



BELFAST AIRPORT

INTERNATIONAL AIRPORT AIMS TO
IMPRESS WITH LED UPGRADE.

THE BRIEF

As part of its refurbishment plans for its main arrival hall, Belfast International Airport have invested in state-of-the-art LED lighting, to welcome and clearly direct passengers entering the country. The new lighting has brought significant reductions in electrical costs and carbon emissions to meet the airport's sustainability goals.



Belfast International Airport (BIA) is Northern Ireland's principal airport. It operates 24/7, all year round and currently stands as the second largest entry-point to the Island of Ireland with an annual passenger flow of over 5 million. Owned and managed by Airports Worldwide, a world leader in airport investments and operations, the airport strives to maintain the highest standards of efficiency in all aspects of its service and facilities, whilst providing its partners with the greatest return on their investments.

Airports are gateways to tourism, commerce and play a crucial role in international relations. Norman Lindsay, Engineer for Belfast Airport, was acutely aware of this fact as he approached Dextra Lighting to provide a lighting solution that would leave passengers with a positive first impression of Belfast the moment they land. After all, in addition to serving millions of tourists each year, BIA was selected to be the hosting airport for global events such as the G8 summit in 2013 and the 2011 MTV awards.

So, the challenge for this project was to design a modern and inviting lighting scheme that would enhance the airport's profile by staying current with new technologies, whilst providing financial returns by reducing both energy and maintenance costs. The installation would also have to bring the airport a step closer to reaching a carbon neutral status, as international airports are required to renew their ISO14001 certification (an international standard for environmental management) periodically (scale of energy expenditure).



THE SOLUTION

LED – The source of forward-thinking solutions.

LED offers a cost-effective and eco-friendly solution to the airport's issues. Typically, LED luminaires would offer roughly between 50% and 70% reductions in energy consumption compared to HID or fluorescent lighting. Since the BIA operates around the clock, throughout the year, these reductions are set to make a considerable impact on electrical bills.

By using the latest LED technology, Dextra Lighting's precision engineered luminaires are designed to offer exceptional light quality and extended lumen maintenance, which combined with the longevity and durability of high-quality sources, will require minimal maintenance. As the luminaires will require minimal servicing, the airport would in turn be able to reshuffle its maintenance resources in other areas and avoid frequent disruption and inconvenience for customers. Combined, these advantages ensure that the initial capital cost of the installation will be repaid at a staggering rate and that environmental responsibilities are maintained.



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Arrivals concourse, Check in, Departure lounges – MODLED Slim & OPUS 2 LED

The MODLED recessed luminaire and the surface mounted Graduate LED were installed in the large arrival hall, featuring a waiting area, several retail stores, a café/restaurant, car-hire desks and wide circulation areas leading to the various exits.

To maintain a continuity of fittings, the MODLED was used in most of the open plan hall. For the smaller area not covered by the existing plasterboard ceiling grid system, but a higher level steel gantry and curved corrugated roofing, the Graduate LED offered a more suitable shape and installation format. These popular luminaires share a minimalist contemporary design and similar performance specifications in line with the aesthetic and efficiency requirements of the airport. They were both provided in a cool white C84 (4000 kelvin) colour temperature to provide comfortable lighting for passengers and staff, and avoid light contrast between areas.

The MODLED has been a mainstay in Dextra Lighting range by offering premium performance and increased versatility at a highly-competitive price. By combining Dextra's unique advanced optics with up to 93% transmission and excellent diffusion of the latest Lumileds LED source, the ultra-efficient luminaire offers light output ratios of up to 85% with significantly lower energy consumption compared to fluorescent or HID equivalents. Out of a wide range of lumen outputs (from 1750lm to 15,200lm), the luminaire was installed in a 5000lm option, to provide the required light levels for the area with ceiling heights of approximately 3m. Using the 5000lm version also generated further savings, as it allowed the design to maximise luminaire spacings, thereby reducing the total number of luminaires installed.

The versatility of this product does not stop at lumen outputs. The MODLED can be supplied in three different body sizes (600mm x 600mm, 1200mm x 300mm, 1200mm x 600mm) and offers compliance to BSEN 12464 3000 candela glare requirements in lower outputs, for areas where monitors are in use. Perforated side panels can also be included to give the luminaire an alternative, high-quality finish. To ensure ceiling compatibility, lay-in and pull-up installation options are available with this product.

All lumen outputs can be offered with HFR, DALI, Switch Dim and DSI dimming functions with compatibility with R24D internal daylight regulation and/or presence detection sensors to increase the efficiency of the installation further. Three hour integral emergency lighting is also available with this product. With such a broad selection of customisable options, the MODLED has enjoyed considerable success across many sectors including commercial, retail, education and health.



THE PRODUCTS

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Similarly, the Graduate Surface LED offers outstanding performance using the same high-quality Lumileds LED, but also offers a choice of either a standard high-efficiency opal polycarbonate diffuser or a clear prismatic TPA option, each offering optimum light output ratios with different distributions to suit the application. Available in a flexible range of lumen outputs from 2,600lm to as high as 12,600lm, in either 1200mm or 1500mm sizes, the versatile luminaire was customised to a 11,000lm capacity in a 1500mm body to meet the building specifications of the main exit area and provide similar light levels to the rest of the hall, despite the higher ceiling. The Graduate LEDs long and narrow shape was a perfect fit to be mounted upon the steel beams crossing the ceiling. Installation was kept quick, simple and therefore cost-effective, with the fittings being fully assembled and ready to install upon arrival and by means of a practical removable gear tray.

The gear tray design also improves the serviceability of the fixture, helping the airport reduce further costs by simplifying maintenance routines. The luminaire is also available for surface mounting or suspension for maximum flexibility at the point of installation.

The Graduate LED offers the same four control options of the MODLED, with the addition of a corridor dimming function. These are compatible with integral R25E or R25C microwave sensors for presence detection to harvest further energy savings.

By investing in Dextra Lighting's cutting-edge LED products, Belfast Airport will also benefit from a comprehensive 5 year warranty for additional support and peace of mind. The project has been extremely well received, with the luminaires lifting the overall light levels to provide a fresh and welcoming ambience in the arrivals hall. The installation also served to highlight the signage leading to the airport's exits, transport links and amenities, eradicating any unwanted dark spots or shadows, to ensure safe transit for passengers and that occupational health and safety requirements are met.

Airports across the world are making concerted efforts to drastically reduce their carbon emission in every area of their operations. As a result LED, is fast becoming the technology of choice for airports globally, not just for interiors, but external applications too, with new advances being made in the development of high-performance, eco-friendly LED lighting for aviation control and runways. A carbon neutral future in this sector is becoming a closer and more realistic prospect. Dextra Lighting has demonstrated the adaptability of its product range and design capabilities across yet another sector, by delivering a financially and environmentally sustainable solution for the airport that will stand the test of time.



FEATURED PRODUCTS



GRADUATE LED



MODLED SLIM