



DRAPER TOOLS

DEXTRA GROUP RETURNS TO
DRAPER TOOLS HQ FOR EXTENSIVE
LED ROLL-OUT

Dextra
LIGHTING

ABOUT THE CLIENT

Pleased with Dextra Group's high-quality and reliable T5 products and fast efficient service back in 2009, Draper Tools contacted Dextra Lighting once again to provide the next generation LED lighting for their warehouse and packing facilities at different locations in Hampshire. The upgrade was driven by Draper's continuous commitment to operational efficiency and environmentally sustainable practice throughout.



Founded almost a century ago, Draper Tools is one of the leading distributors of professional and consumer tools in the U.K. Seven years ago the company outgrew its HQ in Chandler's Ford and had to take over another 350,000 sq ft industrial unit in North Baddesley Hampshire, whilst reconfiguring its existing Hursley Road site to accommodate brand-new packing and storage facilities.

Draper's Environmental Policy is a clear statement of intent showing the company's strong commitment to reducing its impact on climate change, outlining a concerted effort to integrate the latest energy-efficient technology and processes in its operations. The policy is also clear on being highly selective with its supply chain, making sure to procure from company's which follow responsible and sustainable practice.

Dextra Group originally partnered with Draper Tools for the opening of its then new HQ in 2009. Pleased with the quality and performance of the service and precision-engineered products, appointed BHM Electrical Services who working in partnership with consultants Nicholas Owen Associates LTD and have collaborated with Dextra on many occasions, were contacted to take part in the company's latest expansion project.

THE BRIEF

Draper's recently expanded industrial facilities required a cutting-edge solution that used the previously successful T5 installation as a model, offering a similar performance, or improved where possible, but with enhanced reductions of energy consumption.

As with most industrial projects, fast delivery and efficient installation were essential to avoid prolonged and costly interruptions to company operations. Once installed, the new lighting system was to benefit from the extended life and lumen maintenance of LED which significantly economises on maintenance by eliminating the need for frequent lamp changes in typically high ceilings.

In addition to the industrial areas, comfortable and efficient lighting was also required for offices, amenities, and circulation areas. As a result, both Dexeco and Dextra Lighting product ranges were used to cater for these different environments.

To maximise energy savings further, intelligent sensor and dimming controls were to be incorporated in the design, improving the company's overall environmental performance and position in the CRC League table for further financial benefits.

All products required full ECA compliance and an automated emergency lighting system in accordance to building safety regulations.



THE SOLUTION

Energy-Efficient Lighting & Intelligent Controls for Industrial Applications

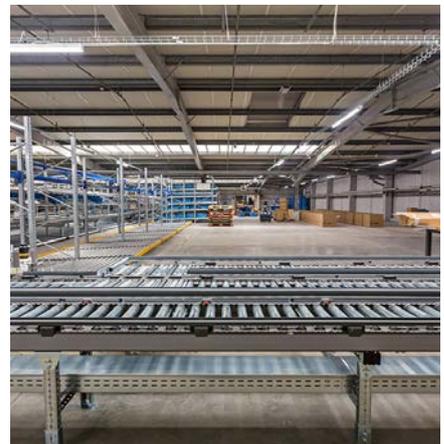
For the warehouse extension, the design was simple: provide an LED version of the Verteco T5 high-level luminaire which had so far served the company well. LED technology has allowed the market-leading Verteco range to offer staggering improvements in energy-efficiency and reduced maintenance, whilst retaining its versatile functionality and outstanding performance. Combining the latest Lumileds LEDs, now LM80-verified to offer 90% LED lumen maintenance for 60,000 operating hours, with advanced optic technology, the luminaire performs at up to 121 Llm/w depending on lumen output, whilst consuming around 50% less than fluorescent equivalents.

Available in a higher band of lumen outputs and a selection of customisable optics, 115 luminaires were specified in both 26,400 and 34,500lm lumen packages for different areas of the warehouse. For the racking aisles, a 26,400lm surface mounted version was installed with an ultra-high rack optic at efficient spacings of 13m mounted at 11m; providing uniformity and visual clarity for handling goods, whilst minimising glare for staff. The higher 34,500lm option, on the other hand, was suspended from the ceiling in the more open areas of the warehouse, complete with its efficient opal diffuser for a wide distribution and excellent coverage, allowing Draper to save more money by using fewer luminaires.

