

IHS Horti Flex LED Strips 8.3mm Pitch

IHX-NH08-Wx08-2000-SD201.

The Horti Flex range are densely populated, high bright, flexible LED strips using the Nichia Hortisolis LEDs. Unlike standard flexible LED strips, the IHX range from IHS incorporate constant current drivers, protection diodes and the latest 3M thermal tape. This combination gives unparalleled performance with high brightness, whilst still achieving 100,000 hours working life.

Horti Flex is available in two options; the 3000K version which includes a higher percentage of red wavelengths, or the 5000K version which contains a higher percentage of blue wavelengths. These strips provide supplemental lighting designed to replicate crucial wavelengths for their end application. The LED recipes have been designed based on an end application with no natural daylight, where these products offer the only source of usable wavelengths. Combined with a full range of accessories including extrusions and connectors, the IHX family of flexible LED reels finally offer a solution for the horticultural market.



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APPLICATIONS

- » Horticultural lighting
- » General lighting
- » Environmental chambers
- » Propagators
- » Vertical farms
- » Indoor farming
- » Schools and universities
- » Research institutes
- » Plant lighting

SPECIFICATIONS

LED Family	Nichia NFSW757GT Rsp0a
Lifetime	Up to 100,000 Hour lifetime to 70% of original brightness
Mounting	3M double sided thermal tape
LED Pitch	8.3mm
Reel Length	2000mm
Wiring	Available with 200mm connecting wires
Working Voltage	24V DC constant voltage
Smallest Length	50mm
Power Supply	20 - 80W dimming and non-dimming. Suitable options on page 7 or visit our website for a full range.

ACCESSORIES

Secondary Optics



IHS has a series of diffusers designed to work with the Horti Flex. These diffusers work seamlessly with the square and corner extrusions. The diffusers are supplied in kits including the heatsink, end caps and mounting clips. The diffusers are available in clear or diffused. For the full range please [visit our website](#).

Heatsinks



IHS has a series of aluminium alloy heatsinks to be used with our standard range of Horti Flex. These heatsinks are supplied with end caps, mounting brackets and 2 diffusers - clear or diffused. IHS is continually expanding its heatsink range and we are equally happy to manufacture custom heatsinks upon your request. Suitable options on [page 6](#) or visit [our website](#) for a full range.

Power Supplies

IHS has a comprehensive range of standard power supplies. The table below shows the total number of IHS products each power supply can drive. Additional power supplies are being introduced so please call us or [check our website](#) for the latest offering. Suitable options on [page 7](#)



Thermal Interface Material (TIM)

IHS has produced a range of High-performance, cost effective Thermal Interface Materials to match perfectly their standard products. The product fills the air pockets between the two surfaces, forming a continuous layer to conduct heat away from the LED to the Heatsink. The IHS Horti Flex LED strips have 3M thermal tape already attached for perfect thermal bonding.



PRODUCT OPTIONS

IHS Part Number	Colour	Typical Power W §		Drive Voltage	Luminous Flux † per 2000mm	Radiance Angle	Relevant NICHIA LED Data
		Per 2000mm reel	Per 50mm cut				
IHX-NH08-WM08-2000-SD201	Warm White (3000K)	57.6W	1.44W	24V	4320 lm	120° (±60°)	Rsp0a
IHX-NH08-WW08-2000-SD201	White (5000K)	57.6W	1.44W	24V	4320 lm	120° (±60°)	Rsp0a

Due to the special conditions of the manufacturing processes of LEDs, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

§ Tolerance +/- 10%

† Measured with 20mS 60mA pulse at 25 °C

MINIMUM AND MAXIMUM RATINGS

IHS Part Number	Operating Temperature at Tc-Point [° C]	Storage Temperature [° C]	Maximum Voltage	Reverse Voltage [Vdc]
IHX-NH08-WM08-2000-SD201	- 40 to 110 °C	- 40 to 110 °C	24V max	Not designed for reverse voltage
IHX-NH08-WW08-2000-SD201	- 40 to 110 °C	- 40 to 110 °C	24V max	Not designed for reverse voltage

Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module.

Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED module.

The temperature of the LED module must be measured at the Tc-Point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

SPECTRAL CHARACTERISTICS CALCULATIONS EXPLAINED

Below you will find specific photometric information for IHX-NH08-Wx08-2000-SD201 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 feel comfortable to use in your own calculations.

IHX-NH08-Wx08-2000-SD201 was suspended above a Horti-Lux light sensor.

The height of the unit was then varied so the front face of IHX-NH08-Wx08-2000-SD201, that is at lens level, was measured to the sensor level at varying increments: 150mm, 300mm, 450mm and 600mm.

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.

The spectral output graph below shows the percentage in flux for each wavelength.

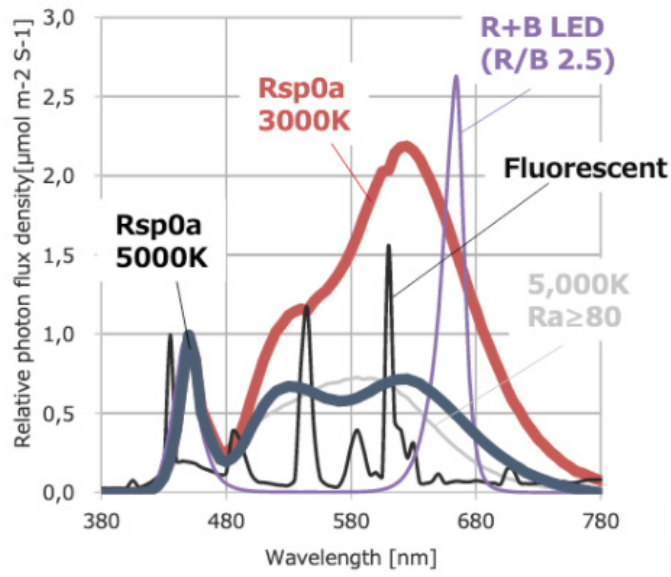
The spectral power illustration below represents the $\mu\text{mol}/\text{m}^2/\text{s}$ reading taken at the central point at each of the varying heights. This value corresponds to a reading area of 100mm^2 .

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 100mm intervals. If you look at the central value, the number either side depicts the $\mu\text{mol}/\text{m}^2/\text{s}$ reading 100mm further out from the centre.

So a 1m^2 area is shown on the chart as 5×5 squares, for example the grid depicts a 1m^2 section.

14.3	17.3	17.9	17.3	14.4
50.4	58.5	62.7	59.7	50.9
104.0	131.0	135.0	131.0	96.0
54.5	74.0	74.0	67.0	49.0
14.9	19.8	23.0	20.0	15.0

