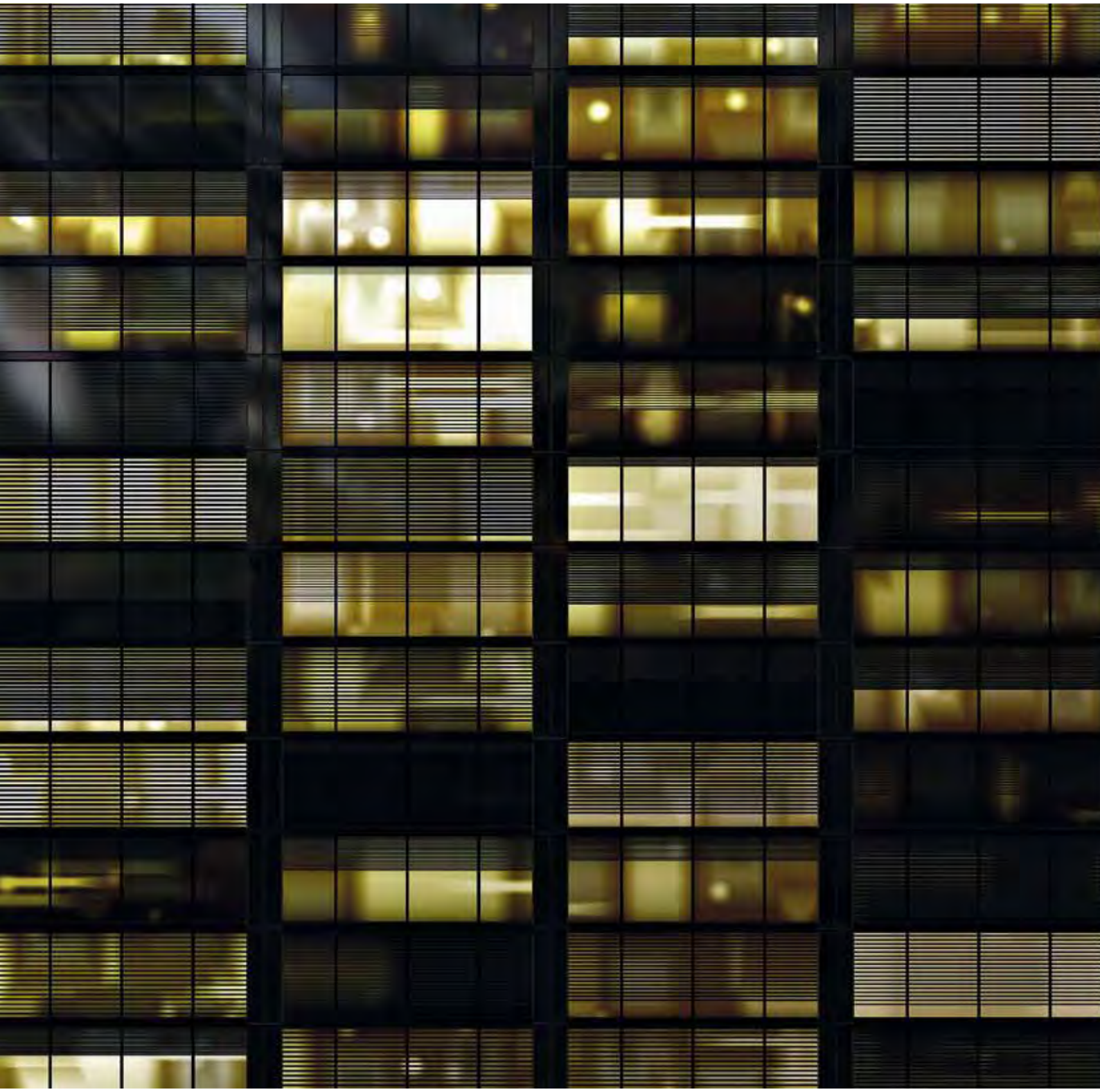
Light control



ETAP

EXCELLENT LIGHTING, SAVING ENERGY

Ten strategies

Light control is the ideal solution to make the most of your lighting. Light control systems result in energy-savings and maximum flexibility. ETAP has many years' experience in the development of light control systems; both sensors (whether integrated into the luminaires or not) and extensive management systems that allow you to have the right light in the right place at the right time.

ETAP defines **ten strategies** that can be used as a guideline to choose the light control system that best meets your needs (*). Application of these strategies results in maximum energy savings and flexibility.

ETAP can help you to apply these strategies. We always start with your specific needs and support you during all the stages of the project, from initial choice through planning and completion to management.

In this brochure we provide an overview of the ETAP systems that can help you to develop your light control strategy, perfectly adapted to your wishes and needs.

** Dossier Light Management, august 2013*

PRESENCE DETECTION

Sensors only switch on the lights once someone has entered the space and switch them off automatically when no one is around.

ADJUSTMENT TO THE TASK

You will prevent waste by setting standard lighting levels, depending on specific tasks or applications. The European standard EN 12464-1 lays down several lighting strengths depending on the task.

