



# Fagerhult Group Ireland

LED lighting solutions for primary & post primary schools

FAGERHULT





# Professional lighting solutions.

Fagerhult Lighting is part of the Fagerhult Group, one of Europe's leading lighting manufacturers and suppliers. With our parent company in Sweden, Fagerhult has over 3500 employees and operates in over 25 countries across the world.

Fagerhult Lighting develops, produces and markets professional lighting solutions, both indoor and outdoor, for public environments such as offices, schools, retail areas, industries and hospitals. Our lighting knowledge, combined with a wide range of innovative, energy efficient, environmentally friendly lighting solutions, means we are well positioned to provide the complete lighting package.





# Lighting guidelines.

Education in Ireland has changed, and so has our understanding of the role and importance of lighting in our schools.

In order to provide a creative environment that is supportive and conducive to learning, the new Technical Guidance Document (TGDs) from the Department of Education have laid down strict guidelines for LED lighting in order to improve both the learning environment and the energy performance of Irish Primary and Post Primary schools.

Fagerhult Lighting can supply cutting edge LED lighting technology and lighting controls that can greatly enhance and benefit the environment for students, teachers and all those working in our schools.

- LED luminaires with efficacies up to 154 lm/W.
- Luminaires incorporating the latest in LED chip technology.
- LED boards manufactured at our European based factories.
- All product comes with a Fagerhult 5 year manufacturer’s warranty.
- Locally based design and project management services.

Light source	LED
Colour rendering index	>80
Colour temperature	4000K
Minimum luminaire efficacy	125lm/W
Median useful life (IEC 62717) Ta 25°C (50.000 hrs)	L80 B50
Minimum driver lifetie (Max ambient temp 35°C) (50.000 hrs)	50.000 hrs
MacAdam step	3
UGR	<19





# Classroom.

Fagerhult AllFive LED, Multilume and Lento fittings are an ideal solution for Irish classrooms.

These LED luminaires are first in class with market efficacies of up to 154 lm/W and state of the art LED chip technology. These fittings offer the best solution achieving the desired Lux levels, optimising glare control, enhancing visibility while also giving comfort and energy performance making the space an enjoyable learning environment.

- Fittings that achieve up to 154 lm/W.
- UGR < 19 compliance.
- AllFive LED available in 1200 mm and 1500mm versions making it ideal for both new build and retro-fit projects.
- Flat Panel 600 x 600 fittings that meet TGDs.
- Life Time L90 100,000 hours.
- Ease of installation and maintenance.

Multilume Slim Delta Art. no	Effect, W	lm	Module length	Installation	Light control
23509-402	32	4335	600x600	VTB	DALI/Phase-pulse
23198-402	33	3758	300x1200	VTB	DALI/Phase-pulse

Lento Art.no.	Effect, W	lm	Light control
19482	22	2700	Standard
19483	47	5400	Standard



**Multilume Slim Delta**  
A recessed workplace luminaire in various sizes for most types of suspended ceilings. Delta louvres provide efficiency and optimal lighting comfort. Recessed depth 23 mm.

**Multilume Slim Delta**

Micro prismatic louvre

IP44

CRI80, 4000K, SDCM 3

L100 B50 50 000h

Led driver, h/max failure 100000/10

Lumen maintenance at 50 000h 1.0



**Lento LED**  
A luminaire for lighting pictures and whiteboards with a controlled pattern of light. Lento LED provides high lighting comfort with a soft gradient between lit and unlit surfaces.

**Lento LED**

Prismatic louvre

Colour: white

Length 1000mm or 2000mm,

Height 85mm, Width 66mm

IP20

CRI80, 4000K, SDCM 3

L70 B50 60 000h

Led driver, h/max failure

100000/10

Lumen maintenance at

50 000h 0,74



**Allfive LED**  
A universal luminaire, developed for different applications use with IP 44 to withstand moisture and mechanical stress. AllFive LED with a added technical film its fulfil UGR19 in classrooms.

