

ECOLUMIERE INTELLIGENT LIGHTING

NEODELIS VISION OF LIGHTING DEVICES

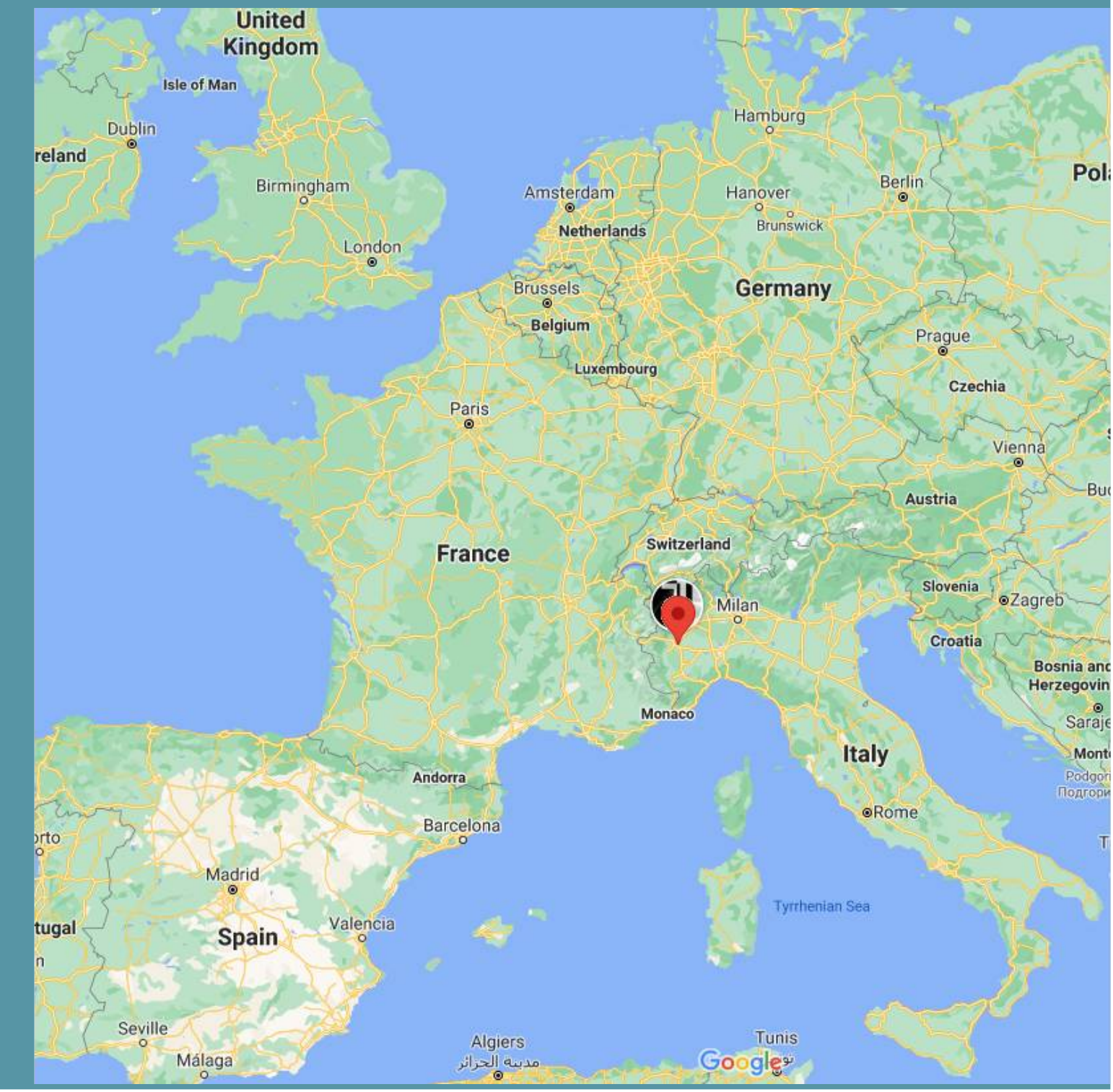
UNIQUE PATENTED IoT LED LIGHTS WHICH INTERCOMMUNICATE and TRANSFER DATA ACROSS THE LIGHT SPECTRUM. BY AUTO-DIMMING WHEN PRESENTED WITH NATURAL LIGHT IN THEIR ENVIRONMENT, THEY SAVE BETWEEN 30%–50% ENERGY COSTS WHEN COMPARED TO STANDARD LED LIGHTS



- Neodelis was founded in 2012 as an LED lighting distributor in Italy
- From 2014 to 2020 designed and developed Ecolumiere®
- In 2020 launched Ecolumiere® T8 tubes, ceiling and industrial lights
- In 2020 opened sales channel in Italy and won significant accounts
- From 2nd Qtr., 2021, began expansion through distributor-partners in EMEA and US



