

A tall, white, curved sign with the company name 'ebmpapst' written vertically in blue and grey lowercase letters. The sign is positioned in front of a modern, multi-story building with large windows and a curved roofline. The building has 'ebm' visible on its facade. The foreground features some landscaping with tall grasses and a small tree. The sky is blue with some clouds. A large blue triangle is in the top right corner, and a large black triangle is in the bottom right corner, meeting at a diagonal line.

EBM PAPST

DEXECO'S LED LUMINAIRES AND
INTELLIGENT LIGHTING CONTROLS
"SURPASS EXPECTATIONS" AT EBM UK
FOR WAREHOUSE UPGRADE

Dexeco
SOLUTIONS

ABOUT THE CLIENT

ebm papst is currently the world's leading manufacturer of energy-saving motors and fans, employing in the region of 12,000 members of staff and turning over 1.5 million EUR each year. Since 2005, the group has been winning multiple industry awards, repeatedly emerging as "Environmental Pioneer" for its innovative technological contributions which have lowered the carbon emissions of HVAC systems, refrigeration, computer and telecommunications systems around the world.

ebm has long dedicated itself to the difficult task of reconciling "technological progress with environmental care". The group has met this challenge not only through the development of new highly efficient technologies but by adopting an internationally recognised (ISO 14001 certified) environmental management system that runs from its R&D and production efforts right through to sales and distribution. With such a solid stance on climate change, it was vital that ebm partnered with a lighting supplier that shared such values and standards, to provide a future-proof, sustainable lighting solution for its warehouse facilities in Chelmsford, Essex.



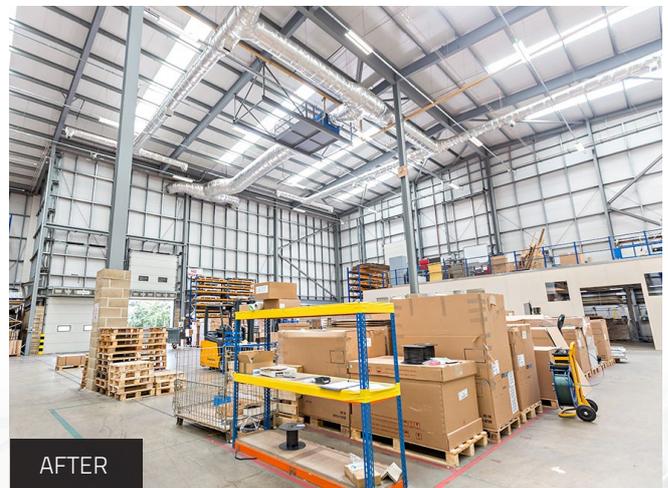
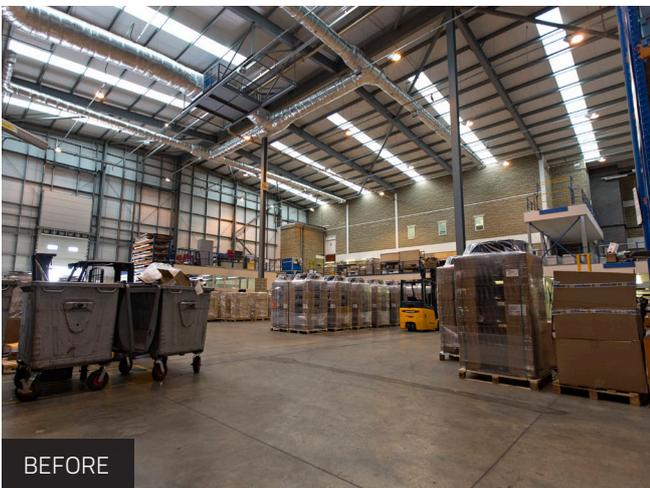
THE BRIEF

ebm approached Dexco with urgency as the introduction of new scanning technology prevented warehouse operatives from doing their jobs effectively. Mr. David Morgan, Planning and Organisation Manager for ebm, explained that since staff were issued hand-held barcode scanners and computers to identify and retrieve goods more efficiently, problems soon arose when the existing 400w sodium discharge lighting, which produces a characteristically dim, orange coloured light, made it very difficult for staff to view readings on the screens of the new equipment.

