designplan LIGHTING

PRODUCT SUSTAINABILITY REPORT

Product: Zelos Beam
Part Number: TLSBB-1100N-X-MT
Description: Zelos Beam is a vandal resistant bollard specifically designed for transport applications and community and public installations.

TM65

The embodied carbon is **310kg CO_2e**

This calculation is based on the CIBSE TM65 Embodied Carbon Calculator (mid-level calculation method).

TM66

TM66-CEAM Make assessment score: **2.1**

This calculation is based on the CIBSE TM66:2021 (Creating A Circular Economy in The Lighting Industry)

ENVIRONMENTAL TECHNICAL DATA	
Efficacy	98 lm/W
Circular design	Long life body, diffuser and upgradeable LED gear tray.
Product life	30 years+ further to our circular design ethos.
Build materials	Recyclable components, including product packaging

Alan Dack
Testing & Compliance Manager
28/10/25

BREEAM excellent manufacturing facility

Recyclable material and packaging

The Fagerhult Group will achieve net zero no later than 2045.

Our Commitment to Sustainability

We have been manufacturing robust, long-lasting luminaires since 1963. We strive to create action for a better environment and a brighter future.

1. Make luminaires with 30+ years of life.
2. Strive for 100% recyclability.
3. Maximise use of recycled materials.
4. Reduce supply chain's carbon footprint.
5. Minimise our facility's environmental impact.
6. Reduce waste.
7. Make installed lighting more energy efficient.
8. Cradle to cradle approach.

An energy efficient, circular product design is key, in practical terms, to ensuring we achieve our sustainability promises.

The UN Sustainability Goals & Our Science Based Targets

The United Nations (UN) Sustainable Development Goals (SDGs) are a set of 17 objectives to ensure a sustainable present and future. As part of the Fagerhult Group, we have assessed all of the UN SDGs to ensure our approach to sustainability is as comprehensive as possible.

Water (SDG 6): Further to target 6.3 (indicator 6.3.1), we are undertaking a range of initiatives to use this valuable resource sustainably. This includes rainwater harvesting and wastewater treatment in our paint plant to filter and recirculate water.

Sustainable Cities and Communities (SDG 11): We want to play our part in making where we live sustainable. We have pioneered and developed LED luminaires, with upgradeable gear trays, which consume less electricity and reduce greenhouse gas emissions.

Responsible Consumption and Production (SDG 12): Ensuring we produce our luminaires sustainably is a key element of our manufacturing philosophy. Sustainability initiatives include solar panels and recycling.

Climate Action (SDG 13): We encourage our customers to adopt connected lighting. These systems optimize energy in the usage phase, to reduce our clients environmental impact.

Our Science Based Targets

The Fagerhult Group's net zero targets have been validated and approved by the Science Based Targets initiative (SBTi). We have set near and long-term goals to reduce direct and indirect Greenhouse gas (GHG) emissions. Our near-term targets are set to reduce emissions by 70 per cent in Scope 1 and Scope 2, and by 30 per cent in Scope 3 by 2030 (from the baseline year 2021). The Group has also set out a long-term science-based target to become net-zero by 2045. Targeted

Our Circular Design Principles

Product Design

We have developed a tried and tested approach to product design, since our inception in 1963, to ensure sustainability is "built in". 60 years ago, we pioneered luminaires which incorporate a removable metal tray containing all the internal lighting componentry.

Our long-term commitment to circular product design has enabled us to produce long-lasting, repairable and upgradable products with 30 year + life spans. Using as much recycled material in our products as possible is a key part of our eco-friendly manufacturing ethos. Ultimately, we are striving for a "cradle to cradle" approach to lighting.

TM65

We believe that measuring embodied carbon in product manufacture is very important to help understand the "whole life carbon" of a building. We utilise the Chartered Institution of Building Services Engineers (CIBSE) TM65.2 measurement methodology for embodied carbon which also includes a product's installation, maintenance, repair, replacement and end of life.

TM66

We work within the CIBSE TM66 self-assessment framework to assess our luminaires based on their design, material use, manufacturing methods and environmental impact.

Product Testing

Product testing is a vital element in the design of our luminaires. We test our luminaires every step of the way, from concept through to completion, in our laboratory.
We continuously upgrade and improve our luminaires, retesting them throughout their product life cycle.

Constant investment in our laboratory helps innovate our lighting solutions in terms of performance and environmental impact.

