POWER TUNING

POWERTUNINGEGYPT.COM
The Art of Using Power

Lighting Technologies & Controls

Suppliers & Products Overview

EUTRAC®

EUTRAC Stromschienen GmbH

Tracks and adaptors

Intelligent Lighting

Light management & control

Intelligent Lighting – for individual projects

public buildings | offices | conferences

exhibitions | museums | trade fairs

architecture | building facades | events

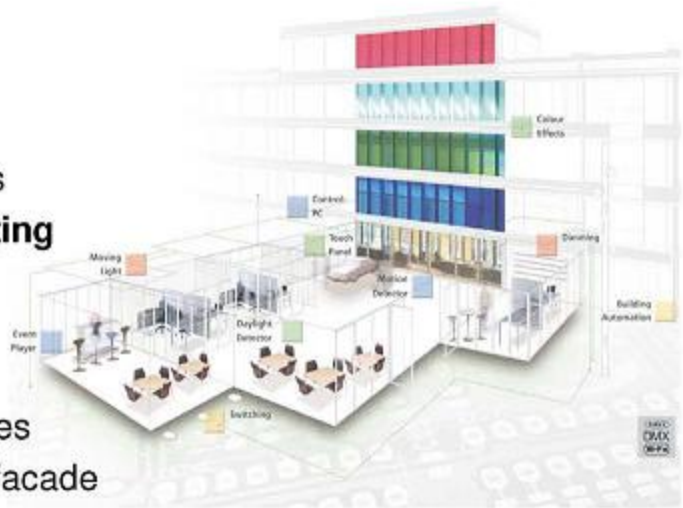
hotels | restaurants | shops

airports | stations | parking

EUTRAC®

Intelligent Lighting – for different applications

- **Energy efficient lighting**
  - Daylight control & presence control
- **Flexible lighting**
  - Multifunctional use of rooms and buildings
- **Ambience & therapy lighting**
  - Emotional lighting & colour control
- **Scenic lighting**
  - Events / stage / theatres
  - Sales / presentation / facade



EUTRAC®

NetComposer network structure

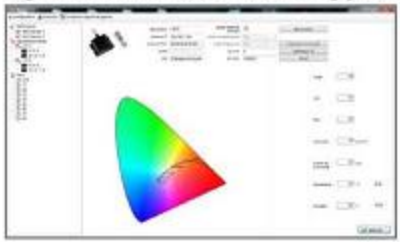
LAN 10 / 100
Switch

Wi-Fi Router
Access Point

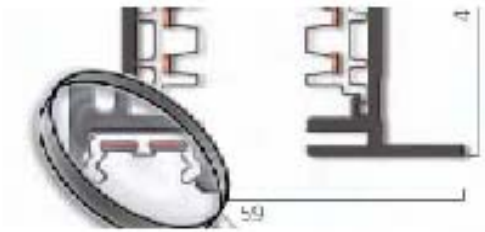
EUTRAC®

Product offering

- **Lighting control**
  - Single room solution
  - Network solution
- **DALI and DMX devices for DIN rail or as pcb**
  - Various LED controller
  - Dim and switch devices
  - Motion and light sensors
  - TrackLinks for the connection of standard push buttons to DALI
- **Customized solution, recently completed:**
  - DMX dimmer 120V
  - LSS Light spectrum Sensor for museums (Quai Branly Paris)
    - Detects RGB, UV, lux, temperature humidity
    - Calculates the damage factor of the art-work
    - Lights are controlled accordingly to the measurements



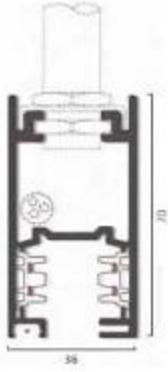
EUTRAC®



EUTRAC|DALI features:

- → Maximum load of 3 x 16A
- → **Easy installation** of track and adaptors with or without data bus contacts without additional wiring
- → **LightComposer®**: Light controller **in adaptor housing**, can be mounted anywhere along the track, or in a housing for mounting in a remote enclosure
- → **Individual addressing** of up to 60 luminaires
- → Control of up to 16 groups of luminaires and up to 4 lighting sequences with programmable dynamic **light control**
- → **Backup and restore function** for for use in museums and galleries
- → Interactive lighting using **daylight and motion sensors**
- → **Individual dimming and switching** of fluorescent lamps, incandescent lamps, LEDs and the switching of high pressure discharge lamps
- → **RGB control** of LEDs or fluorescent lamps according to IEC 62386-209 **Colour Control**
- → Controlled by push-button, **radio frequency and EIB**
- → Clock function in the **LightComposer®** REG
- → **EUTRAC**|DALI is **EIB certified** and can carry LON® and DMX signals as well
- → **Easy startup** through PC or infrared operation
- → **Lamp fault indication**
- → **System backup** of all settings is possible
- → **Energy efficient**

Product features



Easy to cut on site

Any given profile can be easily cut to length on site. It is not necessary to cut back or bend back the copper wire.

Mounting points

The 3 circuit track has pre-punched holes 6 x 25 mm for surface mounting. The holes are spaced 333 mm on center and can be easily pushed out using a screwdriver.

Colours and finish

The tracks are available in white (RAL 9010) or black (RAL 9005) powder coated or silver anodised. All system components and adaptors are available in white, black or painted silver. Custom colours are available on request.

○ white
● black
◇ silver

Project – references extract

Project	Application	Central PC	NCR / Ballast
Paris, Branly	Museum, DALI, LSS	yes	5 / 600
Dresden, Albertinum	Museum, DALI, DR8	no	4 / 50
Rüsselsheim, Opelvillen	Museum, DALI, LMS	yes	2 / 250
Caputh, Gildehaus	Seminar centre, DALI	yes	2 / 100
Berlin, TU	Office, DALI, LMS	no	3 / 50
Berlin, Werkbund	Gallery, DALI	yes	1 / 100
Berlin, Selux, Foyer	Foyer, DALI	yes	2 / 150
Berlin, Booking.com	Call Centre, DALI, LMS	no	2 / 200
Berlin, Königstadt Carree	LED facade, DMX	LightingTab	11 / 312
München, Jugendkirche	Church, DALI, DMX	no	2 / 300
Duisburg, IndustrY	Industrial Park , DMX	yes	1 / 110
Rathenow, Industry	Office, DALI	no	2 / 200
Stuttgart, Fraunhofer	Office Testfield, DALI	no	1 / 100
Hennef, Bus station	Public Transport, DALI	yes	2 / 140
Wiesbaden, Delta	Car sales, DALI	yes	3 / 250
Wien, APCOA Parking	Garage , DALI	no	2 / 200
Aalborg, Harbour House	Shopping mall, DALI, LMS, EMS	no	1 / 100

Extronic Elektronik

We have people-detection as a business concept

Products

Extronic Elektronik

We have people-detection as a business concept

Applications

When can presence-controlled lighting be used?

On these pages we show a number of examples of premises where presence-controlled lighting systems are installed so that electricity can be used more efficiently. Different types of premises require different detectors and control systems to permit optimum performance of the system.
The type of detector and control system that are chosen depends on the layout of the premises, their intended use and how they are furnished. The placement of the detectors in the premises is also very important in ensuring that the system works well.

Most of the examples given here are described in detail in the specification guide in this handbook.

Conference room

Here, lighting is controlled by a corner-mounted IR detector and a logic system.

Changing room and showers

The entire area for changing, showers and sauna is monitored by an AD-600 acoustic detector.

Gym hall

The gym hall is monitored by two corner-mounted infrared detectors, as it is divided into two sections. A logic system permits two to four different lighting levels to suit various activities.

Corridor

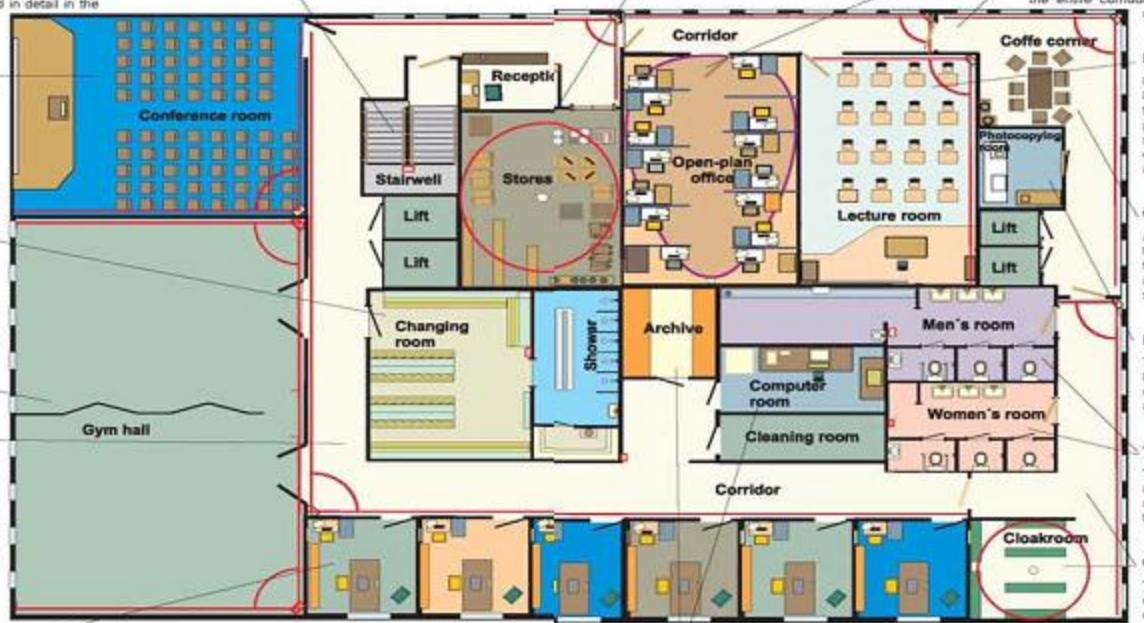
A single infrared (IR) detector with special lens monitors presence in two directions. To ensure that lighting is always switched on quickly, the system also includes an AD-300 acoustic auxiliary detector. This has the task of switching on the lighting initially when someone opens one of the three doors into the archive, since these are concealed from the IR detector. In corridors that are used frequently we recommend dynamic lighting control.

Office

In offices and other small rooms it is usually difficult to justify investment in presence-controlled lighting solely on economic grounds. Using existing technology the investment cost is generally too high in relation to the saving that can be made. In this type of premises, detection can be achieved with an IR detector fitted with a high-resolution lens.

Stairwell

In stairwells, the AD-500/600 acoustic detector generally provides a superior solution to all other methods of presence detection. In stairways that are used frequently we recommend **dynamic lighting control.**



Warehouse and storeroom

In warehouses and storerooms it is often a good solution to install a ceiling-mounted IR detector. This covers a conical area and can see the stacked goods. If there is a large amount of shelving and other fittings that could obscure the detector, the system can be supplemented with an AD-350 acoustic auxiliary detector that keeps the lighting switched on as long as sound (human presence) is detected.

Open-plan office

In an open-plan office with sound-deadening partitions made from textile (not metal) a microwave detector can be used for presence detection. The advantage of this solution is the high sensitivity and the ability to detect presence through thin partitions and fittings. We recommend that a trial is carried out to check performance in each individual case.

Corridor

A corner-mounted IR detector with a long-distance lens monitors the entire corridor. In corridors that are used frequently we recommend Dynamic Lighting Control.

Lecture room

Presence in the lecture room is detected by an IR detector. Lighting is divided into two groups that can be switched on independently when presence is detected. A lens that is divided into numerous detection fields allows the detection of people who are sitting relatively motionless at desks.

Coffee corner and corridor

A single IR detector is able to monitor both the coffee corner and the adjoining corridors, thanks to a special lens. Movement into this area from the lifts is detected by magnetic switches or an infrasound detector (AD-300).

Photocopying room

This room is visited relatively infrequently by people who are rarely stationary. It is monitored by an IR detector that replaces the usual wall-mounted light switch.

Toilets

The ladies and mens toilets are monitored by an AD-500 acoustic detector. An additional microphone provides detection in the ladies toilets.

Corridor and cloakroom

The corridor is monitored by a corner-mounted detector with long-distance lens. The cloakroom is monitored by a ceiling-mounted IR detector that looks down between the cabinets and the clothes hangers.

Archive and computer room

These rooms are only visited occasionally for short periods. People generally move about the room. Detection can be achieved with an IR detector built into a switch housing that replaces the usual wall-mounted light switch.

Often the investment can be justified more easily by including other benefits in the costing, such as environmental savings and improvements in comfort. Future rises in energy costs, improvements in technology and falling costs of technology can also make it profitable to invest in lighting control by presence detection for offices.

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Projects

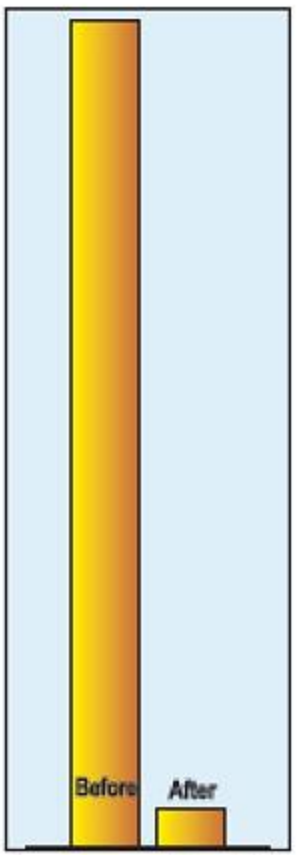
Municipal housing company in Oskarshamn

Before installation the lighting was switched on 24 hours a day in this stairway covering seven floors.
Dynamic lighting control was installed with acoustic detectors.

Cost Before installation:
SEK 12,380/year.
After installation: SEK 550/year.

The saving was over 95 per cent (SEK 11,830/year).

The reduction in energy consumption in this garage is equivalent to a reduction in carbon dioxide emissions of 13,144 kg per year based on the Swedish Energy Agency's figures for marginal electricity production!



An energy saving of 95 per cent was made in this stairway.

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Projects

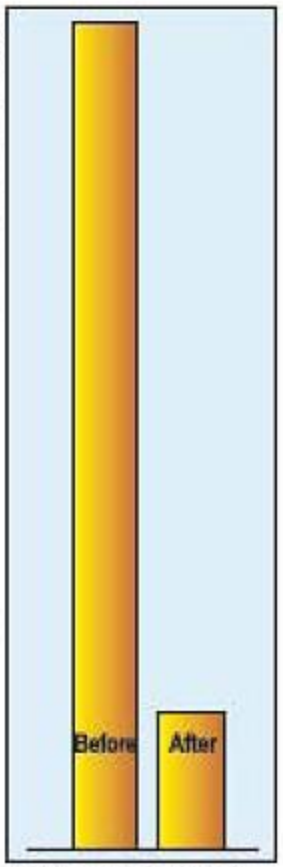
Energy saving of 87 per cent.

The initial calculation for a garage at Brantholmsgränd 60 in Skärholmen/ Stockholm predicted a burn time of four hours compared with the previous 24 hours. Presence-controlled lighting was installed with an acoustic detector. Measurements carried out after installation show even better results, at just 3.1 hours, meaning an energy saving of 87 per cent.

Electricity cost before installation SEK 9,792, after installation SEK 1,264.

Saving SEK 8,528/year

Payback time
Installation cost approx. SEK 4,000 Payback time approx. six months



87 per cent reduction in energy use in a parking garage.

