



# IHS Treviso LED Grow Light

## TREVISO-20W-SINGLE-UK

The Treviso LED Grow Light from IHS is a versatile product that is designed to be plug and play straight from the box. With full spectrum illumination, the Treviso LED Grow Light provides plants with a comprehensive range of wavelengths, to improve overall plant growth. IHS LED Grow Lights offer superior quality at competitive prices.



## CONTENTS

Product Overview	<a href="#">page 2</a>	Spectral Power	<a href="#">page 5</a>
Applications	<a href="#">page 2</a>	Spectral Power and Distribution Patterns	<a href="#">page 6-7</a>
Specifications	<a href="#">page 3</a>	Technical Drawings	<a href="#">page 8</a>
Accessories	<a href="#">page 3</a>	Important Information and Precautions	<a href="#">page 8</a>
Spectral Calculations Explained	<a href="#">page 4</a>	Safety Information	<a href="#">page 9</a>
Spectral Output	<a href="#">page 5</a>	Further Information	<a href="#">page 10</a>

## PRODUCT OVERVIEW

The Treviso LED Grow Light is designed for easy installation in vertical farms, rack systems and bench lighting. Treviso's lightweight design incorporates an integrated heatsink for optimal thermal management. Additionally, the built-in driver allows users to connect straight to mains without a power supply. The spectral output from the Treviso LED Grow Light is full spectrum, meaning that plants are exposed to multiple wavelengths.

The Treviso LED Grow Light recipe has been developed to increase and improve overall plant growth, within environments that receive little or no natural daylight. The spectra is designed to be the primary source of illumination, replicating crucial wavelengths.

With a built-in lens providing 120 degree coverage, large areas can be illuminated with a single Treviso LED Grow Light. This product enables very simple installation. With a 100-240VAC mains input that can be installed by any standard electrician, no complicated wiring or installation processes are required. With brackets included and a lightweight design, installation is very simple in any application. Each Treviso LED Grow Light is fitted with an IP65 connector which allows for easy daisy-chaining; up to 50 lamps can be connected in a single chain.

## APPLICATIONS

- » Horticultural lighting
- » Environmental chambers
- » Propagators
- » Indoor farming
- » Polytunnels
- » Small greenhouses
- » Indoor home growing
- » Schools and universities
- » Research institutes
- » Rack systems and bench lighting

## SPECIFICATIONS

Power	20W
System efficacy	2.3 umol/J @220V
PPF Output	46 umol/s
Power Input	100-240V, 277V, 50-60Hz
Isolation Class	Class II
Thermal Management Type	Passive, no fan required
Dimming	None
Beam angle	120 degrees
Power Factor	>90%
Colour	White
Installation	Brackets
Type of Protection	IP65
Impact Resistance	IK08
Weight	0.5kg, including integrated power supply
Certifications	CE, UL, RoHS, UKCA
Warranty	3 years
Dimensions	1170 x 32 x 36mm
Operating Temperature	0°C to 40°C
Storage Temperature	-40°C to 70°C

## ACCESSORIES

Supplied with each Treviso LED Grow Light are the following accessories.  
Mounting brackets x2, mains input cable and terminating cap.



## TREVISO'S SPECTRAL CHARACTERISTICS CALCULATIONS EXPLAINED

Below you will find specific photometric information for TREVISO-20W-SINGLE-UK. This includes:

- » Spectral power
- » Spectral output
- » Spectral distribution patterns.

All readings were carried out in IHS's in-house test facility in order to provide real life values that you can feel comfortable to use in your own calculations.

The TREVISO-20W-SINGLE-UK was suspended using the hanging brackets and powered according to our Treviso installation manual.

The height of the unit was then varied so the front face of TREVISO-20W-SINGLE-UK, that is at lens level, was measured to the sensor level at varying increments: 200mm and 300mm.

The unit was powered and left switched on for 2 hours before readings were taken to ensure thermal stability had been achieved. Ambient temperature stood at approximately 20°C, whereby the average heatsink temperature increase was noted to be 50°C after stabilisation.

The spectral output graph below shows the percentage in flux for each wavelength. For example, if 660nm shows 90% and 455nm shows 10%, then you know the ratio of 600nm to 455nm is 2:1.