Lowering Our Carbon Footprint

Sustainable Manufacturing

We operate from a BREEAM 'Excellent' facility. Sustainability initiatives include rainwater harvesting, solar panels and integrated lighting controls throughout the building. We are accredited to the ISO 9001 Quality Management and ISO 14001 Environmental Management systems. We have short and long-term plans, to reduce our direct emissions, managed by a dedicated sustainability team. Areas we focus on include:

Reducing Our Manufacturing Waste

We have identified several streams to enable us to segregate waste effectively and maximise recycling. 99.8% of our waste is diverted from landfill, after leaving our site, month on month.

We involve all members of our team by providing and enforcing clear collection and recycling guidelines for all our identified waste streams. One example is the effective segregation of our waste. Our shared approach has enabled us to convert 24% of our waste to energy.

We have installed an on-site cardboard baling machine. This has reduced the volume of waste material significantly. It has also resulted in less collections to remove our 80% recycled cardboard to recycling.

We make our boxes as we need them, to the exact quantity required. This initiative has reduced the number of incoming cardboard deliveries from 66 to 15 per annum.

Utilising Green Energy

We have transitioned our purchased electricity from fossil fuel-derived. 100% of our purchased energy is generated by renewable sources, such as wind and solar power.

We have installed on-site renewable energy systems which include solar panels on our roof and a solar wall on our factory. These initiatives are helping us provide clean energy to power our manufacturing processes. Our rooftop solar panels generate approximately 45,000 kWh annually, which equates to 10,500kg CO_2 or an estimated 25,021 kettle boils! Our solar wall, measuring 290m2, generates over 44,000 kWh annually, saving 13,880 kg CO_2 annually. We also recirculate heat from our internal processes. For example, heat from our paint plant.

Our program to upgrade older machinery to state-of-the-art high efficiency, low energy use machines is due to be completed in 2025.

Saving Water

We use our expansive roof to harvest rainwater which we collect into a large tank. This rainwater is then used to flush our toilets, saving approximately 1,500 litres of mains water per day. Our paint plant filters and recirculates water using a sophisticated arrangement of tanks, pumps, valves and filtration equipment. Automated product presence detectors ensure we only use water when needed. We estimate this automated process saves around 63,000 litres of water per week. In total all of our water savings amount to 72,100 litres of water a week, that's the equivalent of 1.5 Olympic swimming pools a year.

Ethical Purchasing

We, as part of the Fagerhult Group, are committed to ethical purchasing. The Fagerhult Group Code of Conduct lays out our sustainability and environmental values with our business partners. At Designplan, we also work within the sustainable procurement practices set out by ISO 20400: 2017.

Material Selection

We are working with our suppliers to get more recycled content into the materials we use to make our luminaires. For example, 40% of the aluminium in these luminaire bodies is recycled. We are also looking at incorporating more energy-efficient components. We have worked with our suppliers to reuse as much of our incoming packaging as possible. Together we have eliminated 6,000 plastic bags per annum from our supply chain by introducing returnable cardboard boxes with suppliers. We also return incoming cardboard boxes monthly, so that they can be reused for future deliveries.

Material Miles and Green Transport

We are currently looking at ways of minimising material miles. Nearly 70% of our aluminium is now sourced from Europe with an initiative in place to increase this by a further 6% in 2024. We are also working with our suppliers to encourage them to transport materials as energy efficiently as possible utilising electric vehicles. Since switching to electric vehicles for our own fleet of cars we have saved 13880 kg $C0_2$ per annum, based on an annual mileage of 120,000. We also provide on site free charging to encourage electric car usage by our team commuting to work.

Reducing Emissions In The Use Stage

We are encouraging our customers to reduce their emissions in two ways: 1) retrofit LED gear trays to update old technology "in situ" and 2) connected lighting systems to optimize energy usage and reduce environmental impact.

Sustainable Retrofitting

We pioneered luminaires which incorporate a removable metal tray containing all the internal lighting componentry. Incorporating new technology sustainably is vital to a product's circularity.

All our products incorporate removable gear trays. This integral design feature is helping our customers move from fluorescent to LED sustainably. Fluorescent lamps use up to 80% more energy, contain toxic mercury and pose environmental risks when broken or disposed of improperly. These factors have resulted in a ban on fluorescent lamps being placed on the market.

Benefits of LED Gear Trays

- Sustainable way to upgrade.
- Reduces energy consumption.
- Lowers maintenance costs.
- Minimises disruption.
- Improves safety and output.
- Future proofs lighting.

Lighting Controls

Connected lighting systems equipped with sensors and smart controls adjust lighting levels based on occupancy, natural light and time of day. This results in reduced electricity usage by up to 90% by making sure that lighting is only turned on when needed and at the right intensity. Our lighting control systems offer remote monitoring and management capabilities, allowing energy inefficiency to be identified and rectified promptly. This proactive approach minimizes wasted energy and carbon emissions.