

DTU LED Daylight Upgrade



Perfect Daylight, even without Sunshine

Despite best efforts by architects to make natural daylight available throughout buildings, it is not always possible. Especially older buildings suffer from a lack of daylight in many areas. Of course, this may be easily solved with regular artificial lighting, however, studies conducted over the last few years have found that regular lighting solutions are not ideal in places where there is no daylight at all, since they do not reproduce the so called “circadian rhythm” - the natural change of colour temperature in daylight, which is so important for regulating our internal clocks, and thus plays an essential role in our wellbeing.

Lighting challenges

The campus of the Technical University of Denmark is very large - more than 100 hectares, and there are a few places where the management team wanted to improve the lighting, by providing a solution that simulates the natural change of colour temperature throughout the day. However, they wanted to preserve the existing light fixtures in place. Most standard retrofit solutions could not provide an insert that allowed for daylight simulations, or were customised to the exact needs of the clients.

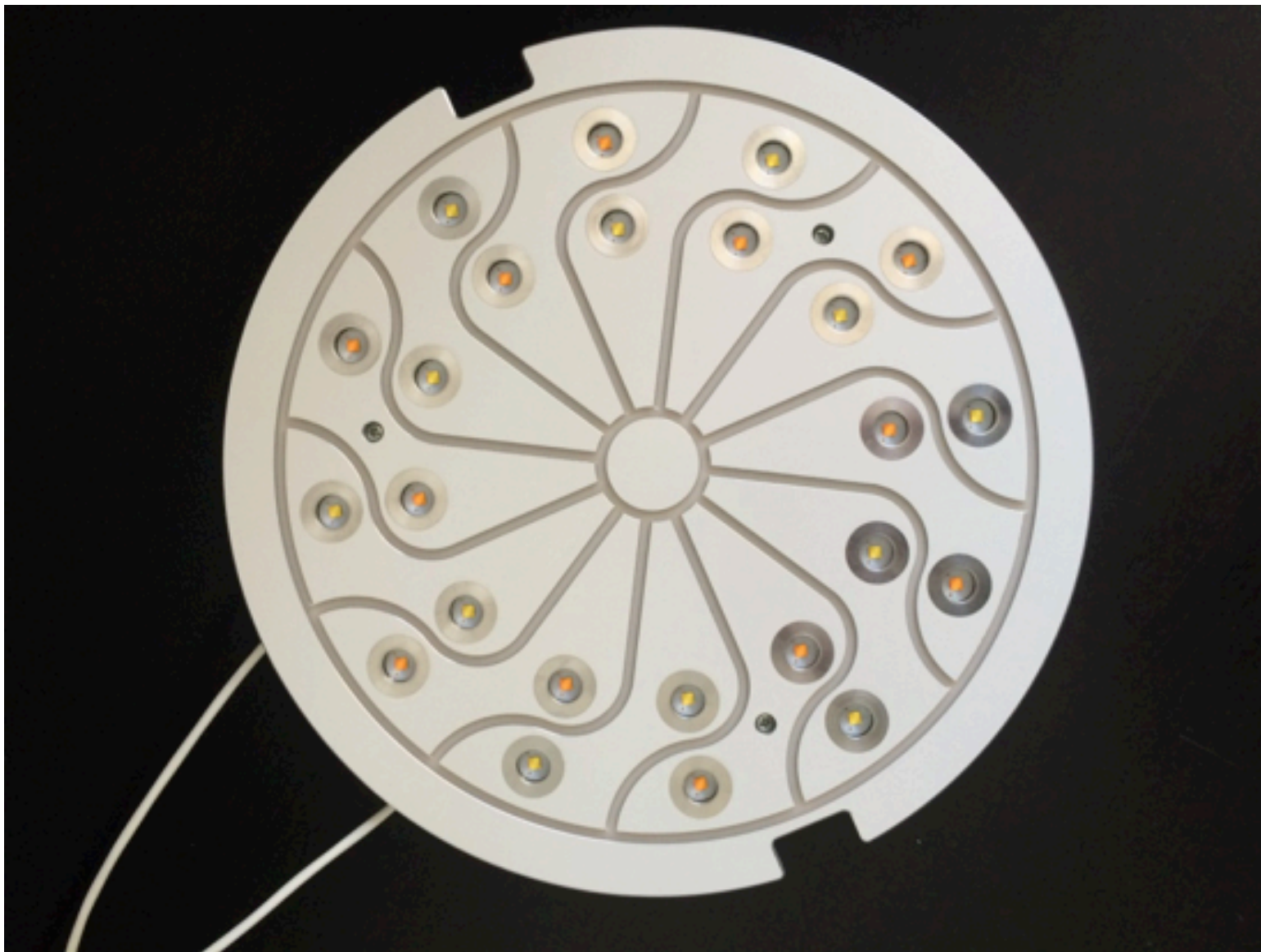
The LED iBond solution

Our team was very excited about this opportunity, and to explore various proposals together with DTU campus service.

Whilst Dynamic White was a given, we also had to make sure how the existing diffuser was affecting colour temperature, and made sure to find the right mix of LEDs through extensive testing. We ended up with a blend of 2200K and 6500K LEDs, which are individually controlled through a light management system to adjust the colour temperature not just according to the time of day, but also to the season, since Denmark can have some relatively dull and dark weather in the winter months. During the darkest months, the lighting is enhanced by blue LED projectors that provide a simulation of the blue sky - brightening up the days for many of DTU’s students.

The solution itself consists of a customised insert, utilising LED iBond’s proprietary and patented technology, which is only 6mm thin - this allowed for easy, quick installation. The inserts are fixed to the luminaires with magnets, further helping to cut down installation cost, as well as a plug and play system.





Project responsible:
DTU Campus Service

Luminous flux per unit:
4065 lm

Special features:
Daylight simulation

Installation date:
June 2015

Wattage per unit:
48.5 W

Total Units installed:
50

Colour temperature:
2200 - 6500K

For more Information, please visit
www.ledibond.com