



The Brighter Choice

Lighting for **schools & colleges**

From classrooms and laboratories to kitchens and car parks



INSIDE A SCHOOL

Schools are complex. There are many different activities taking place under one roof, but there are some priorities and principles that apply almost everywhere.

Lighting should be used to enhance the learning environment. In classrooms good lighting will encourage concentration and engagement – while poor lighting can be boring, distracting, even headache inducing.

Sports area.
 LYNX is an asymmetric flood-light for sports facilities and other outdoor areas

Sports hall / multi-use hall.
 OREGON is a specialist high-output fitting for multi-use halls and sports facilities with an impact rating up to IK10

Changing rooms.
 PRESTON IP54 is designed for this type of demanding environment

Main entrance.
 DENALI is an impressive fitting announcing, "you have arrived"

Classroom.
 STERLING panels provide low-glare, low maintenance lighting

Classroom.
 LINCOLN is an attractive alternative to conventional 600 x 600 panels

Corridor.
 YALE is a very robust fitting with a high output – ideal for busy circulation areas

Classroom.
 DALLAS linear fittings are ideal for higher and sloping ceilings or irregularly shaped areas

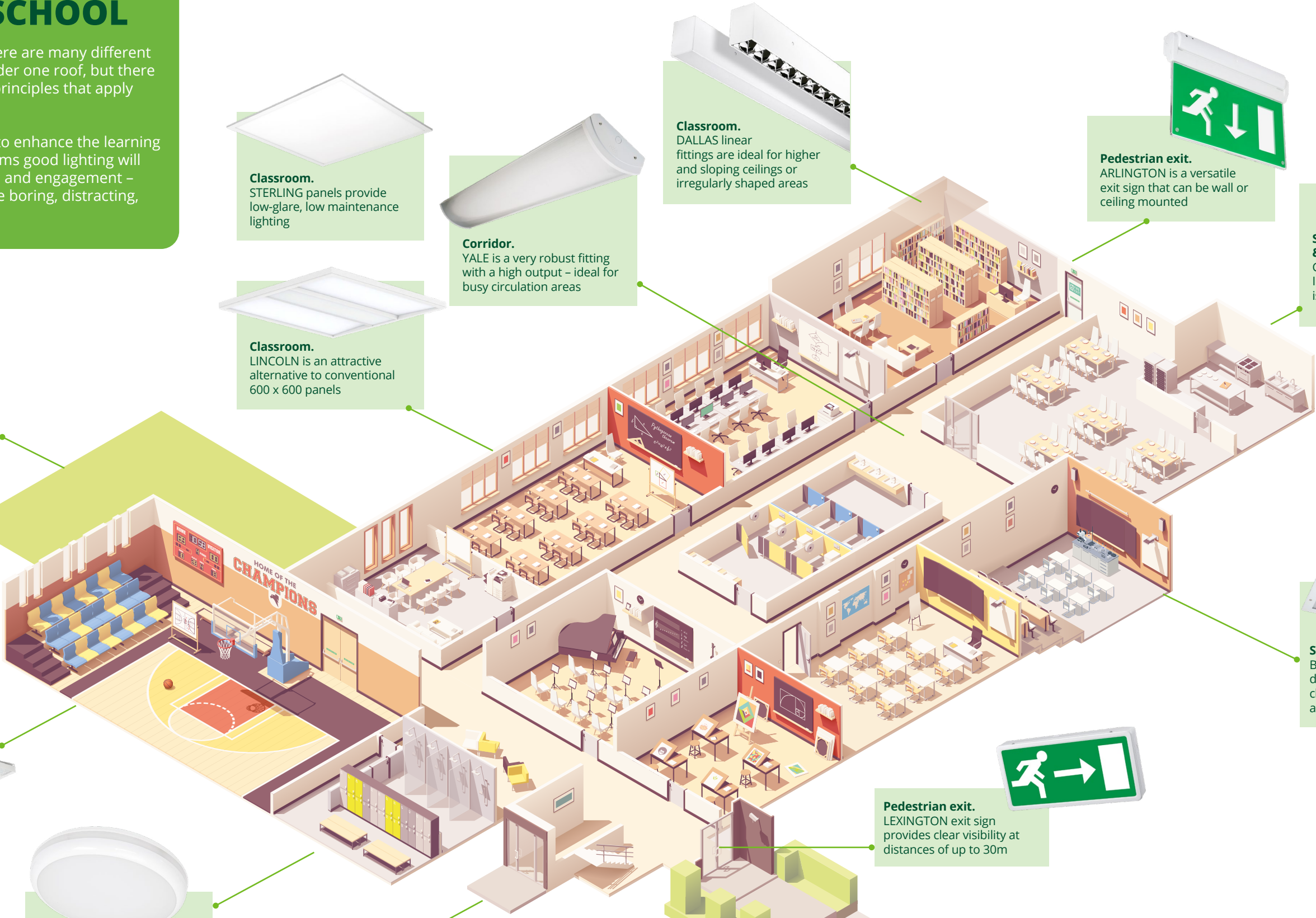
Pedestrian exit.
 LEXINGTON exit sign provides clear visibility at distances of up to 30m

