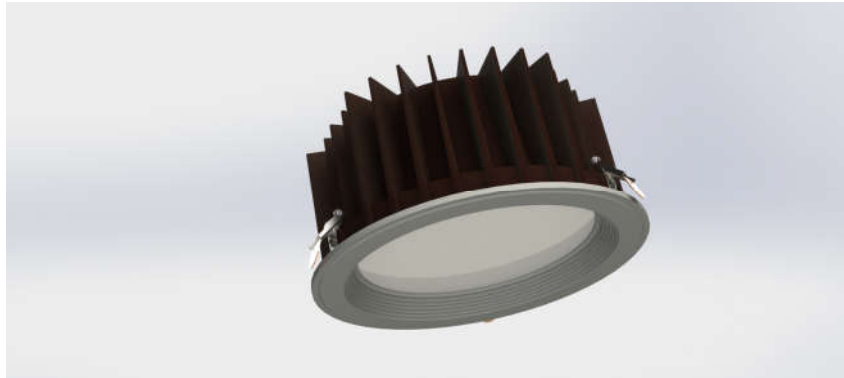# INTELLISUN   HUMAN CENTRIC LIGHTING

The IntelliSUN 250mm Downlight is a full spectrum light source delivering computer controlled daylight simulation at high efficiency and reliability. The light source is capable of being dimmed from 0 to 100% with colour temperature smoothly transitioning from 2500K to 6000K, all the while maintaining colour rendering better than 95 CRI.

Integrated intelligence supports autonomous wireless interaction with other fixtures and environmental sensors, providing a secure network independent of local WiFi.

IntelliSUN 250mm Downlight

Light Source:	
Light Source:	106 colour Luxeon LEDs
Fixture Output:	0 - 1,550lm (Programmable)
Fixture Efficacy:	100 - 120 lm/W[1]
Fixture Power:	5 - 15W (Programmable)
Operating Life:	> 60,000 hrs L90 Projected L70 > 250k hrs
Colour Temp:	White 2500 - 6000K nom.
Colour Rendering:	> 95 CRI (R9 ~ 95 typ)
Cyanosis Index:	0.98 @ 4000K
Flicker:	Nil
Output:	No UV or IR
Dimming:	0-100%
Power Supply:	
Input Voltage:	24V DC
Input Power:	<15W (0.7A @ 24V)
Power Supply:	85-305VAC to 24V 16W
MTBF	1,146,000 hrs @ 25°C
Environmental:	
Ambient Temp:	-20°C to 50°C
Operating Temp:	40°C at 25°C ambient

Features:
Full spectrum throughout tuneable colour temperature range of 2500K - 6000K.
Fantastic Colour Rendering >95CRI.
Excellent Cyanosis Index (COI) < 1.0
Full range dimming 0-100%.
Zero Flicker.

Control:
Integrated autonomous wireless control allows full interaction with other fixtures to optimise energy savings and task specific lighting. No additional control system is required.

Optional Sensing of:
    Motion
    Temperature, Humidity, CO_2
    Ambient Light (Intensity & Colour)

Applications:
Healthcare, Aged Care, Schools, Quality Commercial Office, Indoor Sports .

Installation:
Suspended Ceiling 10" or 254mm Cutout.

Mechanical:
Anodised and Powder Coated Aluminium.
PET or Prismatic Acrylic Diffuser options
Diameter / Width : 282 x 68mm
Weight: Approx 1.5kg

[1] Depending upon colour temperature & dim level

INTELLISUN   HUMAN CENTRIC LIGHTING

Highly Efficient: 1,550 lumens from 12.8W for 120lm/W fixture efficacy.

Extremely Long Operating Life: > 60,000 hrs at 90% lumen maintenance with power supply MTBF of 1,146,000 hrs at 25°C.

Plug and Play: Self contained, self configuring network. No supporting cabling or infrastructure required. Provides data transport for additional sensors in Industry 4.0 applications.

Occupancy Sensing: Integrated microwave sensor option allows adaptive lighting strategies and occupancy monitoring.

Environmental Monitoring: Optional integration with Environmental Sensors allows mapping of internal environmental quality and provides mechanisms for additional energy savings through interaction with HVAC systems.

Daylight Harvesting: System wide detection of ambient light conditions reduces amount of "fill in" lighting required.

Task Tuning: Individual (or groups) of luminaires can maintain different target light levels (and colours) to suit tasks being perform in their areas.

