

SUNON

SPECIFICATION FOR APPROVAL

CUSTOMER :
MODEL NO : RA001-003999DN
DESCRIPTION : LED Cooling Module
DIMENSIONS : ϕ 170 X 10 mm
SUNON SPEC. NO. : C01000640G-00
CUSTOMER APPROVAL NO. :
APPROVED BY :
CUSTOMER :
(AUTHORIZED)

| | | | | |
|--------------|----------------|-----------------|----------------------|----------------------|
| DRAWN | CHECKED | APPROVED | SPEC. NO | C01000640G-00 |
| Alice-Chang | Dani | Jacky | ISSUED DATE | 01.11.2012 |
| 1/11 | | | EDITION | 0 |
| | | | REVISION DATE | |

建準電機工業股份有限公司

SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD.

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SPECIFICATION FOR APPROVAL

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1.SCOPE

This compact LED cooling module designed for heat dissipation of LED lamp.

The following specification outlines the performance of this module for LED lighting system.

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MODEL : RA001-003999DN**2.SPECIFICATIONS**

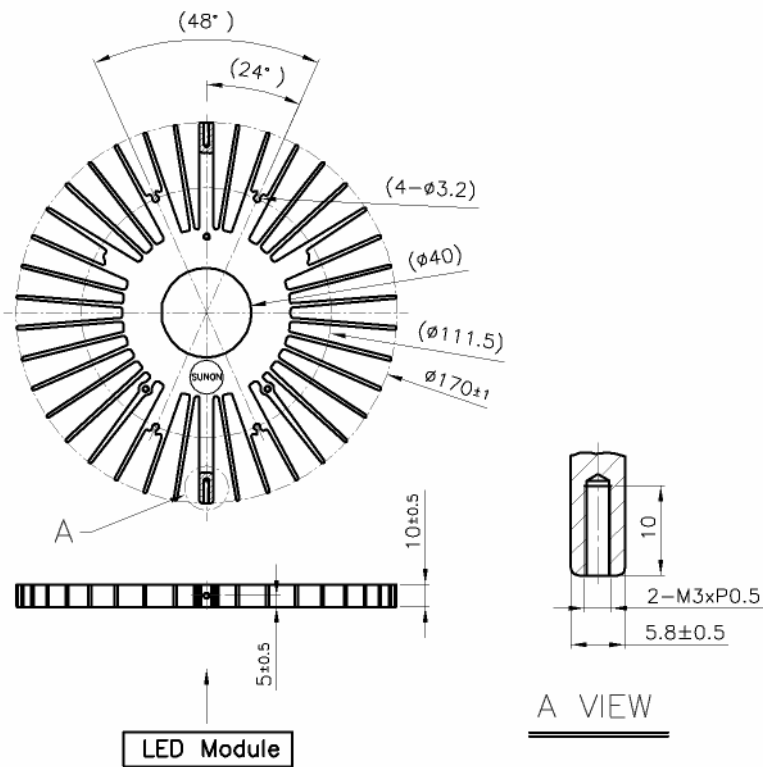
| | |
|-------------------------------|---------------------------------------|
| 1. Application | Heat 8.4 W |
| 2. Heat Sink Dimension | ∅ 170 X 10 mm |
| 3. Heat Sink Material | AL6063 |
| 4. Cooling Method | N/A |
| 5. Fan Speed (with Heat Sink) | N/A |
| 6. Rated Voltage | N/A |
| 7. Rated Current | N/A |
| 8. Power Consumption | N/A |
| 9. Fan Bearing System | N/A |
| 10. Cooling Module Noise @ 1M | N/A |
| 11. Operating Voltage Range | N/A |
| 12. Operating Temperature | -10 to + 70 deg. C |
| 13. Storage Temperature | -40 to + 70 deg. C |
| 14. Weight | 190 g |
| 15. Thermal resistance | 1.29°C/W(base on Fortimo DLM 1100 lm) |
| 16. Tolerance | N/A |
| 17. Life Expectancy(MTTF) | N/A |