DAYLIGHT-DEPENDENT CONTROL

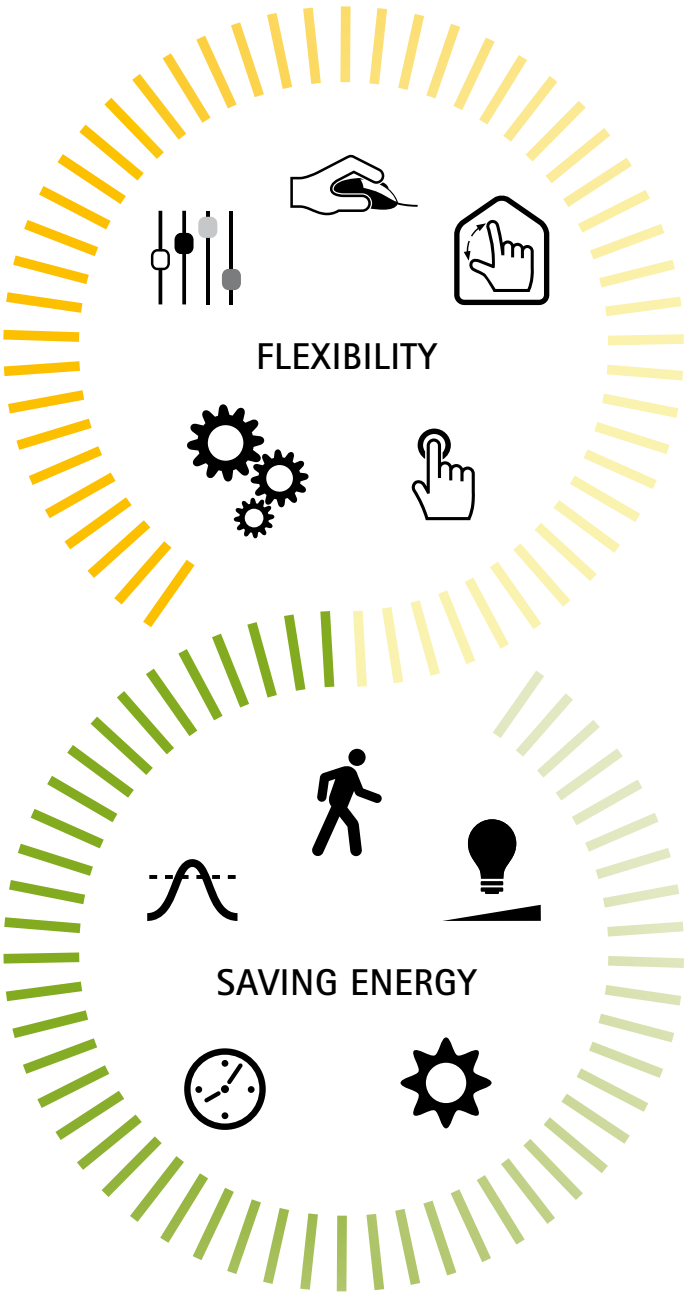
With daylight sensors the intensity of artificial light changes depending on incident daylight.

INTELLIGENT TIME CONTROL

Lighting automatically adjusts to previously set schedules. A simple example is the switching on and off of lighting at the beginning and end of the working day.

LIMITATION OF PEAK CAPACITY

Depending on the recorded energy consumption, the lighting can be temporarily dimmed or switched off in locations chosen by you in order to limit total peak load.



EVOLVING WITH THE BUILDING

Lighting can be easily and quickly adjusted when the buildings or work places are given a new purpose; for example an open-plan office is converted into individual offices.

PERSONAL CONTROL

You can adjust illuminance to your needs and preferences in your workstation at any time. For detailed graphic work you will probably opt for higher illuminance, whilst for less straining tasks lower illuminance will suffice.

SCENARIO SETTING

By defining scenarios the lighting easily adjusts to the various functions in the same room. Just think of an auditorium with adjusted lighting for video presentations, group discussions, maintenance, etc.

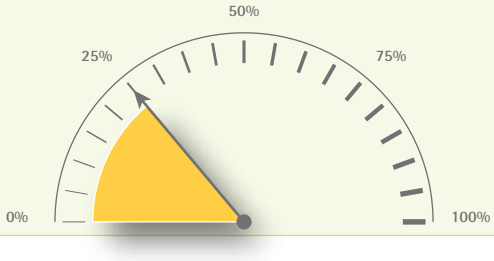
INTEGRATION WITH OTHER TECHNOLOGIES

By opting for a light control system that can be easily integrated into other systems (building management systems, alarm systems, etc.), for example, you can also control heating, ventilation and air-conditioning using the lighting system's motion sensors. Furthermore you ensure that your light control is future-proof and is able to evolve with technological developments.

EASY TO USE AND MANAGE

A light control system that is easy to use and manage, ensures that the light control's flexibility is also effectively used.

ELS - daylight depending control



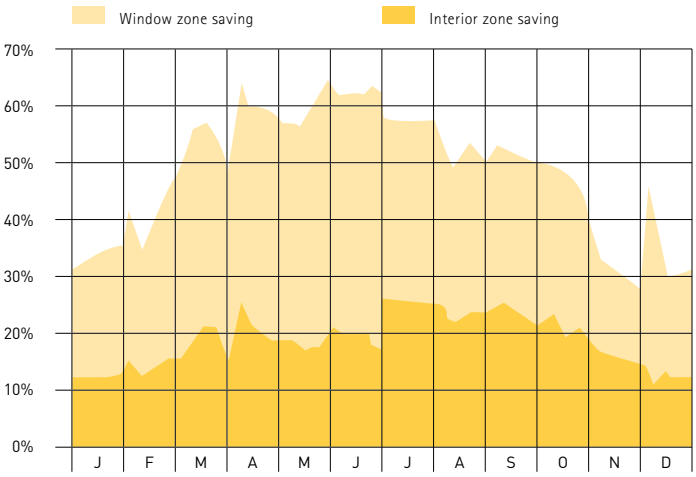
Potential energy saving (depending on application)

The compact ELS sensor integrated into the luminaire, constantly measures the light quantity on the worktop under the luminaire. Depending on the total amount of light the sensor will dim the lamp: should more daylight come in, the luminaire will produce less artificial light and use less power.

ELS comes with both analogue and digital (DALI) sensors. DALI (Digital Addressable Lighting Interface) is a standard protocol for the lighting industry.

ETAP supplies ELS sensors for LED and fluorescent luminaires. For higher ceilings (up to 10 m) a specific ELS sensor is available with DALI and analogue connection in the same housing. This sensor can be controlled by an infrared remote control.

