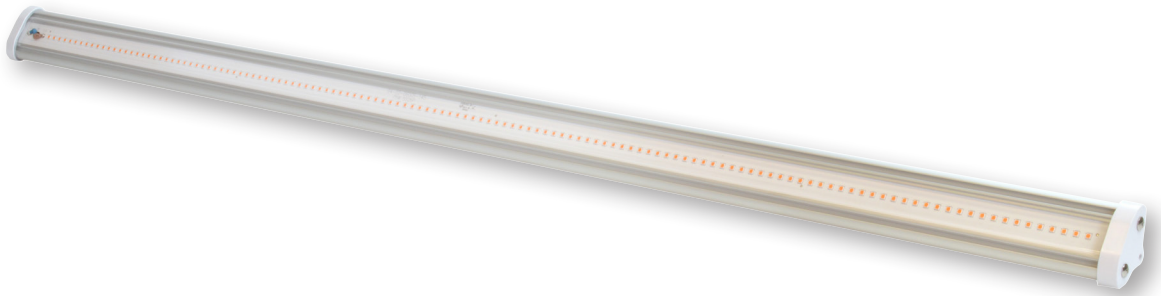




IHS Siena LED Grow Light

SIENA-40W-UK

The Siena LED Grow Light from IHS is a versatile and simple product. This linear solution emits specific wavelengths of light to optimise plant growth and increase yield. The Siena LED Grow Light is an ideal way to provide a consistent light source for plants in indoor and greenhouse farming applications. The linear shape of the Siena LED Grow Light allows for even light distribution over a large growing area. IHS horticultural LED Grow Lights offer superior quality at competitive prices.



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PRODUCT OVERVIEW

The Siena LED Grow Light from IHS has been designed for easy installation in vertical farms, rack systems and bench lighting. The lightweight design incorporates an integrated heatsink for optimal thermal management. Additionally, the inline connectors allow for easy connection to a LED driver. The spectral output from the Siena LED Grow Light is broad spectrum including hyper and far red. Plants are subjected to multiple wavelengths across the spectrum. Hyper red light is beneficial for plants as this specific wavelength is absorbed by the plant's phytochrome pigment.

The Siena LED Grow Light mix of LEDs has been developed to increase and improve overall plant growth. The spectrum has been designed to complement a growing environment where there is already available daylight.

With a built-in lens providing a 120 degree coverage, large areas of target plants can be illuminated with a single Siena LED Grow Light. With brackets included, and a weight of only 0.8kg, installation is very simple in any application. Each Siena LED Grow Light is fitted with an IP65 connector which allows for easy connection.

APPLICATIONS

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

SPECIFICATIONS

Power	40W
System efficacy	1.9 umol/J @ 220Vac
PPF Output	76 umol/s
Power Supply	50-320W dimming and non-dimming. Suitable options can be found on page 3
Isolation Class	Class I
Heat BTU Generated	136.4BTU
Beam angle	120°
Colour	White
Installation	Brackets and screws
Type of Protection	IP65 (dust and watertight)
Weight	0.8kg
Certifications	CE, RoHS, ETL
Warranty	5 years
Dimensions	1116 x 55.8 x 35.1 mm
Operating Temperature	0°C to 40°C
Storage Temperature	-40°C to 70°C

ACCESSORIES

Supplied with each Siena LED Grow Light are the following accessories.

Mounting brackets x2 (included with each light)



IHS Part Number	Rating (W)	Number of SIENA 40W per PSU	Dimming
SIENA-DRIVER-50W	50W	1	DALI-2, 0-10V, PWM, Resistor
SIENA-DRIVER-75W	75W	1	DALI-2, 0-10V, PWM, Resistor
SIENA-DRIVER-100W	100W	2	DALI-2, 0-10V, PWM, Resistor
SIENA-DRIVER-150W	150W	3	DALI-2, 0-10V, PWM, Resistor
SIENA-DRIVER-200W	200W	4	DALI-2, 0-10V, PWM, Resistor
SIENA-DRIVER-240W	240W	4	DALI-2, 0-10V, PWM, Resistor
SEINA-DRIVER-320W	320W	6	DALI-2, 0-10V, PWM, Resistor

SIENA'S SPECTRAL CHARACTERISTICS CALCULATIONS EXPLAINED

Below you will find specific photometric information for SIENA-40W-UK. This includes:

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

These three sets of spectral measurements have been obtained by testing a standard production unit, rather than a 'special' engineering unit. All readings were carried out in IHS's in-house test facility in order to provide real life values that you can use in your own calculations.