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References

- Patent Office in Stockholm
- IKEA central warehouse outside Jönköping
- COOP national warehouse, Bro, Stockholm
  10,000 light fittings and 20,000 fluorescent light sources are controlled by 670 detectors. Jan Thelén, energy co-ordinator, hoped for a 30% saving . The actual figure was 70%.
- City Archive in Stockholm
  Saves around 12,200 kWh per year.
- National Archive in Härnösand
- OKG (Oskarshamns Kärnkraftsgrupp(
  Workshops, warehouses, caverns for temporary storage, corridors and culverts.
- New Police Headquarters in Helsingborg
  Dynamic lighting control in corridors, etc .
- Södra Älvsborg Hospital in Borås
  The hospital saves around 29,270 kWh each year.
- Garage in Skärholmen, Stockholm
  Conventional 50 Hz operation, annual consumption before change, 11,930 kWh; after change, 1,540 kWh; payback time, around 6 months.

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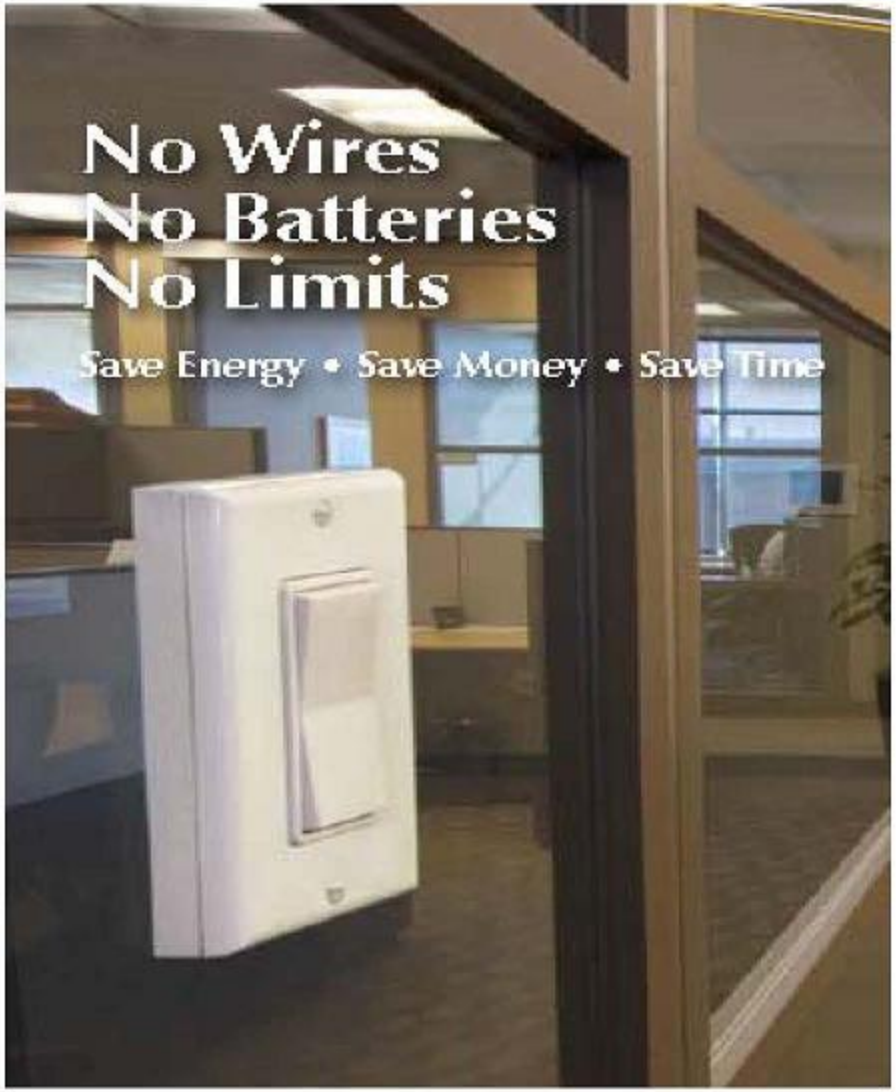
References

- Swedish Royal Opera, Stockholm
- Stockholm Globe Arena
- Nya Moderna Museet, Stockholm
- Police Headquarters, Stockholm
- Bilspedition, Halmstad
- Army stores, Linköping
- Thousands of classrooms across Sweden



ILLUMRA™
SELF•POWERED WIRELESS CONTROLS

About ILLUMRA

ILLUMRA is the leading North American supplier of wireless lighting and HVAC energy management systems. The technology allows ILLUMRA products to harvest energy from the motion of a switch, light on a solar cell, or temperature differentials in the environment. With reliable products, a long transmission range, and dependable service, ILLUMRA is the choice of professionals in the wireless controls industry. Just think what we can do for you. ILLUMRA, brilliantly innovative.

ILLUMRA™
SELF-POWERED WIRELESS CONTROLS

Long Range Hybrid Wireless Controls

Remotely control devices up to 1 mile away. (outdoor line-of-sight)

- Mount self-powered wireless switches anywhere
- Create long range 3 way switches without running wire
- Extend the range of any ILLUMRA system

The Wireless Advantage

- Reduce install costs
- No disruption of workplace during business hours
- Save Time
- Save Energy
- Save Money

Easy-to-Install Classroom Solution

Convenience for teachers. Savings for schools.

ILLUMRA™
SELF-POWERED WIRELESS CONTROLS

- Use ILLUMRA Occupancy Sensors and Relay Receivers and dimmers to control new or existing loads
- Provide instructor with convenient controls for each scene and automatically shut off when classroom is unoccupied

Multi-Zone LED Dimming Solution

Remotely control devices without installing control wires.

- 30% energy savings typical
- Create zone lighting without running new wires
- Low impact installation

ILLUMRA™

SELF-POWERED WIRELESS CONTROLS

Energy Conserving Hospitality Solution

Reduce energy waste. Increase profits.

- Mount Self-powered Wireless Key Card Switch inside entrance
- Connect thermostat or PTAC receiver to HVAC system
- Connect ILLUMRA receivers to lights and electrical devices
- When guest removes keycard to leave room, HVAC, lights, and TV are switched to energy saving mode

ILLUMRA™

SELF-POWERED WIRELESS CONTROLS

ILLUMRA™
SELF-POWERED WIRELESS CONTROLS

Auto OFF Office Control Solution

Manually turn lights ON. Automatically turn unused lights off.

- For manual control, mount self-powered wireless switches anywhere or use existing switches
- Use ILLUMRA Relay Receivers and ambient light powered Occupancy Sensors to control lights and devices

ILLUMRA™

SELF-POWERED WIRELESS CONTROLS

Self-Powered Single Rocker Switch
ST-S1Rxxx xx-WH, AM, IV, LA, GY, BE, EC

Self-Powered Dual Rocker Switch
ST-S2Rxxx xx-WH, AM, IV, LA, GY, BE, EC

Self-Powered
Handheld Remote
ST-S2Rxxxx-WH, SL, EC

Self-Powered Key Card Switch
ST-S2MWH
Vmp ST-S2MWH

Self-Powered Single Rocker
European Switch
ST-S1 Rxxx-WH, EC

Self-Powered Double Rocker
European Switch
ST-S2Rxx xx-WH, EC

Self-Powered Room
mperature Sensor
ST-S1RTH
ST-S1RTHFT
ST-S1RTHLCH

24VAC
Thermostat
EX-T02-02W

SLT Power
Sensor
4 Channel
ST-MICFM40

SLT Power Sensor
ST-E02-21H SF (24VAC)
ST-E12-21H SF (120VAC)
ST-E24-21H SF (240VAC)
ST-E27-21H SF (277VAC)

Solar Door/
Window Sensor
ST-MDCC (315 MHz
ST-MDCC (868 MHz

Self-powered
Occupancy Sensor
ST-MOS-S1EN (ISO S1
ST-MOS-S1EN (ISO S2

Solar powered
Light sensor
ST-S1LS

Solar Power
Occupancy
Sensor
ST-MOS-E1EN
ST-MOS-E2EN

Receivers

0-10V Dimmer
EX-D01FF

Constant Voltage
LED Dimmer
EX-D02FF

3-wire Threaded Mount
Relay Rcvr + Repeater
EX-E02-S1RTF (24V)
EX-E12-S RTF (120V)
EX-E24-S RTF (240V)
EX-E27-S RTF (277V)

3-wire Threaded Mount
Relay Receiver
EX-E02-3HDTF (24V)
EX-E12-3HDTF (120V)
EX-E24-3HDTF (240V)
EX-E27-3HDTF (277V)

3-wire Single Channel
Relay Receiver
EX-E02-3HD FF (24V)
EX-E12-3HD FF (120V)
EX-E24-3HD FF (240V)
EX-E27-3HD FF (277V)

3-wire Single Channel
Relay Receiver
EX-E02-S1R FF (24V)
EX-E12-S1R FF (120V)
EX-E24-S1R FF (240V)
EX-E27-S1R FF (277V)

Room Controller
Manual ON/
Auto OFF
EX-M ECFM-15
EX-M ECFM-22
EX-M ECFM-0L

Low Voltage
Relay Receiver
EX-E0LFM4 (4 Ch)
EX-E0LFM8 (8 Ch)

Plug-in
Dimmer/Relay
EX-E12GF
EX-E12GF
EX-E12G M-E

Shade Controller
EX-M ECFM-02

RS-232 Serial Box
EX-232FF

BACnet Gateway
EX-BACFF
EX-E8H-BACFF
EX-E8H-BACFF

Industrial Wireless
Zigbee Relay
X EX-GTEWFM

Actuators

Battery Powered
Wireless Actuator
EX-MVTF

Wired Actuator
EX-MVTF-S
EX-MVMT FF-S
EX-MVTF-S
EX-MVMT FF-S

Constant Voltage
LED Dimmer
HWD-D02FF

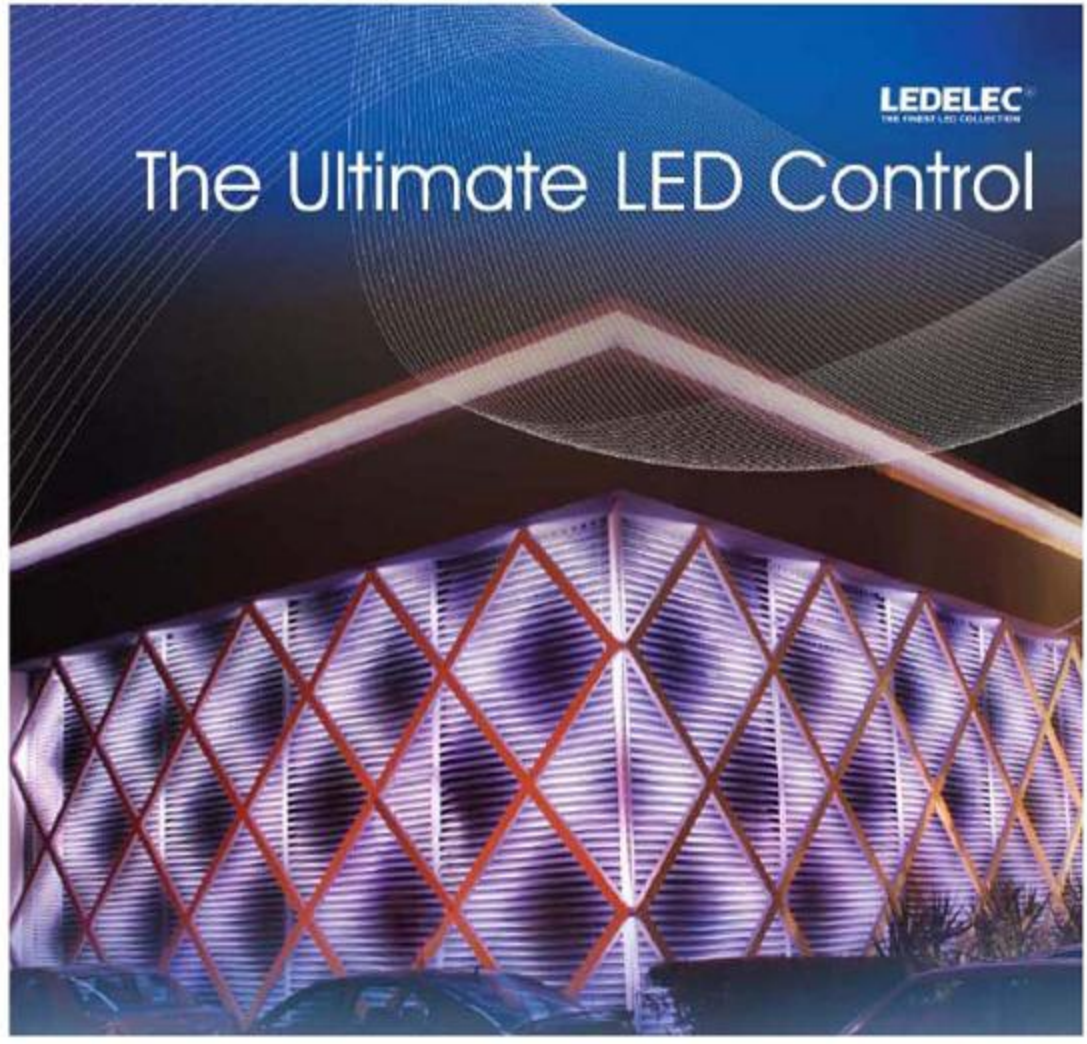
0-10V Dimmer
HWD-D01 FF

Test Tools

Link Test Tool
EX-TT2HF

Link Analyzer
EX-F50
EX-F50

ELECTRON



LED OUTDOOR

LED WASHERS

LINEAR LED WASHERS →

RECTANGULAR & ROUND LED WASHERS →

LED INGROUND

LINEAR INGROUND LED →

ROUND INGROUND LED →

LED WALL / GARDEN LIGHTS

ELECTRON

LED INDOOR

LED ARTBAR | LED ARTTUBE | LED TUBES

ELECTRON

LED DOWNLIGHTS

HIGH POWER LED DOWNLIGHTS

XSM SERIES →

LED PANELS

DIMMABLE CONSTANT CURRENT LED SPOTS 350mA →

ELECTRON

ALUMINIUM PROFILES & FLEXIBLE LEDs

ALUMINIUM PROFILES

FLEXIBLE LEDs

RIBBON FLED - RGB (IN ONE CHIP) →

RIBBON FLED - CCT ADJUSTABLE →

RIBBON FLED - MONOCHROMATIC →

FLEXI RIBBON FLED RGB (IN ONE CHIP)