Pedestrian exit.
 ARLINGTON is a versatile exit sign that can be wall or ceiling mounted

School kitchens & DT workshops.
 GREENLAND is an IK10 and IP66 rated non-corrosive that is impact and water resistant

Science lab / School kitchen.
 BISMARCK is IP54 rated – designed for laboratories, clean rooms and anywhere with a risk of steam and water

Paths and car-parks.
 EDMONTON is energy efficient and the design minimises light pollution



OUTSIDE A SCHOOL

Good lighting reinforces good behaviour, reducing opportunities for bullying, rule-breaking and antisocial activity.

WHAT TO LOOK FOR IN SCHOOL & COLLEGE LIGHTING

LOW GLARE

Glare can prevent students from seeing their teacher, or the blackboard, clearly, and it prevents teachers making eye-contact with their pupils. In the worst cases it induces headaches, fatigue and absenteeism. Low glare (UGR<19) is therefore recommended for classrooms.

Here are 3 things you can do to reduce glare:

1 Choose low-glare fittings

The design of a light fitting has a major bearing on the amount of glare that users will experience. These fittings will all deliver UGR <19 in most situations:

- a. LINCOLN and STERLING panels
- b. WESTPORT downlight

2 Consider adding some up-light

Reducing the contrast between the ceiling and the light fittings reduces glare, so a suspended fitting such as DALLAS (with 30% uplight) will reduce glare.

3 Orient linear fittings correctly

If you are using linear fittings, such as DALLAS and YALE, arrange them so that they run along the line of sight, not across it.

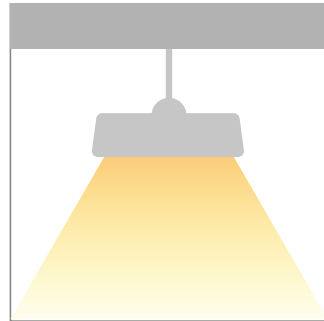


Fig.1 Suspended fitting with downlight only. The contrast between the fitting and the ceiling background is high. This increases glare.

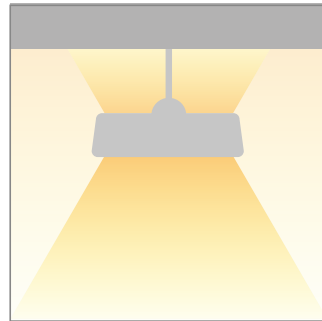


Fig. 2 Suspended fitting with 30:70 uplight / downlight. The light on the ceiling reduces the contrast, so the glare is reduced.

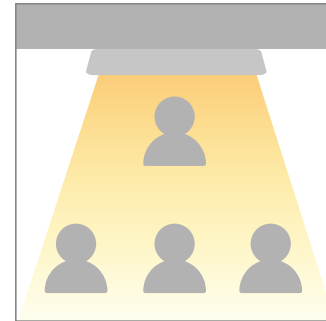


Fig. 3 Using a linear fitting positioned across the line-of-sight, glare is hard to avoid.

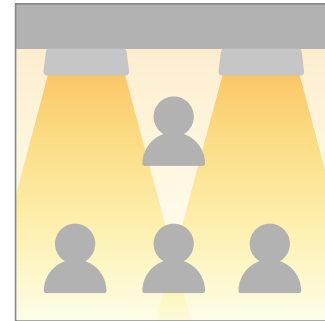
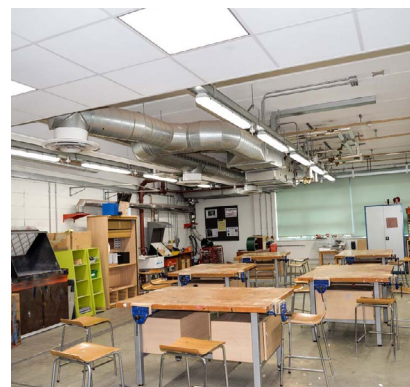
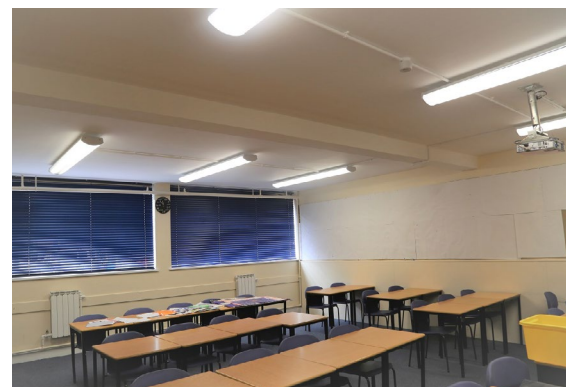


Fig. 4 The same fitting placed parallel to the line of site reduces glare.