**AllFive LED**

Prismatic louvre

Colour: White, IP44

Length 1200mm or 1500mm

Height 50mm

CRI80, 4000K, SDCM 3

L90 B50 70 000h

LED driver, h/max failure

100000/10

Lumen maintenance at

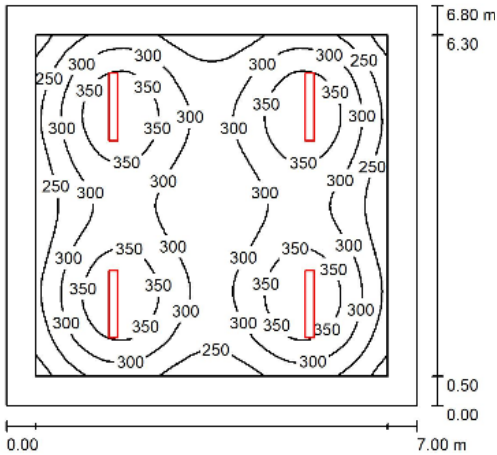
50 000h 0,92

DALI

AllFive LED Art.no.	Effect, W	lm	lm/W	Module length	Louvres
33492	21	3000	142	1200	Prismatic, UGR19 film
33493-402	30	4200	138	1200	Prismatic, UGR19 film
33494-402	36	4900	138	1200	Prismatic, UGR19 film
33495-402	34	4900	147	1500	Prismatic, UGR19 film
33497	22	3200	145	1500	Prismatic, UGR19 film

# 4-fitting classroom layout.

AllFive LED 4900lm output in 1200/1500mm



Luminaire type	Description	Quantity
Allfive LED	A universal luminaire, developed for different application with IP44 to withstand moisture and mechanical stress. Allfive with an added technical film to fulfil UGR 19 in classrooms.*	4

\*1500mm 4900lm output required

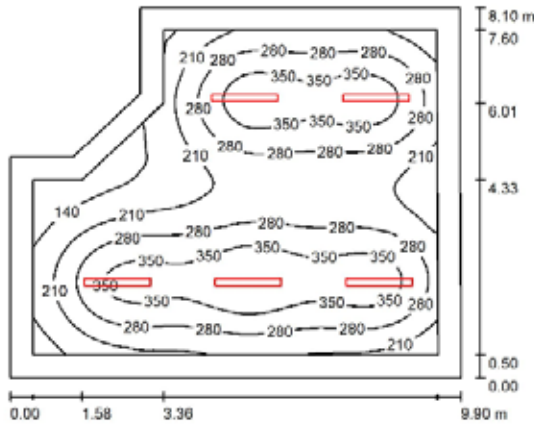
	Targets	Results
Light level	300 lux	304 lux
UGR limit	< 19	Lengthways - 19 across - 18

Calculation critera	As used in calculation	Energy	Results
Reflectances (C/W/F)	70/50/20	Total circuit watts	152
Ceiling height	3.15m <sup>2</sup>	W/m <sup>2</sup>	3.19
Mounting height	3.15m <sup>2</sup>	W/m <sup>2</sup> /100lux	1.05
Area	47.60m <sup>2</sup>	Luminaire efficacy (lim/W)	129
Maintenance factor	0.8	Hyperlink	
Reference plane height	0.7	<a href="https://www.fagerhult.com/Products/allfive/allfive-led/">https://www.fagerhult.com/Products/allfive/allfive-led/</a>	

Notes
Surface mounted LED lighting Compliant with Dept. Education Lighting Guidelines TGD-033, TGD-030 & TGD-031

# 5-fitting classroom layout.

AllFive LED 4900lm output in 1200/1500mm



Luminaire type	Description	Quantity
Allfive LED	A universal luminaire, developed for different application with IP44 to withstand moisture and mechanical stress. AllFive with an added technical film to fulfil UGR 19 in classrooms.*	5

\*1500mm 4900lm output required

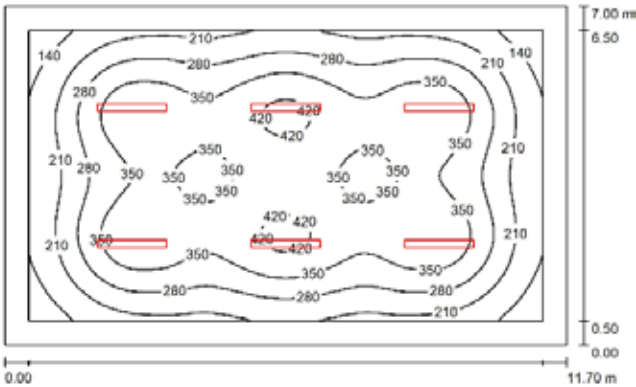
	Targets	Results
Light level	300 lux	305 lux
UGR limit	< 19	Lengthways - 17 across - 15