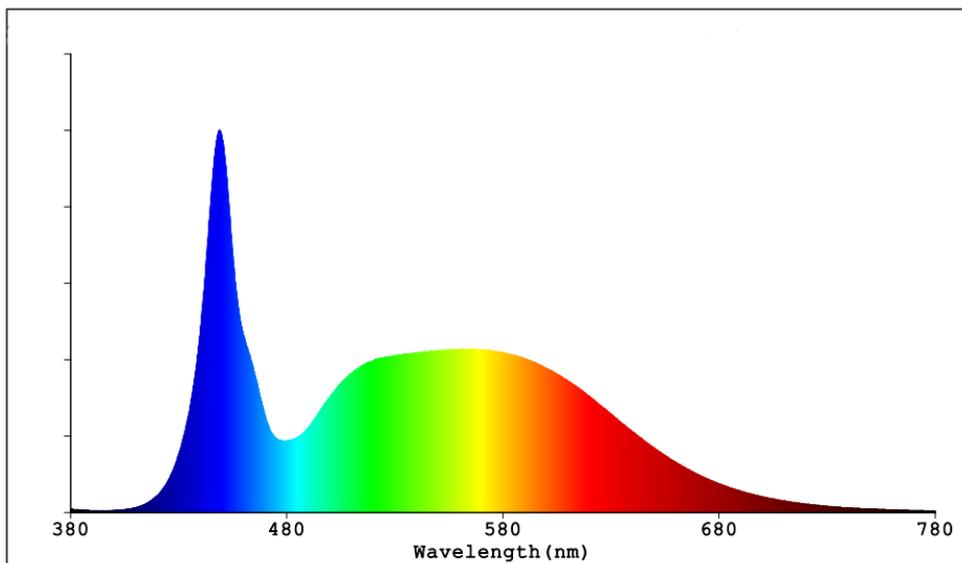
The spectral power illustration below represents the  $\mu\text{mol}/\text{m}^2/\text{s}$  reading taken at the central point at each of the varying heights. This value corresponds to a reading area of 150mm<sup>2</sup>.

The spectral distribution patterns provided below for each of the varying heights show the total  $\mu\text{mol}/\text{m}^2/\text{s}$  readings taken at 150mm intervals. If you look at the central value, the number either side depicts the  $\mu\text{mol}/\text{m}^2/\text{s}$  reading 150mm further out from the centre.

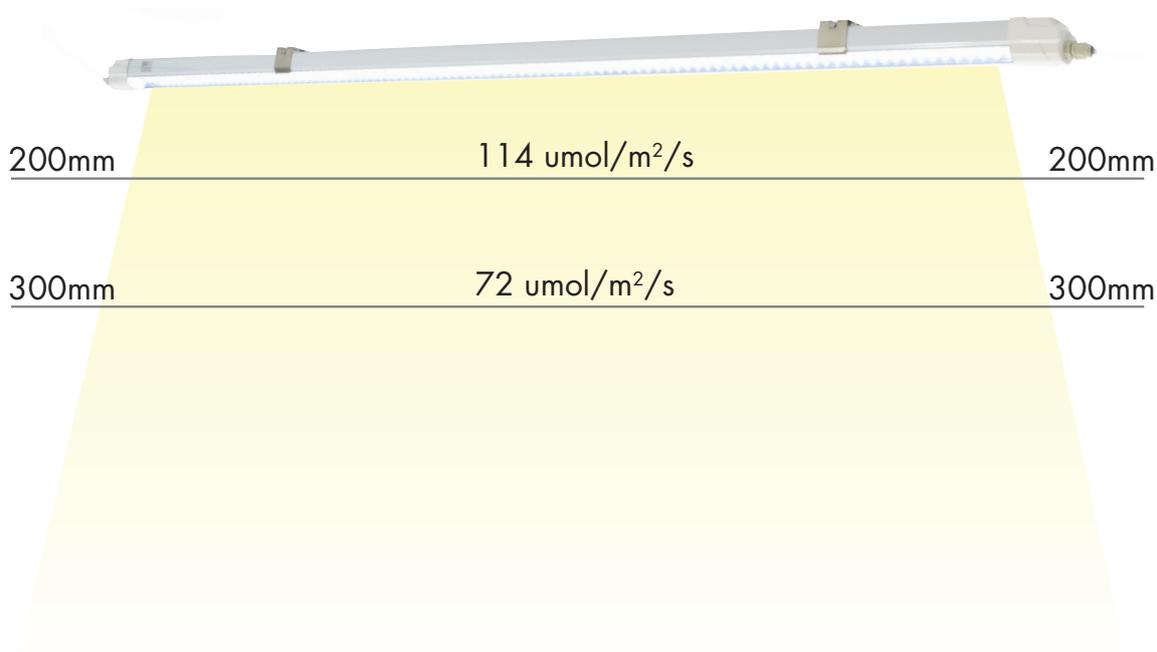
So a 0.45m<sup>2</sup> area is shown on the chart as 3x3 squares.

535.52	932.00	1131.00
890.90	1496.00	1753.00
1095.00	1737.00	1836.00

## SPECTRAL OUTPUT



## SPECTRAL POWER



## SPECTRAL POWER AND DISTRIBUTION PATTERNS

Spectral Distribution Pattern -  $\mu\text{mol}/\text{m}^2/\text{s}$  readings suspended at 200mm

