

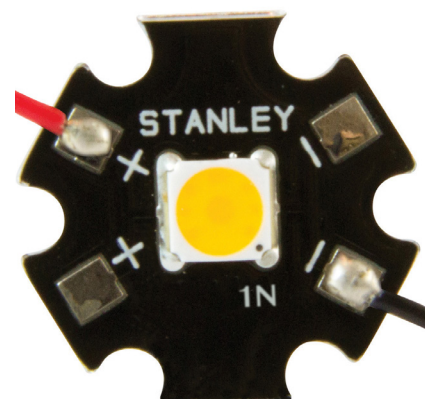
# Stanley 1N 1 PowerStar

ILH-SL01-xxxx-SC211-WIR200.

## Product Overview

At the heart of each PowerStar is a Stanley Electric 1N Series LED giving outstanding luminance and offering specialist colours. Stanley has also introduced a series of unique colours targeting specific markets including retail and hospitality. PowerStars are compact, powerful LED light sources built on aluminium substrates for optimal thermal management.

Available with 200mm wires as standard.



## Applications

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

## Technical Features

- PowerStars contain Stanley Electric 1N series LEDs
- Up to 60,000 Hour lifetime to 70% of original brightness
- Mounting holes using M3 screws allows easy installation
- Size (L x W x H) : 20mm x 20mm x 3.85mm
- Available with 200mm connecting wires
- Secondary Lens can be fitted – check options in suitable Lens and Reflector section
- Suitable Heat Sinks available – check options in Heat Sink section
- Matching Power Supply available - check options in Power Supply section
- PowerStars can be linked together to produce longer chains
- Current range up to 800mA

\*This datasheet should be read in conjunction with the relevant Stanley Electric 1N series LED data.

## Important Information and Precautions

- The PowerStars 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.
- PowerStar's, 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             | Colour          | Colour Temp*<br>(Degrees Kelvin) | Typical Wattage § |          | Forward Voltage | Flux † at 350mA | Radiance Angle | Colour Rendering Index | Relevant Stanley LED Data |
|-----------------------------|-----------------|----------------------------------|-------------------|----------|-----------------|-----------------|----------------|------------------------|---------------------------|
|                             |                 |                                  | at 350mA          | at 700mA |                 |                 |                |                        |                           |
| ILH-SL01-FL85-SC201-WIR200. | Flame White     | 2000K                            | 1.05W             | 2.25W    | 3.0Volts        | 60lms           | 120° (±60°)    | 85CRI                  | GSPW1651 NSE-20Y-TR       |
| ILH-SL01-SW85-SC201-WIR200. | Sunrise White   | 2200K                            | 1.05W             | 2.25W    | 3.0Volts        | 60kms           | 120° (±60°)    | 85CRI                  | GSPW1651 NSE-22Y-TR       |
| ILH-SL01-FW85-SC201-WIR200. | Firelight White | 2400K                            | 1.05W             | 2.25W    | 3.0Volts        | 80lms           | 120° (±60°)    | 85CRI                  | GSPW1651 NSE-24Y-TR       |
| ILH-SL01-QW95-SC201-WIR200. | Quartz White    | 3500K                            | 1.05W             | 2.25W    | 3.0Volts        | 60lms           | 120° (±60°)    | 95CRI                  | GSPW1651 NSE-35Z-TR       |
| ILH-SL01-ICBL-SC201-WIR200. | Ice Blue        | 22000K                           | 1.05W             | 2.25W    | 3.0Volts        | 80lms           | 120° (±60°)    | 65CRI                  | GSPW1651 NCSE-14-TR       |
| ILH-SL01-PABL-SC201-WIR200. | Pale Blue       | 15000K                           | 1.05W             | 2.25W    | 3.0Volts        | 67lms           | 120° (±60°)    | 65CRI                  | GSPW1651 NDSE-13-TR       |
| ILH-SL01-YEPK-SC201-WIR200. | Yellowish Pink  | 3200K                            | 1.05W             | 2.25W    | 3.0Volts        | 60lms           | 120° (±60°)    | 90CRI                  | GSPW1651 NPSE-11-TR       |
| ILH-SL01-PUPK-SC201-WIR200. | Purplish Pink   | 4100K                            | 1.05W             | 2.25W    | 3.0Volts        | 50lms           | 120° (±60°)    | 70CRI                  | GSPW1651 NPSE-12-TR       |