Calculation critera	As used in calculation	Energy	Results
Reflectances (C/W/F)	70/50/20	Total circuit watts	190
Ceiling height	3.15m <sup>2</sup>	W/m <sup>2</sup>	2.65
Mounting height	3.15m <sup>2</sup>	W/m <sup>2</sup> /100lux	0.97
Area	71.73m <sup>2</sup>	Luminaire efficacy (lim/W)	129
Maintenance factor	0.8	Hyperlink	
Reference plane height	0.7	<a href="https://www.fagerhult.com/Products/allfive/allfive-led/">https://www.fagerhult.com/Products/allfive/allfive-led/</a>	

Notes
Surface mounted LED lighting Compliant with Dept. Education Lighting Guidelines TGD-033, TGD-030 & TGD-031

# 6-fitting classroom layout.

AllFive LED 4900lm output in 1200/1500mm



Luminaire type	Description	Quantity
Allfive LED	A universal luminaire, developed for different application with IP44 to withstand moisture and mechanical stress. AllFive with an added technical film to fulfil UGR 19 in classrooms*	6
*1500mm 4900lm output required		

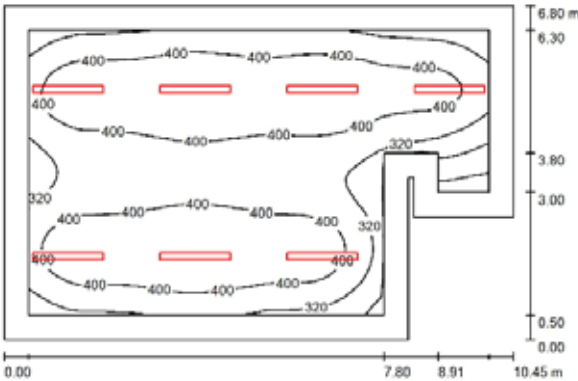
	Targets	Results
Light level	300 lux	301 lux
UGR limit	< 19	Lengthways - 19 across - 18

Calculation critera	As used in calculation	Energy	Results
Reflectances (C/W/F)	70/50/20	Total circuit watts	228
Ceiling height	3.15m <sup>2</sup>	W/m <sup>2</sup>	0.93
Mounting height	3.15m <sup>2</sup>	W/m <sup>2</sup> /100lux	2.78
Area	81.90m <sup>2</sup>	Luminaire efficacy (lm/W)	129
Maintenance factor	0.8	<b>Hyperlink</b> <a href="https://www.fagerhult.com/Products/allfive/allfive-led/">https://www.fagerhult.com/Products/allfive/allfive-led/</a>	
Reference plane height	0.7		

Notes
Surface mounted LED lighting Compliant with Dept. Education Lighting Guidelines TGD-033, TGD-030 & TGD-031

# 7-fitting classroom layout.

AllFive LED 4900lm output in 1200/1500mm



Luminaire type	Description	Quantity
Allfive LED	A universal luminaire, developed for different application with IP44 to withstand moisture and mechanical stress. AllFive with an added technical film to fulfil UGR 19 in classrooms*	7
*1500mm 4900lm output required		

	Targets	Results
Light level	300 lux	381 lux
UGR limit	< 19	Lengthways - 17 across - 16

Calculation critera	As used in calculation	Energy	Results
Reflectances (C/W/F)	70/50/20	Total circuit watts	266
Ceiling height	3.15m <sup>2</sup>	W/m <sup>2</sup>	4.06
Mounting height	3.15m <sup>2</sup>	W/m <sup>2</sup> /100lux	1.05
Area	65.60m <sup>2</sup>	Luminaire efficacy (lm/W)	129
Maintenance factor	0.8	<b>Hyperlink</b> <a href="https://www.fagerhult.com/Products/allfive/allfive-led/">https://www.fagerhult.com/Products/allfive/allfive-led/</a>	
Reference plane height	0.7		

Notes
Surface mounted LED lighting Compliant with Dept. Education Lighting Guidelines TGD-033, TGD-030 & TGD-031





# Circulation areas & stairwells.

Fagerhult Discovery Evo is the new generation of a classic multi-purpose luminaire. Developed to utilise all the benefits of LED technology, Discovery Evo is a versatile lighting concept that meets the needs of a demanding environment and can be ceiling or wall mounted. In school corridors and stairwells we recommend an e-Sense solution with integral control sensors on corridors.

