WHITE TUNABLE LIGHTING

LIGHTING DESIGNED TO REPLICATE THE PATTERNS OF NATURAL DAYLIGHT

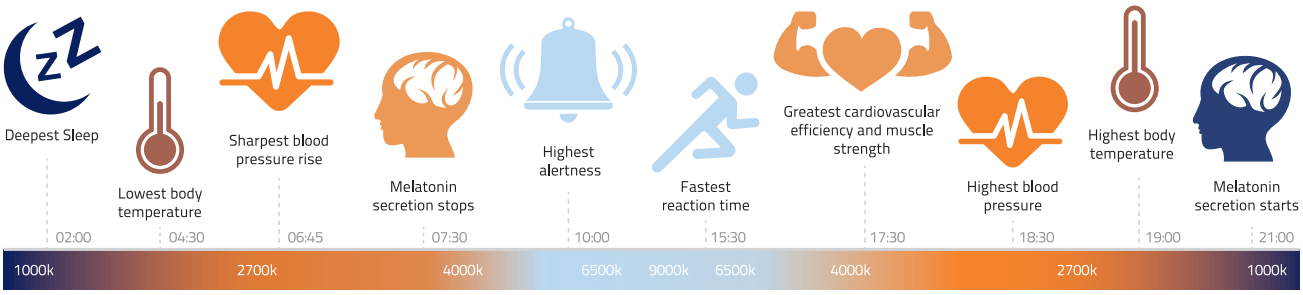
Dextra GROUP PLC

AN INTRODUCTION TO WHITE TUNABLE LIGHTING

Humans have evolved over millennia to respond to changes in natural daylight through the course of the day and it is only in relatively recent history that we have been able to artificially light spaces effectively.

Despite the huge benefits that artificial lighting brings the constant colour temperatures that we are now exposed to for long periods of each day do not synchronise with the expectations of our bodies and minds.

Through the course of a typical day natural daylight colour temperatures vary from warm white at dawn and dusk to cool white at the noon, these changes in colour temperature suppress or stimulate the production of hormones such as Melatonin (sleep hormones), and Serotonin and Cortisol (stimulation hormones) that are important to ensure that we perform at our best during the course of the day and sleep soundly come night time.

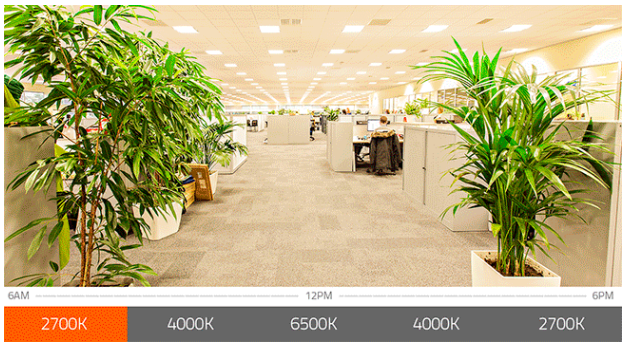


PRACTICAL APPLICATIONS

White tunable luminaires have the ability to replicate the patterns of natural daylight therefore stimulating the production of these hormones and can bring a number of benefits in real world applications.

RETAIL

To evoke emotions in customers in retail applications, be it a cool white colour temperature giving a clean and clinical feeling in a pharmaceuticals aisle or a warm white colour temperature providing a welcoming and calm feeling in a restaurant. Colour temperatures can be tuned to match specific products in a single store, for example warm white over bakery areas and cool white above fish counters and in stores with over night or long opening hours white tuneable lighting can be used to artificially extend the course of a day energising customers and staff.



EDUCATION AND OFFICE

In education and office applications where students and employees are typically subjected to artificial lighting for the majority of each working day white tunable lighting can be aligned to users circadian rhythm to ensure maximum productivity and also to improve sleep patterns come the end of the day.

HEALTHCARE

In health care applications, especially with dementia and Alzheimer sufferers, studies have shown that lighting can assist the well being of patients when the colour temperature adjusts through the course of the day to match the circadian rhythm.

CONTROL METHODS

Dextra white tunable luminaires contain a twin chip set that can be tuned from 2700 kelvin to 6500 kelvin using a DALI DT8 input with two control options.

A DALI DT8 wall panel can be supplied which allows users to adjust both the colour temperature and the dim level of the luminaires as they desire through the course of the day.

Alternatively Dextra white tunable luminaires can be controlled via a DALI DT8 BMS system which can be set to adjust the colour temperature automatically through the course of the day to match the natural cycle of daylight or to any pattern specified by the user. These colour temperature changes can be extremely gradual ensuring that users are not disturbed by sudden changes in the appearance of their lighting.

With both systems the luminaire output can be dimmed as required without effecting the set colour temperature ensuring that they can be used in conjunction with daylight regulation sensors maximising energy saving in conjunction with natural daylight contribution.

Compatible Products:

White tunable can be incorporated into a large number of products including downlights, surface and suspended and recessed ranges. We are also able to supply compatible controls and commission systems on request.

If you have a project requiring white tunable operation please contact our sales team for further information who will be happy to advise on the most suitable product for your application.

Manual control panel

Automatic control panel