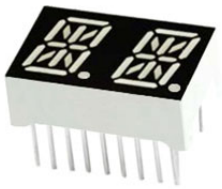
KA2-392AGB-C20 / KA2-392CGB-C20

0.39-inch (10.00 mm) 2-Digit 14-Segment Alphanumeric Display

Pure Green Through-Hole Dual-Digit LED Alphanumeric Display

Technical Data Sheet

Features



- High reliability and long operational life
- Low power consumption
- Uniform segment illumination
- Clear and consistent numeric display
- Easy PCB and socket mounting
- RoHS compliant

Description

KA2-392AGB-C20 (Common Anode) and KA2-392CGB-C20 (Common Cathode) are 0.39-inch (10.00 mm) dual-digit 14-segment alphanumeric LED displays. Both versions feature a black surface with white diffused segments for uniform illumination and clear numeric indication. The displays support operation from 3mA to 10mA per segment, allowing the drive current to be selected according to the required brightness and power consumption.

Applications

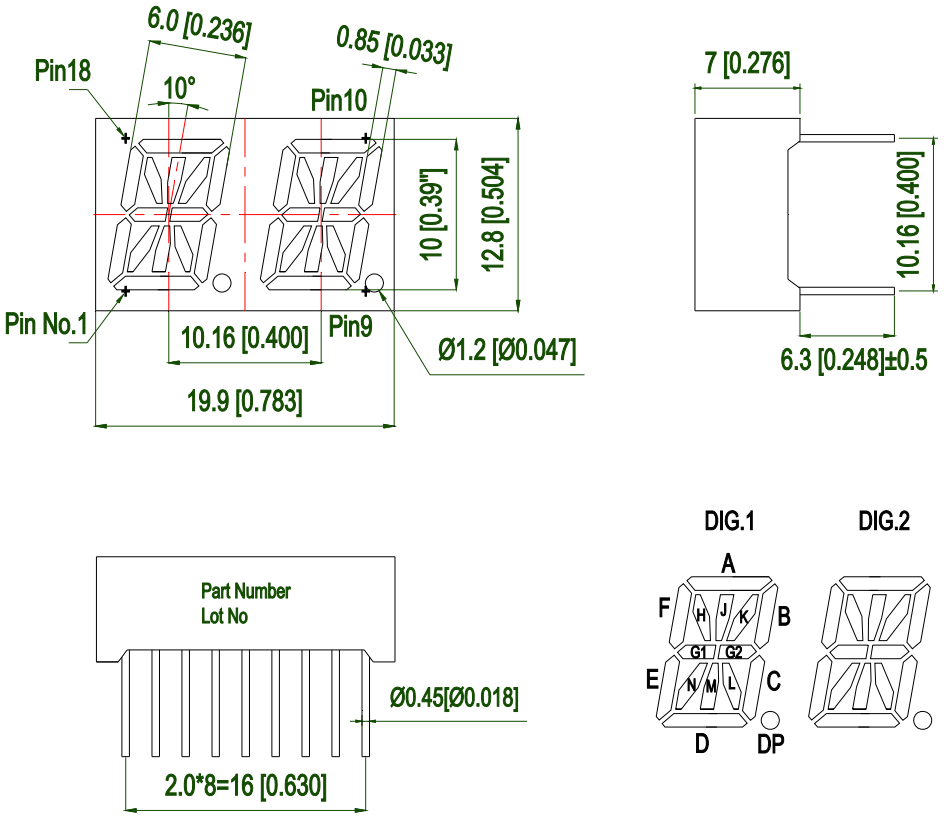
- Industrial instrumentation
- Control panels and operator interfaces
- Test and measurement equipment
- Automation and process control systems
- Power supplies and monitoring equipment
- Electronic counters timers and numeric indicators

Device Selection Guide

Part No.	Emitting Color	Circuit Type
KA2-392AGB-C20	Pure Green	Common Anode
KA2-392CGB-C20	Pure Green	Common Cathode