The SIENA-40W-UK was suspended using a single chain and powered according to our Siena installation manual.

The height of the unit was then varied so the front face of SIENA-40W-UK, that is at lens level, was measured to the sensor level at varying increments: 300mm and 450mm.

The unit was powered and left switched on for 2 hours before readings were taken to ensure thermal stability within the product 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.

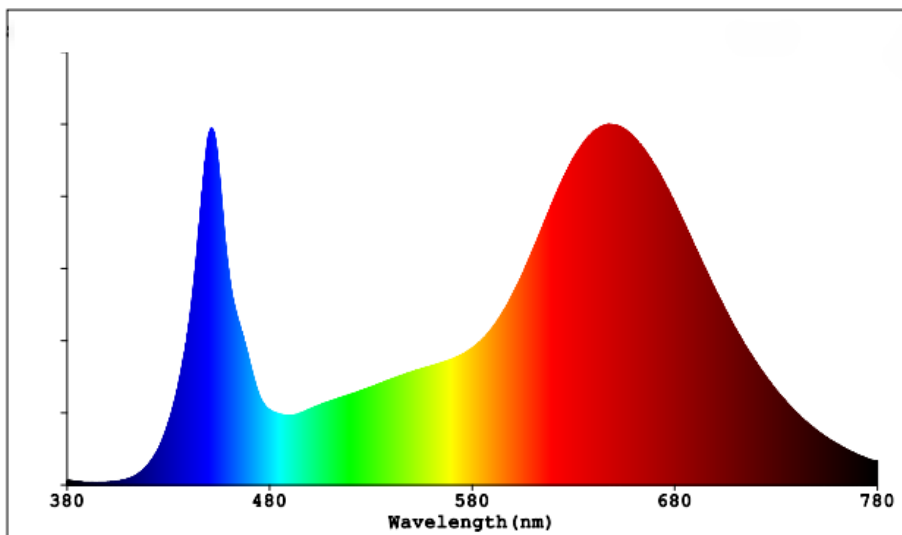
The spectral power illustration below represents the $\mu\text{mol}/\text{m}^2/\text{s}$ reading taken at the central point at each of the varying heights. This value corresponds to a reading area of 750mm^2 .

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.

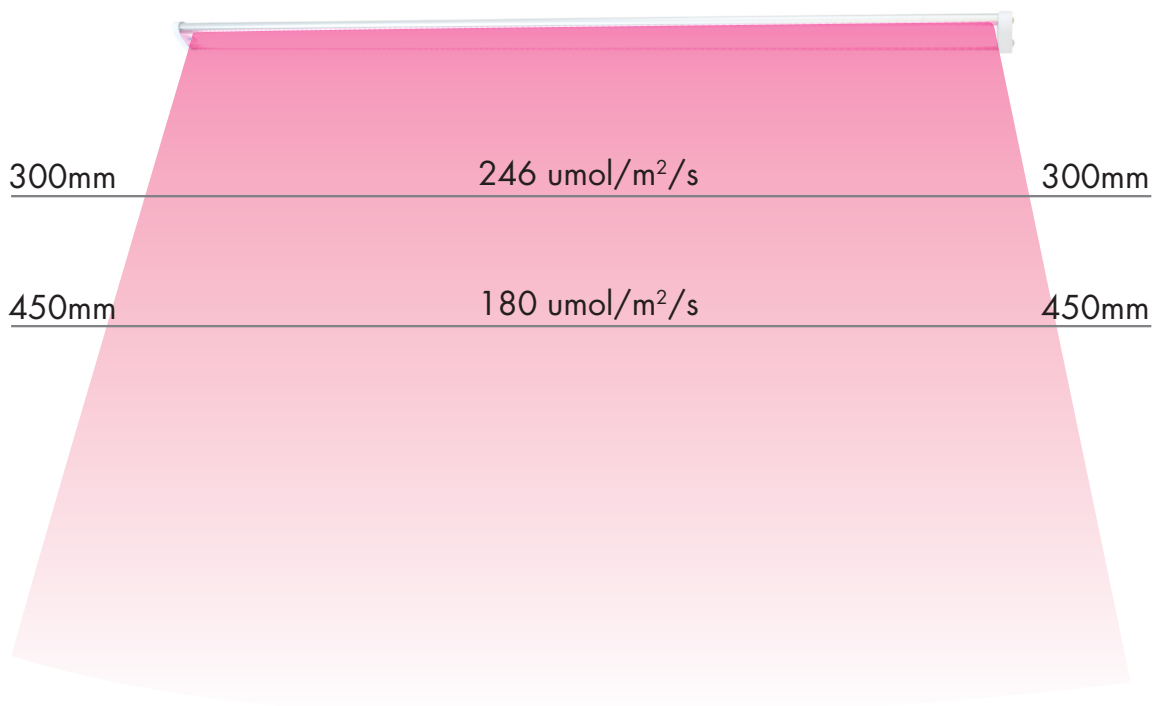
So a 0.45m^2 area is shown on the chart as 3×3 squares.

