INTELLIGENT
LED SOLUTIONS

Bare IMS PCB for Single LED

ILH-xxxx-PCB VER A

Product Overview

ILS have a range of Insulated Metal Substrates (IMS) circuit boards, also known as Metal Clad Printed Circuit Board (MCPCB), designed specifically for LED applications. Better thermal management allows more forward current to be applied to the LED, whilst maintaining the die temperatures, which results in more light and possibly reducing the number of LEDs required to achieve the desired light output. Based on the standard star (hex) footprint, ILS also have included holes for mounting secondary optics (on Oslon version) and have a range of matching Heat Sinks and Thermal Interface Material (TIM) for simple plug and play operation.

ILS can offer PCB's with LED's pre-mounted. Please contact ILS.

Applications

- General Lighting
- Decorative Lighting
- Task Lighting
- Spot Lighting
- Downlighters
- Retail
- Entertainment Lighting
- Prototyping

Technical Features

- Mounting holes using M3 screws allows easy installation
- Size (L x W x H) : 20mm x 20mm x 1.60mm
- Secondary Lens can be fitted
- Suitable Heat Sinks and TIM available
- Lower operating temperature
- Increased power density
- Extends the life of dies
- Improves product thermal and mechanical performance
- Improved product durability

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LED Light for you powered by OSRAM
CERTIFIED PARTNER

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DATASHEET

Important Information and Precautions

- The PowerStar LEDs, when powered up are very bright. Thus it is advised that you do not look directly at it. Turn the PowerStar away from you and do not shine into the eyes of others.
- Do not operate PowerStar's with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the PowerStar to consume current above the specified maximum and cause failure or irreparable damage.
- PowerStars, when operated, can reach high temperatures thus there is risk of injury if they are touched.
- DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.
- DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage

Product Options

ILS PART NUMBER	Suitable ILS Product Range
ILH-ON01-PCB VER A	Single LED bare PCB for Osram OSLON 20mm x 20mm
ILH-GD01-PCB VER A	Single LED bare PCB for Osram Dragon 20mm x 20mm
ILH-X3535-PCB VER A	Single LED bare PCB for Cree XP-E 20mm x 20mm

Compatible LED Families

PCB Part Number	Compatible LED Families
ILH-ON01-PCB VER A	Osram: OSLON SSL 80, 120, 150, OSLON Square, OSLON Signal, OSLON Black, OSLON Black IR, OSLON LX, OSLON MX, and OSLON SX
ILH-GD01-PCB VER A	Osram: Golden Dragon, Golden Dragon Plus, IR Golden Dragon and IR Platinum Dragon
ILH-X3535-PCB VER A	Cree: XHP35, XP-C, XP-E, XP-E2, XP-G, XP-G2, XP-G3, XP-L, XP-L2, XT-E Nichia: NVSL119C, NVSW119C, NVSW219C, NVSL219C, NVSW119B-V1, NVSL119B-V1, NVSW219B-V1, NVSL219B-V1, NCSW119B-V1, NCSL119B-V1 and NCSW219B-V1 LumiLED: Luxeon Q Seoul: Z5, Z5P, Z5M Samsung: LH351D and LH351B LG: H35C4, H35F0, H35A0, H35B0 and H35C0 TSLC: N3535, C3535

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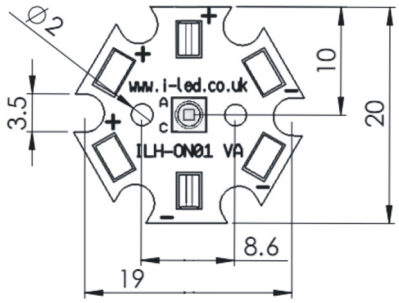
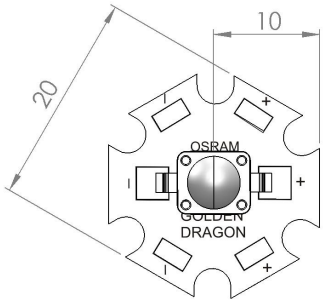
Technical Drawing (mm)