Copyright © 2017 LuckyLight All Rights Reserved

Package Dimensions



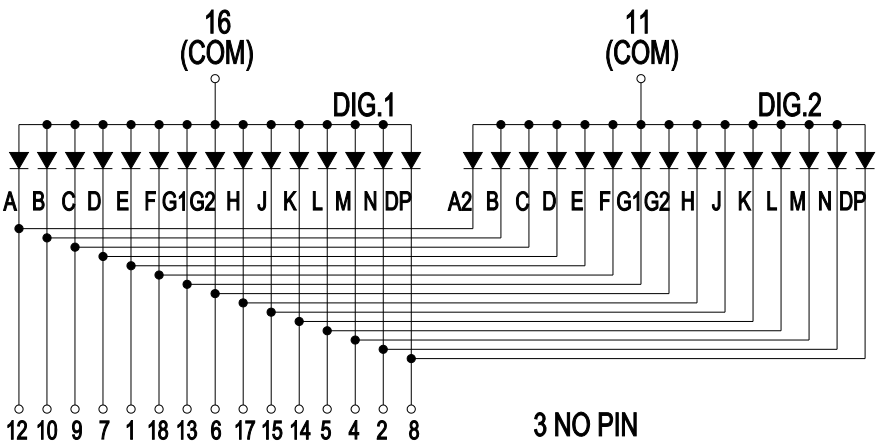
Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25mm (.010″) unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

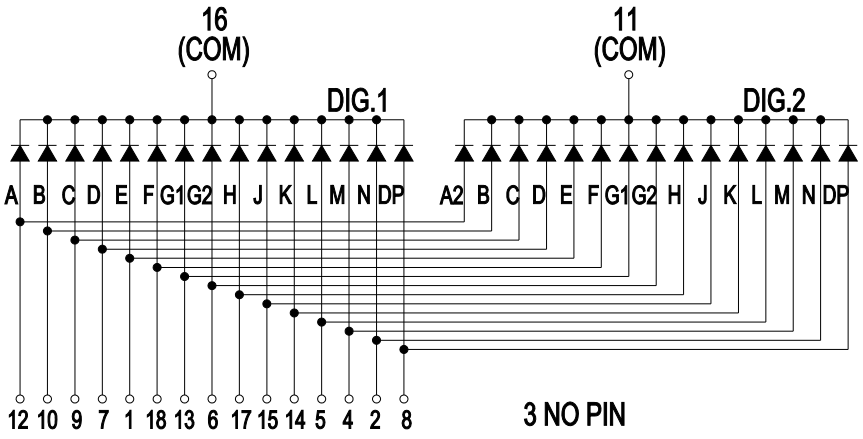
Copyright © 2017 LuckyLight All Rights Reserved

Internal Circuit Diagram

KA2-392AGB-C20 (Common Anode)

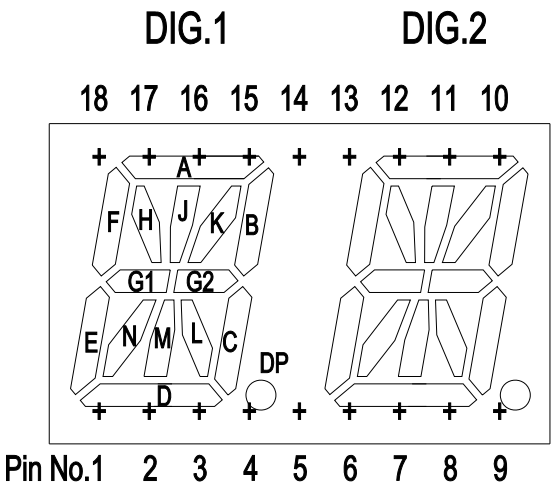


KA2-392CGB-C20 (Common Cathode)



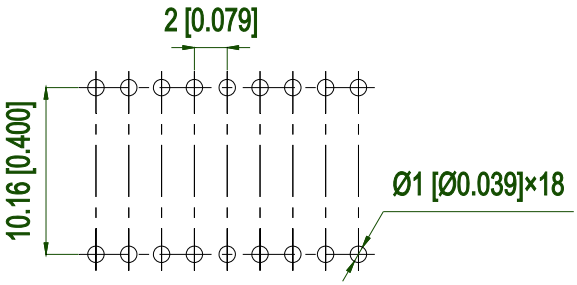
Copyright © 2017 LuckyLight All Rights Reserved

Pin Connection



Pin No.	Function
1	Segment E
2	Segment N
3	No Pin
4	Segment M
5	Segment L
6	Segment G2
7	Segment D
8	DP
9	Segment C
10	Segment B
11	Digit 2 Common
12	Segment A
13	Segment G1
14	Segment K
15	Segment J
16	Digit 1 Common
17	Segment H
18	Segment F