USE OF DAYLIGHT

If plenty of daylight is available, we should use lighting controls to exploit it, but the window rows need to be controlled separately from the other rows.

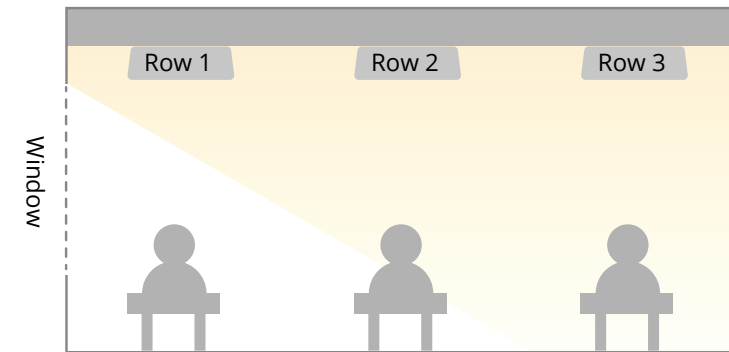


Fig. 5 Row 1 experiences a high level of daylight and should be dimmable. Dimming is less important on rows 2 and 3.

This saves energy, and natural light is also better for our well-being and alertness.

The MasterConnect lighting control system (see next page) is a great solution for classrooms and lecture theatres.

ROBUST, WATERTIGHT & HYGIENIC

The lighting in less-supervised spaces, such as corridors and changing rooms needs to be very robust. Look for fittings with a high IK rating (impact protection) – the maximum is IK10 – and a high IP rating (ingress protection). Changing rooms should have IP44 minimum. Kitchens and laboratories should have IP54.



BISMARCK is IP54 rated with a wipe-clean front cover. Ideal for kitchens and laboratories.



GREENLAND is IK10 and IP66 rated. It is a great choice for larger changing rooms.



PRESTON bulkhead is IK10 and IP54 rated - suitable for most toilets and changing rooms.

OREGON is designed for sports halls. It is available with a wire guard (giving it an IK10 rating), a choice of sensors and either a wide-area or narrow-beam light distribution.



EMERGENCY LIGHTING

The safety of pupils and staff is paramount, but schools and colleges are often large and complex spaces with many different areas - some of them restricted. This means that special consideration needs to be given to how emergency fittings are tested.

The options are:

- | | | |
|---|---|--|
| <p>X Manual test
Rarely suitable</p> <ul style="list-style-type: none"> To avoid disrupting lessons all testing would need to be done out of normal hours, increasing costs. Access would be required during holidays when schools are otherwise closed, increasing costs further. | <p>? Self-test
Sometimes suitable</p> <ul style="list-style-type: none"> Self-test fittings initiate their own test sequence but there is no end-user control over the timing of this. Tests starting without warning during lessons would not be acceptable. | <p>✓ Addressable self-test
The practical solution</p> <ul style="list-style-type: none"> The testing schedule can be determined in advance to take place at appropriate times No fittings are omitted from testing, even in the most distant corridors or restricted areas. |
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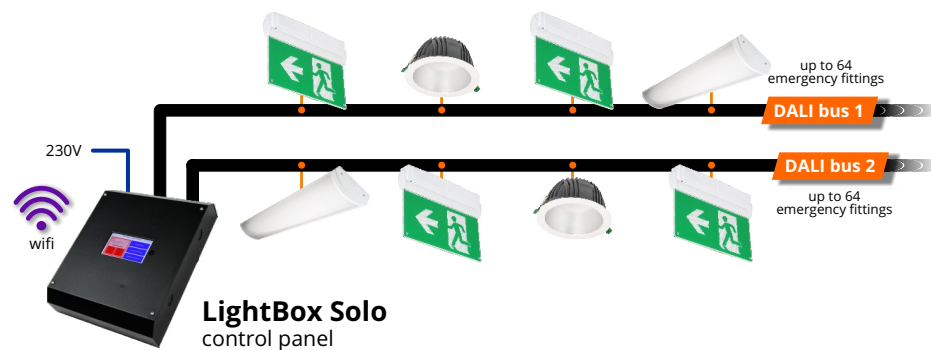
ADDRESSABLE SELF-TEST EMERGENCY LIGHTING

We have 3 addressable self-test solutions available to suit all schools and colleges.

LightBox Solo
This is our entry-level addressable self-test system. It is suitable for installations with up to 128 emergency fittings – just right for many schools.

All emergency fittings test themselves at the required intervals, and this can be scheduled to avoid disruption to normal school activities.