THE COMPANY



MANAGEMENT TEAM AND SHAREHOLDERS



FLAVIO GHIRARDI
FOUNDER & CEO

With a long experience in LED lighting and tech companies. Flavio has a physics degree and worked at CERN.



mondoPOWER
SHAREHOLDER

Company with 20 years' experience in renewable energy sources and in System for energy efficiency



DR G. OCCHILUPO
FINANCE AND SALES

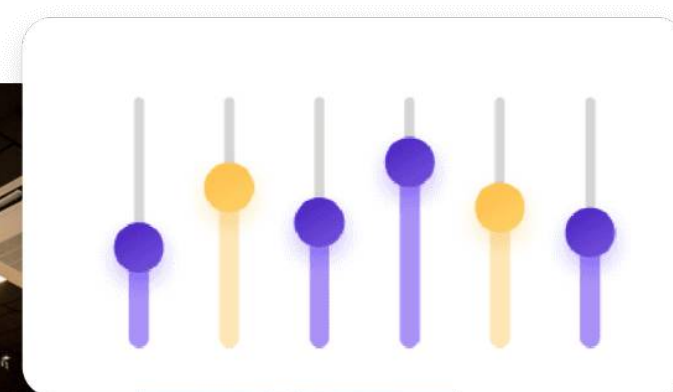
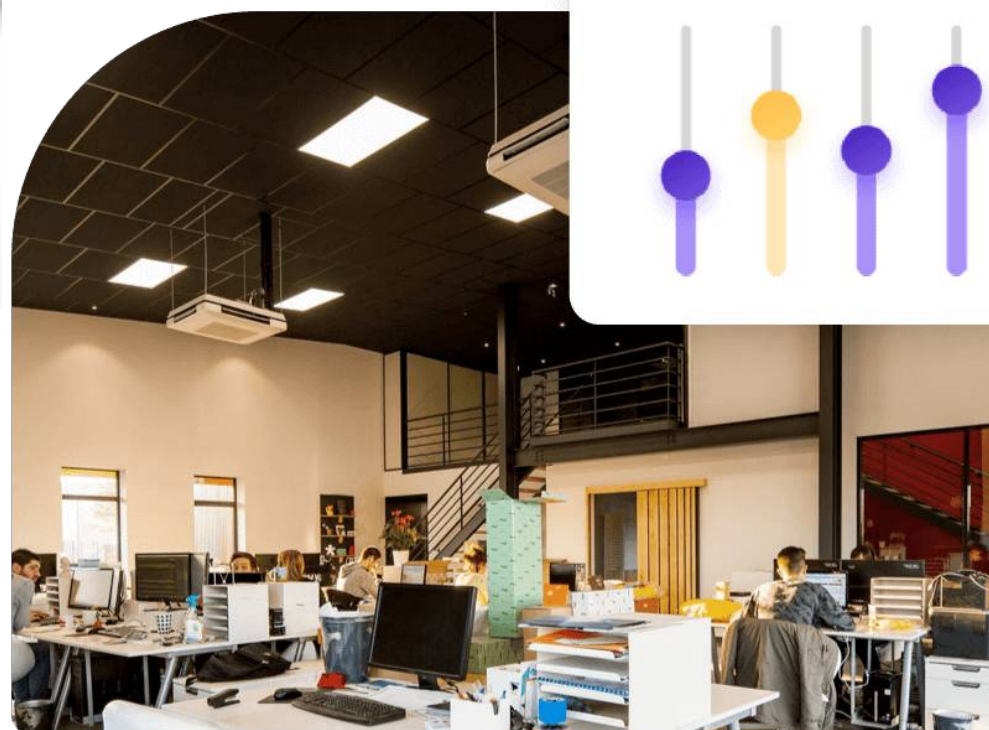
With 25 years' experience of energy efficiency's project. He is electrical engineering and CEO of Mondopower



FRANK NOON
VP SALES

With over 30 years' experience in worldwide tech sales and management; founded two companies which successfully exited.

- **Our Mission is to supply intelligent lights which do not require external sensors, complex cabling, complex system setup and maintenance**
- Neodelis only supply our own brand interior and exterior lamps with integral movement and light sensors enabling significant reductions in energy consumption, resulting in significant cost-savings.
- Neodelis branded and patented lights have an affordable price-point for most use-cases.
- Our product portfolio includes a comprehensive range of Bluetooth, Wi-Fi and stand-alone lamps.