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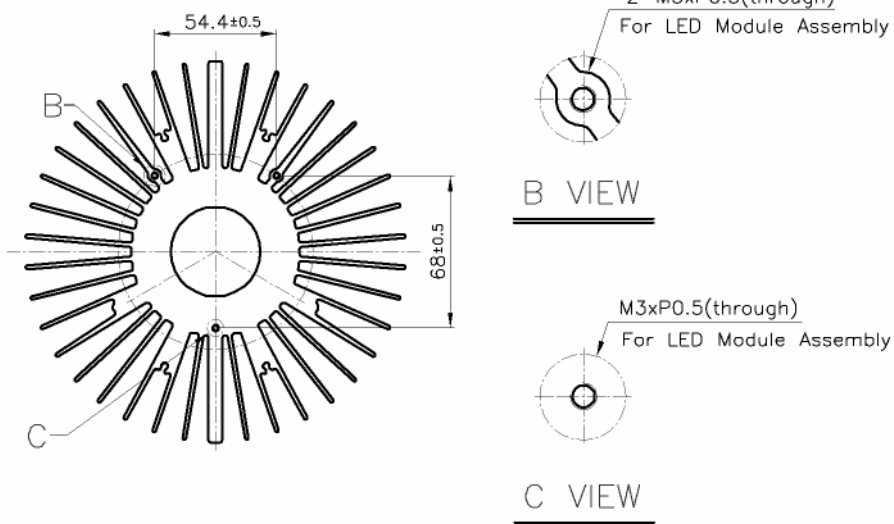
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3.DIMENSION



Assembly direction of customer's LED Module



Unit : mm

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Notes

I. SPECIFICATION MODIFICATION

1. SUNON offers engineering assistance on module installation and cooling system design.
2. All changes, modifications and/or revisions to the specifications, if any, are incorporated in the attached specifications.
3. No changes, modifications and/or revisions to these specifications are effective absent agreement, by both Sunon and the customer, in writing.
4. This module will be shipped in accordance with the attached specification unless SUNON and the customer have agreed otherwise, in writing, as specified in Paragraph 3, above.

II. OTHER

1. DO NOT operate this module in proximity to hazardous materials such as organic silicon, cyanogens, formalin, phenol, or corrosive gas environments including, but not limited to, H₂S, SO₂, NO₂, or Cl₂.
2. Unless otherwise noted, all testing of this module is conducted at 25°C ambient temperature and sixty-five percent (65%) relative humidity.
3. DO NOT store this module in an environment with high humidity. This module must be stored in accordance with the attached specifications regarding storage temperature. If this module is stored for more than 6 months, SUNON recommends functional testing before using.
4. SUNON reserves the right to use components from multiple sources at its discretion. The use of components from other sources will not affect the specifications as described herein.

III. WARRANTY

This module is warranted against all defects which are proved to be fault in our workmanship and material for one year from the date of our delivery. The sole responsibility under the warranty shall be limited to the repair of the module or the replacement thereof, at SUNON's sole discretion. SUNON will not be responsible for the failures of its module due to improper handling, misuse or the failure to follow specifications or instructions for use. In the event of warranty claim, the customer shall immediately notify SUNON for verification. SUNON will not be responsible for any consequential damage to the customer's equipment as a result of any module proven to be defective.

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Declaration of RoHS

Control declaration of environment-related substances/materials

1. In accordance with the Restriction of Hazardous Substances (RoHS) Directive, Sunon product models have complied with law and discipline not to employ the forbidden substances, and restrict the allowable concentration of some limited substances deliberately in our components.

| No | Substance | Criteria | |
|----|--|---|----------|
| 1 | CFCs & HCFCs (ozone depleting substances) | Forbidden | |
| 2 | Chlorinated Organic Solvent | Forbidden | |
| 3 | Lead and its compounds | Plastic (Frame, Impeller, wire harness, etc.) | <100ppm |
| | | Solder | <1000ppm |
| | | Steel alloy | <3500ppm |
| | | Aluminium alloy | <4000ppm |
| | | Copper alloy | <4wt% |
| 4 | Cadmium and its compounds | Solder | <20ppm |
| | | Parts composed of metals containing zinc (e.g. brass, zinc for die casting) | <100ppm |
| | | Plastic | <5ppm |
| 5 | PBBs and PBDEs | Forbidden | |
| 6 | PCB and PCT | Forbidden | |
| 7 | CP, Short-chain Chlorinated paraffins C10-13, Cl ≥48 wt% | Forbidden | |
| 8 | Mirex | Forbidden | |
| 9 | PCN | Forbidden | |
| 10 | Hexavalent Chromium compounds | <100ppm | |
| 11 | Mercury and its compounds | Forbidden | |
| 12 | Asbestos | Forbidden | |
| 13 | Organic Tin compounds | Forbidden | |
| 14 | Azo compounds | Forbidden | |
| 15 | TBBP-A in external case plastic parts of products (PCB is exempted) | <1000ppm | |
| 16 | Nickel in external case parts, which are likely to result in prolonged skin exposure | <1000ppm | |

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