SIDE RIBBON FLED →

ACCESSORIES FOR RIBBON FLED →

COLORI FLED RGB

MILKY FLED RGB & MONOCHROMATIC

POINTER, ROPE & FLAT TUBE FLED MONOCHROMATIC

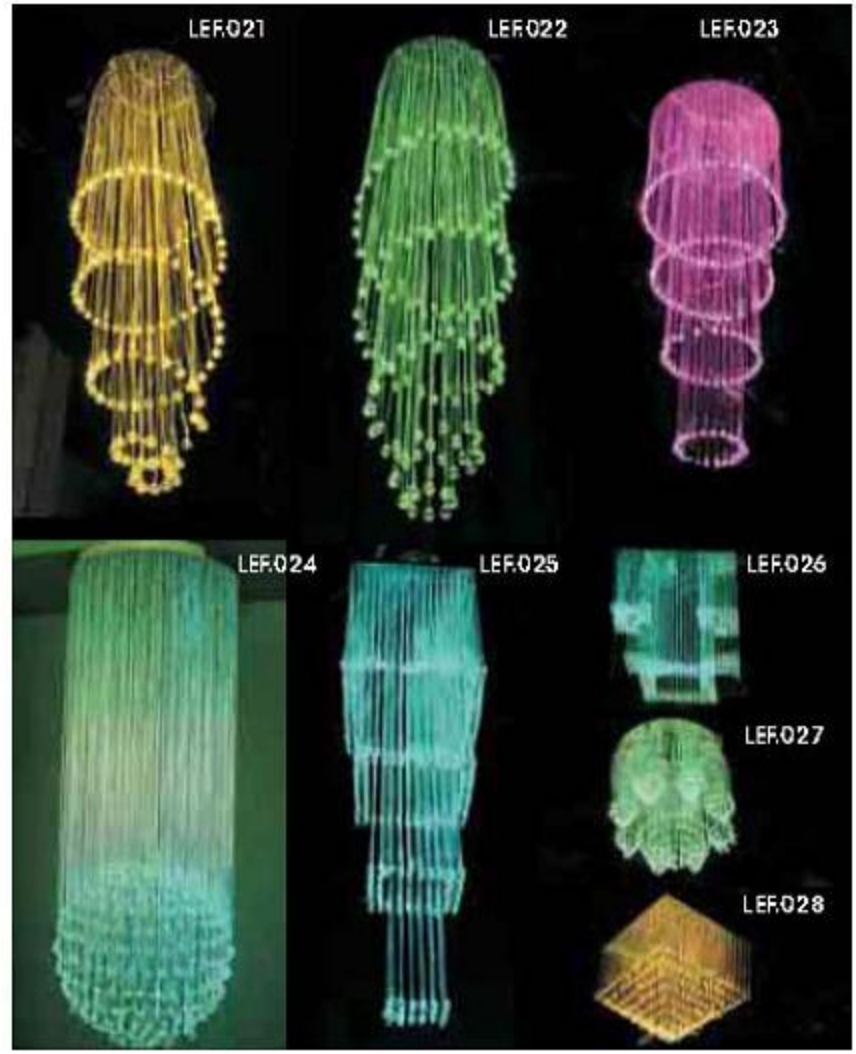
SLIM FLED - MONOCHROMATIC →

DECORATIVE LEDs

DECORATIVE LEDS

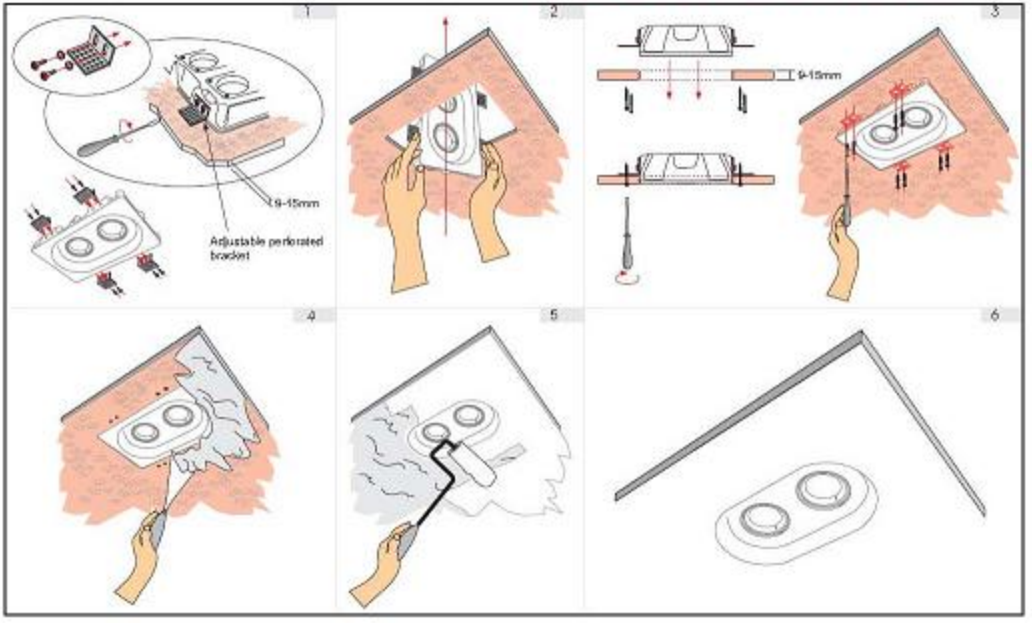
ELECTRON

FIBER OPTICS



ELECTRON

PLASTER LIGHTING



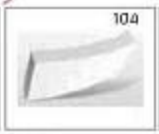
ELECTRON

PLASTER LIGHTING

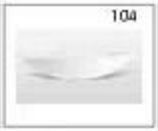
PLASTER LIGHTING SOLUTIONS

WALL MOUNTED →

CUBE PL



WAVE



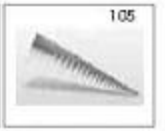
VISION

JUGER

PYCL

BOWL

CURB

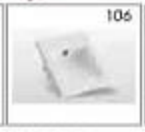


SHIELD II

WALL RECESSED →

RECESSED DOWNLIGHTS →

URGO PL



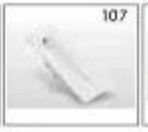
URGO SLEEK

CIRCLE LPL

CIRCLE PL

NECK

SHAPE

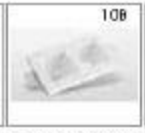


TEAR

SEAMLESS SQUARE SHORT

SEAMLESS SQUARE

SEAMLESS SQUARE WASH 45



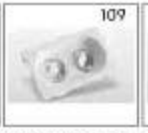
SEAMLESS SQUARE x 2

SEAMLESS SQUARE ADJUSTABLE

SEAMLESS SQUARE ADJUSTABLE x 2

SEAMLESS ROUND

SEAMLESS ROUND ADJUSTABLE



SEAMLESS ROUND ADJUSTABLE x 2

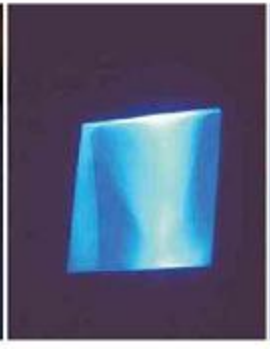
SEAMLESS CURVE ADJUSTABLE

INVISIBLE SQUARE ADJUSTABLE

INVISIBLE ROUND ADJUSTABLE

INVISIBLE ROUND ADJUSTABLE x 2

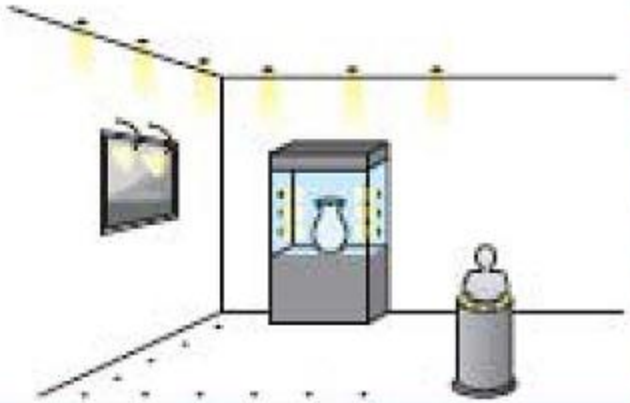
INVISIBLE CURVE ADJUSTABLE



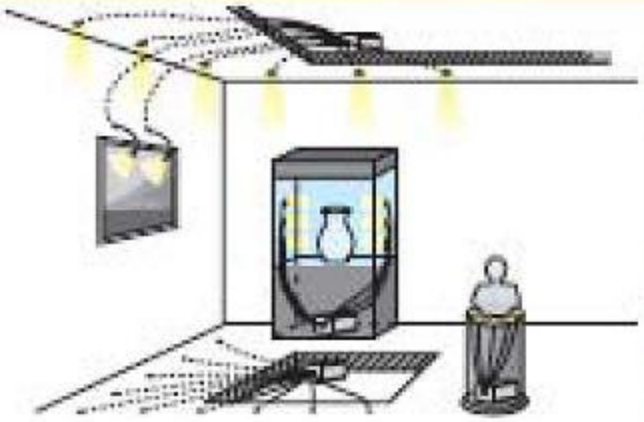
ELINCA®
INNOVATIVE LIGHTING

Fibera

1

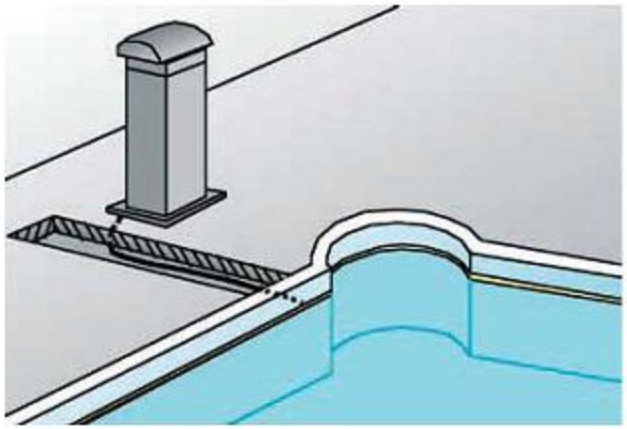


2



ELINCA®
INNOVATIVE LIGHTING

Fibera



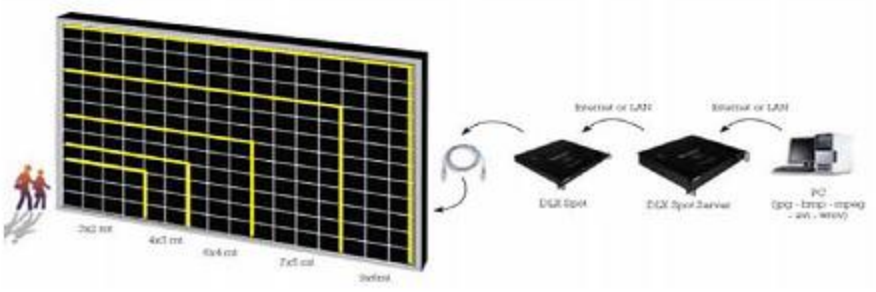
ELINCA
INNOVATIVE LIGHTING

Flexo LED RGB

PATENTED

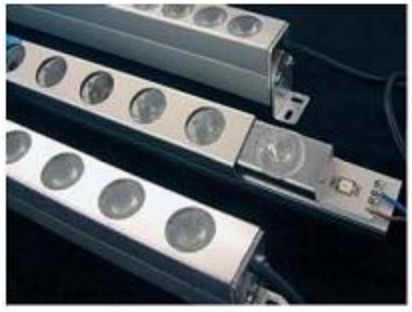
ELINCA®
INNOVATIVE LIGHTING

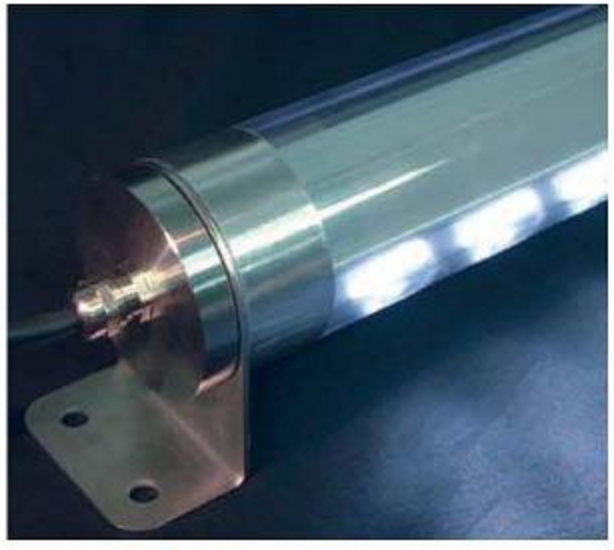
LED Display

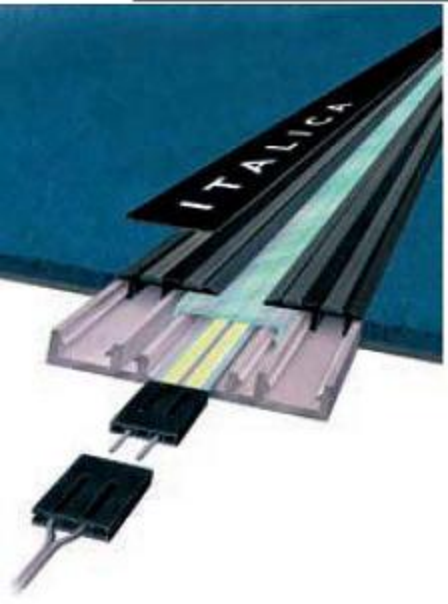


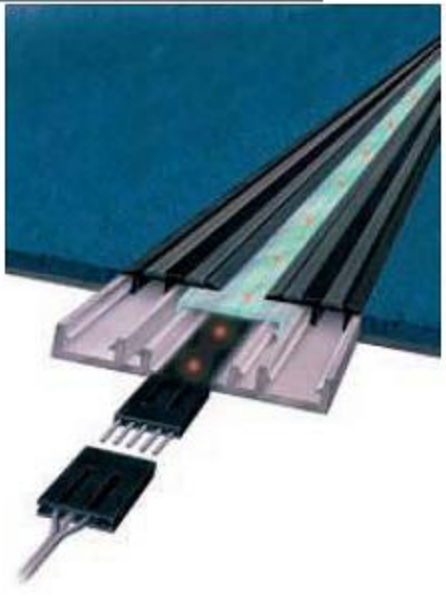
ELINCA®
INNOVATIVE LIGHTING

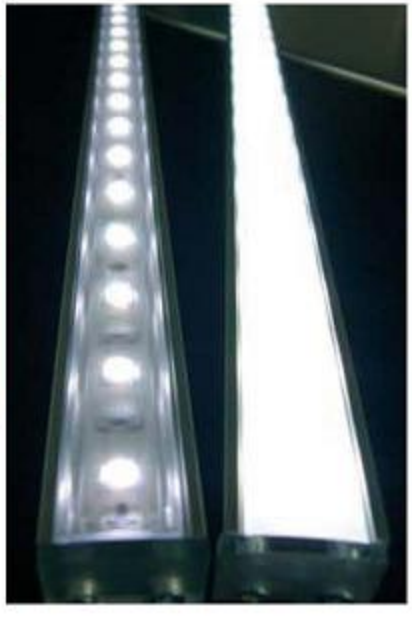
LINEAR LED





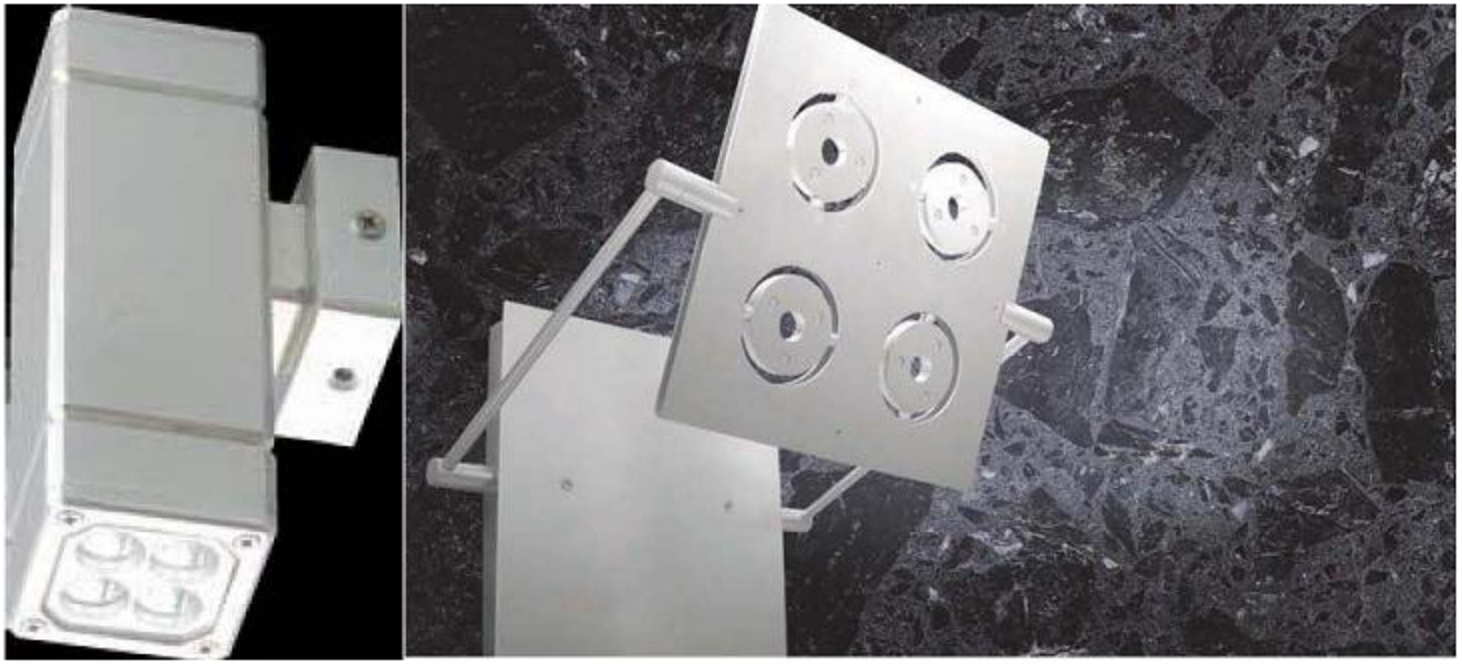






ELINCA
INNOVATIVE LIGHTING

INDOOR LED

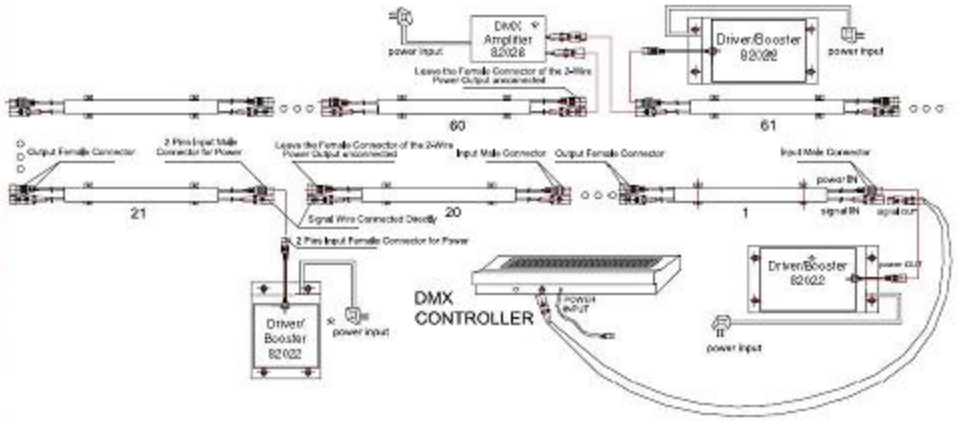


ELINCA
INNOVATIVE LIGHTING

INTEGRATED LED

ELINCA®
INNOVATIVE LIGHTING

DMX CONTROLLED LED



ELINCA®
INNOVATIVE LIGHTING

SUBMERSIBLE LED

ELINCA
INNOVATIVE LIGHTING

WALL WASHERS LED

How to dim halogen lamps? How to control the brightness of LED luminaires? How to create dynamic colourful animations?

Insta have an answer to all these questions. A perfect concept of optimally matching control systems and devices is the key for easy controlling of light installations of any size.

UNIVERS

With UNIVERS Insta provide an integral controlling concept with easy commissioning and intuitive programming of light systems of nearly any size. UNIVERS combines different control interfaces in one single user interface and is thus grade one for flexible control of complex light installations.

UNIVERS

Development and realisation of numerous projects figure clearly the importancy of having a supplying partner who is competent, to link the lighting to the building management systems. Compatibility is a key function for trouble free functionality. We incorporate this also in our future developments.