PRODUCT PORTFOLIO

Neodelis has a full portfolio of smart lamps for intelligent use of the light without installation and maintenance complexity

R&D

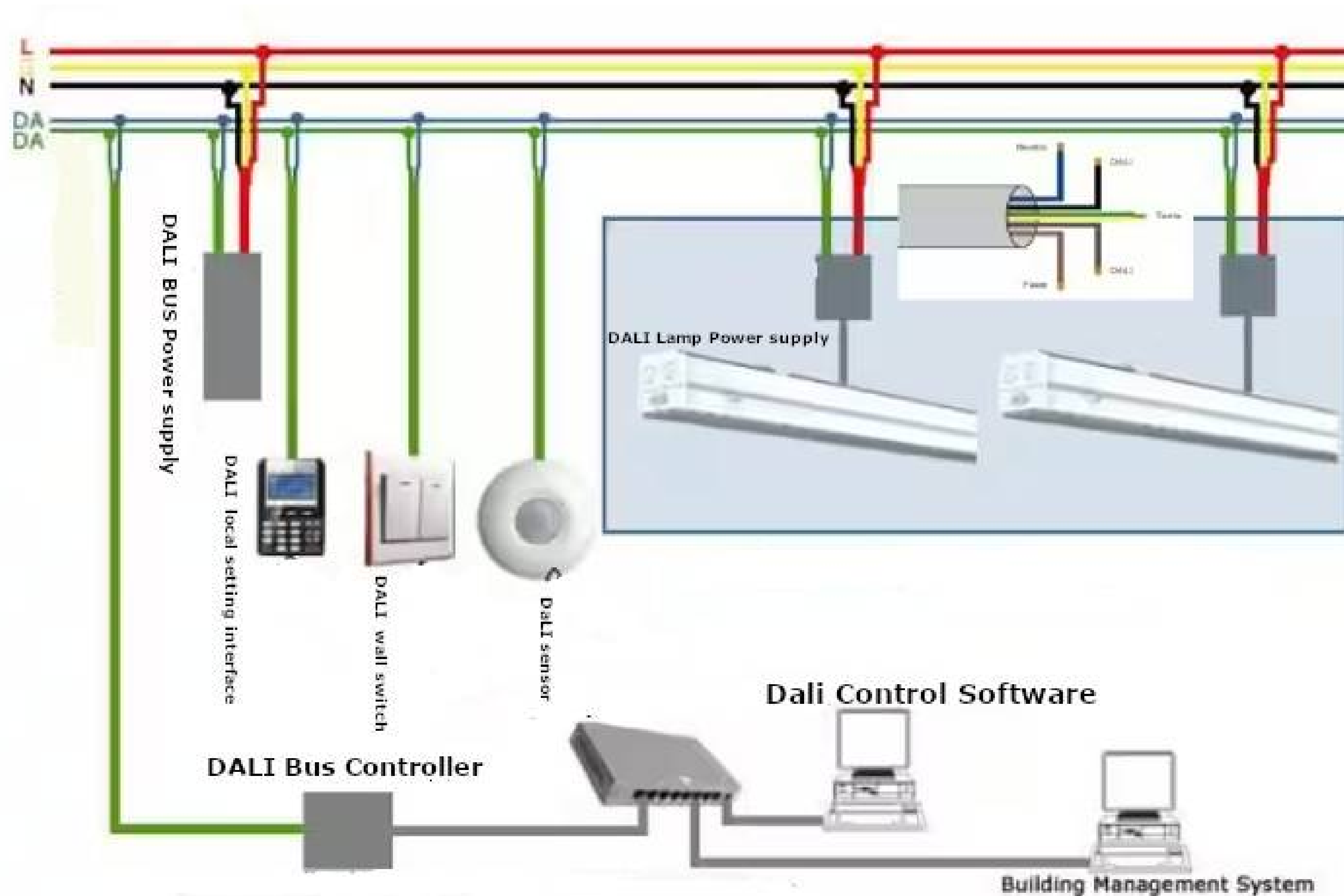
Neodelis has invented and produces unique patented Ecolumiere lamps

- **Unmanaged LED lighting cannot manage light levels – and fall well short in terms of potential energy savings**
- Current intelligent lighting is expensive and complex to install
- Non-integrated light sensors are inefficient, expensive and complex to install
- Wi-Fi intelligent lighting is easily hacked and isn't permitted in many organisations (for example, all kindergartens in France)
- Wi-Fi intelligent lighting emits electromagnetic interference, so cannot be used in hospitals where there are MRI and CT scanners
- Wi-Fi intelligent lighting cannot be used in petrochemical plants
- Current intelligent lighting need expensive annual maintenance – resulting in significant ongoing costs

THE PROBLEM

Standard LED lighting offer far less savings than standard intelligent lighting.

Standard Intelligent lighting provide limited benefits due to expensive installation and maintenance costs.