U7 LED luminaire with ELS sensor.



Energy saving of a luminaire with ELS. Potential energy savings are greatest during the summer months.

Simple installation

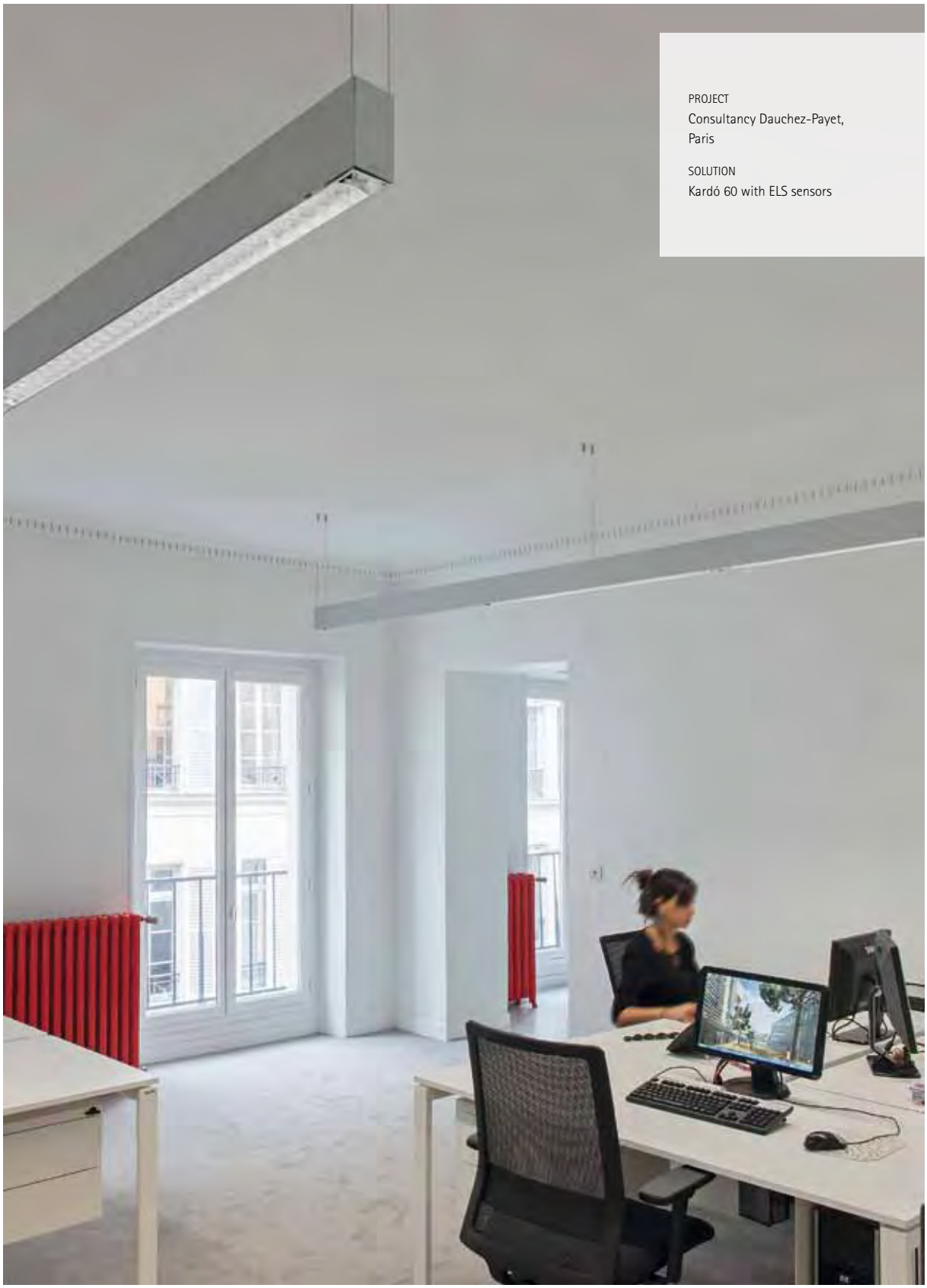
Only the power supply needs to be connected, no additional wiring is required. The ELS sensor is configured in the factory, so that the light control works immediately once the luminaires are installed. Should you wish to adjust the lighting levels later, just change the settings in situ.

High user comfort

The unique ELS control strategy combines high energy savings with excellent user acceptance. ELS reacts immediately to changing light incidence, both for increasing and decreasing lighting levels. In this way dimming goes nearly unnoticed.

Energy-friendly

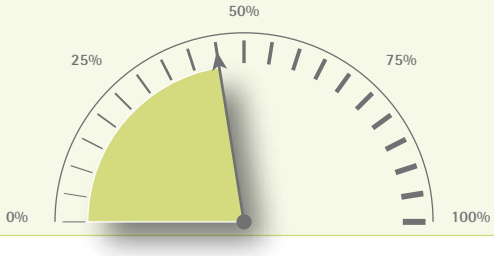
With daylight control, a saving of up to 20% of the lighting installation's total consumption is possible. The sensors' consumption is negligible.



PROJECT
Consultancy Dauchez-Payet, Paris

SOLUTION
Kardó 60 with ELS sensors

EMD - ETAP multidetector



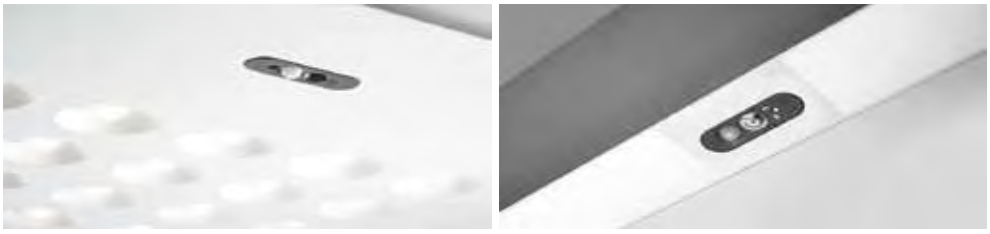
Potential energy saving (depending on application)

EMD analogue

EMD digital

The ETAP Multidetector comes as an analogue or digital (DALI) sensor. It combines several sensors in a single compact housing. The motion detector dims the lighting or switches it off when it does not sense motion within the detection area. The light sensor dims the lighting under the influence of incident daylight.