SPECTRAL OUTPUT

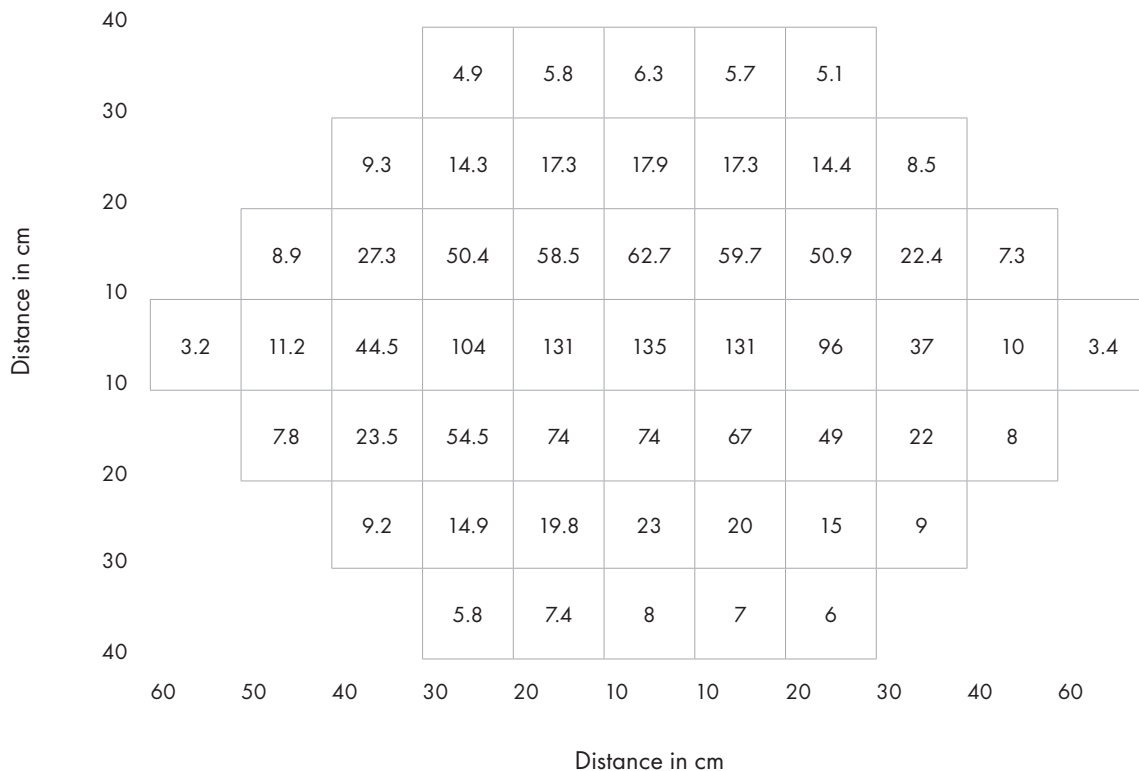


SPECTRAL POWER

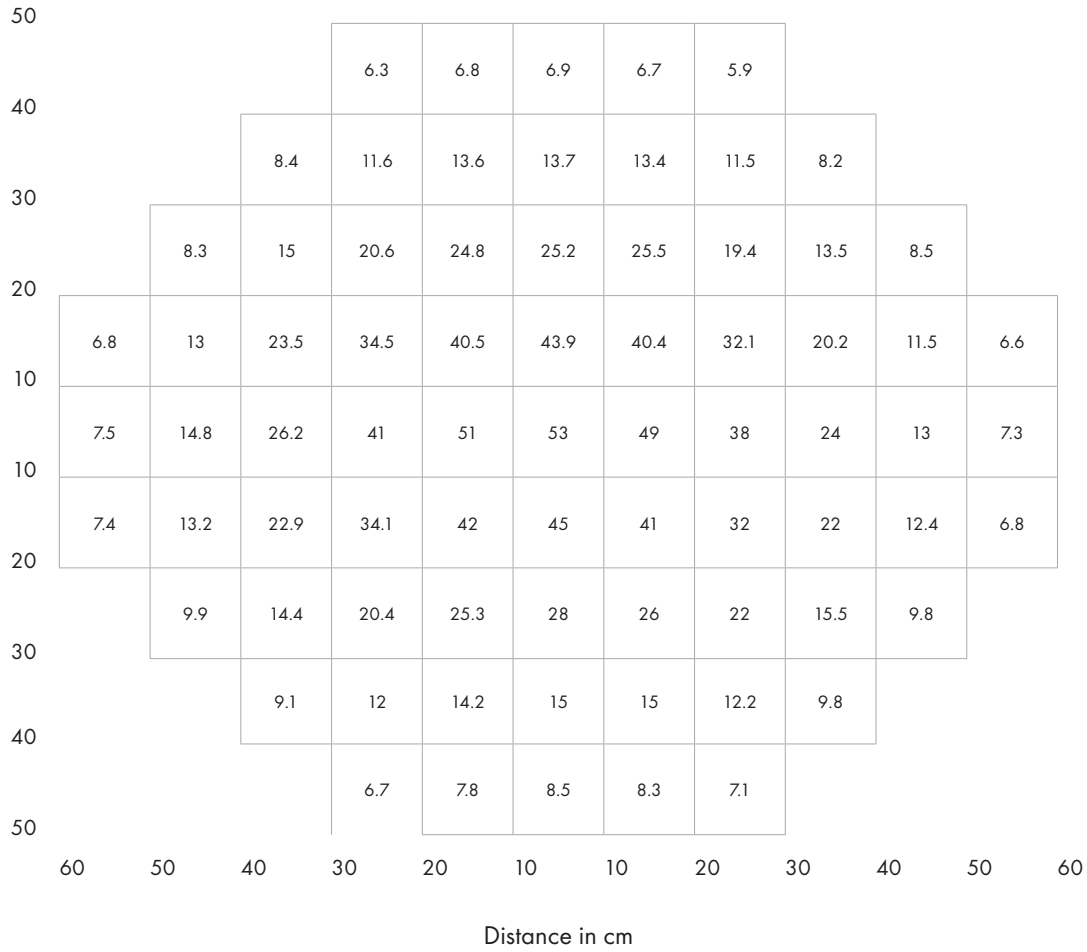
150mm	135 $\mu\text{mol/m}^2/\text{s}$	150mm
300mm	53 $\mu\text{mol/m}^2/\text{s}$	300mm
450mm	28 $\mu\text{mol/m}^2/\text{s}$	450mm
600mm	18 $\mu\text{mol/m}^2/\text{s}$	600mm