Instalight®

The instalight® light management systems have proven their quality in many projects and are best suitable for medium-sized installations. All devices have a standard interface corresponding to the relevant light management system and can be combined with other systems without problems.

The survey on page 162 gives further information on the different systems and their fields of use.

LX — instalight® LEDTRIX

DMX — instalight® DMX

DALI — instalight® DALI

RF — instalight® RF

KNX — instalight® KNX

Light controls

For small installations conventional light controls are still optimally suitable. They are easy to connect and do not need programming. Whether you want to dim individual luminaires, supply and dim low-voltage halogen lamps or switch and dim light automatically with movement and brightness sensors – there is a suitable control device for any demand.

1–10 V

INSTA

UNIVERS


DMX master
page 174


RS master
page 174


LEDTRIX® master
page 175


Color Touch 5.7"
page 175


UNIVERS
bus coupler (BCU)
page 176

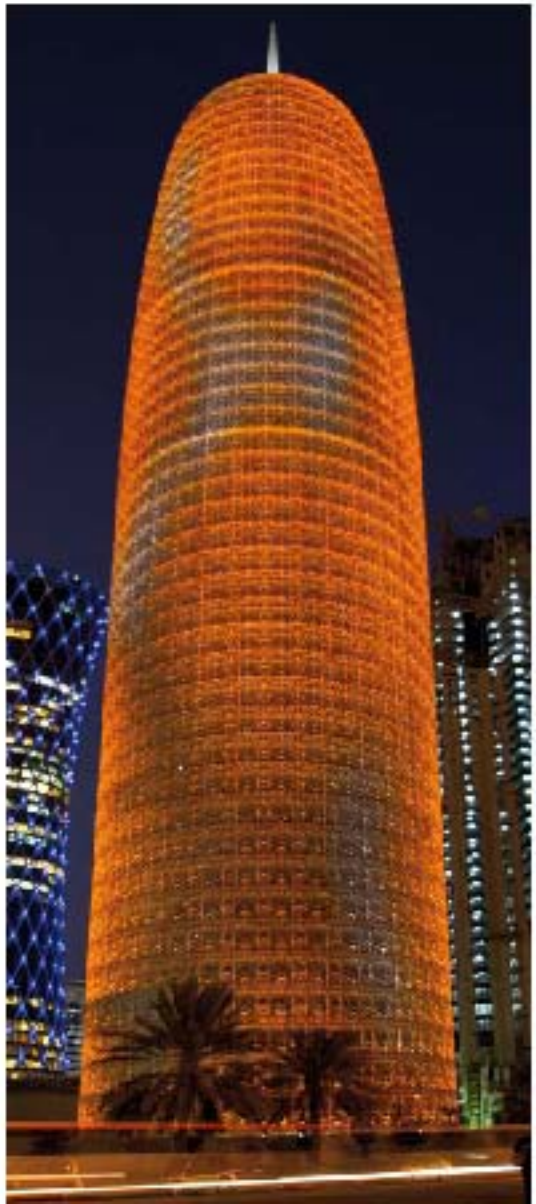

UNIVERS
power supply unit
48 V / 12 W RMD
page 176


UNIVERS
power supply RMD
SVR 48 V PoE
page 177


UNIVERS switch RMD
SRM5
page 176

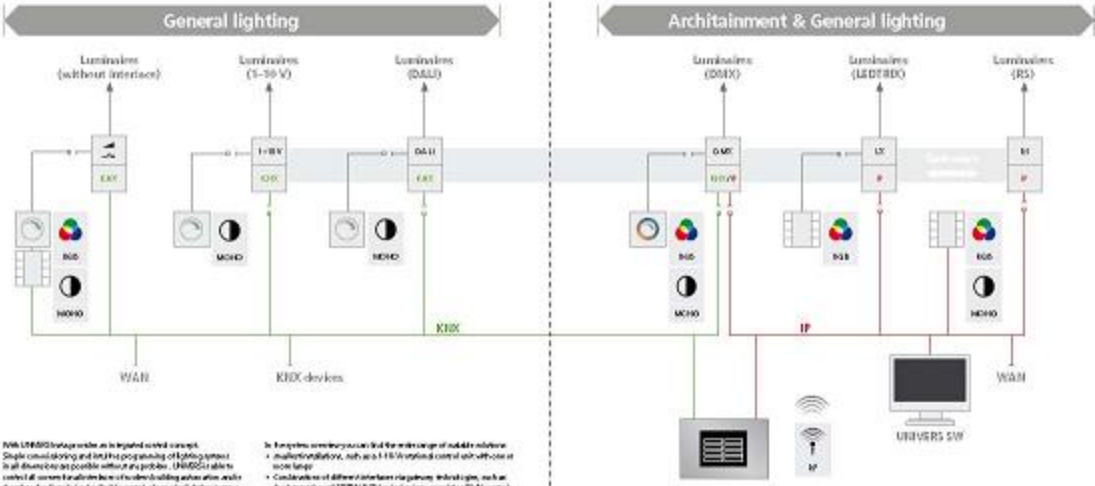

UNIVERS patch panel
RMD PPR 6 PoE
page 176


UNIVERS switch PoE
FS 106P
page 179



UNIVERS

System overview



With UNIVERS interface you have an integrated control concept. Simple commissioning and limitless programming of lighting systems in all dimensions are possible without any problem. UNIVERS enables control of current installation of modern building automation and is therefore the first choice for flexible control of complex lighting systems.

A good overall system is realized intelligently when UNIVERS enables the central tool for complex lighting projects, as well as a Plug&Play solution for simple individual installations.

At the same time, UNIVERS supports all current installation standards for controlling luminaires such as DMX, DALI, and 1–10 V as well as the RS and LEDTRIX technologies specially optimized by Insta for LED applications.

In the system overview you can find the entire range of available solutions:

- Small installations, such as a 1-10 V rotational control unit with colour room lamps
- Combinations of different interfaces via gateway, internal logic, such as the integration of LEDTRIX RGB luminaires on an existing DMX control.
- The most complex large-scale applications, such as networked high-speed architainment installations via KNX and IP including convenient operation and visualisation using touch panels.

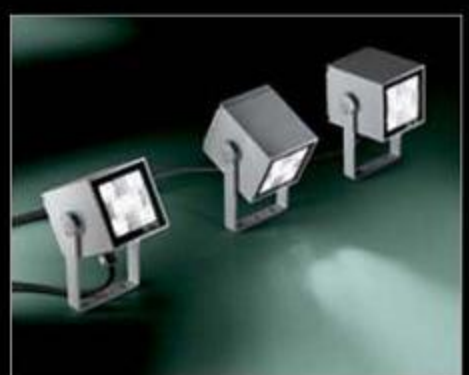
Depending on your wishes and demands, we find the right solution tailored to you, even for your project! Use the portfolio of all possibilities unpacked.