Zone Control: Luminaires can be grouped into zones for grouped control strategies (for example, loading bay vs aisle racking)

Addressable: Luminaries are uniquely addressable for unique control strategies (or sensor monitoring) independent of electrical wiring.
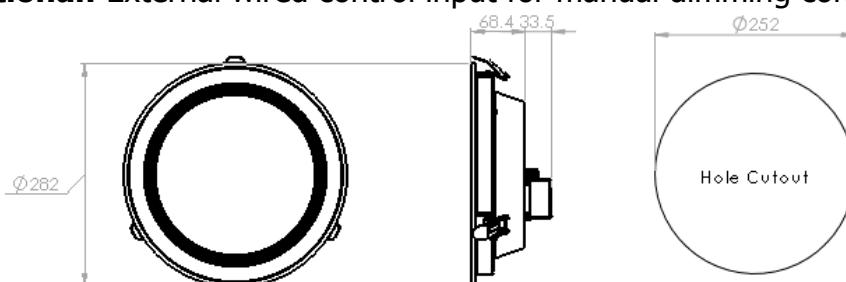
Continuous Dimming: Light level from 0-100% in 200+ steps for smooth lighting transitions. Ramp rates fully programmable.

Safe: No glass, mercury, UV or IR. No hazardous waste – recyclable.

Future Proof: Meets or exceeds DesignLights Consortium Intelligent Controls requirements 2016. Over-the-air firmware upgrades.

Optional: Germicidal Light source using violet (non-UV) light for room sterilisation.

Optional: External wired control input for manual dimming controls.

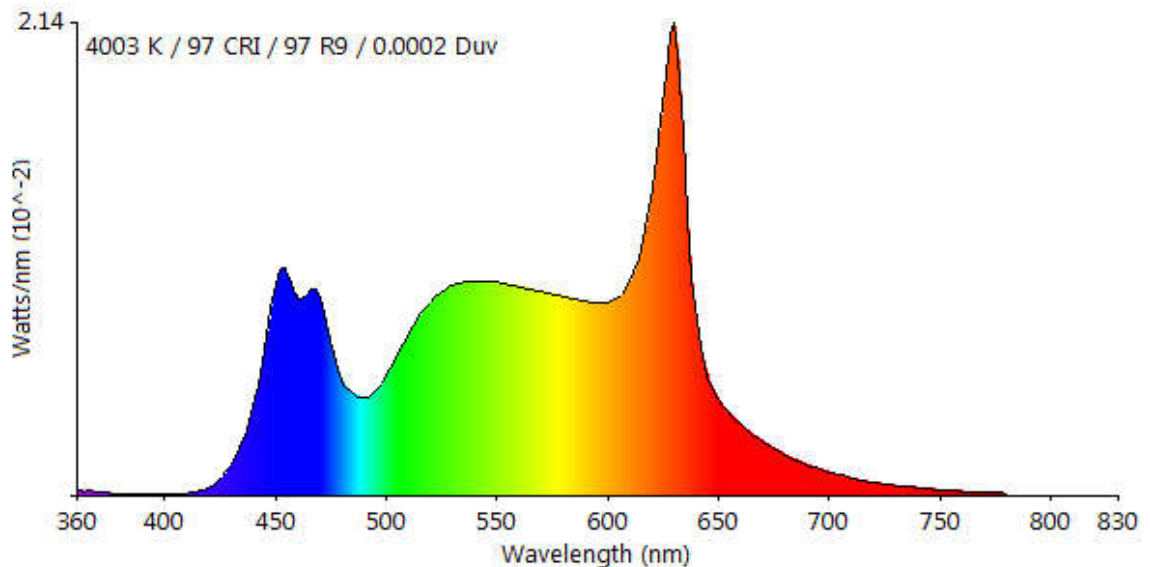**IntelliSUN: Focused on the well-being of people.**

Distributed by:

Digital Light Solutions Ltd - Dave@diffusers.co.nz
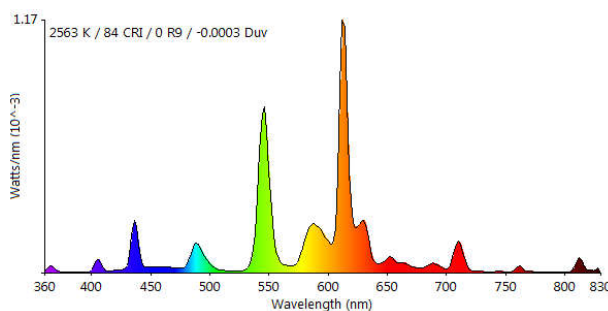
Eco-lightech Solution Ltd - yk.ip@eco-lightech.co.nz

Features

Full Spectrum Lighting: Full spectrum light for better sunlight emulation provides improved neurophysiological impacts on human health.
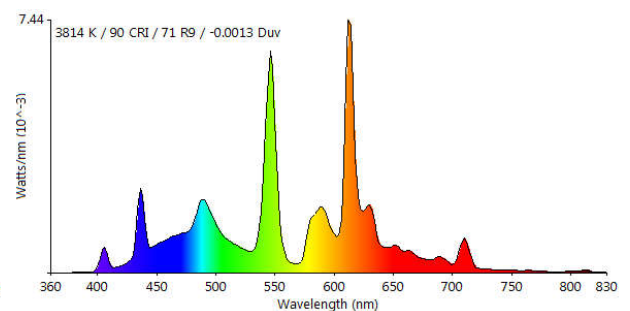

IntelliSUN Spectrum at 4000K 97CRI

Typical spectrum when tuned to 4000K, this shows how the light provides broad stimulation of different wavelengths resulting in significantly better visual acuity with in a Colour Rendering Index (CRI) of 97% and a R9 (red rendering) index of 97%.