The DALI version of EMD furthermore features an infrared-receiver, allowing for the lighting's remote setting and control.



The EMD sensor is perfectly integrated into the luminaire.

Easy installation

The EMD sensor is perfectly integrated into the luminaire by ETAP. Extra wiring is not necessary.

Flexible and comfortable

With EMD in your luminaires you can easily adjust your lighting to changing conditions. For example, you can switch on the motion detector only or both the motion detector and light sensor. The light sensor's sensitivity and the time span after which the motion sensor switches off the light, can be infinitely configured.

It is even easier for the EMD DALI. With the remote control you can programme several settings depending on the use of a space. Subsequently you can switch between the various functions with the press of a button. In addition, the EMD DALI version allows to control several groups of luminaires with a single sensor and to dim the window side and inside of a room independently depending on daylight.

Energy-friendly

EMD considerably lowers the luminaire's power consumption. Thanks to the automatic control depending on daylight and presence, no energy is wasted needlessly. Parasitic energy consumption (the power consumption of the sensor itself) is minimised.

EMD for corridors and large spaces

Specific motion sensors are recommended in large, open spaces and corridors. Corridors require sensors with elongated detection areas. In large spaces, the sensors must also be able to detect any motion whatsoever at greater distances. For these application ETAP also offers a full range of EMD sensors.