SPECTRAL POWER AND DISTRIBUTION PATTERNS

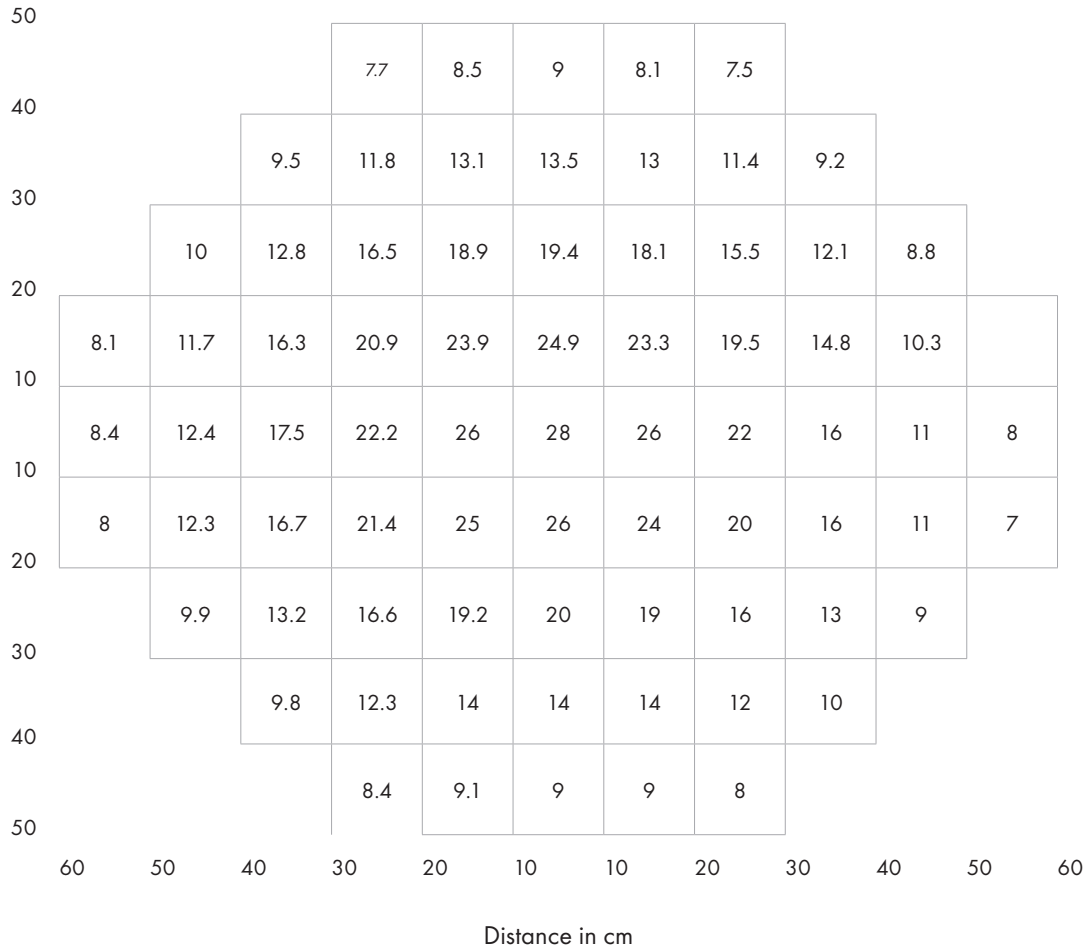
Spectral Distribution Pattern - Suspended at 150mm



