

AASL4805QR425S/5 SERIES

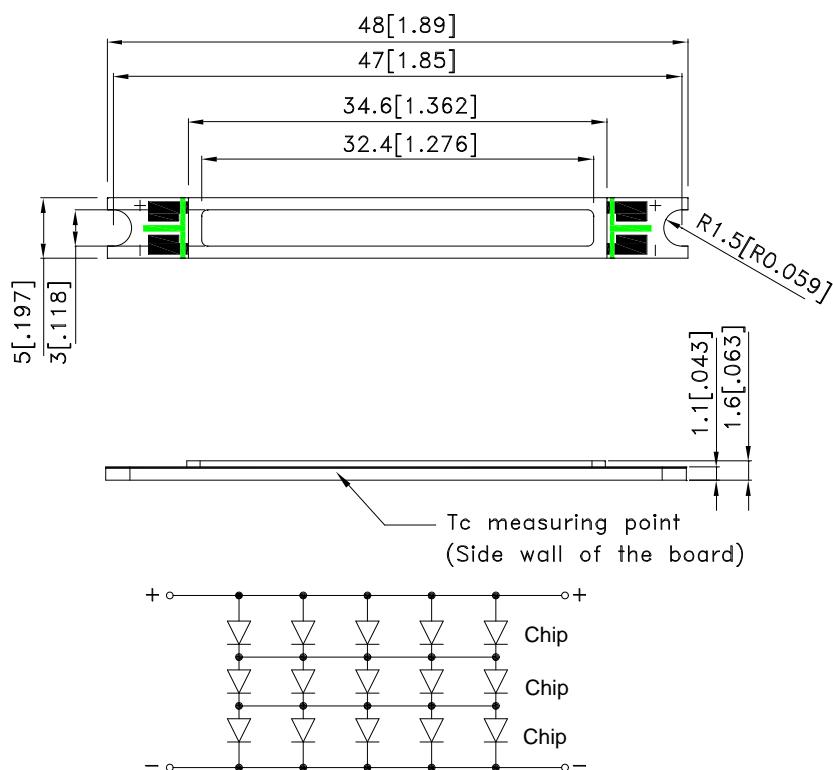


ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- Dimension: 48mm X 5mm X 1.6mm.
- Instant light.
- Linear type.
- High efficiency.
- Long operating life.
- Low power consumption.
- More energy efficient than incandescent, most halogen lamps, and fluorescent lamp.
- RoHS compliant.

Package Dimensions



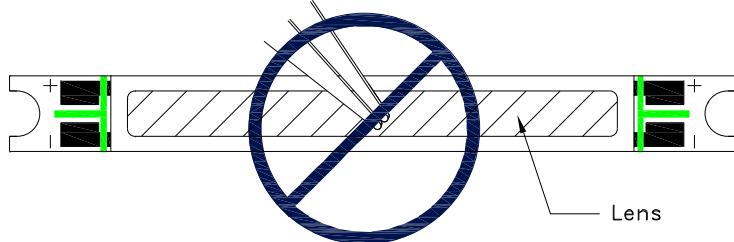
Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01")$ unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

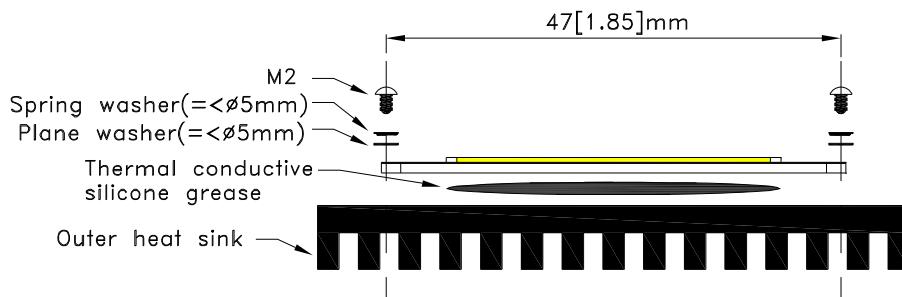


Precautions

1. Do not touch the lens with any sharp object.
2. No stress should be applied on the lens.



3. Thermal grease between the light bar and heat sink is recommended to fill air gaps for better thermal conductivity.
4. For securing the LED light bar, M2 screws are recommended. The light bar should not be bent or stressed in any way which could damage the internal circuit.



5. To prevent damages caused by electrostatic discharge (ESD), it is recommended to wear proper gear such as wristband or anti-static gloves when handling the product.
6. Constant current source is recommended to power the light bar. When more than one light bar are used, they should be connected in series if possible.
7. Thermal management should be taken into consideration when using the product. Maximum driving current should be reduced accordingly at higher ambient temperature to prevent overheating.
8. Soldering recommendations:
 - Soldering iron power should not exceed 40W, and should not be in contact with the joint for more than 3.5 secs.
 - The maximum soldering temperature should be less than 350°C.
 - Do not touch the product immediately after soldering.
 - Not reflow compatible.