LARGE SPACES

lower than 4 metres

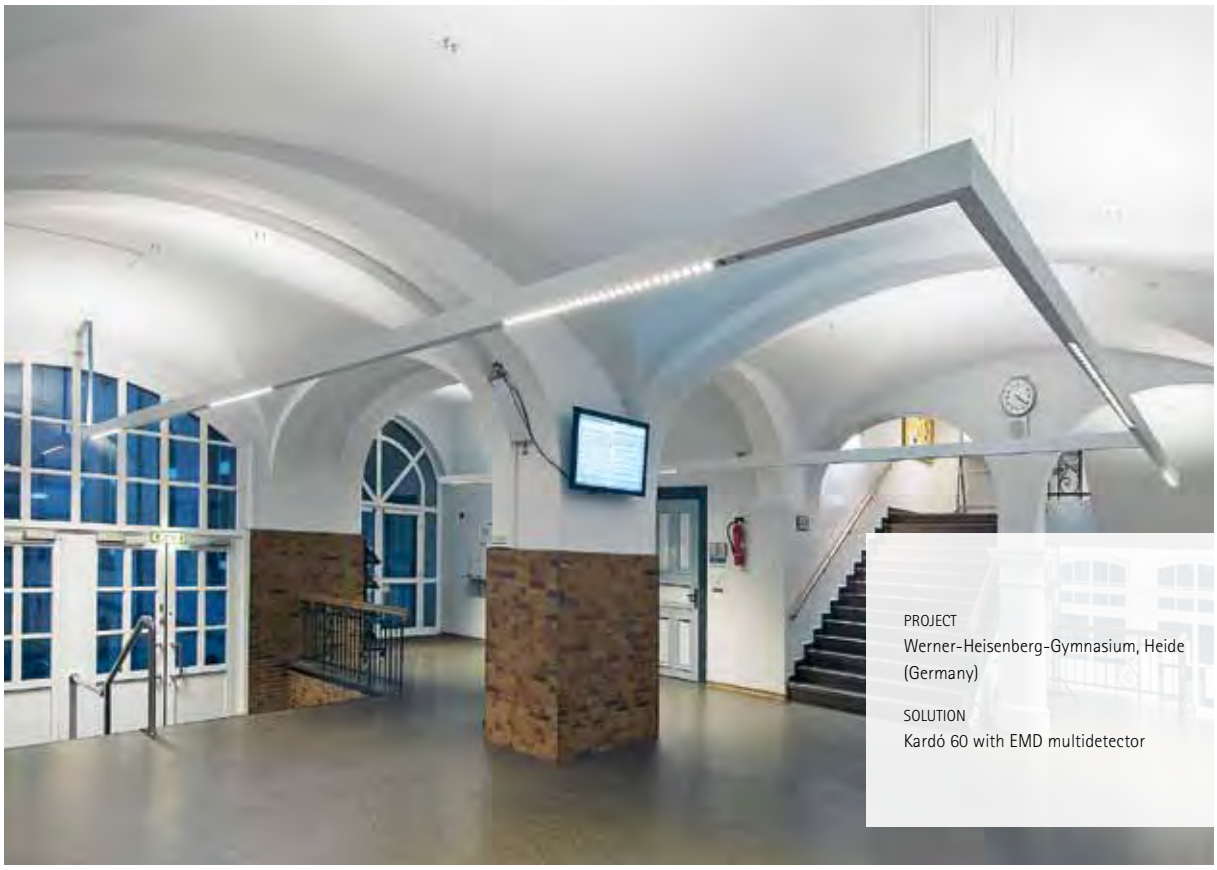
between 4 and 8 metres high

higher than 8 metres

CORRIDORS

lower than 4 metres

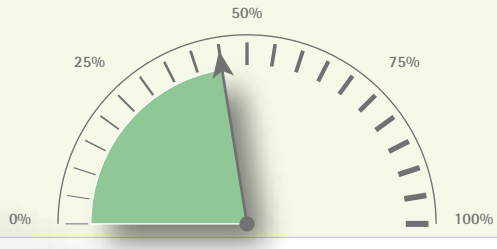
higher than 8 metres



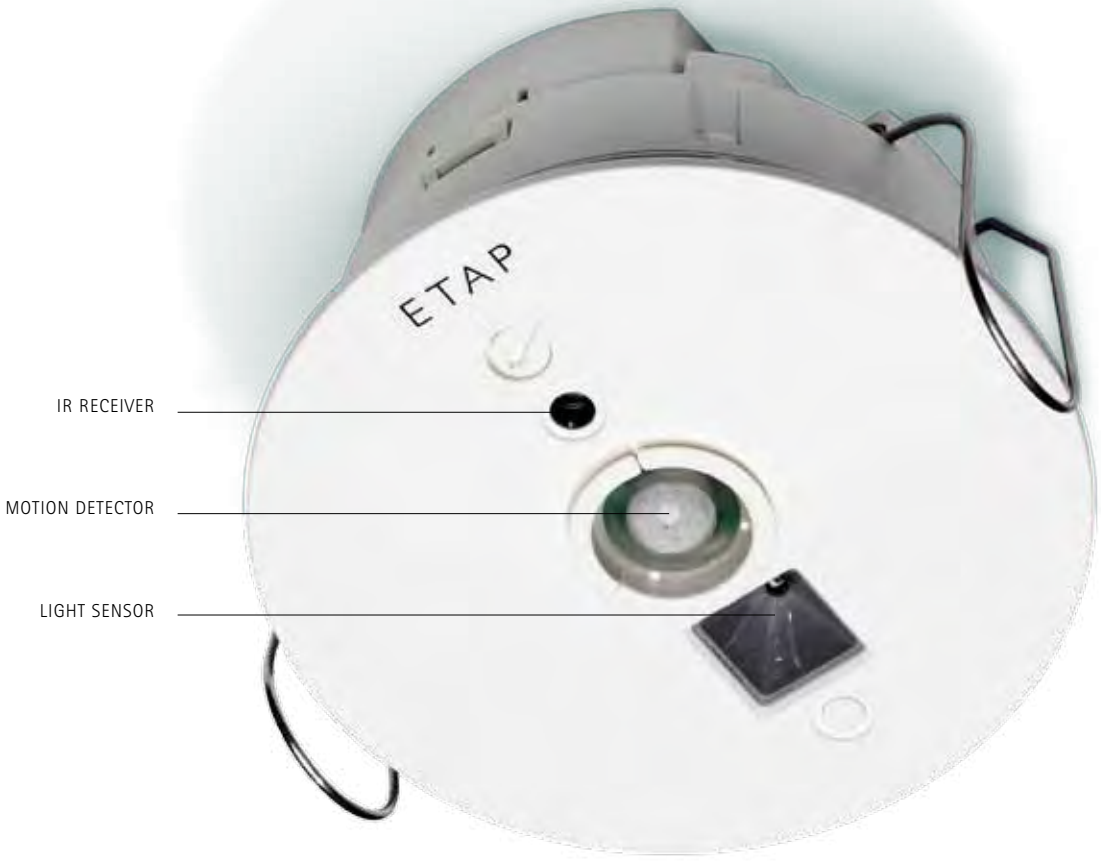
PROJECT
Werner-Heisenberg-Gymnasium, Heide (Germany)

SOLUTION
Kardó 60 with EMD multidetector

EasyDim



Potential energy saving (depending on application)



EasyDim is a local light control system that combines motion detection and daylight control.

EasyDim consists of two components, i.e., an intelligent multisensor with built-in control unit that receives and processes the local signals, and a plug-in installation box that is connected to the DALI luminaires.

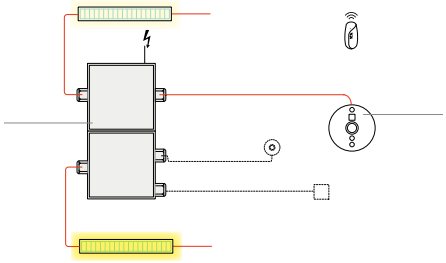
The multisensor has three functionalities, i.e., infrared receiver, motion detector and light sensor. An LED indicator gives you an idea of how much you save at all times, enabling you to adjust where necessary. You can also adjust the lighting level manually, with pushbuttons or remote control. Up to 15 luminaires can be connected per sensor.

Easy installation

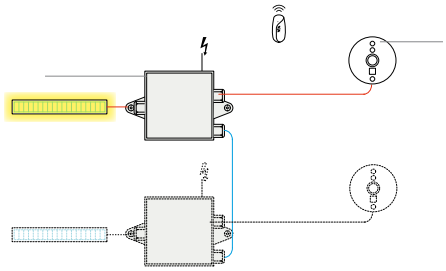
EasyDim is preconfigured by ETAP depending on the application. Nine configurations are possible.

Thanks to this preconfiguration, EasyDim is easy to use in standard scenarios. Depending on your needs, we can also tailor the configuration. Your ETAP representative will be happy to assist you in outlining the best solution for you.

EasyDim Pure



EasyDim Advanced



Two versions

EasyDim is available in two versions, i.e., Pure and Advanced.

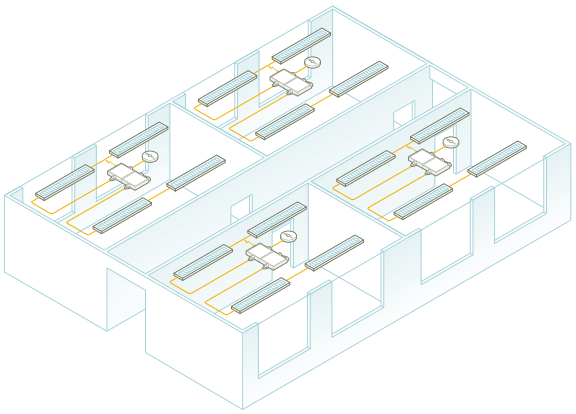
EasyDim Pure is suitable for simple, autonomous applications with DALI luminaires, such as an individual office or sanitary space. The two circuits can control luminaires separately on the window and corridor side, which maximises savings achieved with daylight-dependent control.