The Verteco LED range sets itself apart from the majority of high-bays on the market by using mid-power LED boards instead of high-output sources, offering the high light outputs for high-level industrial applications without causing hazardous glare – This allows staff to work in visually comfortable and safer conditions. The luminaire's constant lumen output also eliminates lumen depreciation of the source over lifetime, allowing the installation to maintain the required light levels for longer without frequent servicing.

Integral R14 passive infra-red sensors provided daylight and presence detection for each individual luminaire. As the warehouse operates around the clock, incorporating intelligent controls can have a huge impact on energy consumption, boosting overall efficiency by a potential 20% for faster returns on investment. These sensors can be customised with three lens types; narrow, wide and ultra wide, to provide accurate detection in all environments. Remote control programming was also provided allowing simple commissioning and accurate control at heights between 4 and 18M. As the sensor is built in the luminaire itself, installation is made quick and easy as no complex interlink communication wiring is required.

To help the appointed technicians carry out a quick installation, the Verteco LED features a unique slide-out mounting bracket offering a simple and accessible method of mounting to trunking. A practical back flap offered easy access for wiring during installation and future maintenance. For projects where time is of the essence, the luminaires can also be provided with pre-wired cables.



THE SOLUTION

Packing Line – EcoPack LED

Over 300 EPK LED luminaires were installed in the new packing and storage facility, making full use of its available range of options. Using the latest light modelling software, Dextra Group's design team calculated the most efficient luminaire spacings using both 5,400 and 6,300 lumen outputs from a range of up to 9000lm, in both standard diffuser and high-rack louvre.

The EPK LED uses the latest Lumileds LEDs combined with a high-transmission opal polycarbonate diffuser to offer light output ratios as high as 88%, whilst operating at a highly efficient 134 luminaire lumens per circuit watt.

This premium performance allowed the luminaire to achieve the required light levels and uniformity to give staff maximum visibility, whilst offering enhanced savings compared to fluorescent battens.

As with the Verteco LED, the EPK was supplied with its integral R44 PIR sensor to provide presence and daylight regulation, which is programmable using the user-friendly and accurate RE-AP remote control.

The luminaires were delivered with pre-wired with Fast-Fix interlink cables and were ready to "plug-and-play" upon arrival. In addition, its gear tray retained to spine with quick release spring clips helped make installation as quick and cost-effective as possible.



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THE PRODUCTS

Under Canopy Area & Plant Room – Eco Impervia LED / Hydra LED

The IP65-rated Eco Impervia LED and Hydra LED were selected for areas where protection from water, dust and dirt ingress and light impact was critical, such as the warehouse's plant room and the large under canopy area. These luminaires also offer resistance to a wider temperature range, allowing the Eco Impervia to withstand changes in weather, and the Hydra LED to be unaffected by the heat generated in the plant room.

Versatility is at the core of both the Hydra LED and Eco Impervia ranges which are

made available in a wide range of lumen outputs, body sizes, choice of optics and sensor controls. Due to the size and height of the under canopy area, the Eco Impervia was supplied in a higher 9600lm version providing a bright and uniformly lit exterior.

Bringing all the benefits of LED for energy efficiency and low maintenance, the Eco Impervia was also supplied with the R44 sensor, which is integrated into the luminaire's polycarbonate diffuser to work in conjunction with DALI dimming controls to adapt to daylight levels and staff movements for further energy savings.



Offices / Amenities – MODLED Slim and Amenity Plus LED

The MODLED Slim brought together energy-efficiency, visual comfort, and low maintenance, in a complete solution for the North Baddesley offices. Using highly efficient optic panels, the luminaire offers 93% transmission of its high-quality Lumileds LEDs, impressive LORs of 85%, with added BSEN 12464 compliant glare reduction in multiple lumen outputs, to guarantee balanced lighting conditions for staff and suitability for computer usage.