Recommended PCB Layout



Copyright © 2017 LuckyLight All Rights Reserved

Absolute Maximum Ratings at T_A=25℃

Parameters	Symbol	Max	Unit
Power Dissipation (Per Segment)	P_D	30	mW
Peak Forward Current (Per Segment) (1/10 Duty Cycle, 0.1ms Pulse Width)	I_{FP}	20	mA
Forward Current (Per Segment)	I_F	10	mA
Reverse Voltage (Per Segment)	V_R	5	V
Operating Temperature Range	T_{opr}	-40℃ to +80℃	
Storage Temperature Range	T_{stg}	-40℃ to +85℃	
Soldering Temperature	T_{sld}	260℃ for 5 Seconds	

Electrical Optical Characteristics at T_A=25℃

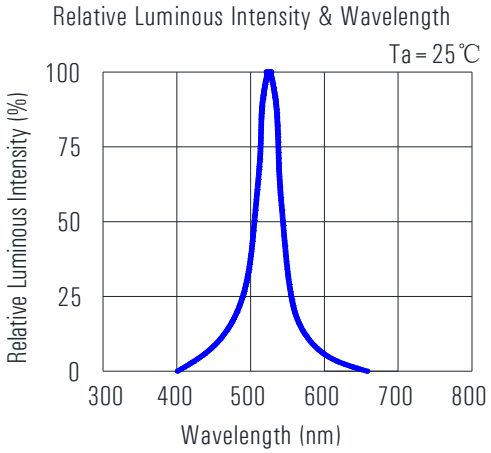
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity (Per Segment)	I_v	14.0	28.0	---	mcd	I_F=5mA (Note 1)
		28.0	55.0	---	mcd	I_F=10mA (Note 1)
Peak Emission Wavelength	λp	---	515	---	nm	I_F=10mA
Dominant Wavelength	λd	---	520	---	---	I_F=10mA (Note 2)
Spectral Line Half-Width	△λ	---	20	---	nm	I_F=10mA
Forward Voltage (Per Segment)	V_F	---	2.8	3.0	V	I_F=10mA (Note 3)
Reverse Current (Per Segment)	I_R	---	---	50	μA	V_R=5V

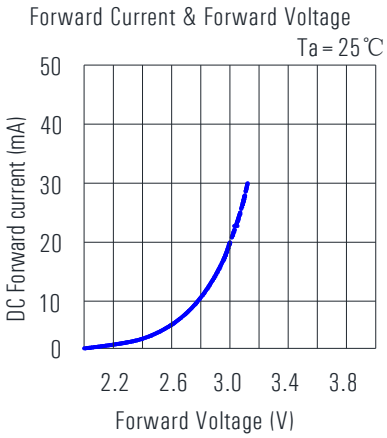
Notes:

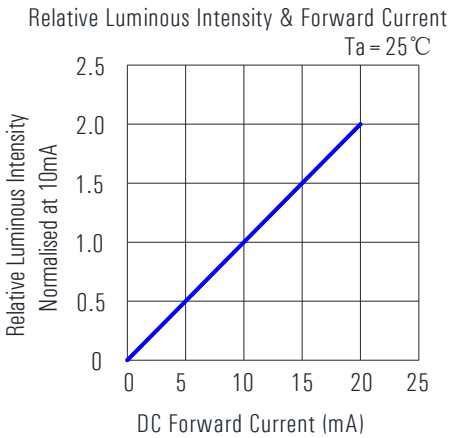
1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve. Tolerance of Luminous Intensity: ± 10%.
2. The dominant wavelength (λd) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
3. Tolerance of Forward Voltage: ± 0.1V.

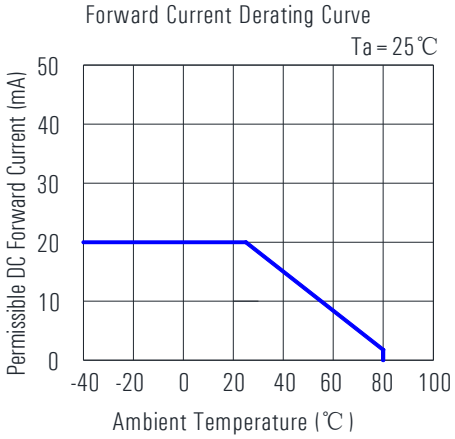
Copyright © 2017 LuckyLight All Rights Reserved