**Fluorescent Philips TLD 36W 830
(Specified as 3000K 85CRI)**

**Compact Fl. Philips PLL 36W 950
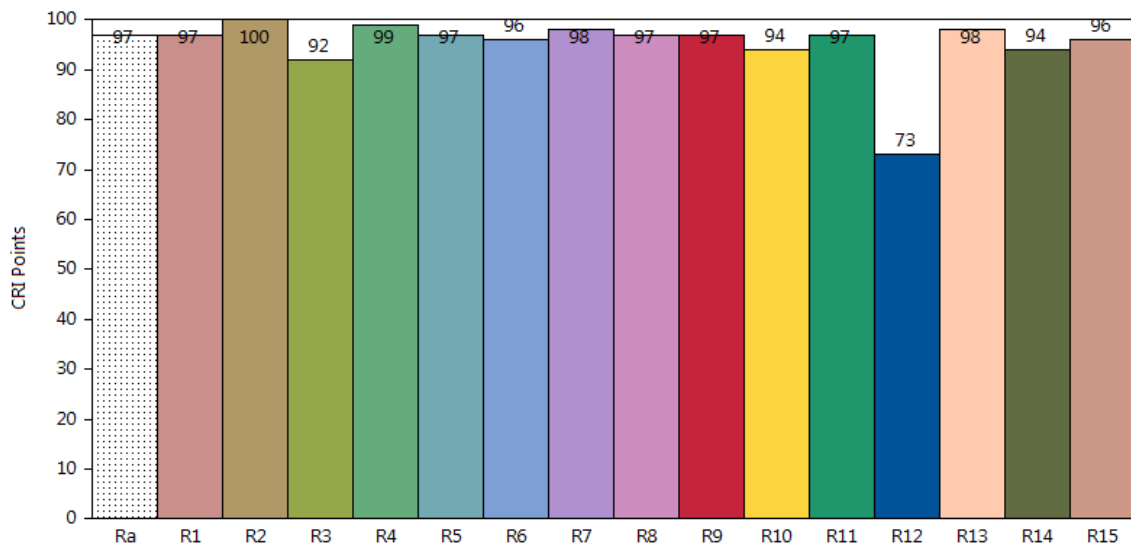(Specified as 5200K 82CRI)**

In comparison, the spectrums are shown of a typical 4ft fluorescent tube and a "full spectrum" compact fluorescent showing the dramatic peaks corresponding to the tube phosphors.

These examples show the limitations of relying on either colour temperature or colour rendering index as a measure of light (spectrum) quality and why visual acuity is reduced under these light spectrums.
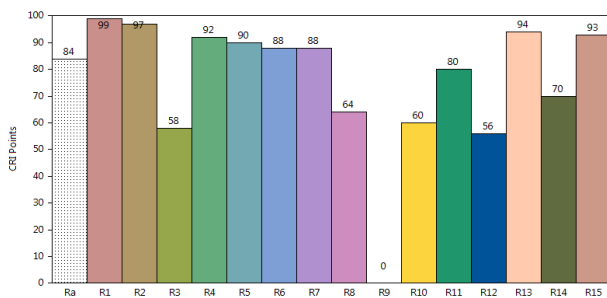
Circadian Mode: Automatic circadian lighting mode provides tuneable lighting, changing from morning through midday, afternoon and night-time. Using the eye's photoreceptors this has been shown to help synchronise the internal body clock(s) that manage the body's temperature, blood pressure, digestive functions, alertness and sleep cycles.

Excellent Colour Rendering: The broad spectrum light source provides excellent colour rendering at all dim levels, resulting in a noticeable improvement in visual perception at all times (including when dim).
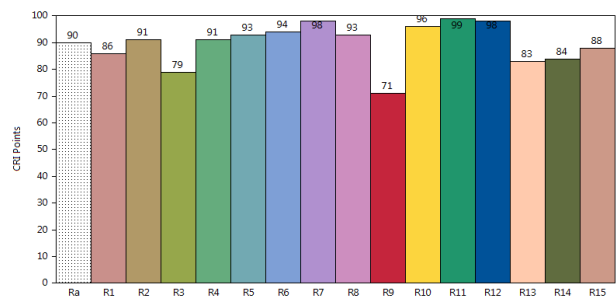
Colour Rendering Index is a measure of the average colour matching of the first 8 (pastel) colours in the table. Rendering of bright red, yellow, green, blue and the skin tones are not reflected in the Ra value (R9-R15), however the IntelliSUN also renders these extremely well.

IntelliSUN Colour Rendering Performance

Fluorescent TLD 36W 85CRI

Compact Fluorescent PLL 36W 82CRI

In comparison, note how poorly the fluorescent tube renders accurate colour, especially bright red (R9 of 0)!