INSTA

LED outdoor luminaires

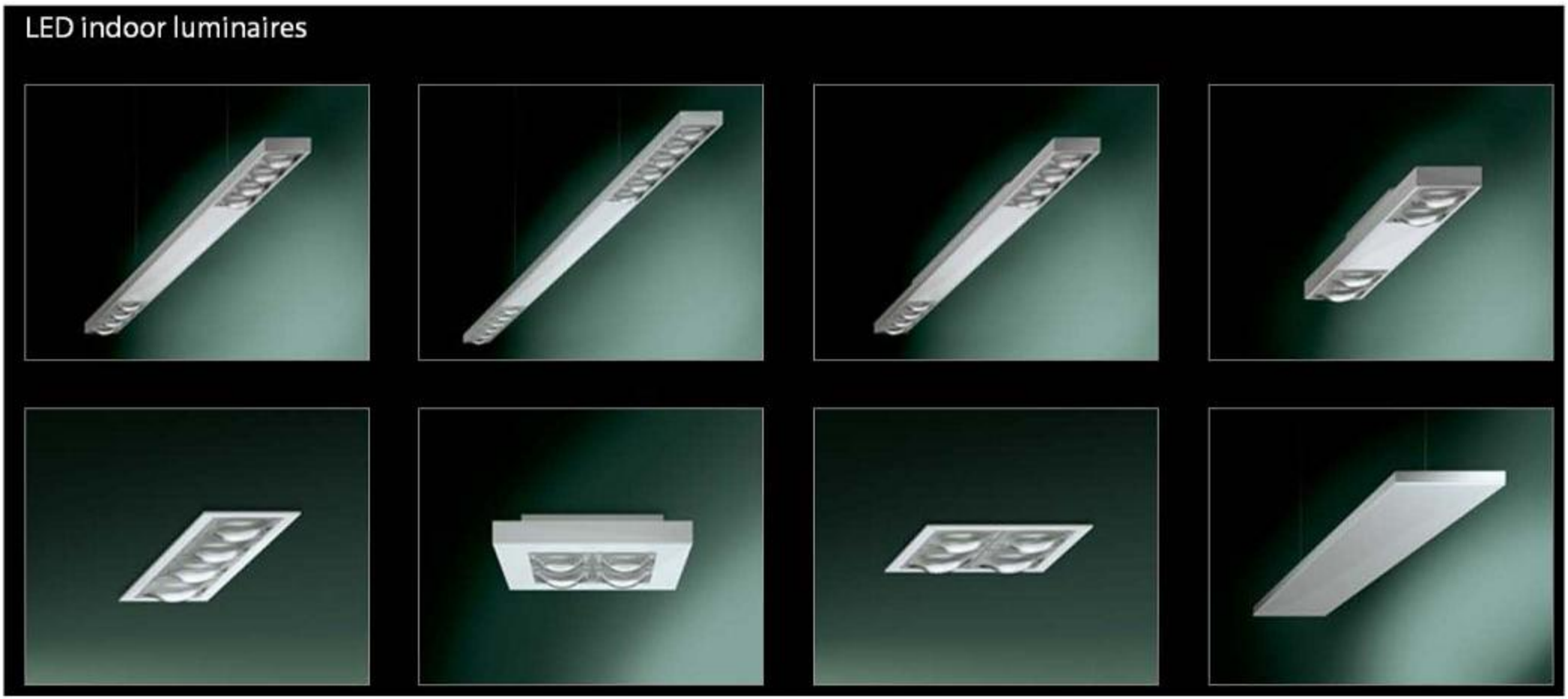







INSTA

INSTA



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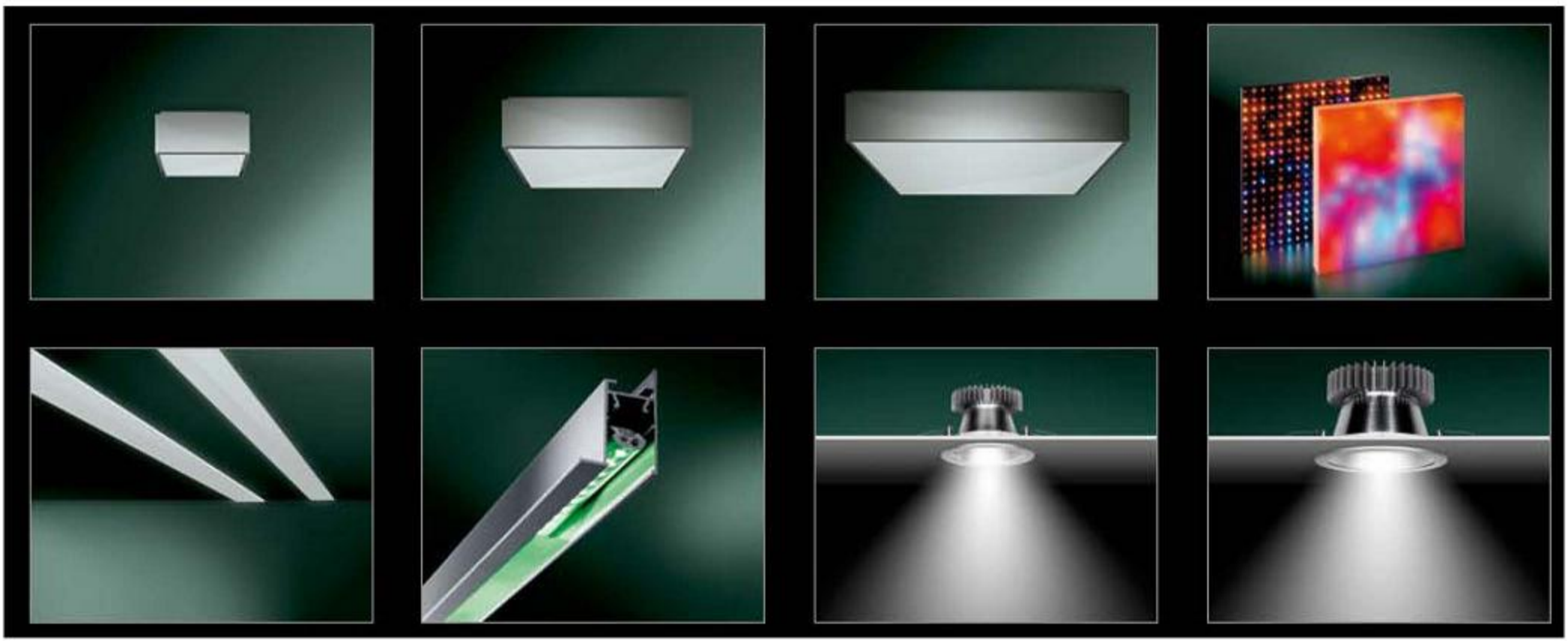
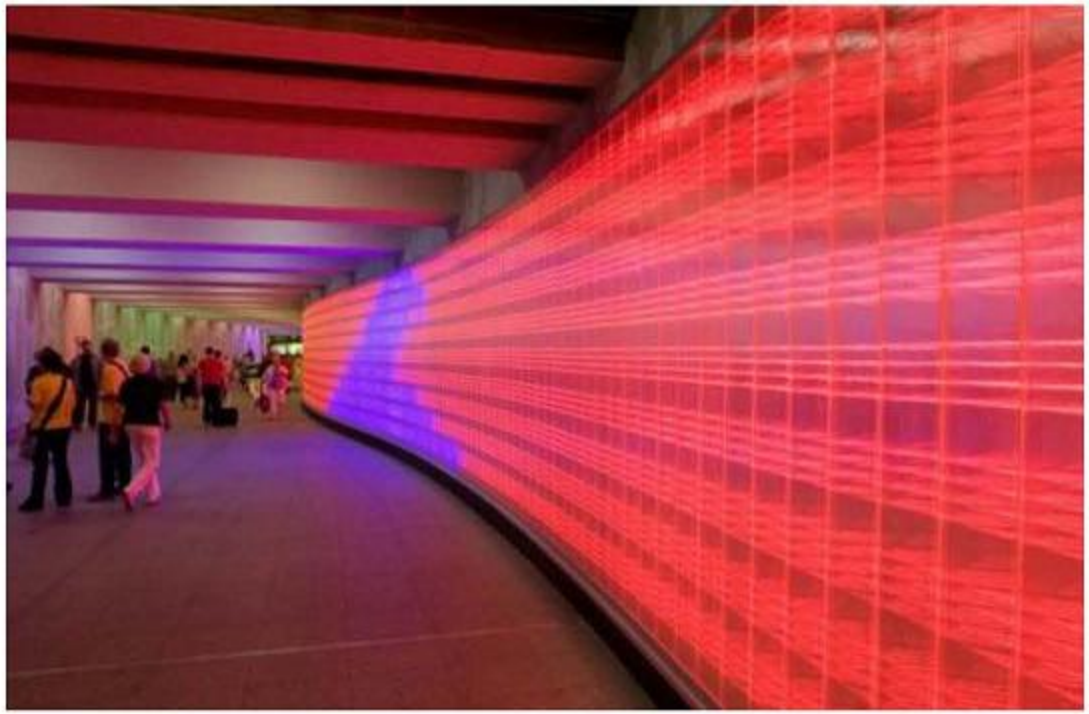


INSTA

LED INDOOR Luminaires

LED OUTDOOR Luminaires



INSTA

instalight® LEDTRIX

LEDTRIX® master
page 166

LEDTRIX® sequencer ECO
page 166

LEDTRIX® sequencer VARIO, flush-mounted
page 169

LEDTRIX® sequencer VARIO RF, flush-mounted
page 169

LEDTRIX® sequencer VARIO RF, built-in
page 190

DMX-LEDTRIX® gateway 2-channel, built-in
page 190

DMX-LEDTRIX® gateway, 5-channel
page 191

LEDTRIX® multiport, 5-way
page 191

LEDTRIX® repeater IP 20, double
page 192

LEDTRIX® repeater IP 67, double
page 192

LEDTRIX® high-current core
page 193

LEDTRIX® sequence designer for the LEDTRIX® sequencer VARIO
page 193

INSTA

instalight® DMX

DMX master
page 198

KNX-DMX sequencer
page 198

DMX-LEDTRIX® gateway, 2-channel, built-in
page 199

DMX-LEDTRIX® gateway, 5-channel
page 199

DMX-PWM converter
page 200

DMX adapter cable (socket)
page 200

DMX adapter cable (plug)
page 201

DMX extension cable
page 201

DMX plug with terminating resistor
page 202

DMX sequence designer, Software-CD incl. connection cable
page 202

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Installight® DALI

DALI-KNX gateway
page 207

DALI-Power-Poti, flush-mounted
page 207

for ballasts with 1-10 V control input

Light sensor 1-10 V
page 241

Light sensor 1-10 V
page 241

Electronic potentiometer 1-10 V
page 242

Cord dimmer 1-10 V
page 242

Push-button control device for el. ballasts
page 243

SNT 105 / 1-10 V
page 243

INSTA

Light controls

for ballasts

EVG T2 AC 230/240 V
page 234

EVG T2 12 V / 24 V
page 234

for Tronic Trafo

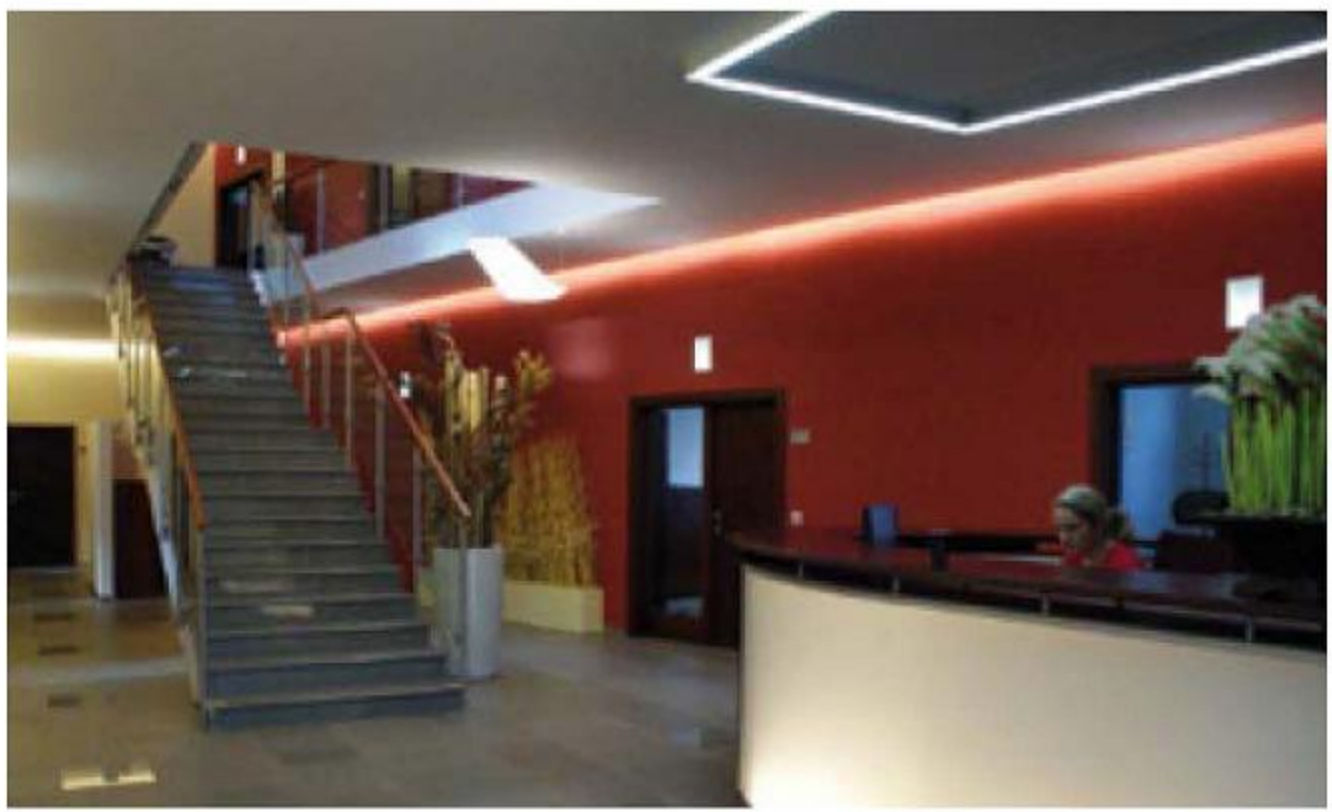
Passive IR movement detector
page 235

Mains-controlled relay
page 236

Light controls

Tronic built-in dimmer 700 W
page 236

Tronic built-in power booster 700 W
page 237



Installight® KNX

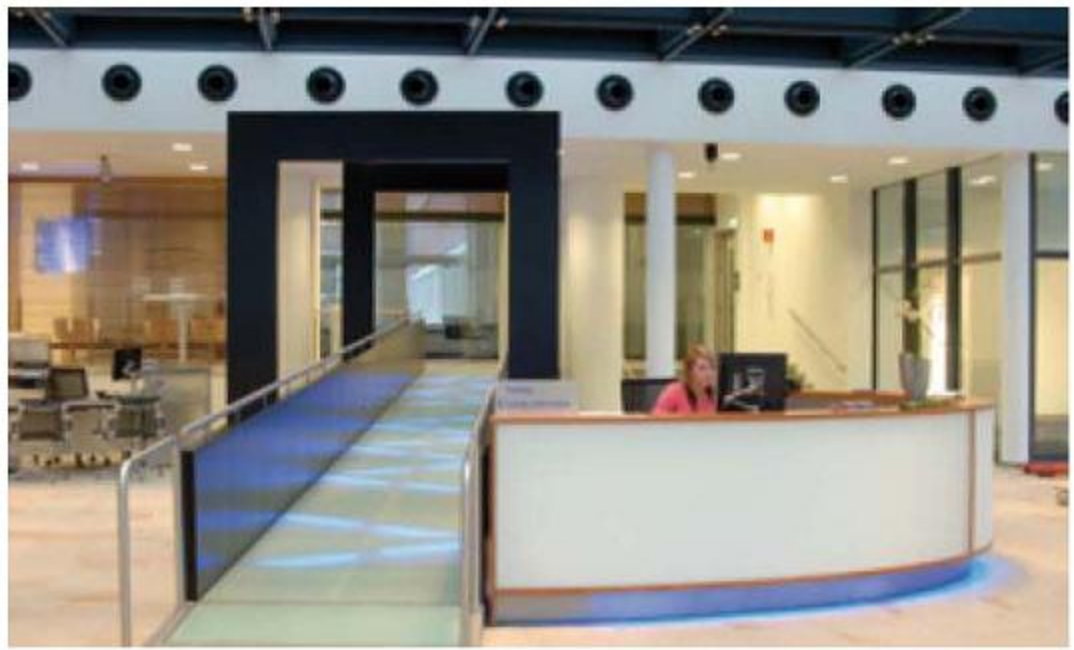
KNX TP light control panel
page 225

KNX single switching actuator 16 A, flush-mounted
page 225

KNX double switching actuator 6 A, flush-mounted
page 226

KNX single shutter actuator, flush-mounted
page 226

KNX-DALI gateway
page 227



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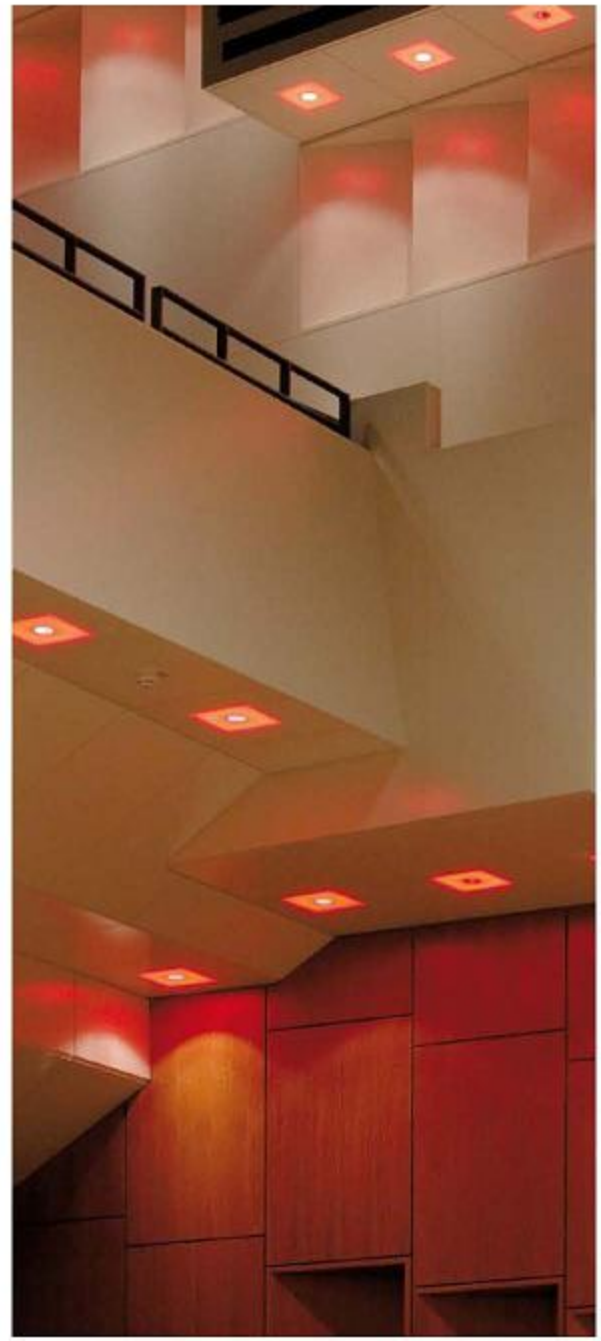
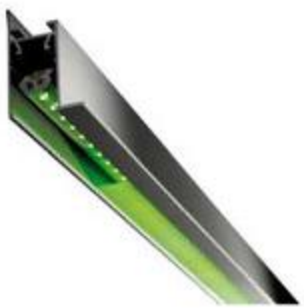


INSTA

LED Lighting Products



New Technology

b,a,g,

passion for electronics

State-of-the-art operation of fluorescent lamps

Fig. 1a
Lamp voltage oscilloscope at 50 / 60 Hz operation

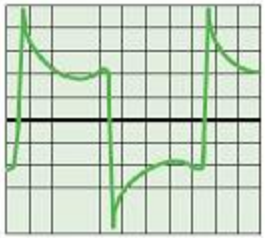
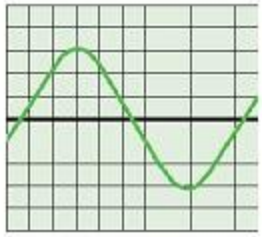


Fig. 1b
Lamp voltage oscilloscope at high-frequency operation ≥ 30 kHz



Energy controlled preheating

End-of-Life recognition "Test 2"

Cut-Off technology

E

EoL T.2

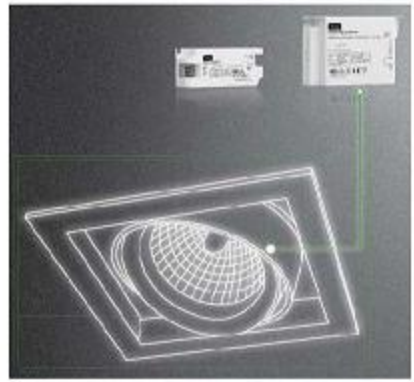
cut off

Norm complicance

- EN 61 347-1
- EN 61 347-2-3
- EN 61 347-2-3 /C
- EN 60 929
- EN 61 347-2-3 /J
- EN 61 000-3-2
- EN 61 000-3-3
- EN 61 547
- EN 55 015 (< 300 MHz)