Kingbright

Selection Guide

| Erp. | Part No. | Dice | Lens Type | CCT Range [2] | | | Luminous Flux (lm) @ 500mA [1] | |
|------------|---------------------|---------------|-------------|---------------|-------|-------|--------------------------------|------|
| | | | | Min. | Typ. | Max. | Min. | Typ. |
| 1209000166 | AASL4805QR425S/5-C1 | Cool White | WATER CLEAR | 5310K | 6000K | 7040K | 280 | 330 |
| 1209000167 | AASL4805QR425S/5-N2 | Neutral White | WATER CLEAR | 4260K | 4700K | 5310K | 280 | 320 |
| 1209000168 | AASL4805QR425S/5-W2 | Warm White | WATER CLEAR | 2870K | 3000K | 3220K | 240 | 290 |

Notes:

1. Flux is measured with an accuracy of +/-15%.
2. CCT selection acc.to CCT groups and an accuracy of +/-300K.

Absolute Maximum Ratings

| Parameter | Symbol | Rating | Units |
|---------------------------|------------------|----------|-------|
| Forward Current | I _F | 500 | mA |
| Forward Pulse Current [1] | I _{FP} | 700 | mA |
| Power Dissipation | P _d | 5.8 | W |
| LED Junction Temperature | T _j | 120 | °C |
| Operating Temperature | T _{opr} | -30~+100 | °C |
| Storage Temperature | T _{stg} | -40~+120 | °C |
| Case Temperature | T _c | 100 | °C |

Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

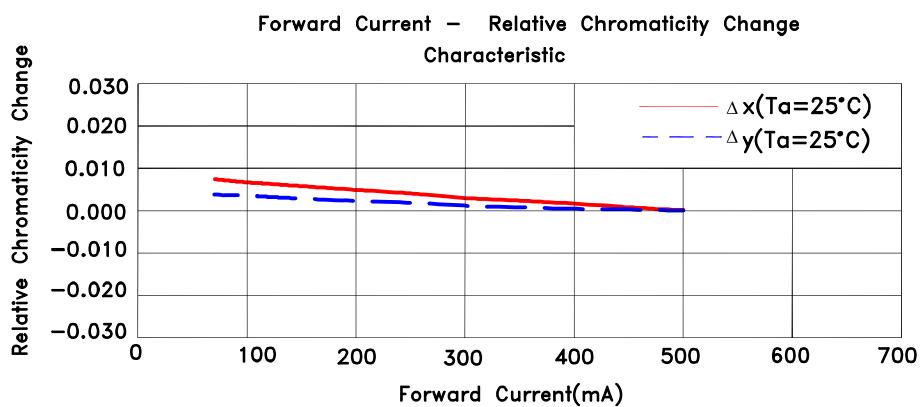
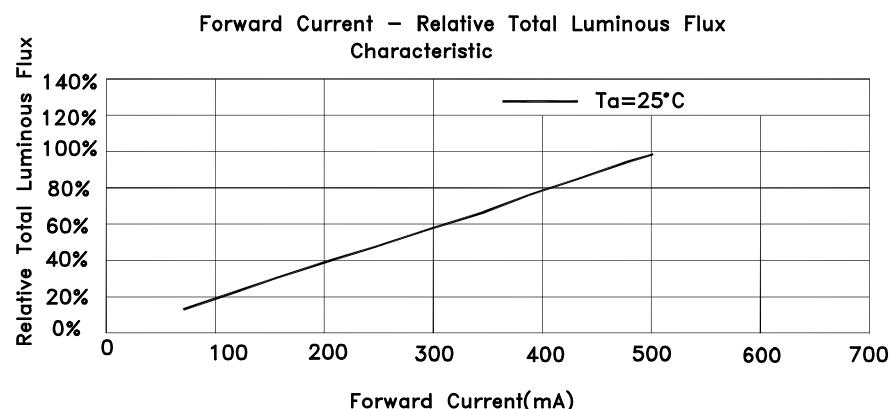
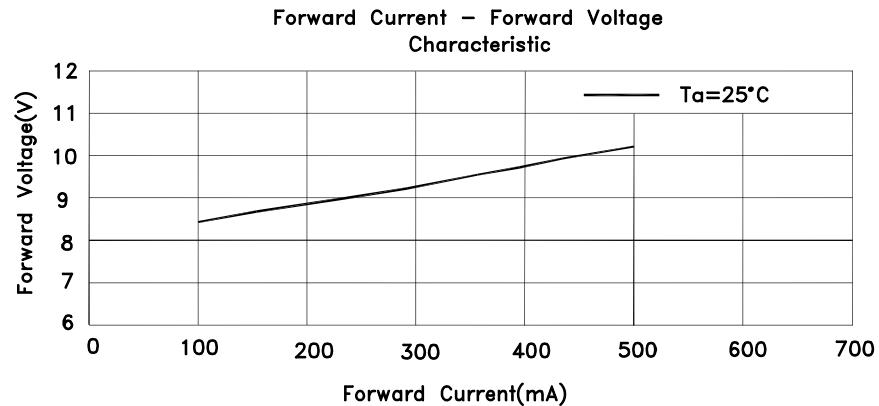
Electrical / Optical Characteristics

