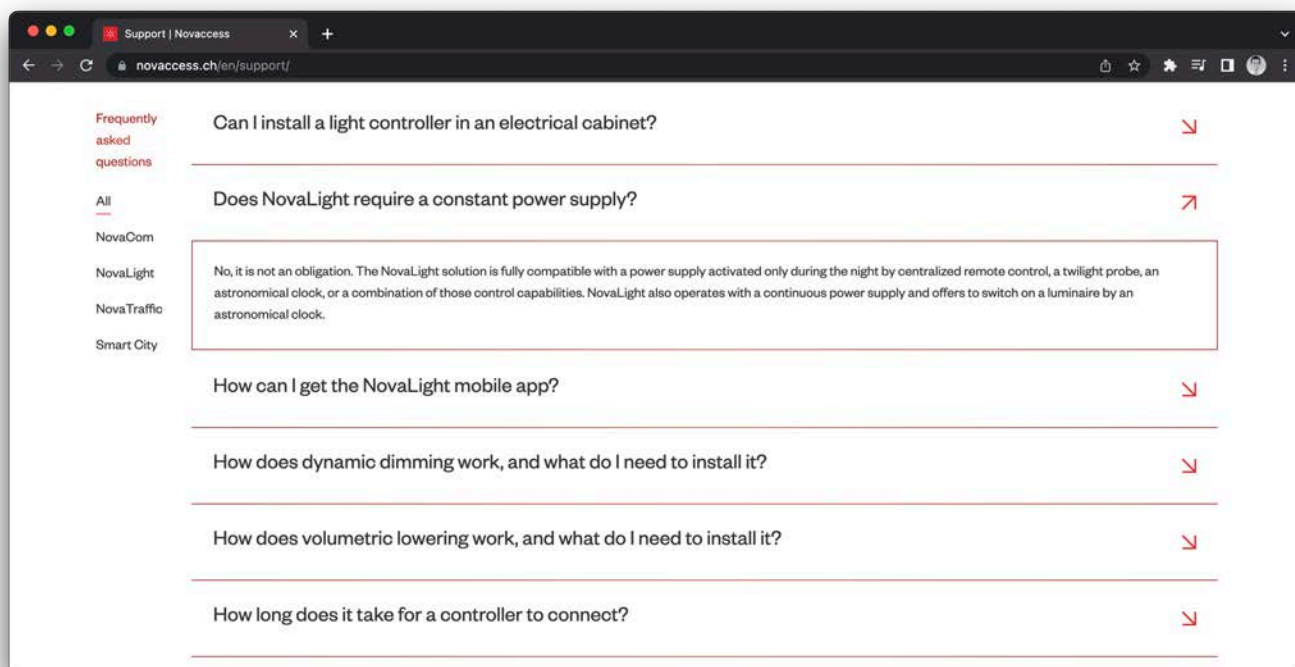
Training

Novaccess offers various training programs to support stakeholders in the planning, installing, and maintaining of smart solutions for cities and industries. These training courses combine theory and practice to understand and experience modern technologies. For example, for the remote management of public lighting, we offer training for project managers, lighting consultants, assemblers, maintenance specialists, IT services that integrate and operate communication networks, etc.



Support

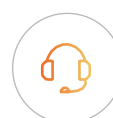
Are you having difficulty installing or using our products? On our website, you will find our technical documentation and frequently asked questions that should help you solve your problem. If you are still in trouble, please do not hesitate to contact our support team, who will be happy to help you.



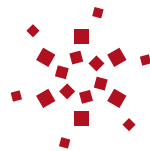
<https://novaccess.ch>



support@novaccess.ch



+41 24 524 30 76



About Novaccess

Novaccess provides cities and industries with digital solutions enabling them to offer more comfort and operate more efficiently while contributing to sustainable development.

Contact



info@novaccess.ch



Sales contact (FR/EN)
+41 24 524 30 07

Sales contact (DE)
+41 79 777 89 00

Customer support
+41 24 524 30 76

Other solutions to discover

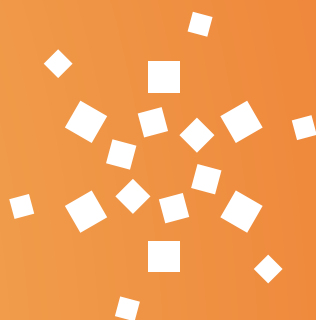


NovaTraffic

Road traffic
management system

They put their trust in us





Novaccess S.A.
Rue Galilée 6
CH-1400 Yverdon-les-Bains
Switzerland
<http://www.novaccess.ch/>
info@novaccess.ch
+41 (0)24 524 30 07

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