Typical Electrical/Optical Characteristic Curves at T_A = 25°C



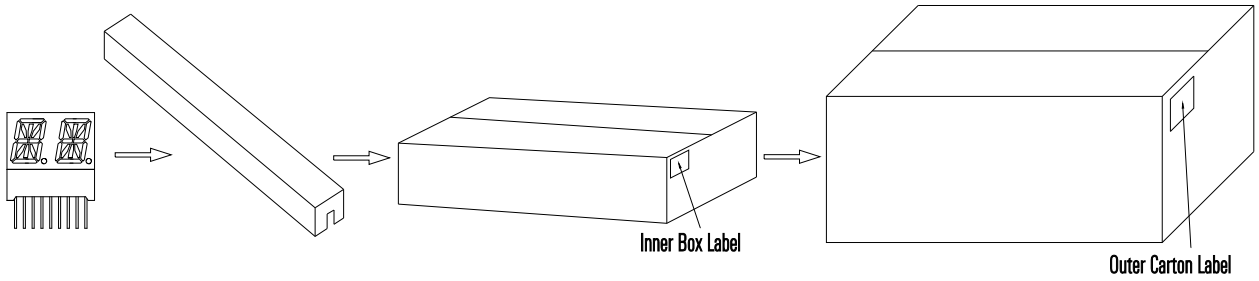




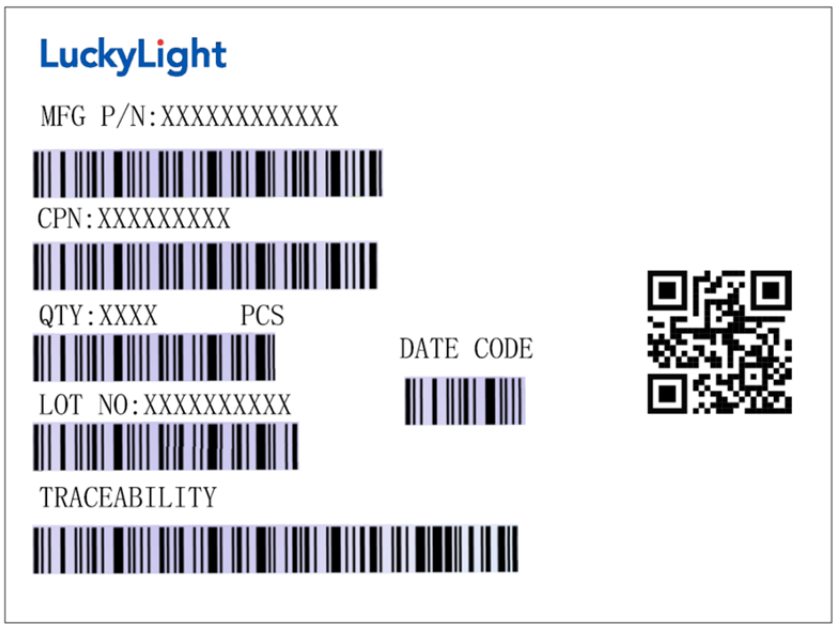


Copyright © 2017 LuckyLight All Rights Reserved

Packing and Label Specifications



25 pcs per tube	60 tubes (1500 pcs) per box	2 boxes (3000 pcs) per outer carton



Notes:

1. The packaging shown above represents the standard tube packaging for this product.
2. Alternative packaging, including tray or EPE foam packaging, may be available upon request.
3. Please confirm any special packaging requirements with LuckyLight before placing the order.

Copyright © 2017 LuckyLight All Rights Reserved

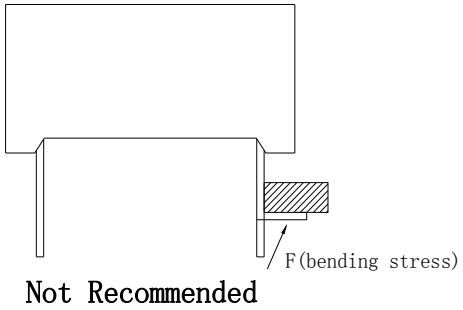
Precautions

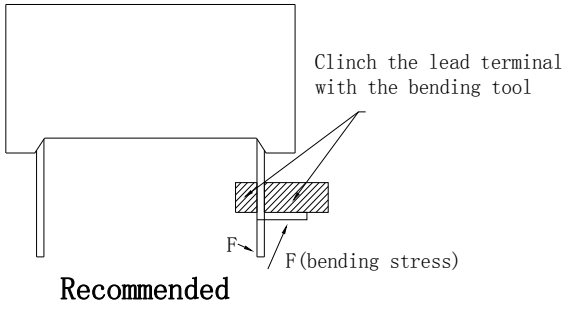
Through-Hole Digital Display Mounting Guidelines

1. Lead Forming

1.1. Do not bend the component leads by hand without proper tools.

1.2. The leads should be bent by clinching the upper part of the lead firmly so that the bending force is not exerted on the plastic body.