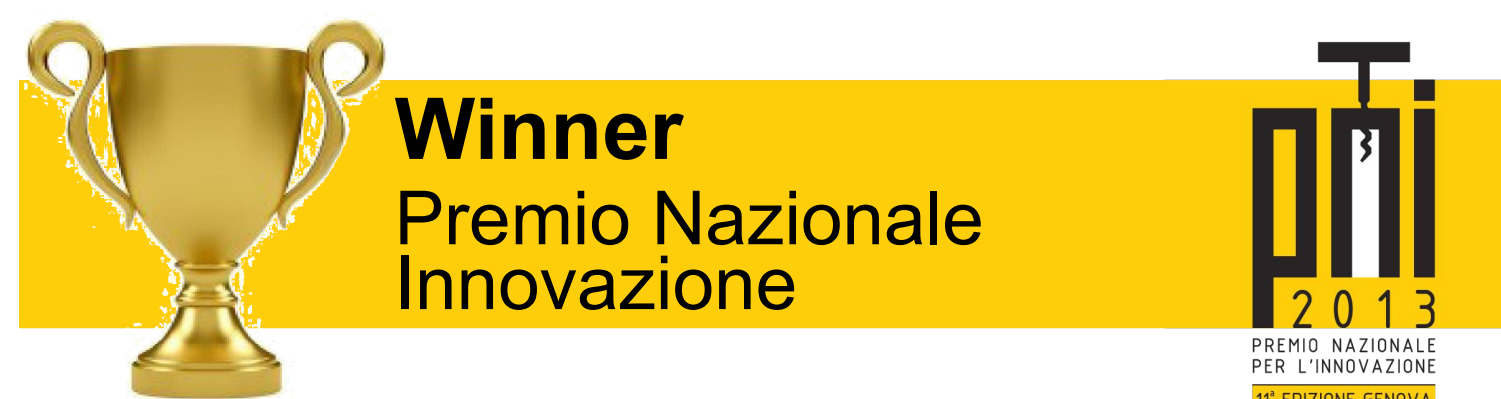


THE PROBLEM

To install and maintain a full information technology infrastructure for managing standard intelligent lights.

Simplify the process of user intervention and modification of the lighting settings via the Ecolumiere APP

- Existing Ecolumiere adapts to changes in daylight/lighting levels – enabling it to reduce power consumption intelligently, maximising energy savings
- Each light has its own integrated light sensor and CPU – this allows for automatic, dynamic coordination between lamps, reducing energy costs by up to 50% when compared to standard LED lighting
- Ecolumiere is aimed at businesses that wish to reduce their energy costs and carbon footprint and take advantage of grants for reducing CO2 emissions
- Ecolumiere is secure – it cannot be hacked remotely – and is ideally suited to large enterprises, military and government use
- Ecolumiere does not produce electromagnetic interference and can be used safely in kindergartens, hospitals and petrochemical plants
- The Ecolumiere app provides continually updated energy saving information and enables users to make lighting adjustments easily



THE SOLUTION

Ecolumiere lights are an all-in-one solution. They are fitted easily and don't require additional cabling, special equipment, technical expertise or annual maintenance costs.

50%

**SAVE BETWEEN 30%–50%
WHEN COMPARED TO
STANDARD LED LIGHTING**

- Ecolumiere saves organisations money and helps them achieve their CO2 emission targets (0.15 tons CO2e savings per lamp per year)
- Ecolumiere delivers up to 50% greater savings than standard LED lighting
- Ecolumiere delivers up to 80% greater savings than neon lighting
- Ecolumiere can be installed without downtime for customers
- Ecolumiere requires no more maintenance than current unmanaged LED or neon lighting
- Ecolumiere **reduces electronic waste** of sensors, control units, cabling



**ECOLUMIERE
PRODUCTS ARE
PROTECTED UNDER
WORLDWIDE PATENT**

THE BENEFITS

Ecolumiere is more than a lamp. It is sophisticated IoT intelligent device able to integrate more sensors to save energy and make life better