Any failures can be reported to the caretaker (or responsible person) via e-mail or text message.

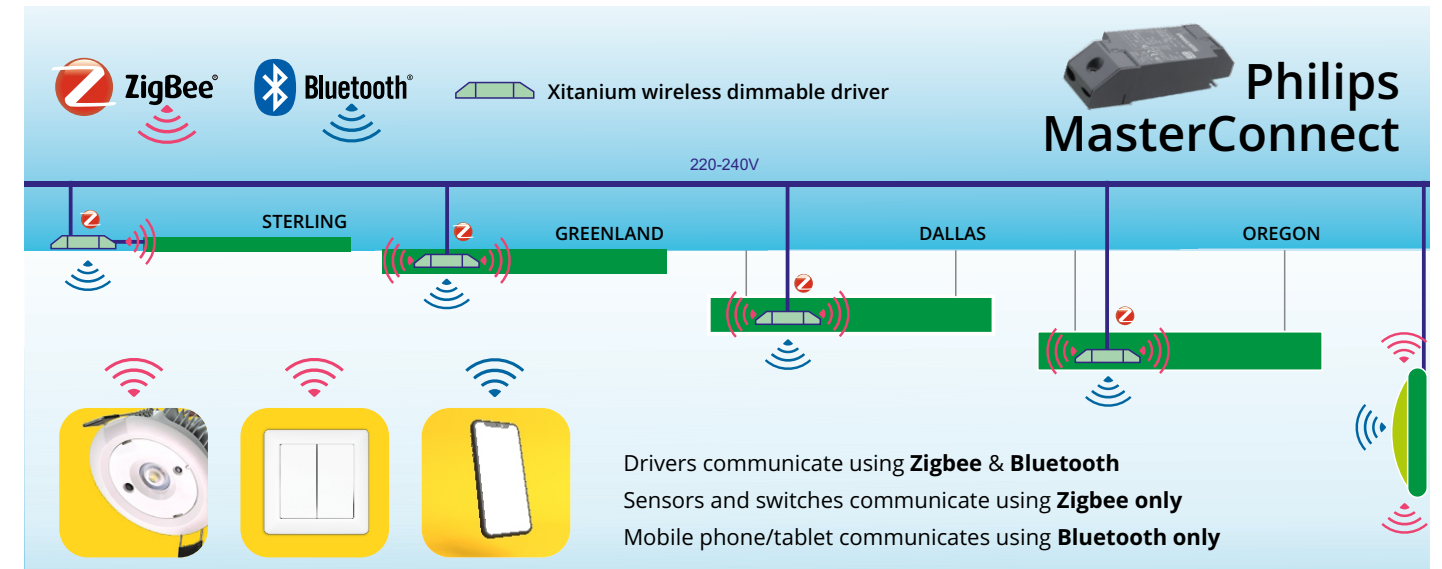


LightBox Emergency
This is suitable for installations with up to 1,200 emergency fittings, so it is suitable for large schools and colleges, especially with multiple buildings.

LightBox
This is designed for the largest projects and contains a full suite of lighting control functions as well as addressable self-test.

LIGHTING CONTROLS FOR CLASSROOMS, LECTURE THEATRES AND STUDY AREAS

We have partnered with Signify to offer the Philips MasterConnect system. This enables us to create simple, flexible and highly functional lighting control installations that are ideal for classrooms and lecture theatres.



At the heart of the system are Philips Xitanium drivers in NVC light fittings. The Xitanium drivers communicate with sensors and switches wirelessly - using Zigbee.

The sensors and switches are all wireless, so they can be installed anywhere with minimal disruption.

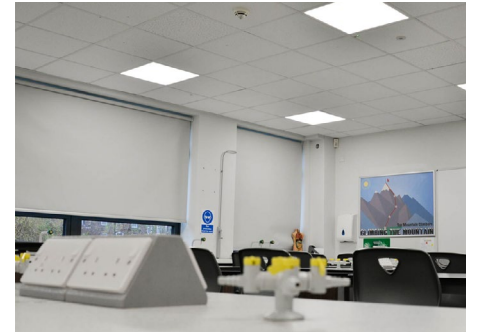
Commissioning is required, but it is a simple process. It is done via an app on a phone or tablet which communicates with the drivers via Bluetooth.

Without human intervention, all the Zigbee drivers, switches and sensors talk to each other and build their own Zigbee mesh network. This means that MasterConnect is simple and cost-effective to install, making it an ideal solution for classrooms and lecture theatres.

MasterConnect has all the features you need in classrooms and lecture theatres

- Presence/absence detection
- Corridor hold – keeps the corridor lights on whenever someone is in the adjacent classroom
- Maintained light level (daylight harvesting)
- Manual over-ride for dimming & on-off
- Scene setting and recall – for presentations, quiet time, teaching etc





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