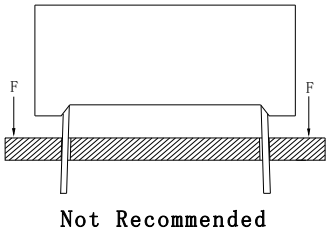


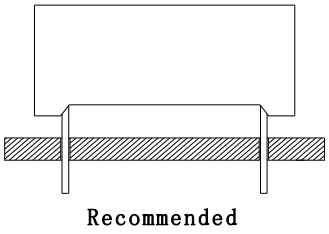


2. Installation

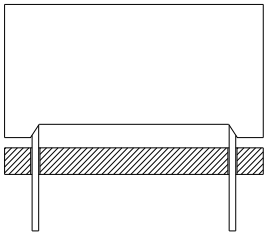
2.1. The installation process should not apply stress to the lead terminals.

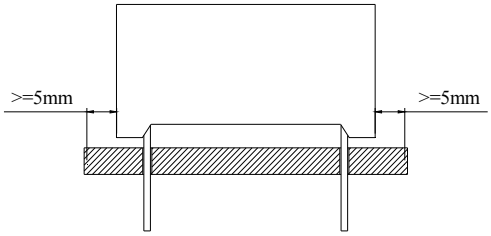
2.2. When inserting for assembly, ensure the terminal pitch matches the substrate board's hole pitch to prevent spreading or pinching of the lead terminals.





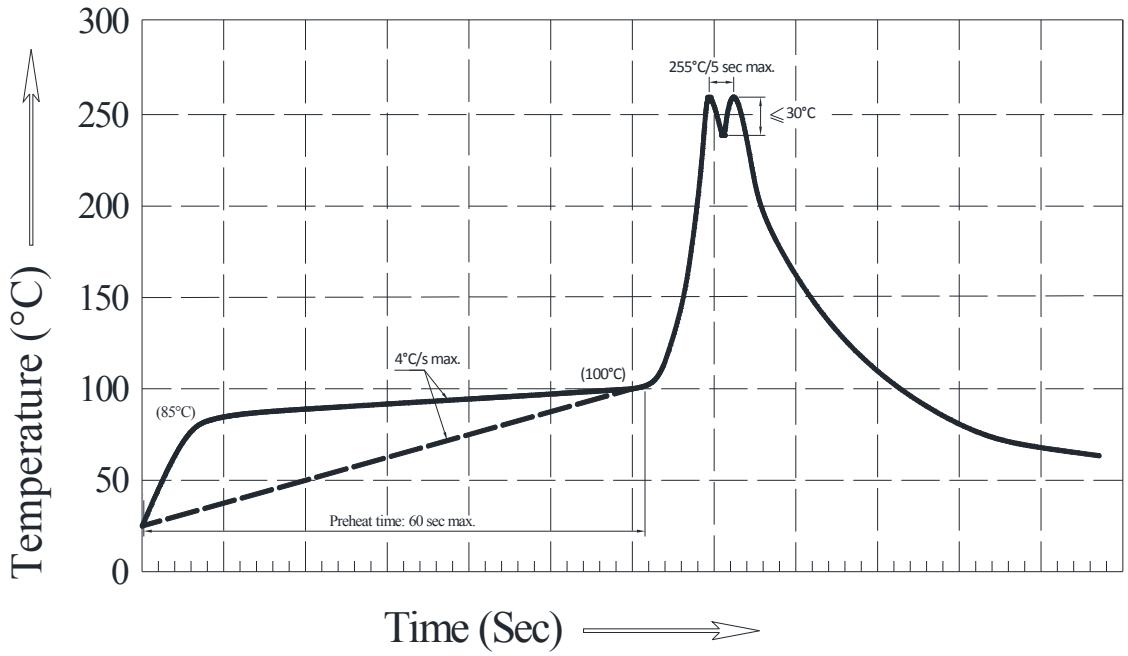
2.3. The component shall be placed at least 5mm from the edge of the PCB to avoid damage caused by excessive heat during wave soldering.