Art.no.	Effect, W	lm	lm/W	Light control
57755	14	1898	136	Standard
57755-402	14	1898	136	DALI/Phase-pulse
57755-469	14	1898	136	e-Sense Detect on/off
57755-496	14	1898	136	e-Sense Move DALI absence
57759	19	2566	138	Standard
57759-402	19	2566	138	DALI/Phase-pulse
57759-469	19	2566	138	e-Sense Detect on/off
57759-496	19	2566	138	e-Sense Move DALI absence



**Discovery Evo**

Opal cover,  
Diameter 359mm  
Height 94mm  
IP44, IK07  
CRI80, 4000K, SDCM 3  
L90 B50 60 000h

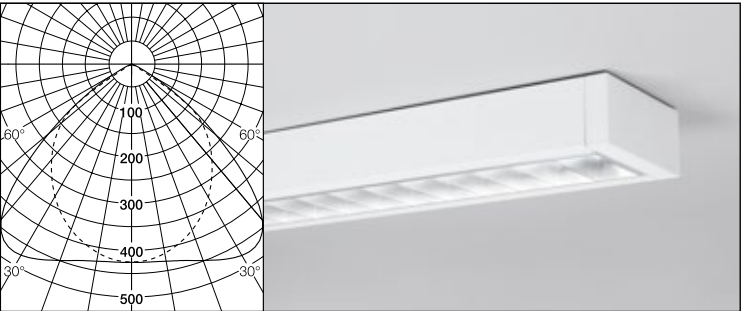
Led driver, h/ max  
failure 100000/10  
Lumen maintenance  
at 50 000h 0,91



# Office.

Closs LED has a classic minimalist shape and a unique visual appearance that suits most environments.

The design makes Closs LED an obvious choice for offices where an effective luminaire with small dimensions and clean lines is required. Despite its small cross-section of 55 x 125mm, Closs LED with Beta Opti optics offers a high contrast light with good light treatment and a so called bat-wing shaped light distribution to create a glare-free, versatile working light.




Closs LED
Louvre: BetaOpti
Colour: white
Length 1200mm, Width 125mm, Height 55mm
IP20
CRI80, 4000K, SDCM 3
L100 B50 50 000h
Led driver, h/max failure 100000/10
Lumen maintenance at 50 000h 1.0


Art.no.	Effect, W	lm	lm/W	Colour	Light control	Light distrubution	CLO
12161	32	3900	125	White	Standard	Direct	
12161-402	29	3549	125	White	DALI/Phase-pulse	Direct	Yes
12177	40	5250	131	White	Standard	Direct/Indirect	
12177-402	40	5250	131	White	DALI/Phase-pulse	Direct/Indirect	



# Toilet areas.

Well-lit hygienic areas create a ‘clean’ space that is easy to maintain and pleasant to use. Discovery Evo provides light on ceilings and walls to define the room. An effective all-round luminaire with IP 44 rating that meets the needs in more demanding environments. An elegant design and a space-creating lighting pattern for bathrooms, kitchens, stairwells and corridors. Pleiad G4 125, 165 or 205 is an effective IP44 downlight with very good technical properties. Several light outputs, reflector options and distributions.

<b>Pleiad G4 125</b>	
Diameter 143mm, height 98mm IP44 CRI80, 4000K, SDCM 3 L80 B50 80 000h Led driver, h/max failure 100000/10 Lumen maintenance at 50 000h 0,87	

<b>Discovery Evo</b>	
Opal cover, Diameter 359mm Height 94mm IP44, IK07 CRI80, 4000K, SDCM 3	L90 B50 60 000h Led driver, h/max failure 100000/10 Lumen maintenance at 50 000h 0,92 



Art.no.	Effect, W	Lumen output	CCT, K	Diameter, mm	Reflector	Light control
Pleiad G4 125 73014	10	1290	4000	143	Matt	Standard
Pleiad G4 125 73014-402	10	1161	4000	183	Matt	DALI/Phase-pulse
Discovery Evo 57751	8	1176	4000	359		Standard
Disovery Basic 58300	8	1318	3000	288		Standard
Disovery Basic 58301	8	1318	3000	288		On/Off sensor



Whatever the sport a well-lit environment makes the activity easier for everyone to enjoy.

Excis LED has been developed for sports centres with ball protection certification per VDE 0710-13. Available with three different lumen packaged, providing glare-free light from greater heights. Can be suspended or surface mounted. (*Wire suspension kit or adjustable ceiling bracket ordered separately*)

[illegible]





# External wall mounted.

Discovery Evo is the new generation of Fagerhult’s classic multi-purpose luminaire. Developed to utilise all the benefits of LED technology, Discovery Evo is a versatile concept that meets the needs of demanding environments.