50%

**SAVE UP TO 50%
WHEN COMPARED
TO STANDARD LED
LIGHTING**

To develop new Ecolumiere products

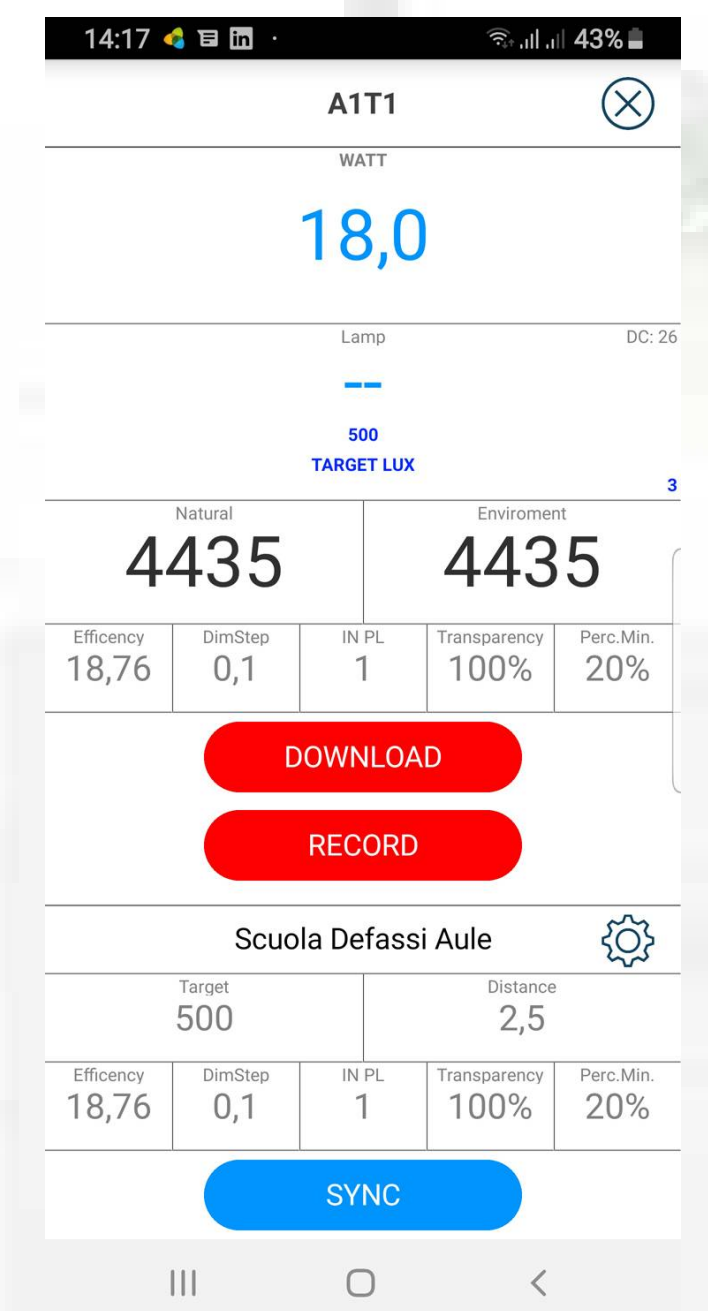
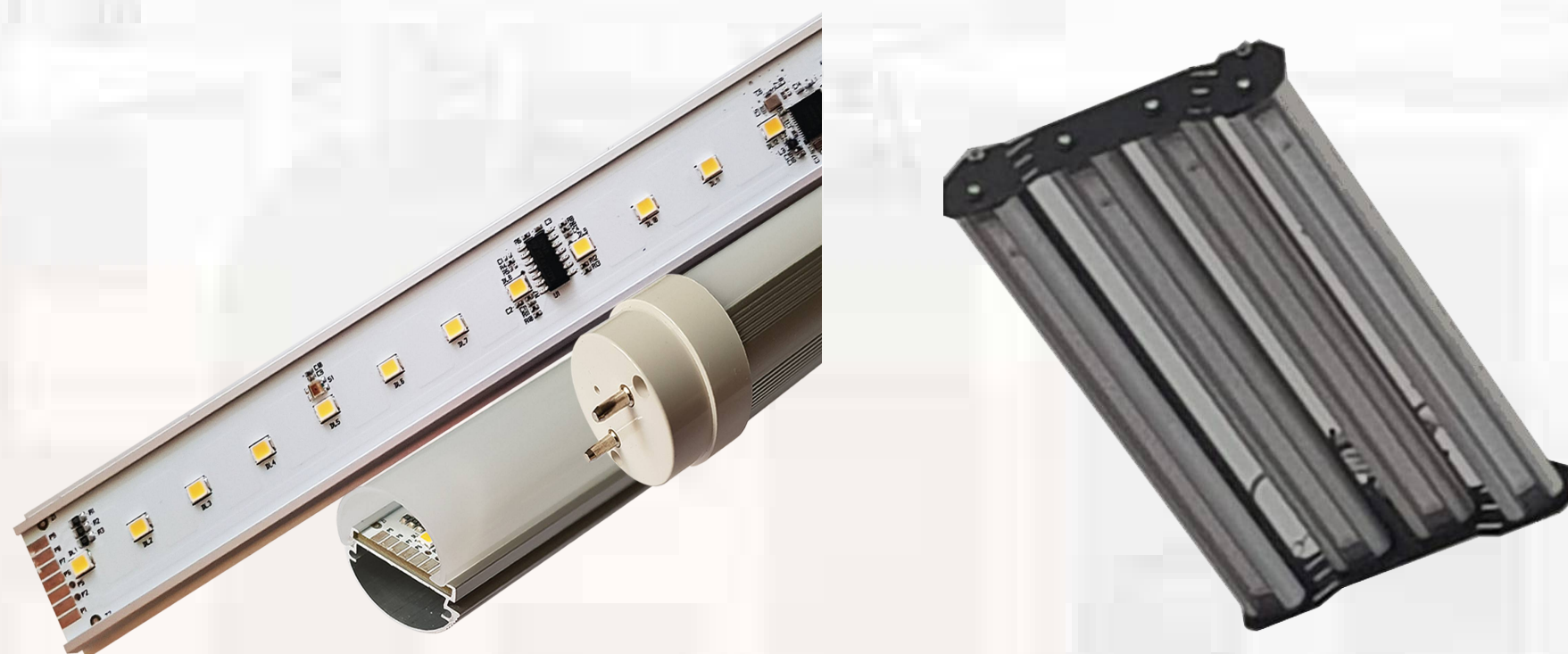
- Noxious gases sensors
- Sensors and specific algorithm to detect earthquakes
- People counting sensor to reduce crowding
- Many other potential environmental sensors
- Photocatalysis system and quality of air sensor for sanitisation
- Specific sensor-driven horticultural lamps

PRODUCT DEVELOPMENT

Ecolumiere is more than a lamp. It is sophisticated IoT intelligent device. More in-demand sensors are included in the Roadmap.