Markings

VDE EMC CE



b,a,g,

passion for electronics

Design concepts BAG LED portfolio

	Modular systems	All-in-one systems	Conversion systems
LED Module & Light Engines	astares	nexares	cronius
	LED modules with separate electronic control gear • High flexibility due to modularity	LED modules with integrated electronic control gear • Very flat design including ECG • High uniformity of light distribution	LED lamps with socket • Simplified installation in existing luminaires • Lamps can be replaced
			
ECG	+ zitares 		
	Application areas • Linear and flat luminaires • Spotlights • Downlights For general lighting, e.g. • Shops • Office and Schools • Museums and Industrial halls	Application areas • Flat luminaires • Luminaires with extremely low construction height For general and decorative lighting, e.g. • Corridors • Foyers • Restaurants • Hotels	Application areas • Downlights For general lighting, e.g. • Shops • Corridors • Foyers

b,a,g,
passion for electronics

The ZITARES Family

ZITARES CC
Constant Current

ECG Output
- Constant Current
- SELV equiv. (< 60 VDC)
- 1- /2-/4-Channel

Mains Voltage
- 220 - 240 V; 0/50 ... 60 Hz

Life time
- 50.000 h
  ($\lambda \leq 10$ % at $t_C = t_{C,max}$)

Operating mode
- Non dimmable
- DALI / Push-Dim; 1-10V

ZITARES CV
Constant Voltage

ECG Output
- Constant Voltage
- SELV equiv. (< 60 VDC)
- 1-Channel

Mains Voltage
- 220 - 240 V; 0/50 ... 60 Hz

Life time
- 50.000 h
  ($\lambda \leq 10$ % at $t_C = t_{C,max}$)

Operating mode
- Non dimmable

ZITARES UC
Constant Current

ECG Output
- Constant Current
- SELV equiv. (< 60 VDC)
- 1-Channel

Mains Voltage
- 100 - 240 V; 0/50 ... 60 Hz

Life time
- 45.000 h
  ($\lambda \leq 10$ % at $t_C = t_{C,max}$)

Operating mode
- Non dimmable

ZITARES NC
Constant Current

ECG Output
- Constant Current
- Non-SELV
- 1-Channel

Mains Voltage
- 220 - 240 V; 0/50 ... 60 Hz

Life time
- 50.000 h
  ($\lambda \leq 10$ % at $t_C = t_{C,max}$)

Operating mode
- Non dimmable
- DALI / Push-Dim

b,a,g,
passion for electronics

ASTARES Modules

ASTARES square	ASTARES plane	ASTARES linear	ASTARES spot
			
Application areas, e.g. • Plane luminaires • Linear Flat luminaires • Downlights	**Application areas, e.g.** • Plane luminaires	**Application areas, e.g.** • Plane luminaires • Linear Flat luminaires	**Application areas, e.g.** • Spotlights • Downlights
Luminous flux levels [lm] 400, 600, 800, 1.100	**Luminous flux levels [lm]** 1.350	**Luminous flux levels [lm]** 700, 1.100, 2.200	**Luminous flux levels [lm]** 1.100, 2.200, 3.700, 4.900
CRI: > 80	**CRI:** > 80	**CRI:** > 80	**CRI:** > 80 (> 90)
CCT: 3.000 K, 4.000 K	**CCT:** 4.000 K	**CCT:** 3.000 K, 4.000 K	**CCT:** 3.000 K, 4.000 K

astares

b,a,g, passion for electronics

b,a,g,

ZIRIUS-hot restrike igniter

230/480 ZIR 2000 AS 2L

ZIRIUS

HST-DE 250...1000 W
HIT-DE 250...2000 W
HIT-CE 250/400 W (GY22)
HI compakt 700 W

Case/mounting:

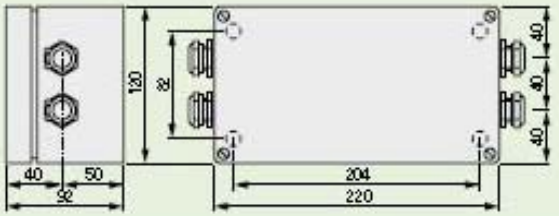
- Fibre-glass re-inforced polyester case for surface mounting
- Degree of protection IP 65
- Case fastening with screws M5

Connections:

- Screwed cable glands M20x1.5
- Mains: 3-pole screw terminal, 2.5 – 6.0 m²
- Lamp: Screw terminals, 2.5 – 6.0 m²
- Ignition cut-off: 2-pole screw terminal, 0.5 – 4.0 m²
- Ignition Voltage Limitation (IVL): 2-pole screw terminal, 2.5 – 6.0 m²

Remarks:

- The high voltage conducting lamp leads and lampholders have to be appropriate for the supplied high igntition voltage!
- Ensure that both connection wires to the gate switch are guided in parallel.
- Defective lamps should be replaced at short term.



DISTECH CONTROLS®

Innovative Solutions for Greener Buildings™

DISTECH CONTROLS®

Meet the New Standard in Sustainable Buildings

Distech Controls provides comprehensive building and energy management systems that help businesses reduce energy and maintenance costs, while optimizing occupant comfort.

Our solutions are built from the ground up to deliver exacting performance meeting the strictest guidelines, achieving an unprecedented interoperable building management system for HVAC, Lighting, Access Control, CCTV, and Energy Management.

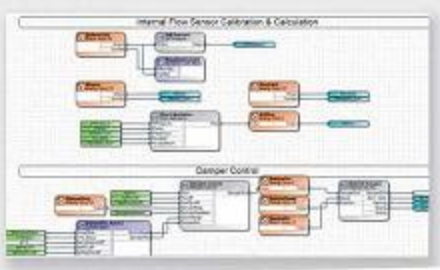
Distech Controls' building automation and control products provide a sustainable foundation that supports and evolves with your building system's lifecycle.

DISTECH CONTROLS®

- EC-Net^{AX}: Web-based Integrated Building Management System
- BACnet® and LONWORKS® HVAC Controllers: Air Quality and Comfort
- Lighting and Sunblind Control Solution
- EC-Net^{AX} *Security*: Access Control and CCTV
- Open-to-Wireless™: Wireless, Battery-less Sensing, Wireless Mesh Networks
- Energy Management and Metering
- Multi-Site and Campus Solutions
- Other Building Systems and Applications: Elevators, Networked Equipment, etc.

DISTECH CONTROLS®

Integrated Building Management Systems and Energy Management Solutions



DISTECH CONTROLS®

Web Solutions for an Efficient Building Management

Based on a multi-protocol Web platform, Distech Controls solutions provide the power to do more, with cost-effective and scalable integration of all your control, monitoring, and operational needs, from a simple web browser or from a local PC.

- EC-Net^{AX} Pro and Supervisor - The Power To Do More!
  A Web-based, integrated building management system, for cost effective and scalable integration of all your control, monitoring, and operational needs.
- EC-Net^{AX} *EnerVue* - Demand Eco-performance
  A configurable, graphics oriented web-based energy management dashboard to measure and manage building utility functions for single building, multiple site, and multiple tenant applications.
- EC-Net^{AX} *Security* - Secure Your Buildings
  Fully scalable access control with electronic card access and closed circuit television (CCTV) solution, for projects ranging from single door installations to multi-building deployments.

DISTECH CONTROLS®

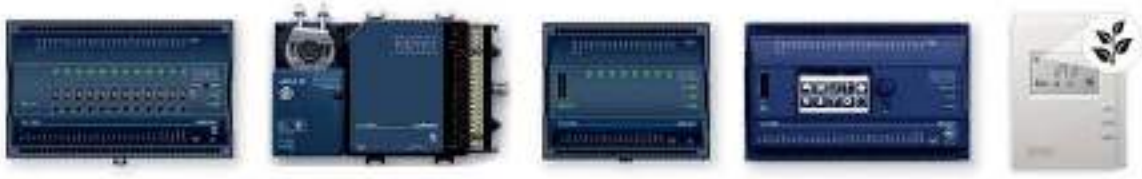
Web Building Controllers for Supervision and Access Control

- **EC-BOS^{AX}**: a compact, embedded building controller that combines integrated control, supervision, data logging, alarming, scheduling, and network management real-time functions with IP connectivity and web-serving capabilities. Powered by the Niagara^{AX} Framework®, one EC-BOS^{AX} supports a wide range of protocols including LONWORKS, BACnet, DALI, Modbus and other standard protocols.

- **EC-BOS^{AX}** ***Security:*** an IP-based controller that eliminates the need for on-site PCs or thick client software. It provides access control according to card reader lecture of badges, allows for two card readers to be connected directly to the controller, and supports remote card readers. It also provides supervised access and log entry information, as well as connectivity to HVAC systems.

DISTECH CONTROLS®

LonWorks® and BACnet® Programmable HVAC Controllers for Advanced Applications



- **Extensive choice of LonWorks and BACnet programmable HVAC controllers,** to control central plants, boilers, chillers, AHU, roof tops, heat pumps and VAV systems. Based on a robust common hardware platform, they share the same programming and productivity enhancing toolset and provide the features and flexibility to address the demands of even the most complex projects.
- **Allure™ room devices**: our industry-leading contemporary line of room devices offers a broad array of models suitable for a wide range of environments and applications. The line ranges from wired and wireless, battery-less discrete sensors to intelligent communicating sensors.
- **Unique embedded Open-to-Wireless™ solution**: each controller supports a wireless port, letting you create wire-free installations and use various wireless battery-less sensors and switches.

DISTECH CONTROLS®

LonWorks® and BACnet® Programmable HVAC Controllers

for Terminal Units and Integrated Room Control

- **Feature-rich LonWorks and BACnet programmable HVAC controllers:** provide the most advanced yet cost-effective solution for addressing any terminal control application - fan coils, chilled beams, chilled ceiling...
- **Expandable with Lighting and Sunblind control modules** - on-off, dimming, DALI and SMI - providing a fully integrated control solution that optimizes energy savings.
- **Compatible with all Allure™ room devices:** industry-leading contemporary line of room devices.
- **Unique embedded Open-to-Wireless™ solution:** each controller supports a wireless port, letting you create wire-free installations and use various wireless battery-less sensors and switches.

DISTECH CONTROLS®

Programming and Productivity Enhancing Toolset

- EC-*gfx*Program 4.0: a common software tool for programming LONWORKS and BACnet controllers, offering unique benefits that significantly increase productivity and reduce overall project cost.
- *gfx*Applications: a comprehensive library of pre-engineered codes embedded within EC-*gfx*Program.
- dcg*fx*Applications and dcImages: a complete set of pre-built devices, including ready-to-use graphics for display and controller configuration, with pre-defined devices, alarms, and logs.

DISTECH CONTROLS®

LonWorks® and BACnet® Configurable HVAC Controllers

+ Room control device with touch-sensitive LCD color screen

- **A wide range of configurable room controllers for HVAC terminal control** that can be easily configured with dedicated software tools that helps reduce engineering time. When connected to our peripheral products, a single controller manages temperature and ventilation according to occupancy, reducing energy costs (45% expected savings).
- **Expandable with Lighting and Sunblind control modules** - on-off, dimming, DALI and SMI - providing a fully integrated control solution that optimizes energy savings.
- **Compatible with the Allure RS-Smart-Sense: Innovation For All Your Senses!**
  A new generation of room sensor devices available with a large choice of colored front plates. Features a touch-sensitive LCD color screen, allowing for integrated room control of comfort parameters. Its ECO-Vue leaf indicates energy consumption in real time to promote an occupant's energy-conscious behavior.

  Download the iPhone Smart-Sense Room Control App for free: visit the App Store!

+ Select and memorize your favorite parameters!

DISTECH CONTROLS®

Lighting and Sunblind Configurable Controllers

+ RJ9 Accessories

- **A comprehensive Lighting and Sunblind control solution** - on/off, dimming or DALI - that significantly reduces energy costs by delivering optimal lighting in all environments (60% expected savings)
- **LonWorks certified controllers,** fully equipped with a LON 2.0 FT5000 processor.
  Dedicated to Lighting and Sunblind Control, they can be easily configured with our dedicated software tools that helps reduce engineering time.
- **RJ9 or wireless accessories and controls units:** receivers, multi-sensors (motion detector and Lux level sensor), room sensor devices or multi-discipline remote controls.

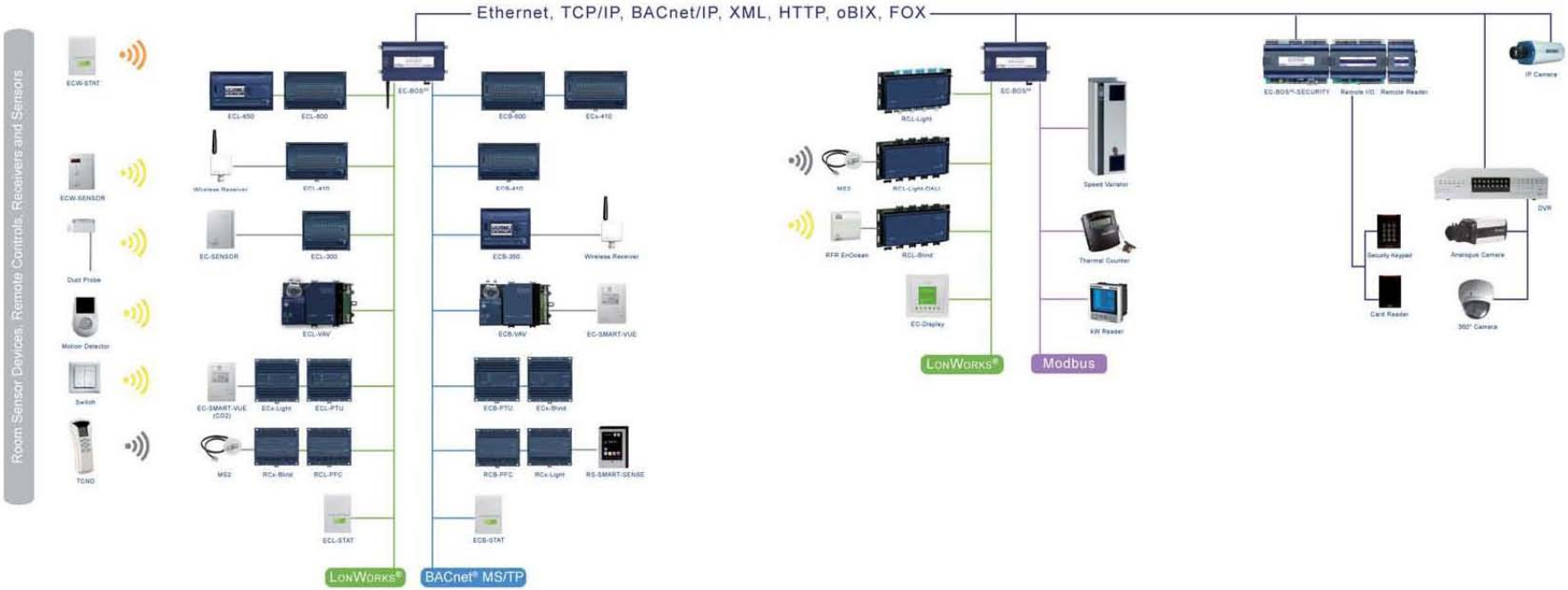
DISTECH CONTROLS®

Peripheral Product Offering + Open-to-Wireless™ solution

Distech Controls has secured best-of-breed product agreements with different leading manufacturers to provide you with a comprehensive peripheral product offering that complements our building automation systems. As a trusted supplier, we are able to support you in the choice and installation of our products to meet the specifications of all your projects.