Discovery Evo can be surface mounted or recessed in ceilings or on walls and is also available in an anti-ligature design IK 10 as well as an outdoor model which combines IK 10 and IP 55. Based on an innovative solution with recess ring and a user friendly light package, the installation is one of the quickest on the market.

**Emergency lighting**

Self-contained emergency lighting luminaire 3 h, with self-test AT4 and the possibility to connect a monitoring system based on communication via Dali. The system is not dependent on a Dali system being connected or operated.

Discovery Evo
<p>An effective all-round luminaire with IP 44 that satisfies needs in more demanding environments. An elegant design and a space-creating lighting pattern for stairwells, corridors, kitchens, bathrooms and cellars.</p>

Discovery Evo		Outdoor casing	
Opal cover, Diameter 359mm, height 94mm		IK10, IP55, black (RAL 9005 structured) 92655	
CRI80, 4000K, SDCM 3		IK10, IP55, Anthracite grey (Gris 900 Sablé	
L90 B50 60 000h		structured) 92654	
Led driver, h/max failure 100000/10			
Lumen maintenance at 50 000h 0,91			
Art.no.	Effect, W	lm	lm/W
57755	14	1898	136
57759	19	2566	138
Emergency Lighting			
57757	14	1898	136
57761	19	2566	138





# Car parks & external post top.

Guidance and safety are the most important criteria for a well-lit, functioning carpark. At any time of day it should be easy to find your car or a free parking space.

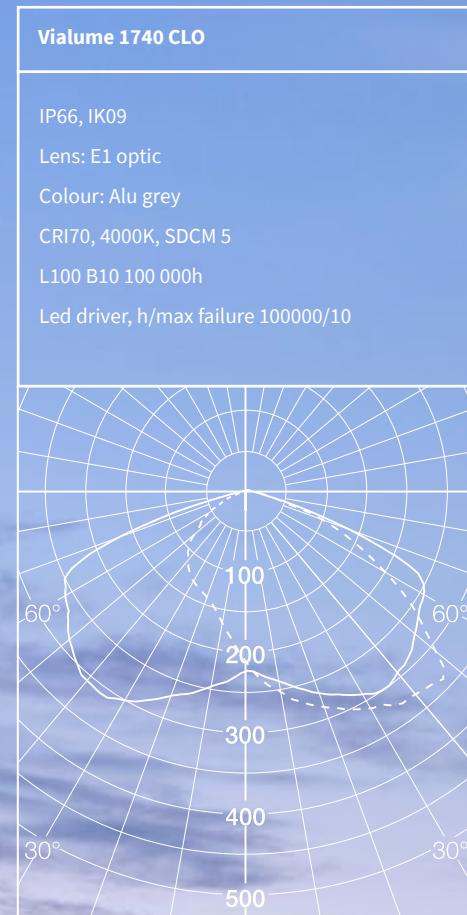
Vialume combines excellent lighting properties and visual comfort with a modern cost-effective design, with its slim, clean lines, the post top luminaire blends well into most environments.

## Vialume

A post top luminaire with Advance Glare Control (AGC) lenses giving excellent lighting properties and visual comfort, ideal for street lighting, footpaths, bicycle paths and smaller car parks. CLO for output consistency as standard.

Vialume Art.no.	Start W	Average W	lm	lm/W	Light source colour	Lens	No. of LEDs	CLO function on
304117-479	30	33	4300	142	740	E1	7	Yes
304143-479	52	57	7300	141	740	E1	9	Yes

Evolume Art.no.	Start W	Average W	lm	lm/W	Light source colour	Lens	No. of LEDs	CLO function on
303354-479	33	35	4300	129	740	E1	6	Yes
303384-479	57	63	7300	129	740	E1	8	Yes
303596	Bracket for Evolume. Bracket for Ø 76 mm posttop. Alu grey.							





# Evolume.

A post top luminaire with Advance Glare Control (AGC) lenses giving excellent lighting properties and visual comfort, ideal for street lighting, footpaths, bicycle paths and smaller car parks. CLO for output consistency as standard.



**Evolume 1 740 CLO**

IP66, IK08

Lens: E1 optic

Colour: Alu grey

CRI70, 4000K, SDCM 5

L100 B10 100 000h

Led driver

h/max failure 100000/10




# Emergency.

Fagerhult’s emLED concept uses a high intensity LED which is only used for emergency lighting, and is a luminaire with self-test function, for recessed or surface installation.