Copyright © 2017 LuckyLight All Rights Reserved

3.Recommended Wave Soldering Profiles



Notes:

3.1. It is recommended to pre-heat at a temperature of 105°C or lower (measured using a thermocouple attached to the LED pins) before immersion in the solder wave, with a maximum solder bath temperature of 260°C.

3.2. The peak wave soldering temperature should be between 245°C to 255°C for 3 seconds (maximum of 5 seconds).

3.3. Avoid applying stress to the epoxy resin when the temperature exceeds 85°C.

3.4. Fixtures should not exert stress on the component during mounting and soldering processes.

3.5. Only one wave soldering pass is allowed.

3.6. Maintain the PCB top-surface temperature below 105°C during wave soldering.

4.Soldering General Notes

4.1. Through-hole LED digital displays are not suitable for reflow soldering.

4.2. If components will undergo multiple soldering processes or other high-heat treatments, please consult Luckylight for compatibility.

5.Cleaning

5.1. Mild "no-clean" fluxes are recommended for soldering purposes.

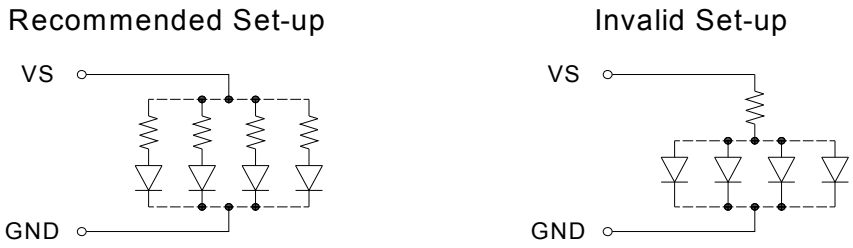
5.2. If cleaning is necessary, Luckylight suggests washing components with water only. Avoid using harsh organic solvents for cleaning as they can damage the plastic parts.

Copyright © 2017 LuckyLight All Rights Reserved

5.3. The cleaning process should occur at room temperature, and the devices should not be washed for more than one minute.
5.4. After using water in the cleaning process, promptly remove excess moisture from the component by utilizing forced-air drying.

6.Circuit Design Notes+

6.1. A suitable current-limiting resistor or constant-current driver must be used to ensure that each LED segment operates within the specified current range.
6.2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.



6.3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.
6.4. The safe operating current should be selected by taking into account the maximum ambient temperature of the operating environment.
6.5. Extended reverse bias should be avoided as it may result in metal migration, leading to an escalation in leakage current or potential short circuits.

7.LED Storage Instructions

7.1. Store LEDs at or below 30℃ and 80% relative humidity (RH) before opening the package.
7.2. LEDs should be used within one year of purchase.
7.3. After opening the package, store LEDs at or below 30℃ and 60% RH.

8.ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED. Suggestions to prevent ESD damage:
8.1. Use of a conductive wrist band or anti-electrostatic glove when handling these LEDs.
8.2. All devices, equipment, and machinery must be properly grounded.
8.3. Work tables, storage racks, etc. should be properly grounded.

Copyright © 2017 LuckyLight All Rights Reserved

Disclaimer

The information contained in this document is provided for technical reference only and is based on representative operating conditions.

Product part numbers, configurations, specifications and other information contained herein are subject to change or improvement without prior notice. Before product selection, design-in or mass production, customers should refer to the latest version of this datasheet and confirm the applicable specifications.

The products described in this document must be operated within the electrical, mechanical and environmental ratings specified herein. LuckyLight shall not be liable for any malfunction, damage or loss resulting from operation outside the specified ratings or from improper handling, installation or use.

The products described in this document are intended for use in standard industrial and electronic equipment, including industrial control equipment, automation systems, communication equipment, office equipment and general electronic devices.

For applications requiring exceptionally high levels of reliability or safety, where product failure could directly result in personal injury, loss of life or significant property damage, including aerospace systems, transportation systems, traffic control equipment, medical life-support equipment and safety-critical devices, please contact a LuckyLight sales representative in advance for technical evaluation and written approval.

No part of this document may be reproduced, distributed or transmitted in any form or by any means without prior written permission from LuckyLight.

Revision History

Revision	Date	Contents	Page
Rev. 1	August 7, 2017	Initial Release	/

Copyright © 2017 LuckyLight All Rights Reserved