



Thorlux Lighting designs, manufactures and supplies the most energy efficient lighting systems on the market. The majority of Thorlux products can be used straight from the box with their default settings. However, to operate most effectively, products need to be configured to the conditions on site (and also in line with any specific user wishes). Thorlux has a team of skilled commissioning engineers who can visit the site and configure the lighting installation upon request. Commissioning is charged at a daily rate and will be added to most project quotations as a standard option.



## WHAT IS COMMISSIONING?

Thorlux offers a professional on-site commissioning service to ensure that products are configured to provide the desired performance and return on investment. Commissioning begins with identifying the end-user's project requirements and ends with ensuring that the installed systems satisfy these requirements. After all, the end user has paid extra for electronic systems to offer benefits – it's important that these benefits are realised.

Commissioning of lighting is now an integral part of the requirements for new buildings and major refurbishments under Building Regulations. Paragraph L1(b)(iii) of Schedule 1 to the Building Regulations requires fixed building services to be commissioned by testing and adjustment as necessary to ensure that they use no more fuel and power than is reasonable in the circumstances.

## DEFAULT FACTORY SETTINGS

A common misconception is that default factory settings will provide the desired energy savings and performance. All "Smart" luminaires leave the factory with default settings that will turn the lights on and off as required, with the luminaires reacting to daylight by dimming and brightening.

However, these default factory settings do not take into account site-specific conditions. Different décor, furniture and floor and window coverings affect the way that the sensors respond to reflected light; because these aspects can vary widely from installation to installation, it is impossible to optimise settings in the factory. In addition, luminaire positions and mounting heights can dramatically affect the overall performance of the system.

Some end users may also choose specific settings, for example to reduce automatic turn-off time when no presence is detected, to further increase energy savings. (The factory default is 10 minutes).

## IDENTIFYING END-USER REQUIREMENTS

The end user's requirements are agreed prior to Thorlux's site visit; typically the end user or design team provides Thorlux with a clear expression of expectations. Thorlux prepares a pre-commissioning checklist to document the agreement. The checklist includes information about the tasks being conducted on site, special needs, light levels, visual comfort, energy efficiency, maintenance, applicable codes and standards and many other issues.

The customer-specific requirements are highlighted on the Thorlux commissioning certificate. This formal document provides a clear, detailed description of the requirements addressed during configuration, and may include other helpful information such as details of performance testing and acceptance criteria, requested deviations from standard CIBSE requirements, control zoning and references to related documents such as wiring diagrams.

## COMMISSIONING SMART LUMINAIRES

All Smart luminaires offer a number of parameters that can be altered to suit the site and user requirements:

- Light level - Smart luminaires need to be set to maintain the correct illumination level. For this to be achieved correctly the building should be ready for occupancy with the floor finished and furniture in place. If blinds are not fitted, then light level setting needs to be completed during the hours of darkness.
- Time-out periods - The default setting of 10 minutes before the luminaires turn off is suitable for many applications, but it can be adjusted to save energy.
- Security level - In some applications (such as hospital corridors), the luminaires are set to dim to a lower output level rather than turning off at the end of the time-out period. This offers a feeling of increased security for users.
- Scenes - User-control can be enhanced with the addition of scene control capability using Smart Touch wall mounted plates or Smart Scene infra-red handsets. The system needs to be configured to provide this control, for example, in classrooms where interactive white boards are fitted, or in meeting rooms.

## ADDITIONAL SMARTSCAN COMMISSIONING REQUIREMENTS

All SmartScan luminaires are delivered with wireless communications disabled to avoid problems during installation. Therefore all SmartScan installations must be commissioned to configure luminaire addresses and enable wireless communications which are essential for reliable and correct operation.

SmartScan platform 2 projects need additional commissioning procedures, which can only be undertaken by Thorlux's commissioning engineers. These include:

- Communications between the Gateway and Web server to enable website reporting of energy consumption and luminaire status
- Luminaire data input for correct energy reporting
- Assignment of Gateways to end-user companies
- Marked up drawings with luminaire location details
- Web access and email configuration for authorised users

## SMARTSCAN EMERGENCY LUMINAIRE COMMISSIONING

Commissioning of SmartScan Emergency Luminaires includes:

- Off-site monitoring via the SmartScan website
- Compliance with BS EN 50172:2004
- All emergency luminaires are checked to ensure batteries and lamps have been tested and their self-commissioning process has been successful
- All luminaires are checked to ensure wireless communication



## THORLUX COMMISSIONING ENGINEERS

Thorlux prides itself on the quality of its mobile engineering team. Customers can be confident of a well-rounded and experienced workforce.