\* 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 350mA pulse at 25°C

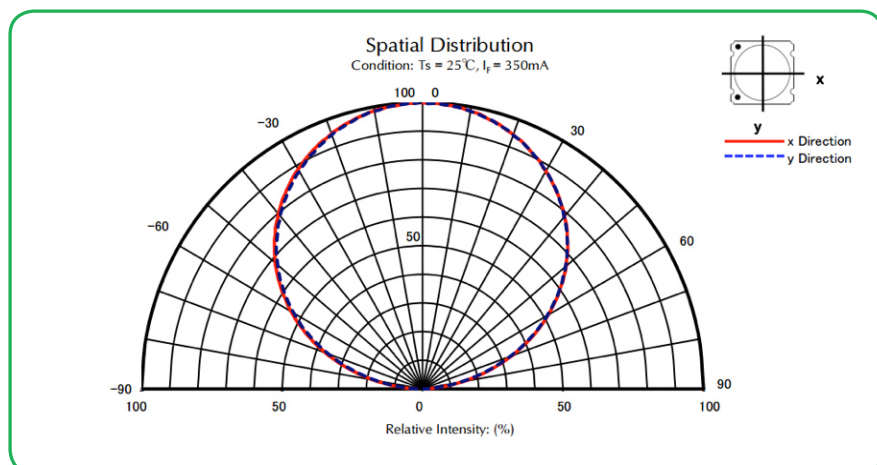
## Minimum and Maximum Ratings

| ILS PART NUMBER             | Operating Temperature at Tc-Point [°C]* | Storage Temperature [°C]* | Forward Current per chip [mA]* | Reverse Voltage [Vdc]*           |
|-----------------------------|-----------------------------------------|---------------------------|--------------------------------|----------------------------------|
| ILH-SL01-FL85-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |
| ILH-SL01-SW85-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |
| ILH-SL01-FW85-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |
| ILH-SL01-QW95-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |
| ILH-SL01-ICBL-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |
| ILH-SL01-PABL-SC201-WIR200. | 70°C max                                | - 10 to 100°C             | 800mA max                      | Not designed for reverse voltage |

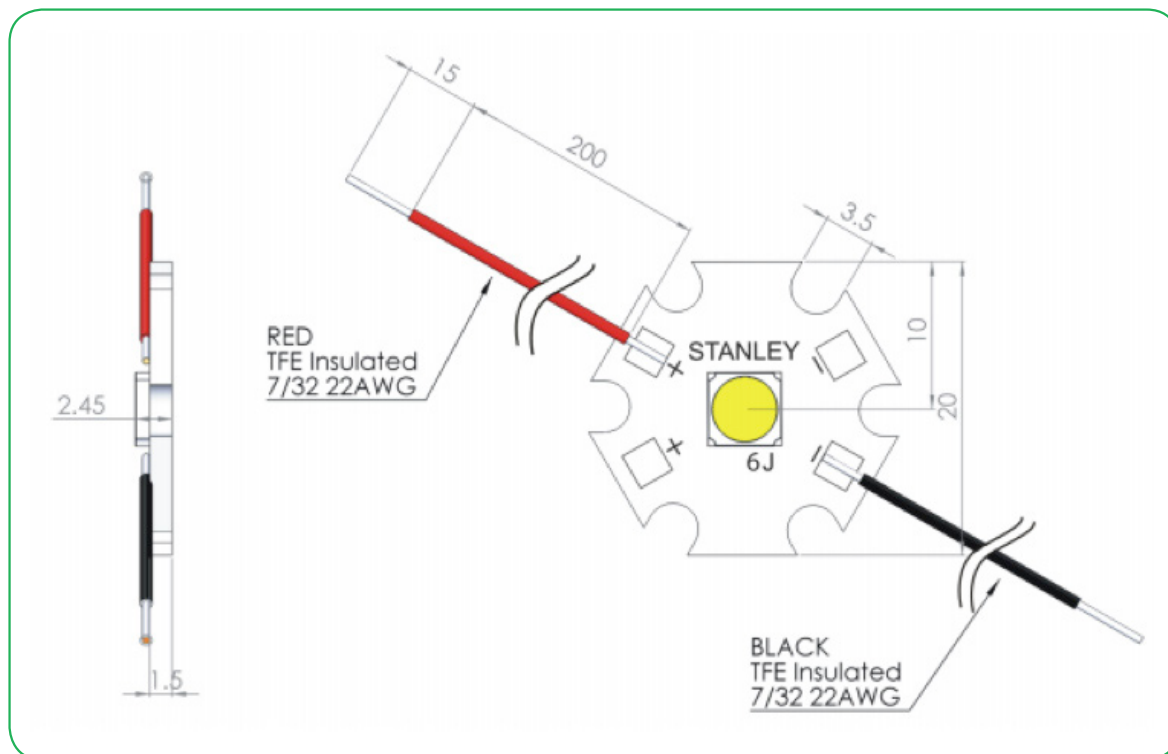
| ILS PART NUMBER             | Operating Temperature at Tc-Point [°C] * | Storage Temperature [°C] * | Forward Current per chip [mA] * | Reverse Voltage [Vdc] *          |
|-----------------------------|------------------------------------------|----------------------------|---------------------------------|----------------------------------|
| ILH-SL01-YEPK-SC201-WIR200. | 70 °C max                                | - 10 to 100 °C             | 800mA max                       | Not designed for reverse voltage |
| ILH-SL01-PUPK-SC201-WIR200. | 70 °C max                                | - 10 to 100 °C             | 800mA 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 is likely to 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.