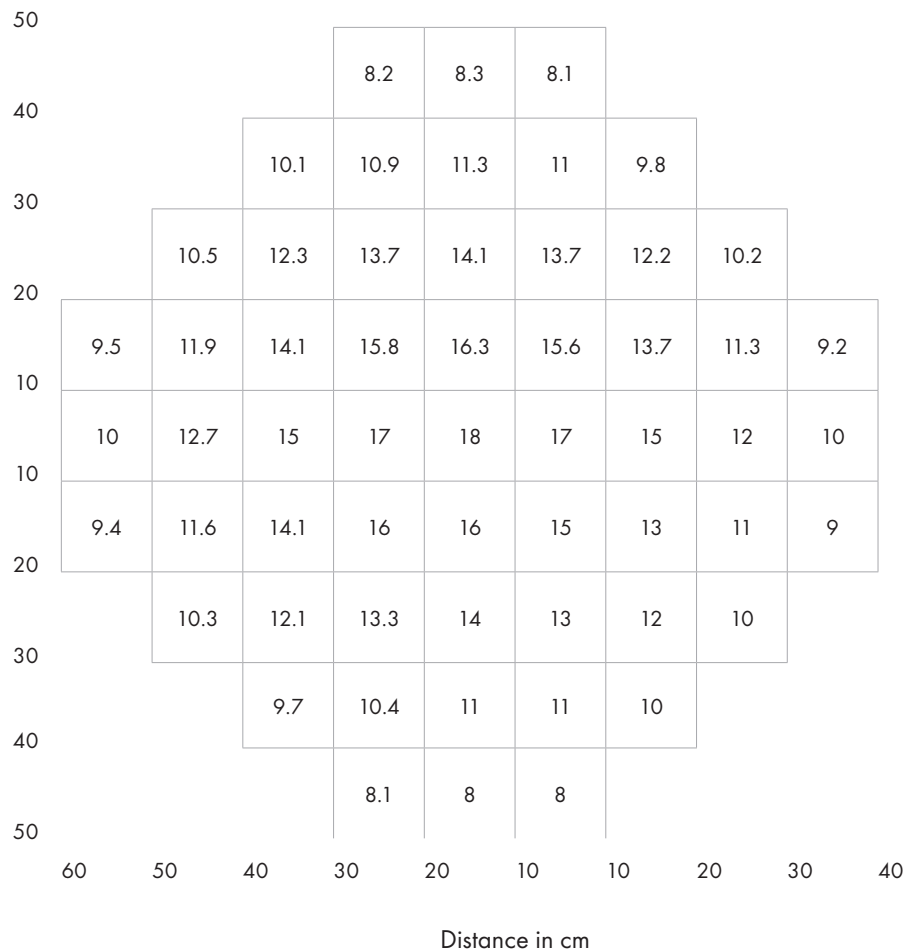
Spectral Distribution Pattern – Suspended at 300mm