It is a self-contained emergency luminaire. Monitoring via Dali, emLED is supplied complete with two lenses for a choice of light distribution. The lens for symmetrical light distribution is intended for use in open areas and the lens with oval light distribution works best for corridors and escape routes.

exLED directional self-contained sign for wall or ceiling mounting supplied with a complete set of EC & ISO legends are supplied with each luminaire. A suspended version is also available. Dali option.

emLED

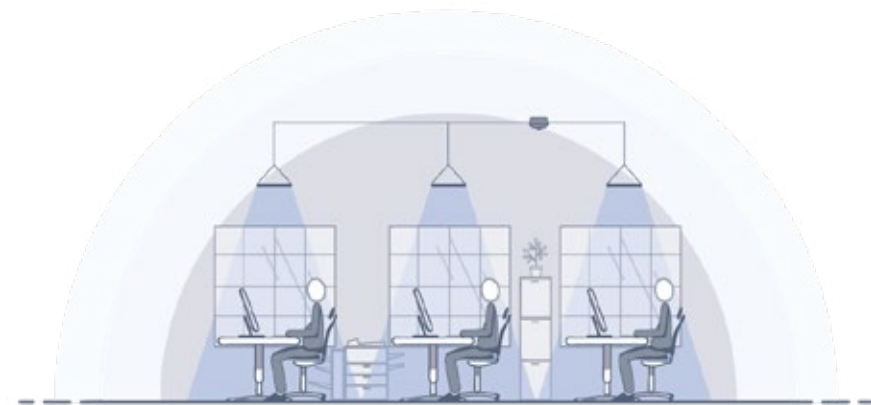


exLED



Art.no.	Miscellaneuos
emLED 99103	Monitoring via DALI
exLED 188003	Ceiling/wall mounted
exLED 188004	Suspended





# e-Sense Customised Stand-alone


e-Sense Customised Stand Alone sensors are an easy way to achieve the greatest possible energy saving and control over installations where the sensor cannot be placed adjacent to the luminaire.


The sensor communicates with the luminaires via DALI and several functions can be programmed to meet the requirements for the installation.


e-Sense Customised Stand-alone is ideal for installation in offices. Several sensors can be connected together to cover large areas and energy saving functions, such as daylight control and manual control, can be activated.


The system offers functions commonly used in office environments such as daylight control, lux threshold and manual control. Sensor for individual installation in ceilings, ceiling height max 6 m.


Several sensors can be connected together to cover large areas or corridors and there is a choice of PIR or Microwave detection techniques. The integrated power supply for DALI helps simplify installation. Easy programming by remote control enables you to quickly adjust the installation.

  
Presence control

  
Lux threshold

  
Absence detection to switch off

  
Wireless communication

  
Remote control

Art. no.	Description	
86370	Sensor e-Sense Customised Stand-alone, ceiling height max 6 m	



# e-Sense Move

The lighting control system e-Sense Move is primarily developed for stairwells, and is based on microwave technology. In this system, several luminaires communicate with each other wirelessly. e-Sense Move does not require any control cables.

e-Sense Move is a duplex system, which means all luminaires act as both master and slave luminaires, depending on which luminaire detects presence. When presence is detected, information is sent on to one or more luminaires, which turn on. Each sensor is able to actively “listen” to 15 other sensors. e-Sense Move is excellent for use in stairwells of buildings where there are many floors, for instance. The luminaires can be adjusted so that only luminaires on the floor above and below the floor where detection takes place switch on, which saves energy.

If movement is detected on floor 4, for instance, the luminaires on floors 5 and 3 switch on. If someone is walking down the stairs, the luminaire on floor 3 detects this and sends a signal to floor 2, etc. In each case the light switches on in front of the person who is on their way up or down the stairwell.

e-Sense Move can even optimize the lighting in car parks. Individual settings for every luminaire mean that basic lighting can be used in the dark parts, and other lighting for brief periods for the luminaires that are located towards the entrances and doors. The system is also suitable for corridors, basements and attics, because times and levels can be adjusted for each luminaire.

**Commissioning**  
Commissioning is carried out by remote control. Commissioning includes determining which luminaires should listen to one another, light levels for basic and low-level lighting, time settings for returning to low-level lighting and/or for turning lights off.

**Technology**  
Microwave sensor and RF unit (integrated in luminaires). The luminaire that registers presence sends an RF signal to the luminaire or luminaires that have been programmed to listen to the detecting luminaire.





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