- **A complete peripheral product offering that fulfills the specifications of all your projects:** probes, sensors, valves, actuators, HVAC drives.
- **Simplified installation and optimization of building control systems,** while guaranteeing reduced installation costs.
- **Open-to-Wireless ™:** wireless battery-less sensor solution increases flexibility and adaptability in any environment, contributing up to **15% installation cost savings** in new construction projects and **70% in retrofit projects.**

DISTECH CONTROLS®



HVAC, Multi-function and Custom Applications

Lighting and Sunblind Control

Energy Metering

Access Control and CCTV

EnOcean® Wireless Communication ZigBee® Wireless Communication Infrared or Radio Wireless Communication

DISTECH CONTROLS®

Delivering the New Standard

Designed to meet the highest standards of green stewardship and durable performance, Distech Controls' open solutions provide not only a competitive advantage today, but sustainability tomorrow and beyond.

Source: University of Applied Sciences - Hannover / 'Energy Systems' department - Prof. Dr. Nordmann Estimation of Data: University of Applied Sciences - Hannover & MU Darmstadt

DISTECH CONTROLS™

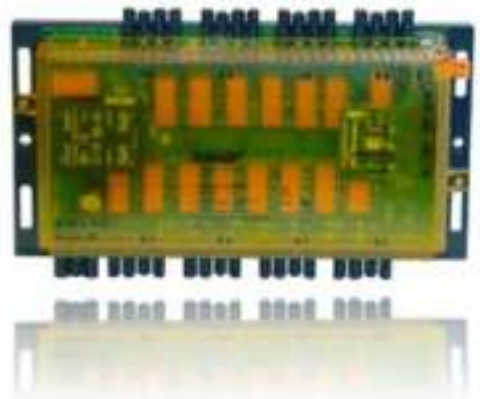
PRESENTS

DALILON®

Lighting Controller Range

Many Controllers for Different Applications

- Lighting controllers bring an optimized comfort and energy savings within office buildings and open areas
- A complete lighting controller range: on/off or dimming lighting management, DALI ballasts supply and control
- They can work in stand alone mode or connected to the LonWorks® open and interoperable network
- Used jointly with our graphic configuration software, they build a modular solution in case of repartitioning: no need to modify your installation



Up to 59% saving on energy consumptions*

Combining dimming lighting management, presence detection and time schedules

* Data source: University of Applied Sciences - Hannover

DISTECH CONTROLS
DALILON

Product Benefits

- Modular solution: the system can be adapted to a premises repartitioning
- One controller for lighting management in several rooms (depending on your installation configuration)
- Differentiated lighting management for window and corridor sides (1st day and 2nd day)
- Can be used for a multi-discipline management: they make available HVAC and sunblind data on the LonWorks® network (except CTR-DALI-LR16)

Lighting Controllers

On-Off Controllers

- Controllers for managing 4 or 8 On-Off lighting outputs
- A single controller for lighting management in 4 rooms (factory configuration)
- Up to 4 RJ9 accessories can be connected (receivers, multi-sensors, etc.)
- Receive orders emitted by infrared, radio or EnOcean remote controls
- Acquire presence information provided by a multi-sensor
- Manage occupancy modes provided by BMS (occupied, unoccupied and standby)

- CTR-4L: lighting controller, 4 on/off outputs
- CTR-8L: lighting controller, 8 on/off outputs

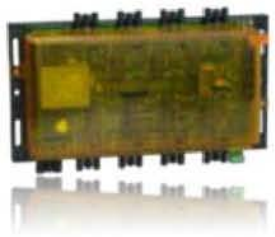
Dimming Controllers (1-10 VDC signal)

- Controllers for managing 4 or 8 dimming lighting outputs
- A single controller for lighting management in 4 rooms (factory configuration)
- Up to 4 RJ9 accessories can be connected (receivers, multi-sensors, etc.)
- Receive orders emitted by infrared, radio or EnOcean remote controls
- Acquire presence and Lux level information provided by a multi-sensor
- Manage occupancy modes provided by BMS (occupied, unoccupied and standby)

- CTR-4LD: lighting controller, 4 1-10VDC dimming outputs
- CTR-8LD: lighting controller, 8 1-10VDC dimming outputs

DISTECH CONTROLS
PRESENTS
BALILON

DALI Lighting Controllers



DALI lighting controllers
dedicated to offices

- A single controller for lighting management in 4 rooms (factory configuration)
- Receive orders emitted by infrared, radio or EnOcean remote controls
- Acquire presence and Lux level information provided by a multi-sensor
- Manage occupancy modes provided by BMS (occupied, unoccupied and standby)
- Up to 4 RJ9 accessories can be connected (receivers, multi-sensors, etc.)
- Supply power to 8 DALI ballast groups maximum (16 ballasts overall) and drive them through the DALI bus (5A max per output)
- Automatic addressing of the 8 ballast groups (push-button in front of the controller)
- Make available each ballast group operating status

- CTR-8LDALI: DALI lighting controller dedicated to offices: 8 power outputs (16 ballasts managed, divided in 8 groups maximum)

DALI lighting controllers
dedicated to open areas

- Receive orders emitted by infrared, radio or EnOcean remote controls
- Acquire presence and Lux level information provided by a multi-sensor
- Manage occupancy modes provided by BMS (occupied, unoccupied and standby)
- Up to 4 RJ9 accessories can be connected (receivers, multi-sensors, etc.)
- Supply and drive up to 64 DALI ballasts which can be divided in 8 or 16 groups
- Individual automatic ballasts addressing (push-button in front of the controller)
- Make available each ballast operating status

- CTR-DALI-LR8: DALI lighting controller dedicated to open spaces: 64 ballasts managed divided in 8 groups + sunblind and HVAC variables provided on the LonWorks network
- CTR-DALI-LR16: DALI lighting controller dedicated to open spaces: 64 ballasts managed divided in 16 groups

DISTECH CONTROLS™ PRESENTS DAUTON®

Selection guide to find the right controller

	CTR-4L CTR-8L	CTR-4LD CTR-8LD	CTR-8LDALI	CTR-DALI-LRx
MAIN FUNCTIONS				
On / Off Lighting	●			
Dimming Lighting		●	●	●
DALI ballasts driving			●	●
Sunblinds				

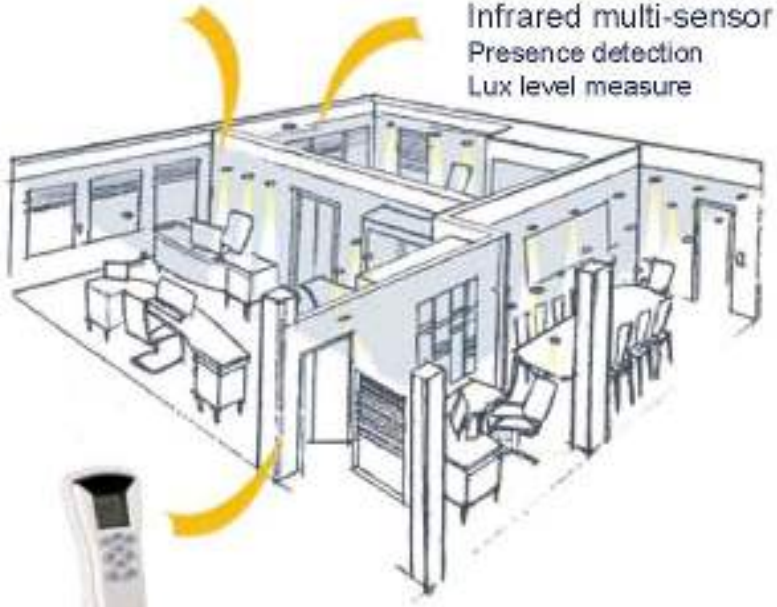
Selection guide to find the right controller

	CTR-4L CTR-8L	CTR-4LD CTR-8LD	CTR-8LDALI	CTR-DALI-LRx
CTR DALI FUNCTIONS				
Offices projects			●	
Open spaces projects				●
Sunblind and HVAC variables provided on the LonWorks® network			●	● (CTR-DALI-LR8 only)
Maximum number of ballasts groups controlled			8	CTR-DALI-LR8 : 8 CTR-DALI-LR16 : 16
Maximum number of ballasts controlled			16	64
Ballasts groups operating status			●	
Individual ballast operating status				●
Integrated ballasts supply			●	●
Groups addressing			● (automatic)	● (manual)
Individual addressing			● (automatic)	● (random automatic or manual)

Lighting application example

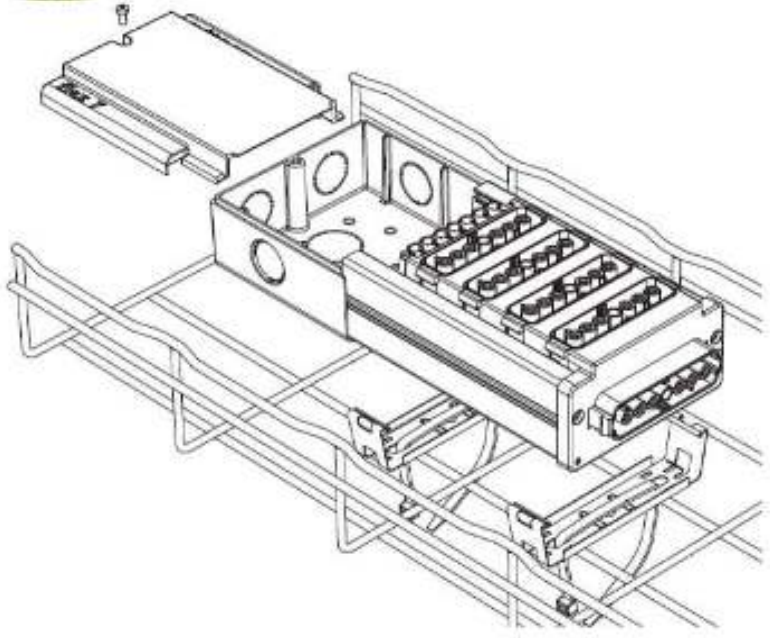
Lighting controller
Hidden into suspended ceilings

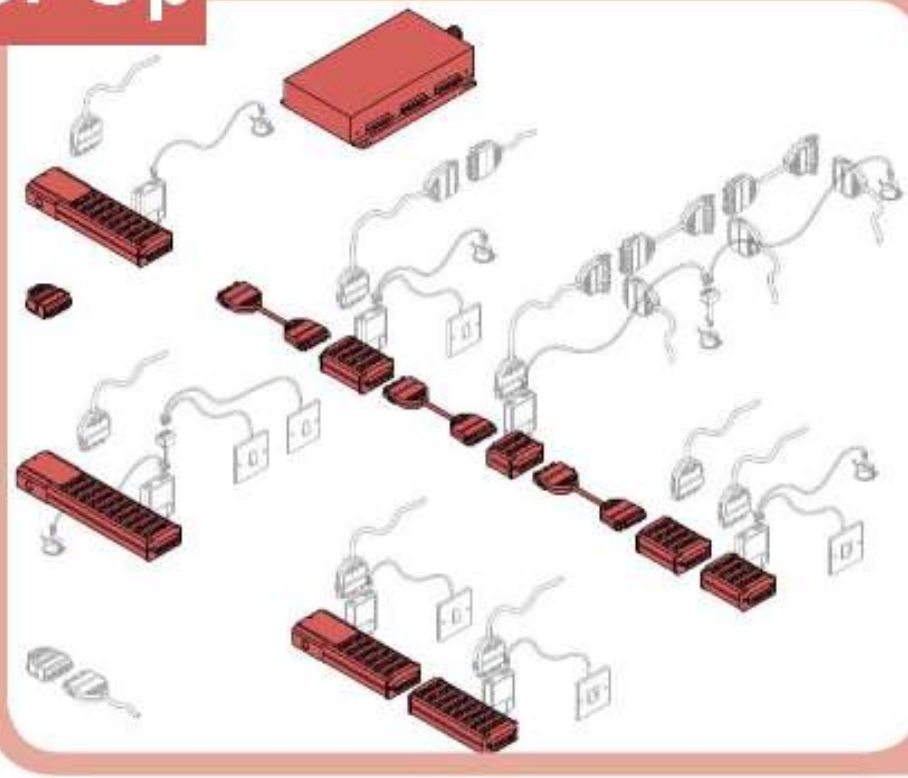
Infrared multi-sensor
Presence detection
Lux level measure



Infrared remote control
Lighting adjustment

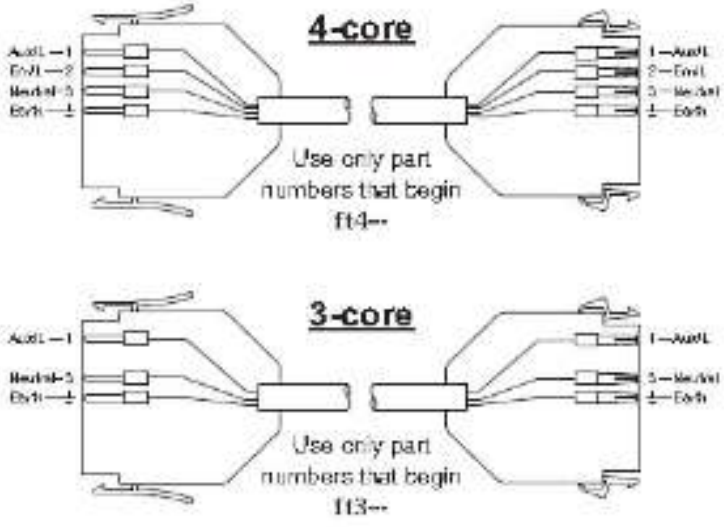
Step 1 - Power Up

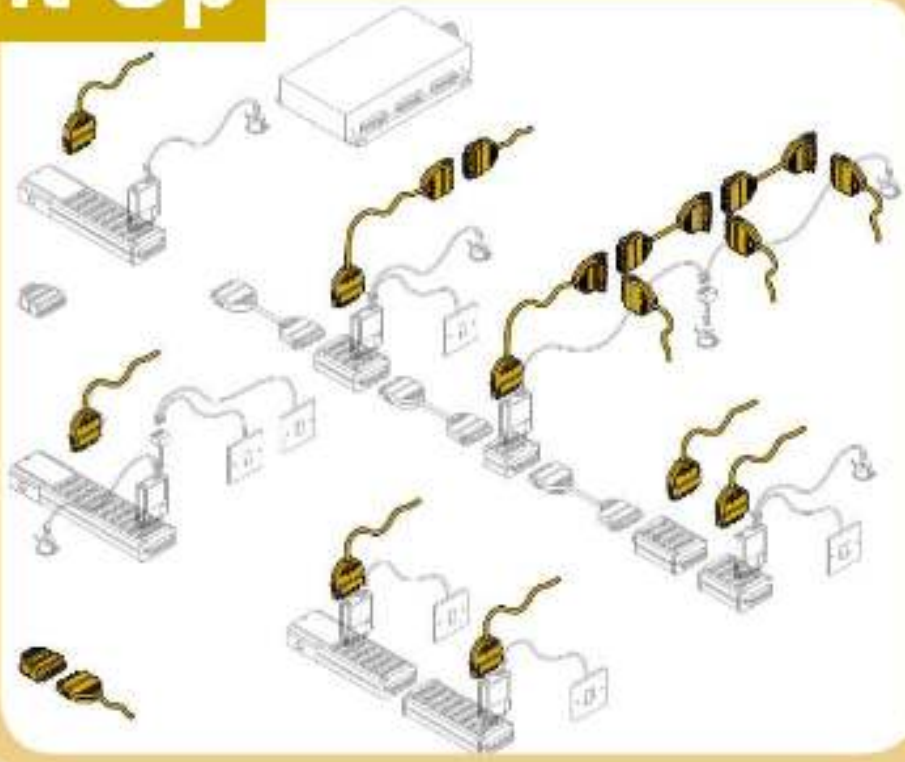




Distributing power to supply your lighting circuits could not be easier. Use the connection units or single socket outlets as stand alone, or take advantage of the unique modular design to add further units and build a plug together connection system. Plug-in an extension unit to extend the previous switched circuit or plug in an inter-connection unit to extend just the supply. Units can be used in any combination and either plugged directly into one another or via an extender lead (when for example continuing on to another room). For a fully modular system use a hub unit as the starting point to provide multiple supply circuit tap off points.