Sodium lamps are often installed in industrial contexts for their low energy-consumption. However, this advantage is greatly offset by poor light quality. A well-designed LED solution in this case, would dramatically improve the lighting conditions at the warehouse and offer further energy savings for ebm.

Due to narrowly spaced racking aisles, visibility was also severely limited, especially at floor level. Powerful high-level lighting was therefore required to replace the existing high-bays, ensuring light levels were raised evenly within each section of the 15m high racking aisles as well as in the open space packing area in accordance to CIBSE guidelines.

The upgrade was to be performed as cost-effectively as possible, generating savings not only in future energy consumption, but slashing maintenance and installation expenses for a faster payback period and improved ROIs.



THE PRODUCTS

Verteco LED – Racking Aisles and Packing Area

Within only five years of the Verteco LED's release, over 300,000 units have been supplied to a range of blue chip companies across the UK, helping them significantly reduce their carbon emissions and overheads for a more sustainable future. Since then, the popularity of this highly efficient range of high-bays has been growing rapidly across different sectors.

The Verteco LED high-bay luminaire was selected to relight the entire Chelmsford site as it combines excellent performance, simple installation, significant energy reduction and rapid return on investment in a single, attractive package. The product is also included in the Energy-efficient Technology List of low-energy products which are eligible for the government's Enhanced Capital Allowance (ECA) scheme offering 100% tax relief within the first year of purchase.

The luminaire is designed to offer the highest standards of performance, energy-efficiency and light quality for high-level logistics and manufacturing applications. By combining high-transmission diffusers and a choice of optical designs with the latest Lumileds LED sources, the luminaire ensures that installations provide optimum light distribution and task illumination in each area without compromising on safety and visual comfort for users. The combination of advanced optic technology and high-efficiency LED sources allows the luminaire to offer high light output ratios at an impressive efficiency of 121lm/w.

Unlike the majority of high-bays on the market, the Verteco LED is manufactured with mid-power LEDs instead of high-output sources, which combined with its efficient diffusers provides great coverage and reduces hazardous glare for staff. For ebn, this glare-control technology will produce a bright yet glare-free environment, allowing staff to clearly view the monitors of their

devices whilst forklift operators can now manoeuvre safely around the premises.

Available in a range of output packages of up to 320,000 lumen in a choice of three distributions (open area, high rack and ultra-high rack), the Verteco is easily customisable to suit a variety of applications. To ensure even coverage throughout the 15m high, narrow racking aisles, a 132,000lm version with an ultra high-rack optic was installed, meeting the 200 lux level requirement defined by CIBSE guidelines. In the packing and dispatch zone on the other hand, a 160,000 version with an open-area optic was provided to achieve the same light level with a wider distribution. Overall, the luminaire has drastically improved the warehouse's lighting conditions whilst operating at an electrical load of up to 73% lower than the previous sodium fittings.

"The light levels are exactly what you said they'd be...we set the light levels to what we wanted them to be – which was to CIBSE guidelines. As far as energy saving goes, they surpassed our expectations. I went to our directors and said we would save X amount – We've probably saved double that to tell you the truth"

For further energy savings, the Verteco LED's integral Reacta 14 sensor provided both daylight and presence detection, allowing the lighting to react to staff occupancy patterns and changing daylight levels. The integral sensor also allows installation to be quick and easy, free of any complex BUS wiring communication wiring as each luminaire has its own independent sensor control using only the existing live, earth and neutral wiring that would be present on a fixed output installation. Commissioning and programming can then be performed from the user-friendly REA-AP remote control from ground level. The R14 sensor can be customised with either a narrow, wide or ultra-wide lens type to provide the desired detection range for each area.