## Radiation of single LED



## Technical Drawing with cables (mm)



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

## Stanley 1N 1 PowerStar Lens and Reflector Options

LEDiL precision-engineered Lenses and Reflectors allow for rapid deployment of all types of light fixtures, including street lights, wall-wash, high-bay, sconces, emergency beacons, parking garage/low-bay, MR and AR downlights, and dock lights. Precision-engineered for maximum efficiency and durability, LEDiL Lenses and Reflectors are released alongside the latest product releases from our LED suppliers. You select the best LED for the application; choose LEDiL and you're selecting the best optical solution as well.



### Lenses

| LEDiL Part Number   | Stanley 1N | Mounting Type |
|---------------------|------------|---------------|
| FA10339_NIS83-MX-M  | 33         | Glue/Tape     |
| FA10903_NIS83-MX-WW | 56         | Glue/Tape     |
| FA10903_NIS83-MX-WW | 122        | Glue/Tape     |
| CA12332_STRADA-T-DN | Asymmetric | Glue/Tape     |
| CA12333_STRADA-T-DW | Asymmetric | Glue/Tape     |

## Stanley 1N 1 PowerStar 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. Available in Black, Red, Silver and Blue colour variants. More versions will be introduced over the coming months and we are also 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-HEATSINK-STAR-50X20MM. | ILA-HEATSINK-STAR-50X40MM. | ILA-HEATSINK-STAR-50X60MM. | ILA-HEATSINK-STAR-50X80MM. | ILA-HEATSINK-CLUSTER-70X70X55MM. | ILA-HEATSINK-CLUSTER-78X46X25MM. |
|----------------|--------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------------|----------------------------------|
| 3J 1 PowerStar | 350mA  |                           |                            |                            |                            |                            |                                  |                                  |
|                | 700mA  |                           |                            |                            |                            |                            |                                  |                                  |
|                | 1000mA |                           |                            |                            |                            |                            |                                  |                                  |



## Stanley 1N 1 PowerStar Power Supply Options

ILS has a comprehensive range of standard Power Supplies. The table below shows the total number of ILS products each Power Supply can drive.

Additional Power Supplies are being introduced so please call us or check our website for the latest offering.

| ILS Driver Part No.  | Rating | Current   | Stanley 1N PowerStar |                                                                                       |
|----------------------|--------|-----------|----------------------|---------------------------------------------------------------------------------------|
| IZC015-005F-0067C-QA | 5      | 150mA     | 6-11                 |    |
| IZC035-005F-0067C-QA | 5      | 350mA     | 1-4                  |    |
| IZC070-005F-0067C-QA | 5      | 700mA     | 1                    |    |
| IZC035-008F-5065C-SA | 8      | 350mA     | 1-12                 |    |
| IZC070-008F-5065C-SA | 8      | 700mA     | 1-4                  |  |
| IZC035-017F-0067A-SA | 17     | 350mA     | 2-16                 |  |
| IZC035-018T-9500A-SA | 18     | 350mA dim | 5-17                 |  |
| IZC050-018T-9500A-SA | 18     | 500mA dim | 3-12                 |  |
| IZC070-018T-9500A-SA | 18     | 700mA dim | 2-8                  |  |
| IZC035-035F-9067C-QA | 35     | 350mA     | 13-26                |  |
| IZC070-035F-0067C-SA | 35     | 700mA     | 3-16                 |  |

| ILS Driver Part No.  | Rating | Current   | Stanley 1N PowerStar |                                                                                     |
|----------------------|--------|-----------|----------------------|-------------------------------------------------------------------------------------|
| IZC045-040A-9266C-SA | 40     | 450mA dim | 10-29                |  |
| IZC070-050A-9267C-SA | 50     | 500mA dim | 8-24                 |  |
| IZC050-060F-9067C-QA | 60     | 500mA     | 13-36                |  |
| IZC070-075A-9267C-SA | 75     | 750mA     | 18-36                |  |

## Thermal Interface Material Options

ILS have produced 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

## Assembly Information

- The mounting of the Stanley 1N 1 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 Stanley 1N 1 PowerStar.
- The Stanley 1N 1 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.