EasyDim Advance is developed for applications where it makes sense to interconnect several EasyDim systems, e.g. to prevent the lighting from being switched off when there is still activity in another area. A maximum of 22 EasyDim Advanced can be connected to one system.

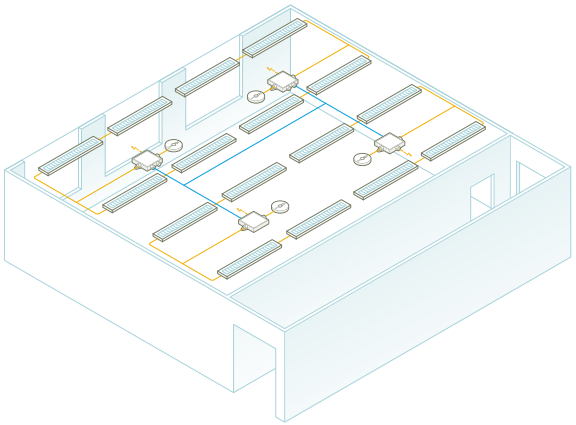
PROJECT
Groupe Scolaire Leval (France)

SOLUTION
U5 recessed luminairs with EasyDim Pure

EasyDim



Individual office with windows. EasyDim Pure combines motion detection and daylight control. Using the remote control, staff can adjust the lighting level in their office to suit their needs.



Open-plan office with long window wall. With EasyDim Advanced the light stays on dimmed in unoccupied workstations until no further motion is detected. This avoids dark areas. The lighting of each EasyDim Advanced system can be separately switched on/off or dimmed using the remote control.

Applications

Both EasyDim Pure and EasyDim Advanced feature nine possible configurations. The provide solutions for individual offices, open-plan offices, classrooms, corridors, sanitary spaces and conference rooms. Depending on the application and taking into account your needs, your ETAP adviser will recommend a suitable configuration. Does it involve an individual office, where light should only be on if someone is present, or an open-plan office where it is advisable to keep the lighting on in dimmed mode until the last employee has left? Does the space have one or several walls with windows?

In a corridor, on the other hand, it is important for lighting not to stay on needlessly when no one is around. On the other hand it is not recommended to only illuminate a small section of the corridor: someone who is heading for a darker area will not experience this as comfortable. By linking EasyDims to each other, you will ensure that several groups of luminaires are switched on whenever motion is detected. In this way a large enough section of the corridor is illuminated, which increases the feeling of safety.

Accessories

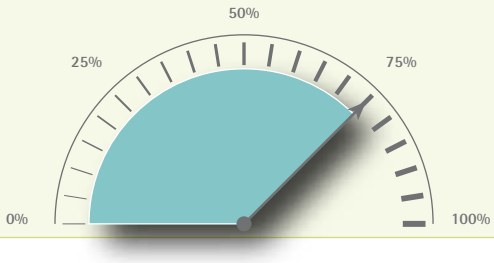
Depending on your needs additional accessories for your EasyDim system can be ordered. We sell several remote controls, pushbutton units, expansion sensors for motion detection and housing for surface mounting. Ask your ETAP adviser.

Housing for surface mounting

PROJECT
Schleswig-Holstein Netz AG,
Niebüll (Germany)

SOLUTION
R7 with EasyDim Pure

Excellum



Potential energy saving (depending on application)

PROJECT
ErnstEtYoung,
Diegem (Belgium)

SOLUTION
Reflector and diffuser luminaires
with Excellum

Excellum is an integrated system for light control and energy management. The application of the ten strategies ensures maximum flexibility and energy saving for your lighting.

The addressable dimming and switching function, combined with the user-friendly control software allows Excellum to react dynamically to constantly changing light conditions within a building. Excellum provides the correct light intensity, where and when you need it.

Excellum communicates through DALI (Digital Addressable Lighting Interface), a standard protocol for the lighting industry. For each controller (ECU), four DALI lines can be connected , which individually control a maximum of 64 luminaires and components. By combining several controllers, the system's expansion is nearly limitless.