THE PRODUCTS

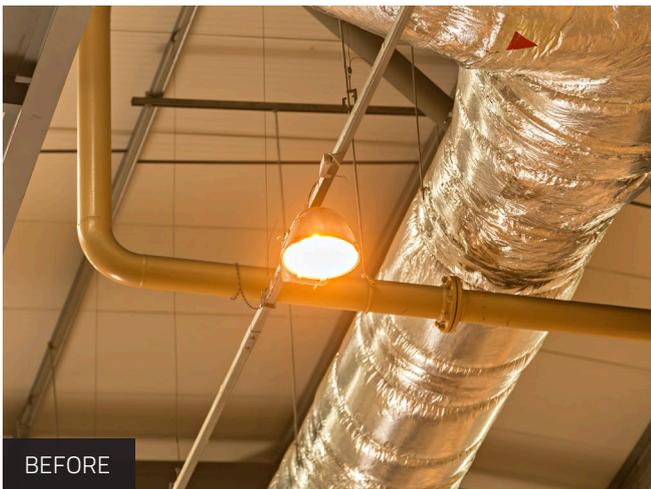
Throughout the course of the day, luminaires will either switch on or off, or dim to low level, depending on whether staff enter the designated detection zone or not, and the addition of DSI dimming functions will allow the light output of each luminaire to adapt to the daylight present onsite, providing adequate lux levels at all times. The savings generated by incorporating sensor and dimming controls can amount to an additional 30% to the original slash in energy usage.

Savings for ebm did not end here. The Verteco LED was supplied ready to "plug and play" with pre-wired cables and is designed for low cost installation, with a practical back flap offering easy access for hard wiring and a unique slide-out mounting bracket for faster mounting to trunking without removing the reflector. In addition, its integral sensors simply use existing live, earth and neutral wiring connection with no need for additional wiring, making the one-for-one replacement at the warehouse as hassle-free and cost-effective as possible.

In addition to the long-life and low-maintenance benefits of its high-quality LM80-tested LEDs offering 90% lumen maintenance for the first 60,000 hours of operation, the luminaire includes a Constant Lumen Output feature (CLO) powered by a highly efficient Philips driver, that gradually increases the power as the LED source depreciates over time. The longevity, durability and reliability of the Lumileds LED chips will make costly and disruptive lamp replacement at inconvenient ceiling heights a thing of the past for ebm, which combined with the CLO function, will significantly reduce the need for maintenance over the luminaire's lifetime for greater financial paybacks in the longterm.

Where required, the luminaire can be provided with integral 3-hour Self-test or Auto-test emergency functions. The integral emergency gear also cuts installation costs further by avoiding the need to fit standalone emergency units.

All Verteco luminaires are supplied with 5-year warranty providing peace of mind that the installation will operate effectively above and beyond the payback period.



THE RESULTS

The highly-efficient, sensor-controlled Verteco LED high-bay not only solved the warehouse's lighting issues completely but delivered savings that will have a notable impact on ebm's overheads and profit margins whilst amply fulfilling their commitments to the environment.

With the simple step of switching to LED, reductions of up to 73% in energy consumption were achieved, with a potential average of 30% added to that figure when including savings generated by the intelligent control system.

The reliability and long-life of high-quality LED chips will eliminate the cost and inconvenience of frequent lamp changes typically experienced with sodium, HID or fluorescent fittings. Economising on maintenance will add up to huge savings in the longterm and help speed up the system's payback period.

Installation was also kept quick and cost-effective, thereby reducing the total cost of ownership for ebm.

The project has demonstrated how upgrading to LED is an immediate and effective way to improve the lighting conditions of a building whilst closely attending to a company's sustainability agenda. With a highly competent design team, a wide range of customisable precision-engineered luminaires and intelligent controls, an LED retrofit can be raised to the next level, making it an investment that companies like ebm cannot afford to miss.

Future-proof lighting solutions such as these will quickly pay for themselves over a few years, and continue to provide energy and maintenance savings far beyond the payback period.

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Mr. David Morgan – Planning and Organisation
Manager ebm papst



FEATURED PRODUCTS



VERTECO LED