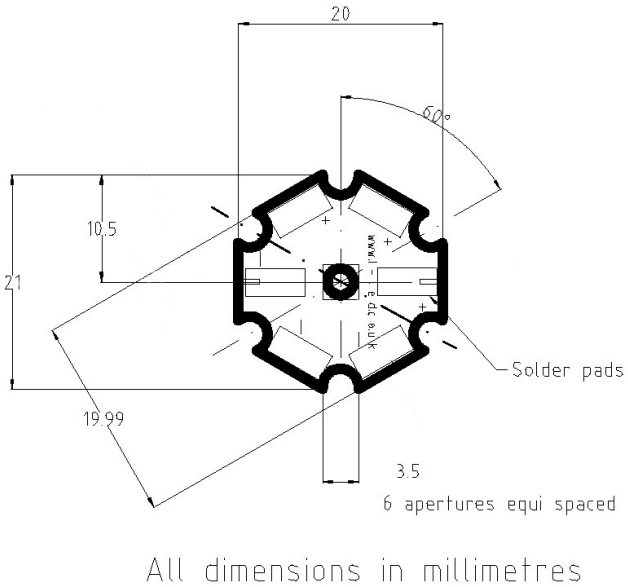
ILH-ON01-PCB VER A



ILH-GD01-PCB VER A



ILH-X3535-PCB VER A



3D drawing files are available on request from ILS. Please call or email

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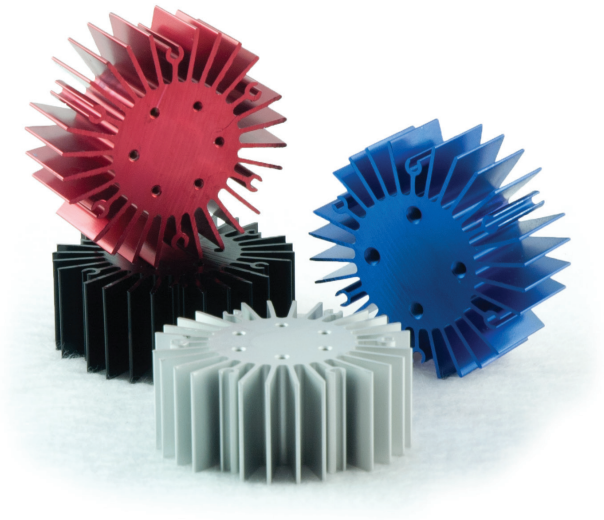
Heat Sink Options

ILS has a series of Aluminium Alloy Heat Sinks to be used with our standard range of PowerStars and PowerClusters. These Heat Sinks are supplied with fixing screws for the light engine and for fixing to a base plate. They also come with Thermal Interface Material (TIM) attached to the top surface. More versions will be introduced over the coming months and we are happy to manufacture custom Heat Sinks to your request.

	Operates under the recommended ILS junction temperature
	Operates under the recommended LED maximum junction temperature
	Not suitable for use
N/A	Heat Sink not designed for use with this product

ILS Product		No Heat Sink, in free air	ILA-HSINK-STAR-50X20MM.	ILA-HSINK-STAR-50X40MM.	ILA-HSINK-STAR-50X60MM.	ILA-HSINK-STAR-50X80MM.	ILA-HSINK-CLUSTER-70X70X55MM.	ILA-HSINK-CLUSTER-78X46X25MM.
ILH-xxxx-PCB VER A	350mA							
	700mA							
	1000mA							



Thermal Interface Material Options

ILS have a range of high-performance, cost effective Thermal Interface Materials to match perfectly their standard products.

Our product fills the air pockets between the two surfaces, forming a continuous layer to conduct heat away from the LED to the Heat Sink.

ILS offer our TIM in three options – Double Sided Adhesive, Single Sided Adhesive and Non-Adhesive.

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
Star	ILA-TIM-STAR-0A	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A

Other sizes are available, including customised parts

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Assembly Information

- The mounting of the PowerStar has to be on a metal Heat Sink.
- 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.

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.
- The mounting of the module is carried out by attaching it at the mounting holes. Metal mounting screws must be insulated with synthetic washers to prevent circuit board damage and possible short circuiting.
- 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 PowerStars.
- The PowerStars, as manufactured, have no conformal coating and therefore offer no inherent protection against corrosion.
- 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.

For further information please contact ILS

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

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