ACTUAL ECOLUMIERE PRODUCT PORTFOLIO

- Ecolumiere® T8 LED 120 cm tube. To replace LED T8 standard tubes or fluorescent tubes, without need of specialist-skills
- Ecolumiere® T8 LED 120 cm tube. To replace LED T8 standard tubes or fluorescent tubes, without need of specialist skills
- Ceiling light. 120x30 and 60x60 cm ceiling and counter ceiling lights. Mounting as any other LED office light.
- Industrial lights. 50w and 100w industrial light. IP65 and dust-proof light for production plants and industrial use
- Ecolumiere® App to programme embedded parameter changes in the lights and download usage-data of any Ecolumiere® product
- Ecolumiere® web available interface to interrogate light usage data and download for reporting purposes

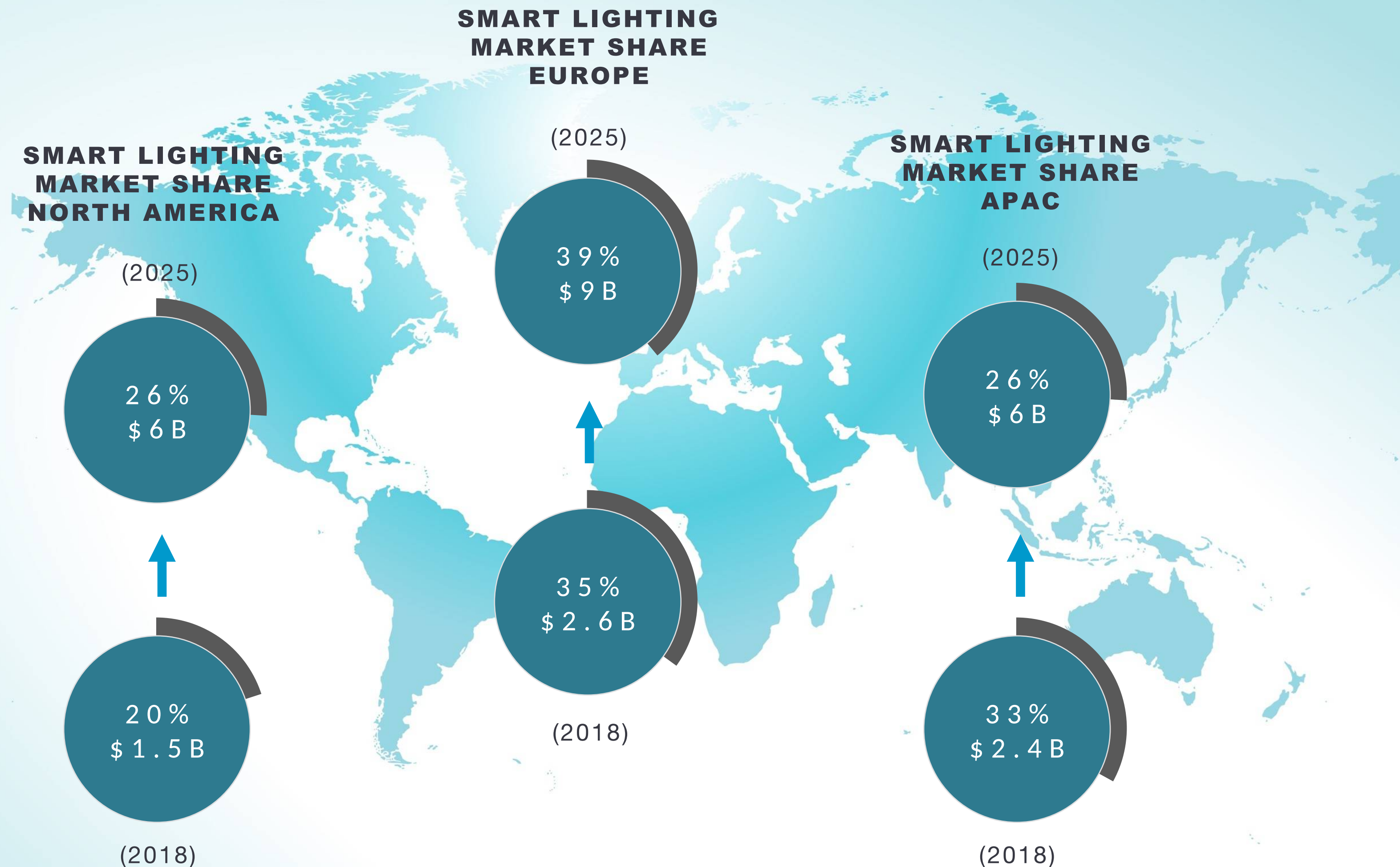


MARKET OPPORTUNITY

The smart-lighting segment will grow to \$23 billion dollars by 2025.