Thorlux commissioning engineers hold all the relevant industry qualifications to ensure that Thorlux fully complies with the strictest health and safety standards:

- PASMA scaffold certification
- IPAF powered access operation such as scissor lifts and boom lifts 3A and 3B
- Annual asbestos awareness training
- CSCS skills card
- ECS Electrical Safety card
- DBS criminal records check

Thorlux commissioning engineers arrive on site equipped to gain access to the lighting systems, whether they are outdoors, in manufacturing environments, in sensitive and secure environments or mounted at a high level. The engineers are able to respond to the varied and sometimes sensitive needs required when working on customers' sites.



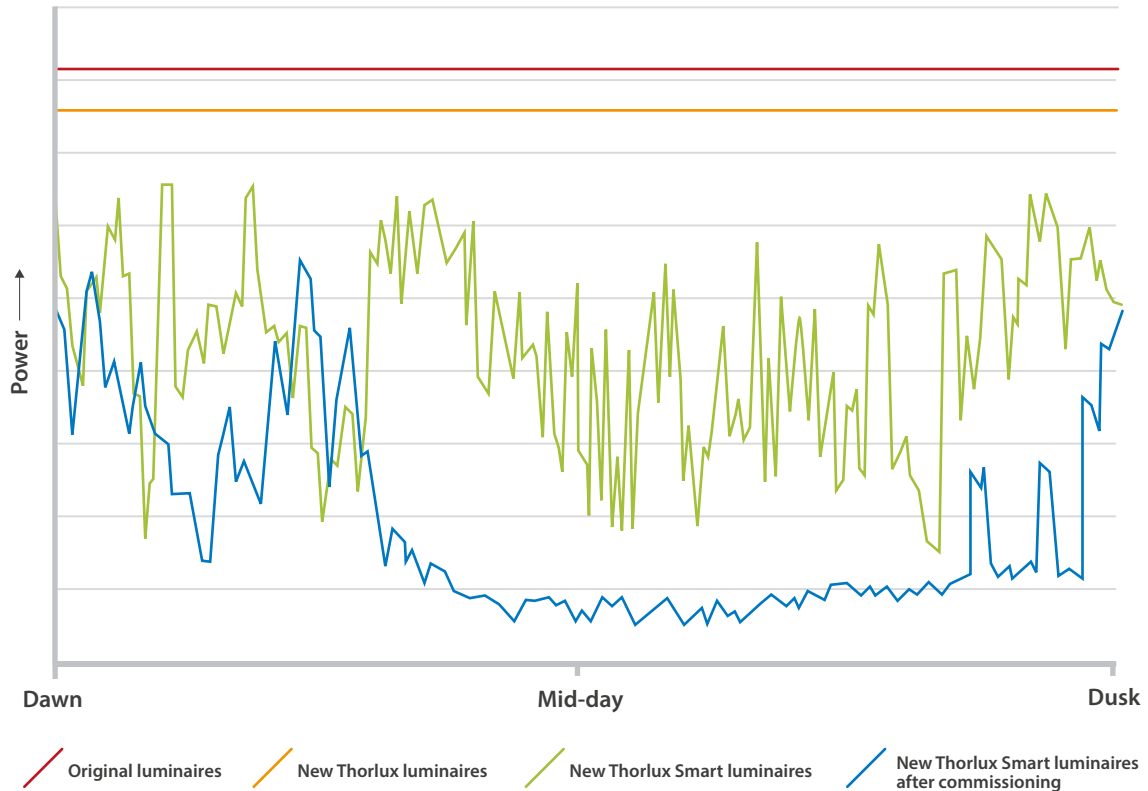
## USER TRAINING

During, or after, handover of the lighting systems to the client, Thorlux can train facility personnel on the proper operation and maintenance of the lighting and the control system. Trained staff who fully understand the controls are less likely to attempt to override or bypass the system.





## TYPICAL EXAMPLE DETAILING ENERGY USAGE OVER A SINGLE DAY



### BENEFITS OF COMMISSIONING

Energy and operating costs are reduced as a result of fine-tuning. The cost benefits of commissioning continue for many years, whereas implementing the commissioning process is a one-time cost.

For example, in a recent project, high pressure sodium high bay luminaires (a mixture of 250W and 400W) in a large industrial facility were replaced with Thorlux Smart luminaires on a point-for-point basis. Load monitoring was used to determine the energy savings made.

Simply changing the luminaires resulted in an immediate reduction in total load of 7%, with an improvement in the light level and in the working environment due to improved colour rendition.

The Smart controls at their default settings reduced the energy consumption by 50%; however, analysis of the data showed that further savings could be made. After commissioning to fine-tune the light levels, the savings increased to 73%. This equated to a saving of £20,000 per annum.

### OTHER BENEFITS INCLUDE:

- Occupant acceptance and satisfaction – the system is explained to users who are more comfortable with the automatic lighting system and will feel part of the environmental benefits that result.
- Training of staff ensures that the lighting can be more efficiently operated and maintained and staff are less likely to over-ride / bypass the controls.
- Improved documentation of the lighting system ensures better long term operation.