Spectral Distributions Pattern – Suspended at 450mm

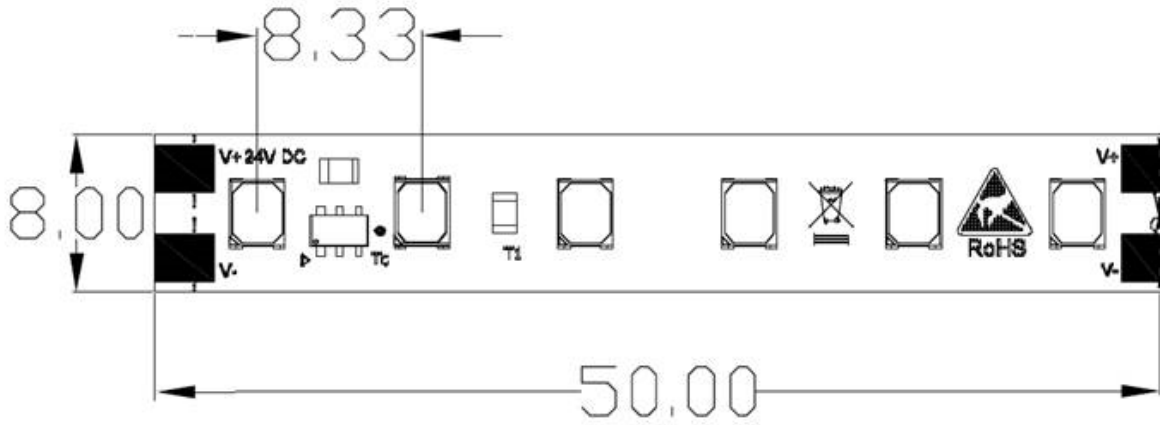


Spectral Distribution Pattern – Suspended at 600mm

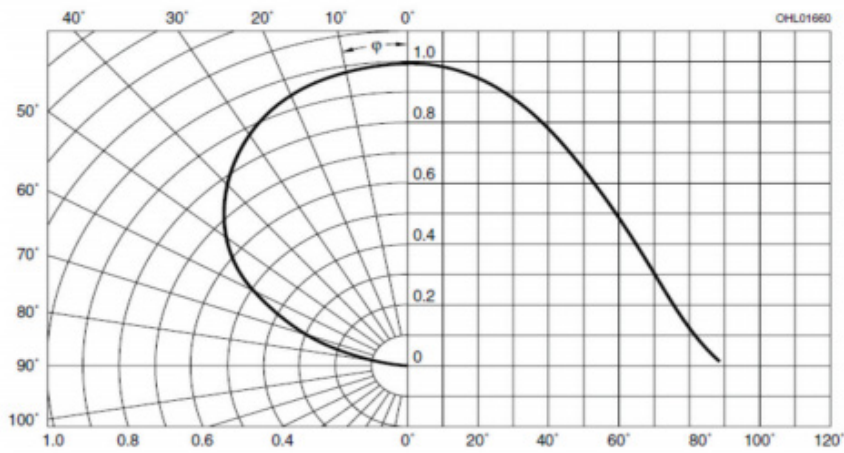


TECHNICAL DRAWING (MM)

PRODUCT DATASHEET » IHX-NH08-Wx08-2000-SD201.



RADIATION OF SINGLE LED











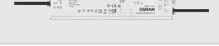
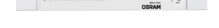
HEATSINK OPTIONS

ILS Product			
ILK-FLEXEXT-0310-001.	1x 310mm metre surface mounted aluminium extrusion 1 x 310mm clear diffuser 1 x 310mm opal diffuser 2 x end caps 2 x mounting clips W 16.7mm x H 9.0mm		
ILK-FLEXEXT-1000-001.	1x 1000mm metre surface mounted aluminium extrusion 1 x 1000mm clear diffuser 1 x 1000mm opal diffuser 2 x end caps 3 x mounting clips W 16.7mm x H 9.0mm		
ILK-FLEXEXT-1500-001.	1x 1500mm metre surface mounted aluminium extrusion 1 x 1500mm clear diffuser 1 x 1500mm opal diffuser 2 x end caps 4 x mounting clips W 16.7mm x H 9.0mm		
ILK-FLEXEXT-0310-002.	1x 310mm metre angled aluminium extrusion 1 x 310mm clear diffuser 1 x 310mm opal diffuser 2 x end caps 2 x mounting clips W 17.0mm x H 12.6mm		
ILK-FLEXEXT-1000-002.	1x 1000mm metre angled aluminium extrusion 1 x 1000mm clear diffuser 1 x 1000mm opal diffuser 2 x end caps 3 x mounting clips W 17.0mm x H 12.6mm		
ILK-FLEXEXT-1500-002.	1x 1500mm metre angled aluminium extrusion 1 x 1500mm clear diffuser 1 x 1500mm opal diffuser 2 x end caps 4 x mounting clips W 17.0mm x H 12.6mm		