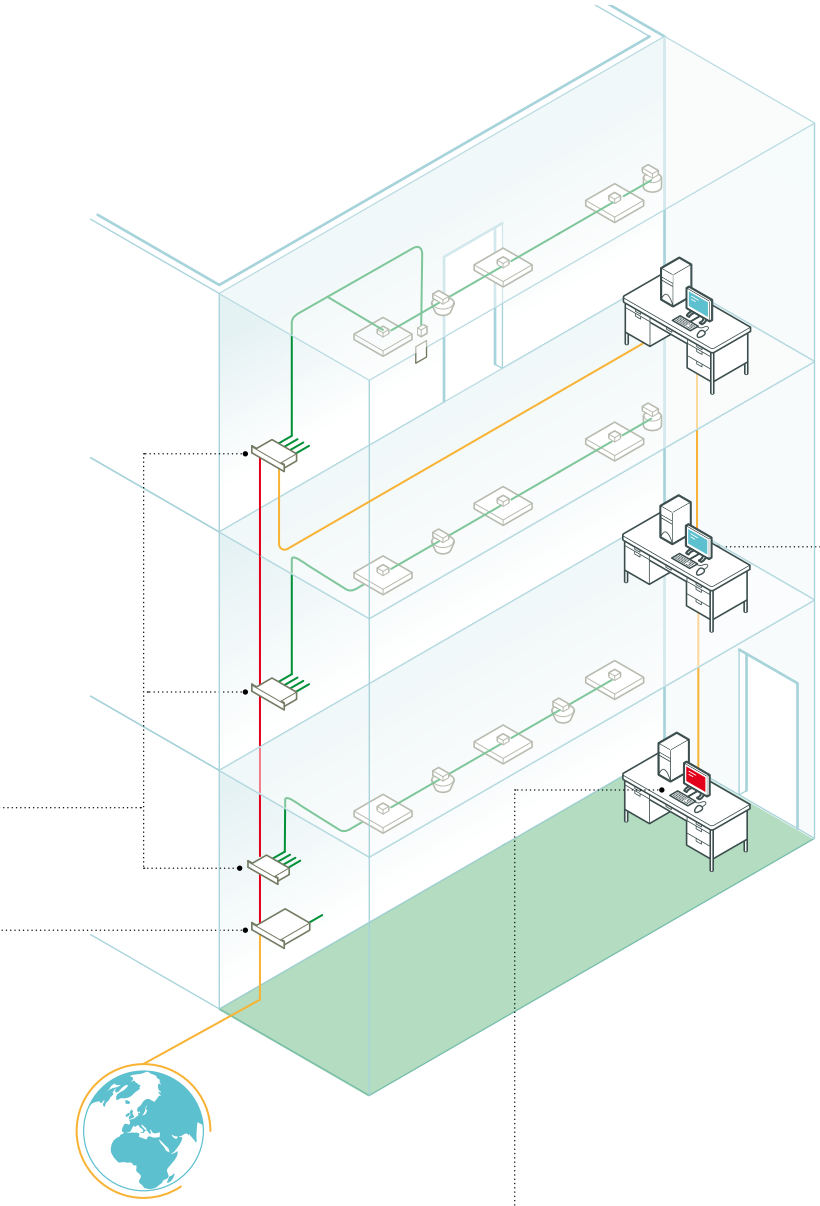
DALI ECU

The Energy Control Unit (ECU) is the system's central intelligent unit. It collects signal information from light sensors, presence sensors and/or pushbuttons. The ECU determines the suitable lighting levels or the on/off status for each luminaires and zone on the basis of this information. Each ECU is provided with 4 DALI channels and controls up to 64 luminaires.

SSU

The SSU (System Server Unit) is the database server for all data within the Excellum system. The SSU stores system settings and parameters for luminaires, sensors and controllers. The unit also provides the option to remotely adjust configurations and settings. In addition, the SSU also has a logbook functionality: for example, you can consult and analyse power consumption, or easily trace errors in the lighting (defective light bulbs, etc.).

EVOLVING WITH THE BUILDING | PERSONAL CONTROL | SCENARIO SETTING | INTEGRATION WITH OTHER TECHNOLOGIES | EASY TO USE AND MANAGE | INTELLIGENT TIME CONTROL | DAYLIGHT-DEPENDENT CONTROL | ADJUSTMENT TO THE TASK | PRESENCE DETECTION | LIMITATION OF PEAK CAPACITY



DALI Bus

Secure Ethernet (existing)

Excellum Ethernet Network

DALI luminaire with DALI ballast

Presence-/light sensor + sensor coupler

Personal Control Software

The Personal Control Software allows for the individual control of the lighting from a PC. Depending on the settings, the user is able to switch or dim the luminaires individually or in a group. It is also possible to program and call up scenarios. A Web version is also available that does not require installation on the PC.

Polaris 3D™ software

Polaris 3D™ is a graphic interface based on the building's blueprint. The user can easily navigate between zones, floors or different buildings to configure Excellum's settings. With the 'drag and drop' principle the various components (luminaires, sensors, controllers, etc.) can be programmed individually. By means of the software, luminaires can also be regrouped or a sensor assigned to a group of luminaires or zone.

Excellum

Flexible and future-proof

Excellum controls each luminaire individually. The configuration in zones is independent from the lighting circuits. This makes the design simple, fast, flexible and future-proof.

All luminaires and all control components are connected to one type of bus on the central controllers (ECU), thus making the system's installation easier.

User-friendly

Thanks to the Polaris™ 3D central management software,, the building manager can control each luminaire in a building from a PC, through an internal network or through the Internet and therefore does not have to be present in the building.

The Polaris™ 3D software allows to manage lighting on the basis of a clear, graphic 3D interface based on the floor plan. The software furthermore also features extensive reporting and analysis functionalities.