LED Tube lighting is forecasted to grow to \$6b in 2025.

Ecolumiere has **EXCLUSIVITY** in the smart segment of the LED tube lighting market.



SOURCE: GLOBAL MARKET INSIGHTS

NB: LED TUBE LIGHTING IS FORECASTED TO GROW TO \$6B IN 2025

COMPETITOR TECHNOLOGY

Solution	T8 120 LED	T8 150 LED	Ceiling light	Industrial light
Ecolumiere light-light communication	✓	✓	✓	✓
Bluetooth-based communication	Neodelis	Neodelis	Neodelis	Neodelis
WiFi	✗	✗	✓	✓
VLC (LiFi)	✗	✗	Neodelis patent	Neodelis patent
Dali	✗	✗	✓	✓
Zigbee	✗	✗	✓	✓

Energy cost saving vs. unmanaged LED

Lamps type	N° LAMPS	Power (W)*	Average working hours	Daily Consumption (kW/h)	Daily energy cost	Day per month	Yearly energy cost	Lifetime	Hours per year	Years of life	Cost*	Total lamps cost	Maintenance cost to replace lamps	Yearly maintenance cost to replace lamps
LED standard ceiling lamp (2 standard T8 LED tubes)	67	50	24,0	80,40	€ 18,97	30	€ 6.830,78	20.000	8.640	2,3	€ 30,00	€ 2.010,00	€ 40,00	€ 1.157,76
TOTAL	67			80,40			€ 6.830,78					€ 2.010,00		€ 1.157,76
LED ECOLUMIERE														
ECOLUMIERE ceiling lamps (2 Ecolumiere T8 LED tubes)	67	50	13,0	43,55	€ 10,28	30	€ 3.700,01	50.000	4.680	10,7	€ 152,00	€ 10.184,00	€ 40,00	€ 250,85
TOTAL	67			43,55			€ 3.700,01					€ 10.184,00		€ 250,85
* End User pricelist cost including APP and Cloud licenses														

- Typical energy cost savings vs. standard unmanaged LED
 - 46% cost saving
 - 3131 Euro less cost per year
 - Minimum 10000 hours longer lifetime
 - 2 years return of investment (more than 8 years of NET saving)

NB- KW/h is at 0.23 Euros

Energy cost saving vs. DALI managed LED

Lamps type	N° LAMPS	Power (W)*	Average working hours	Daily Consumption (kWh)	Daily energy cost	Day per month	Monthly energy cost	Yearly energy cost	Lifetime	Hours per year	Years of life	Cost including installation costs*	Total lamps cost	Yearly maintenance cost to replace lamps
LED DALI ceiling lamp ext. sensors	67	50	13,0	43,55	€ 10,28	30	€ 308,33	€ 3.700,01	20.000	4.680	4,3	€ 170,00	€ 11.390,00	€ 940,68
TOTAL	67			43,55			€ 308,33	€ 3.700,01					€ 11.390,00	€ 940,68
LED ECOLUMIERE														
ECOLUMIERE ceiling lamps	67	50	13,0	43,55	€ 10,28	30	€ 308,33	€ 3.700,01	50.000	4.680	10,7	€ 158,00	€ 10.586,00	€ 94,07
TOTAL	67			43,55			€ 308,33	€ 3.700,01					€ 10.586,00	€ 94,07
* End User price is cost including APP and Cloud licenses														

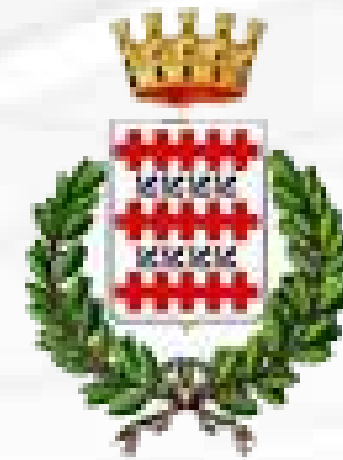
- Typical energy cost savings vs. DALI managed LED
 - Similar consumption excluding sensors, control units consumptions, which is lower with Ecolumiere
 - 10 % Lower buying cost
 - 80% saving in yearly maintenance of the system (control unit configuration, sensor replacement etc)
 - Double lifetime