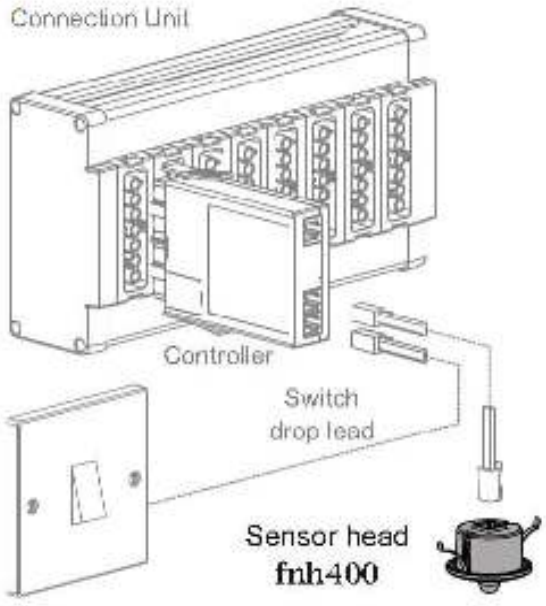
Step 2 - Light Up

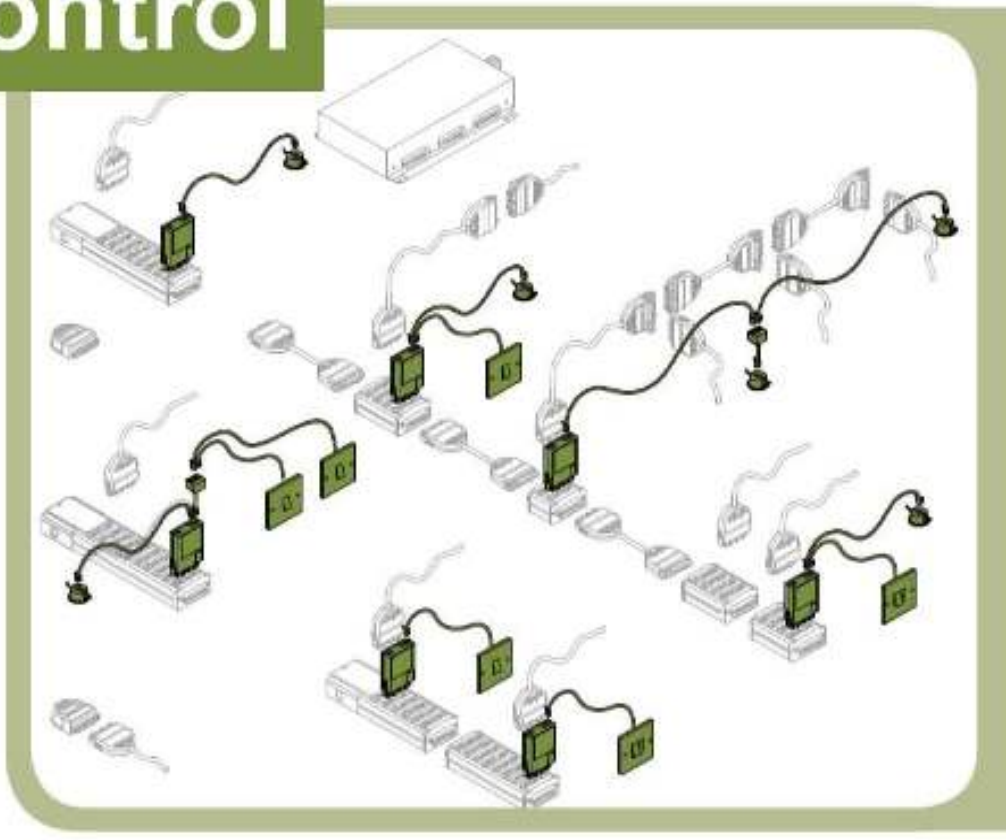




Once the lighting supply is in place the next consideration is connection to the luminaires. Use any of our extensive range of pre-wired luminaire leads, extender and double extender leads (piggy back), pre-wired and unwired plug and socket sets or just plugs. There are also panel mounted plugs and sockets for incorporation into luminaires.

Step 3 - Control





At its simplest a flex7 connection unit can be controlled by hard-wired switch inputs, but to best utilise the flex7 system why not choose a suitable plug-in control device from our extensive range of sensors and switches, and simply plug into any spare way to control that box. Operating at protected extra low voltage we can provide occupancy, presence, daylight linking, daylight dependency, manual dimming / switching and remote control. If preferred there is also a range of mains plug-in switch drops.

ESTA
energy services and technology association

Flex Connectors' flex7 lighting connection and control System was recently installed over 6 floors at 4 Carlton Gardens, London. The system was designed by Stinton Jones Consulting Engineers LLP and installed by Contractor Langley Electrical of Harlow. Flex Connectors were selected for the project due to their user friendly design, quick installation time and the fact that they do not require any commissioning.

flex7 controls were networked to provide a global On/Off per floor. The controls are programmed to monitor the levels of daylight in a room, and dim the lights down when natural light is sufficient. When the room is unoccupied lights will automatically switch off after a pre-set timeout. This ensures that unnecessary energy usage is kept to a minimum at all times.

The building lies within a conservation area, and has much historical significance. It served as headquarters for General Charles de Gaulle during World War 2, who set up the Free French Forces Headquarters there in 1940. It was awarded a blue plaque in 1984 to commemorate their use of the building. Another plaque outside the building details the historic radio broadcast he gave upon first arriving in Britain.

Blue Plaque Building

Projects recently completed using the flex7 system:

4Carlton Gardens, London
Milton Of Leys Primary School, Inverness
Rosebank Primary School, Dundee
Colston Primary Care Centre, Birmingham
The Everyman Theatre, Cheltenham
BBC Drama Village, Cardiff Bay
Whitfield Primary School, Dundee
Dundee Dental Hospital, Dundee
Kidsgrove Fire Station, Stoke On Trent

Blue Plaque Building

PRODUCTS Overview

Power Up

Light Up

Control

ETAP

Recessed luminaires

Surface mounted and suspended luminaires

Modular light systems

Downlights

ETAP

Spots

Wall luminaires

Decorative & accent

Floor standing luminaires

ETAP

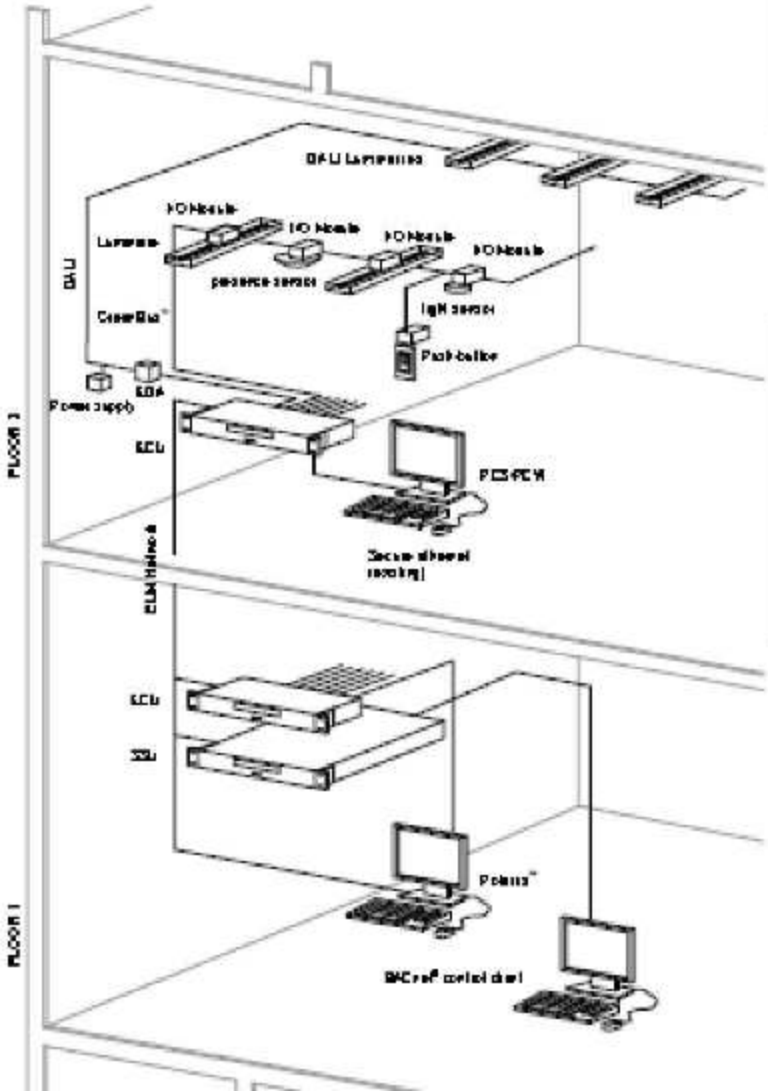
Light line systems

High protection factor luminaires

Medical systems

Light control

ELM
SYSTEM STRUCTURE



DALI

DALI (Digital Addressable Lighting Interface) is a standard protocol for the lighting industry. DALI provides simplified communication and installation. Every DALI line can monitor up to 64 luminaires, which remain individually addressable. Direct communication with the network is possible thanks to the DALI ballast.

GREENBUS™

Exelium's GreenBus™ communication technology is a bus system specifically designed for monitoring. It allows luminaires to be individually monitored and it integrates additional devices, such as presence detectors, light sensors, etc. in an entirely programmable light monitoring system. GreenBus™ provides low-voltage for all devices on the network which means external voltage supplies for sensors etc. are no longer necessary.

ETAP

K1 Surface, suspended and recessed luminaries

K2 Impact-resistant, dust and watertight surface, suspended and recessed luminaries

K3 Dust and watertight surface mounted luminaries IP66

K5 Recessed luminaries

ETAP

K6 Surface and suspended luminaries

K7 Surface and recessed luminaires with LED

K9 LED technology

KB Impact-resistant, dust and watertight surface luminaire

KL Surface luminaires for increased viewing distance


ELKOVO
ČEPELÍK

FILIX

LED INSPIRED

Abacus®

World Leaders in Lighting

Hinged Masts

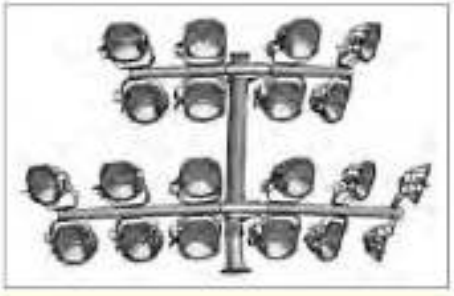
Telescopic Mast Systems

Lowering Headframe Masts

Custom Headframe Design

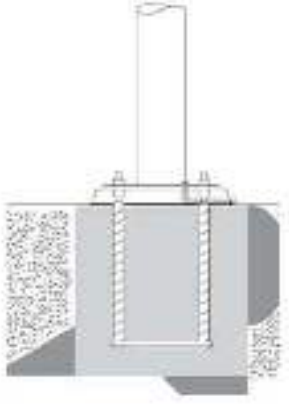
Fixed Masts

Brackets



Control Gear Cabinet

Foundation Design



Abacus®

World Leaders in Lighting

Challenger® 1

Wattage: 1000 -2000W
Optics: Narrow – Medium – Wide
Colour Temp.: 4100k – 5600k
RA: 65 - 90

Challenger® 2

Wattage: 1000 -2000W
Optics: Extra Narrow – Medium – Wide
Colour Temp.: 5600k – 5900k
RA: 90 - 93

Challenger® 3

Wattage: 1000 -2000W
Optics: Narrow – Medium – Wide
Colour Temp.: 4200k – 5600k
RA: 65 - 90

Trent

Wattage: 150-400W
Optics: Narrow symmetric – Asymmetric – Double Asymmetric

Rhea

Wattage: 400-1000W
Optics: Double Asymmetric Medium - Double Asymmetric Wide

Halogen

CFL

2G8

60-85-120W

E27

40W


AMUR
LIGHTING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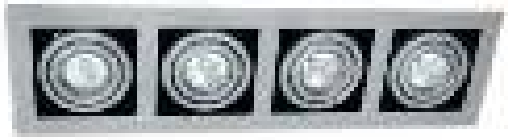

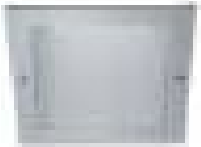

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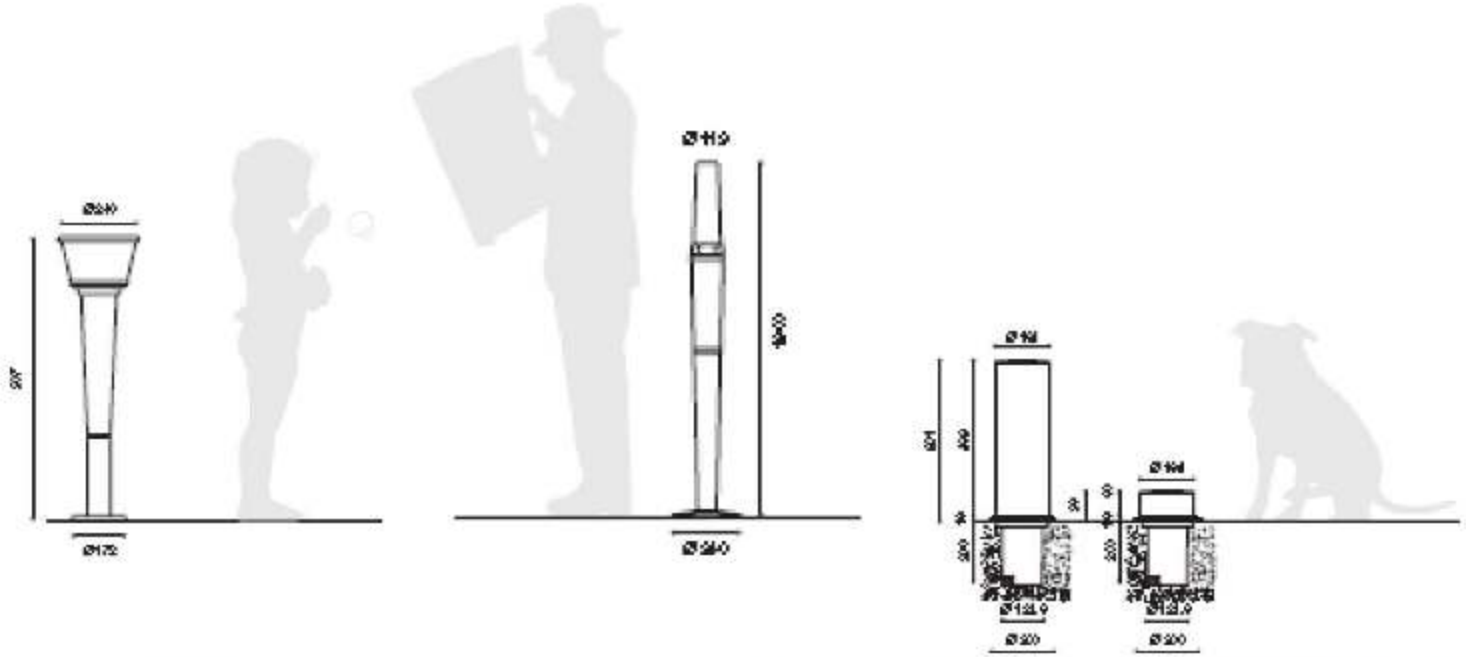
AMUR LIGHTING

DECORATIVE

SWS

marecoLUCE

mareco LUCE



marecoLUCE