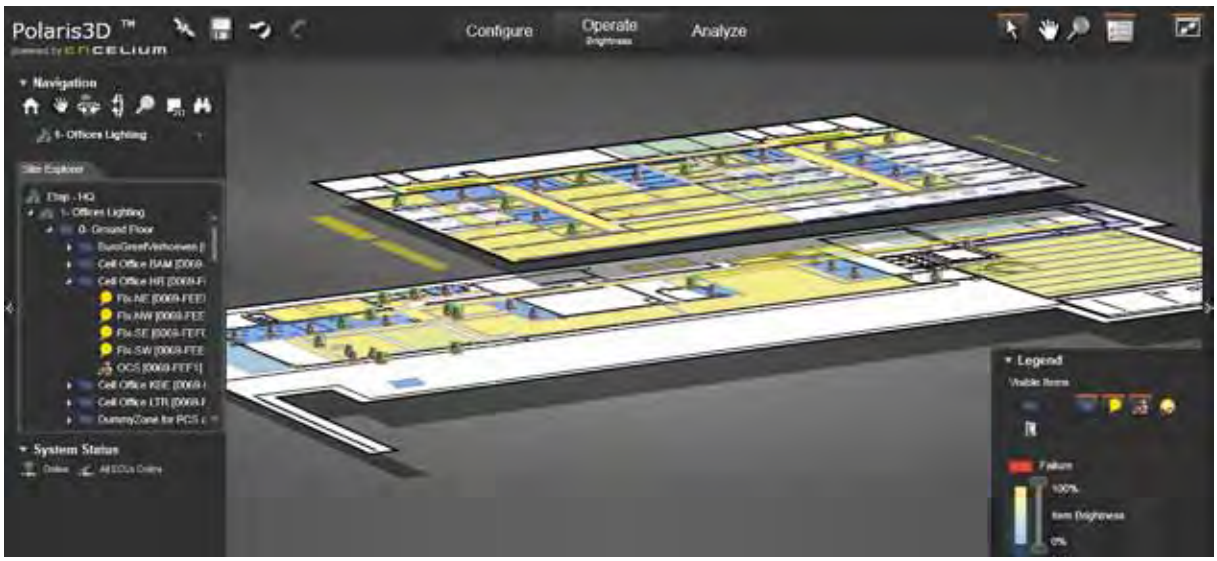
Easy to adjust

The reconfiguration of the lighting, for example after adjustments in the workspace or after the building's renovation, also takes place through Polaris™ 3D. Using the 'drag and drop' function, you can, for example, drag a sensor from one zone to another.

Open system

Since DALI is a standard protocol, you have a wide range of options. For the choice of luminaires and components you are not tied to a single supplier. The only criterion is that the luminaires are DALI-controlled. Furthermore Excellum is an open system. This makes it possible to allow Excellum components (such as, for example, motion sensors) not only to control lighting, but also ventilation or A/C. Conversely it is also possible to allow components in another building management system to communicate with your lighting installation.

The Polaris™ software offers a clear 3D interface based on the floor plan.
By using the 'drag and drop' function, the lighting installation can be adjusted.



PROJECT
Grammar school Het Vlier, Deventer (Holland)

SOLUTION
Excellum with a combination of intelligent time control, daylight-dependent control, adjustment to the task, presence detection and individual control.

Tailored light control system

ETAP has many years' of experience in the implementation of light control systems in hundreds of projects. A team of specialists is ready to assist you in choosing the light control that best meets your needs and maximises energy savings and flexibility. We support you from the planning stage to completion to management.

Planning

The choice of the right light control system starts with a thorough **needs analysis** based on the building's blueprints, but especially by listening to you: what do you aim to achieve with light control? The ten strategies serve as a guideline in this context.

Subsequently a **concept study** defines light control in the building's various sections. Where would you like your daylight-dependent control? Your motion sensors? Do your employees benefit from personal control over lighting?

The concept study serves as the basis for a budget assessment and a **detailed plan** with the exact location of luminaires and other components. You will also receive a list of semi-finished products, a detailed cost estimate, a technical overview of the system and further descriptive information.

Implementation

Your ETAP adviser will support you in the **implementation** of the light control. Specialists will configure the requested settings, carry out the necessary tests and brief the installer. If necessary we will visit the site for the **initial operation**.

Management

ETAP specialists will familiarise the facility manager or building manager with the operation of the light control system. If necessary this **training** will take place in situ.

If you so wish, ETAP also provides a **service contract**. This ensures that you will be assisted immediately after each breakdown or abnormality. Regular audits of the system, analysis and reporting are also possible. Consult your ETAP adviser.

The strategies applied

All ETAP light control systems apply one or more strategies that make your lighting flexible and save energy. Below you will see which strategies apply to each product. This pattern can be an initial guideline to choose the light control system that perfectly meets your needs.




		ELS	EMD	EasyDim	Excellum
FLEXIBILITY	EVOLVING WITH THE BUILDING	×	×		×
	PERSONAL CONTROL			×	×
	SCENARIO SETTING				×
	INTEGRATION WITH OTHER TECHNOLOGIES				×
	EASY TO USE AND MANAGE	×	×	×	×
SAVING ENERGY	INTELLIGENT TIME CONTROL				×
	DAYLIGHT-DEPENDENT CONTROL	×	×	×	×
	ADJUSTMENT TO THE TASK		×	×	×
	PRESENCE DETECTION		×	×	×
	LIMITATION OF PEAK CAPACITY				×

Some reference projects

PROJECT
Railway station Bilbao
(Spain)

SOLUTION
Kardó light lines with ELS

Offices

Head office Carrefour, Paris (France)
Schleswig-Holstein Netz AG, Niebüll (Germany)
Ernst&Young, Diegem (Belgium)
Majid Al Futtaim, Dubai (United Arab Emirates)
WSP, Göteborg (Sweden)
Assimoco Spa, Milan (Italy)
Transavia, Schiphol (Netherlands)
European Court of Justice, Luxemburg (Luxemburg)Eland House, London (United Kingdom)

Healthcare

University Hospital Antwerp (Belgium)
St Anne Hospital, Paris (France)
Assisted living centre Ten Hove, Mol (Belgium)
St Elisabeth Hospital, Tilburg (Netherlands)

Education and culture

Grammar school Het Vlier, Deventer (Netherlands)
Campus Mersch (Luxemburg)
Odyzee school, Goes (Netherlands)
School group Leval, Leval (France)
Primary school Tilia, Melsbroek (Belgium)
Hamburg University, Faculty of Law, Hamburg (Germany)
IE University, Madrid (Spain)
Grammar School Werner-Heisenberg, Heide (Germany)

Transport and industry

Car Park Hausmann Berri, Paris (France)
Auction Mechelen, Sint-Katelijne-Waver (Belgium)
Railway station Bilbao (Spain)
Gestamp Aveiro, Oliveira de Azeméis (Portugal)
Research centre Friesland Campina, Wageningen (Netherlands)
SMA Solar Technology, Niestetal (Germany)
Topex, Warschau (Poland)


Light control

- Saves energy and ensures optimal flexibility for your lighting
- Extensive range of sensors (whether or not integrated into the luminaire) and building management systems
- User and management friendly
- Extensive service before, during and after installation

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