191	234	191
200	246	200
191	234	234

SPECTRAL OUTPUT



SPECTRAL POWER - SIENA-40W-UK



SPECTRAL POWER AND DISTRIBUTION PATTERNS

SIENA-40W-UK Spectral Distribution Pattern - $\mu\text{mol}/\text{m}^2/\text{s}$ readings suspended at 300mm

75	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	50	76	95	76	50	-	-	-
45	-	-	-	80	131	162	131	80	-	-	-
30	-	-	-	103	170	208	170	103	-	-	-
15	-	-	-	115	191	234	191	115	-	-	-
0	-	-	-	120	200	246	200	120	-	-	-
15	-	-	-	115	191	234	191	115	-	-	-
30	-	-	-	103	170	208	170	103	-	-	-
45	-	-	-	80	131	162	131	80	-	-	-
60	-	-	-	50	76	95	76	50	-	-	-
75	-	-	-	-	-	-	-	-	-	-	-
	75	60	45	30	15	0	15	30	45	60	75

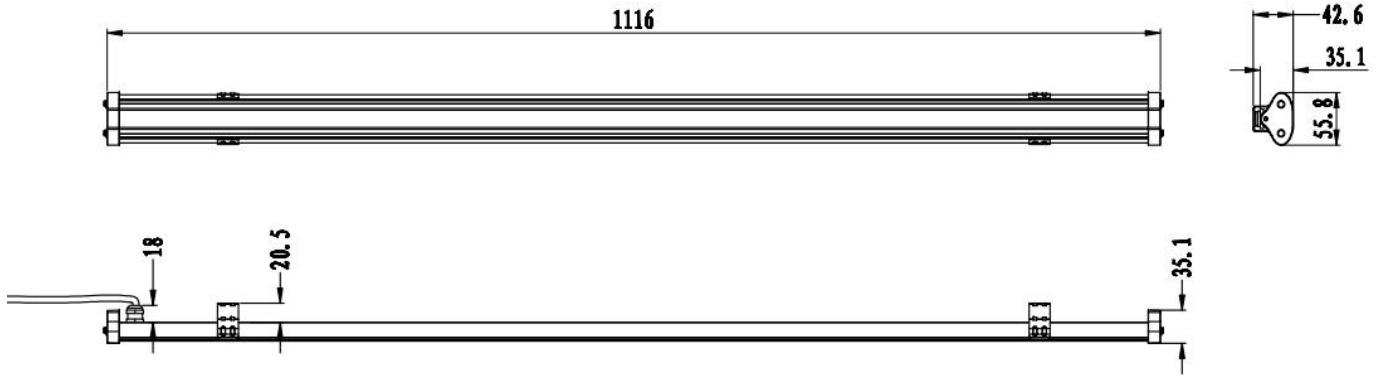
Distance in cm

SIENA-40W-UK Spectral Distribution Pattern - $\mu\text{mol}/\text{m}^2/\text{s}$ readings suspended at 450nm

75	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	54	70	80	70	54	-	-	-
45	-	-	-	76	105	120	105	76	-	-	-
30	-	-	-	95	132	152	132	95	-	-	-
15	-	-	-	108	152	172	132	108	-	-	-
0	-	-	-	113	160	180	160	113	-	-	-
15	-	-	-	108	152	172	132	108	-	-	-
30	-	-	-	95	132	152	132	95	-	-	-
45	-	-	-	76	105	120	105	76	-	-	-
60	-	-	-	54	70	80	70	54	-	-	-
75	-	-	-	-	-	-	-	-	-	-	-
	75	60	45	30	15	0	15	30	45	60	75

Distance in cm

TECHNICAL DRAWING (MM)



Please refer to our [Siena 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.



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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.

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