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POWER SUPPLY OPTIONS

	Part Number	Wattage	Voltage	Dimming	Horti Flex 1.44W per cut 57.6W per reel	
					Reels per Driver	Cuts per Driver
	OT 6/200-240/24 CE	6W	24V	No	0	4
	OT 20/220-240/24	20W	24V	No	0	13
	OT 20/220-240/24 P	20W	24V	No	0	13
	OT 20/220-240/24 DIM P	20W	24V	1-10V	0	13
	ELEMENT 30/220-240/24 G2	30W	24V	No	0	20
	IZV024-040M-9767C-SAL	40W	24V	0-10V, PWM Signal or Resistance	0	27
	OT SLIM 30/220-240/24	30W	24V	No	0	20
	OT 40/220-240/24 P	40W	24V	No	0	27
	OT 40/220-240/24 DIM P	40W	24V	1-10V	0	27
	OT 50/220-240/24	50W	24V	No	0	34
	IZV024-060M-9767C-SAL	60W	24V	0-10V, PWM Signal or Resistance	1	41
	ELEMENT 60/220-240/24 G2	60W	24V	No	1	41
	OT 60/220-240/24 P	60W	24V	No	1	41
	OT SLIM 60/220-240/24	60W	24V	No	1	41
	OT 60/220-240/24 DIM P	60W	24V	1-10V	1	41
	OT 75/220-240/24	75W	24V	No	1	52
	IZV024-090M-9767C-SAL	90W	24V	0-10V, PWM Signal or Resistance	1	62
	OT 100/220-240/24 P	100W	24V	No	1	69

	Part Number	Wattage	Voltage	Dimming	Horti Flex 1.44W per cut 57.6W per reel	
					Reels per Driver	Cuts per Driver
	OT 100/220-240/24 DIM P	100W	24V	1-10V	1	69
	IZV024-120M-9767C-SAL	120W	24V	0-10V, PWM Signal or Resistance	2	83
	ELEMENT 120/220-240/24 G2	120W	24V	No	2	83
	OT 130/220-240/24 P	130W	24V	No	2	90
	OT 130/220-240/24 DIM P	130W	24V	1-10V	2	90
	OT SLIM 160/220-240/24	160W	24V	No	2	111
	ELEMENT 180/220-240/24 G2	180W	24V	No	3	125
	OT 250/220-240/24 P	250W	24V	No	4	173
	OT 250/220-240/24 DIM P	250W	24V	1-10V	4	173
	OT SLIM 250/220-240/24	250W	24V	No	4	173

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THERMAL INTERFACE MATERIAL OPTIONS

These strips have 3M thermal tape already attached for perfect thermal bonding.

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ASSEMBLY INFORMATION

- » The mounting of the Horti Flex has to be on a metal heatsink.
- » In order to optimise the thermal management, the metal surface needs to be clean (dirt and oil free) and planar for the best contact with the LED module. A thermal grease or heat transfer material is highly recommended.

IMPORTANT INFORMATION AND PRECAUTIONS



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



Horti Flex, when operated, can reach high temperatures thus there is risk of injury if they are touched.



Horti Flex will overheat in operation if not attached to a suitable heatsink. Over heating can cause failure or irreparable damage.



DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.



Do not operate Horti Flex with a power supply with unlimited current. Connection to constant voltage power supplies that are not current limited may cause the Horti Flex to consume current above the specified maximum and cause failure or irreparable damage.



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 Horti Flex.



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 so important than in Horticulture. The complexities and knowledge required is 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. The horticultural specialism has evolved, due to market demand in the LED division, Intelligent LED Solutions (ILS).

INTELLIGENT GROUP SOLUTIONS DIVISIONS