Versatility and an attractive and easily adaptable minimalist design, have also been at the centre of the MODLED range's popularity. LDD Consultants were able to choose from a wide range of lumen outputs across 4 body sizes starting at 1750 to up to 15,200lm to tailor the design accordingly. In the end, the 600 x 600m 3500lm version was chosen to achieve the recommended lux levels of between 300 and 400 in all areas, with glare kept below the 3000 candelas per metre squared limit.

Compatibility with all mainstream dimming controls and suitability to a host of lay-in, pull-up and surface installation formats, add further flexibility to this range for a variety of interiors.

For the office's WC facilities, the IP65-rated Amenity Plus LED circular bulkhead provided durability and efficiency with both its robust polycarbonate diffuser, steel gear tray and reliable Lumileds LED source. The AMC LED's robust construction makes it suitable for both internal and external applications alike, and, with both a side conduit entry or rear cable entry, the luminaire can be either wall or ceiling mounted quickly and efficiently. The luminaire is also available in either circular and square versions in black or white finishes to suit the aesthetic and practical needs of each application.



THE PRODUCTS

Emergency

The luminaires used in this project were supplied with integral emergency drivers providing three-hour emergency lighting. These can be supported by either a self-test function or a digitally addressable auto test option, which allows all emergency luminaires to be monitored periodically by producing accurate reports of their status and locate any faults.

To broaden the scope of the emergency coverage, the IP65 rated, self-contained AME LED Emergency Bulkhead was also installed at various strategic locations across the warehouse. The efficient and low maintenance luminaire offers non-maintained emergency lighting using a long-life and energy-efficient 2.5w LED strip that requires minimal maintenance. The EXI LED was utilised for all emergency exit signage in both sites.



Car Park & Building Perimeter – Dexeco Impervia LED Column & Avalon Wallpack

The versatile and ultra-efficient Dexeco Impervia LED Column was installed on a number of columns in the car park and main driveway to provide clear and safe illumination of all access routes for drivers and pedestrians.

Using a high-quality L3 LED Card, the Impervia LED Column offers excellent efficiency in a high band of outputs, with a constant lumen output function whereby the driver compensates for the lumen depreciation of the source over time by gradually increasing the power as required. In addition to the added long life benefits and reliability of the source itself, each LED present on the L3 Card features its own incorporated lens to offer maximum light control. Combined, these features give designers added flexibility to create highly efficient outdoor schemes whilst reducing the number of luminaires used.

To achieve the recommended 10 lux for external areas and a uniform distribution whilst adhering to optimal spacings, the luminaire was supplied in both a 4944lm version and a higher 10,959lm output, with asymmetrical reflectors to provide wide coverage whilst minimising glare and light pollution into unwanted areas. Symmetrical lenses are also available for a narrower distribution.

To boost the energy efficiency of the installation, the luminaire can be supplied with an integral R11 passive infrared sensor for presence detection dimming the lights to minimum, yet safe, output when the areas are vacated.

The Avalon Wallpack floodlight, on the other hand, was mounted directly onto the building's external walls, allowing pedestrians to circulate safely and illuminate all entrances and clearly whilst providing a pleasant ambiance. The durable luminaire is manufactured in high-quality die-cast aluminium and uses the latest Lumileds LEDs to offer increased efficiency and requires minimal maintenance to run. Supplied in a 2802lm output, the luminaire achieved the required lux levels for the building exterior with its external reeded curved diffuser and internal optic creating a comfortable and even light coverage.

For further energy savings, the luminaire can be provided with an optional integral photocell to react to daylight and switch luminaires on only when pupils or staff approach the building.

Emergency

The LED3 Emergency Module was installed to provide three-hour non-maintained emergency lighting in optimal positions throughout the premises. The durable IP-rated and efficient 2.5w AME LED emergency bulkhead was also used to increase emergency lighting coverage in the building. The self-contained HBE "Hanging-Blade" and EXI LED emergency exits luminaires, provided energy-efficient and low-maintenance emergency signage in compliance with safety regulations.



FEATURED PRODUCTS



VERTECO LED



EPK LED



ECO IMPERVIA LED



HYDRA LED



MODLED SLIM



AMENITY PLUS LED



AME LED



EXI LED