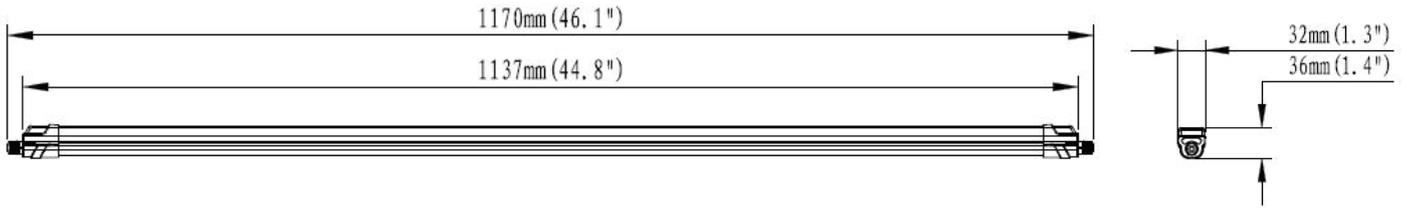
75	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-
45	1	1	1	1	1	1	1	1	1	1	1
30	2	3	6	9	10	11	10	9	6	3	2
15	4	14	32	40	44	44	44	40	32	14	4
0	7	28	79	107	113	114	113	107	79	28	8
15	4	14	32	40	44	44	44	40	32	14	4
30	2	3	6	9	10	11	10	9	6	3	2
45	1	1	1	1	1	1	1	1	1	1	1
60	-	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	-	-	-	-
	75	60	45	30	15	0	15	30	45	60	75

Distance in cm

Spectral Distribution Pattern -  $\mu\text{mol}/\text{m}^2/\text{s}$  readings suspended at 300mm

Distance in cm	75	1	1	1	1	1	1	1	1	1	1	
	60	1	2	3	3	3	3	3	3	2	1	
	45	3	4	7	9	9	11	9	9	7	4	3
	30	3	7	11	14	16	17	16	14	11	7	3
	15	7	16	29	39	44	44	44	39	29	16	7
	0	9	24	47	64	70	72	70	64	47	24	9
	15	7	16	29	39	44	44	44	39	29	16	7
	30	3	7	11	14	16	17	16	14	11	7	3
	45	3	4	7	9	9	11	9	9	7	4	3
	60	1	2	3	3	3	3	3	3	3	2	1
	75	1	1	1	1	1	1	1	1	1	1	1
		75	60	45	30	15	0	15	30	45	60	75
		Distance in cm										

## TECHNICAL DRAWING (MM)



Please refer to our [Treviso installation manual](#) for details about mounting, wiring and safety.

### IMPORTANT INFORMATION AND PRECAUTIONS



The LED module when powered up, are very bright. Thus it is advised that you do not look directly at them. Turn the LED module away from you and do not shine into the eyes of others.



DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.



LED modules, when operated, can reach high temperatures thus there is a risk of injury if they are touched.



DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage.

## SAFETY INFORMATION



The LED module itself and all its components must not be mechanically stressed.



Assembly must not damage or destroy conducting paths on the circuit board.



To avoid mechanical damage to the connecting cables, the boards should be attached securely to the intended substrate. Heavy vibration should be avoided.



Observe correct polarity! Depending on the product, incorrect polarity will lead to emission of red or no light. The module can be destroyed!



Pay attention to standard ESD precautions when installing the LED module.



Damage by corrosion will not be accepted as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.



For outdoor usage, a housing is definitely required to protect the board against environmental influences. The design of the housing must correspond to the IP standards in the application. It is also the responsibility of the user to ensure any housings or modifications keep the Tc junction temperature to within stated ranges.



To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards: CE: EC 61374-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61374-2-13 and IEC/EN 62384.



The evaluation of eye safety occurs according to the standard IEC 62471:2006 ("photobiological safety of lamps and lamp systems"). Within the risk grouping system of this CIE standard, the LED specified in this data sheet falls into the class "moderate risk" (exposure time 0.25s). Under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. As is also true when viewing other bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment and even accidents, depending on the situation.

## FURTHER INFORMATION

The values contained in this datasheet can change due to technical innovation. Any such changes will be made without separate notification. Intelligent Horticultural Solutions is a division of Intelligent Group Solutions, delivering LED solutions to the rapidly evolving and highly important horticultural lighting market.

All trademarks recognised.



Unit 2, Berkshire Business Centre,  
Berkshire Drive, Thatcham,  
Berkshire, RG19 4EW

+44 (0)1635 294606

[info@i-hled.co.uk](mailto:info@i-hled.co.uk)

[www.i-hled.co.uk](http://www.i-hled.co.uk)

## ABOUT IHS

LEDs are producing revolutionary advancements in many areas of technology and life, but none more important than in horticulture. The complexities and knowledge required are growing daily, with different plants requiring different spectral illumination and control.

Intelligent Horticultural Solutions (IHS) was formed in 2017 to support the development of products in the fast moving and exciting area of LED lighting. We have brought together key horticultural LED manufacturers, leveraging their 20+ years of experience in general LED lighting in order to offer development platforms and custom growing solutions.

IHS is part of the [Intelligent Group Solutions Ltd](#) (IGS) group of companies founded in 2001. We operate from our head office in Thatcham, Berkshire. Sister divisions specialise in a variety of opto and mainstream electronics distribution, design, prototyping and assembly services.

## INTELLIGENT GROUP SOLUTIONS DIVISIONS