NB- KW/h is at 0.23 in Euro

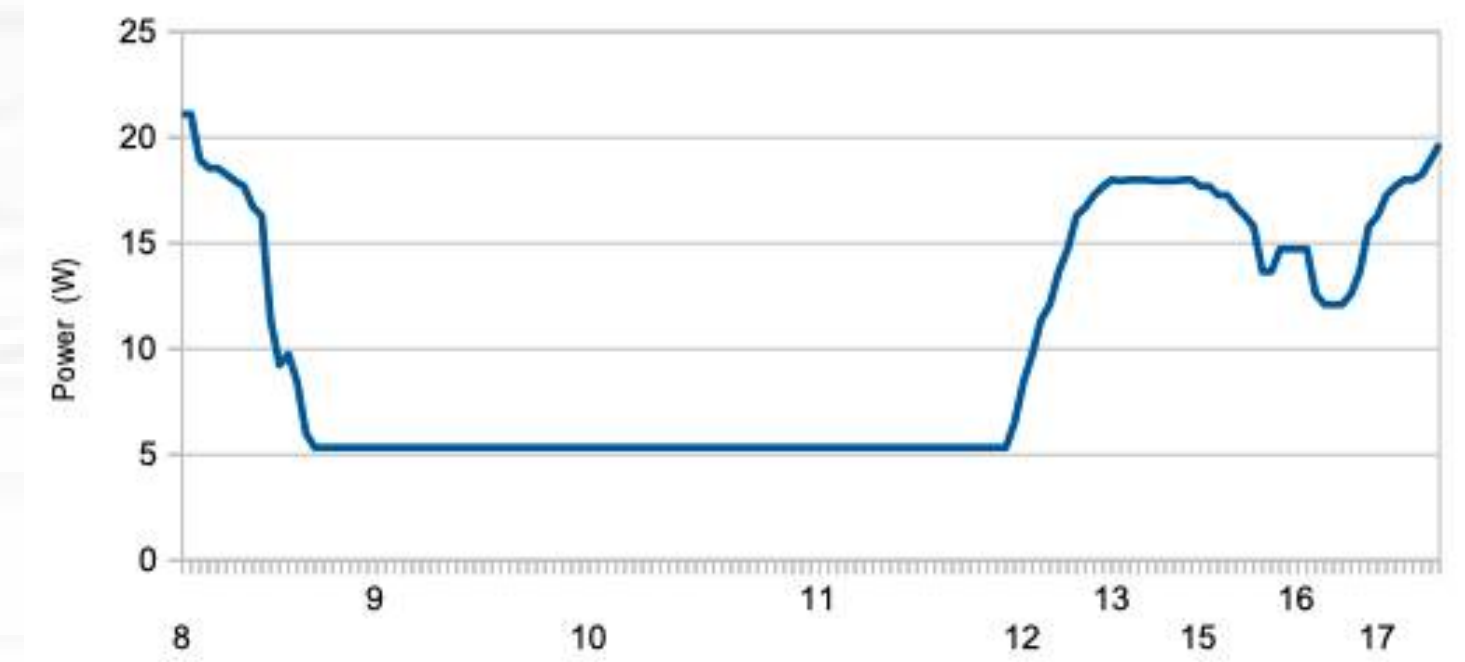
Some customers

Organisation	Profile	Lamp Type	Replacement of X or new installation	Volume installed
PAM	supermarket	Ceiling lamp	Replaced Neon lights	67
PAM	supermarket	Ceiling lamp	Replaced DALI lamps	67
Burgo	Paper making	Industrial lights	Replaced Sodium light	40
Municipalities Città di Cuneo	3 Schools	T8	Replaced Neon lights	500
Città di Borgaro Torinese	5 schools and one local council office	T8	Replaced Neon Lights	500
Hospital Humanitas	Warehouse of hospital	T8	Replaced Neon lights	100
Istituto di Candiolo	Technical area of hospital	T8	Replaced Neon lights	100
Iveco	Truck manufacturer	T8	Replaced Neon lights	300

Case Studies



Comune di
Borgaro
Torinese



Typical daily power consumption in a classroom

- Municipality of Borgaro Torinese
- Situation before Ecolumiere
 - 6 schools with old lighting and high consumptions due to unmanaged usage
 - 2 municipality building (local police and city hall) old (hard to modify electric network) and with stylish lamps
- Requests
 - In schools managing lights without having to change users behaviour and installing control units
 - In municipality building maintain actual lamps, no recabling but reducing energy consumption
- Ecolumiere was the solution
 - In school Neodelis replaced most of the lamps with similar style lamps already cabled for T8 LED and with Ecolumiere tubes.
 - In municipality building Neodelis modified the actual lamps to be able to fit T8 Ecolumiere tubes. Neodelis took charge also of the security recertification of the lamps in an external laboratory
- Results
 - In school more than 50% energy saving and very uniform and comfortable light for student
 - In municipality no changes in the building look and reduction of over 30% of energy consumption related to lighting

MORE INFORMATION

SEE ECONOMY IN A WHOLE NEW LIGHT

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ECOLUMIERE IS A REGISTERED TRADEMARK OF NEODELIS. ECOLUMIERE PRODUCTS ARE PROTECTED UNDER PATENT.