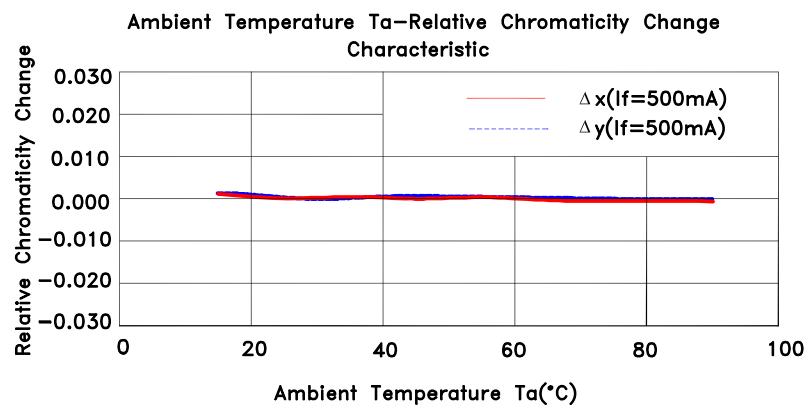
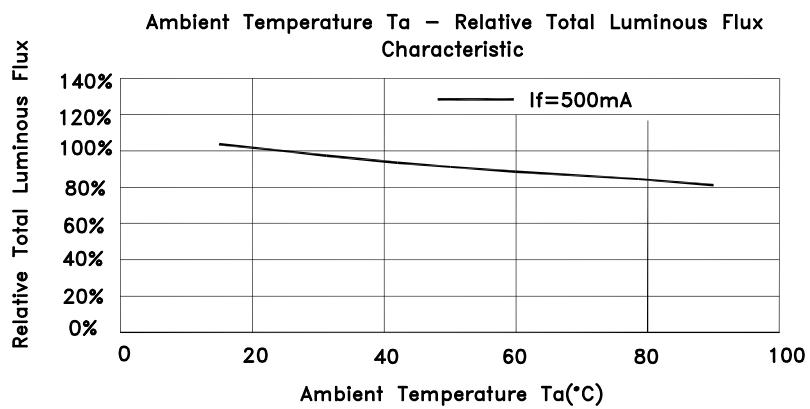
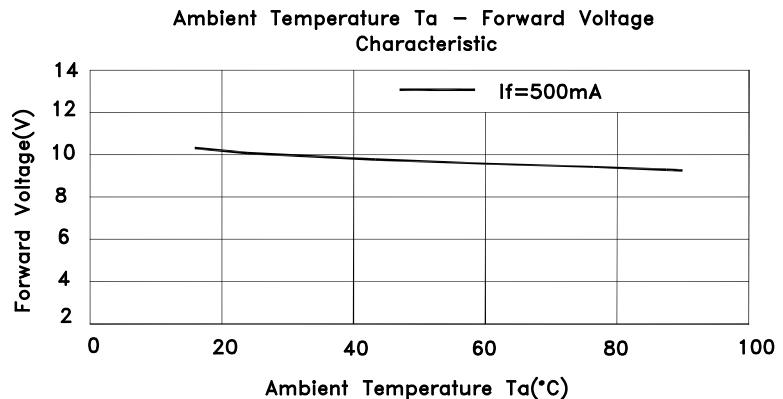
| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|--|-----------------------|------|------|------|-------|-----------------------|
| Forward Voltage [1] | V _F | 8.4 | 10.3 | 11.6 | V | I _F =700mA |
| Temperature Coefficient of Forward Voltage | Δ V _F /Δ T | - | -2.9 | - | mV/°C | I _F =700mA |
| Thermal Resistance | R _{th j-c} | - | 3.5 | | °C/W | I _F =700mA |
| Emission Angle | 2θ 1/2 x direction | - | 120 | - | ° | I _F =700mA |
| | 2θ 1/2 y direction | - | 120 | - | ° | I _F =700mA |

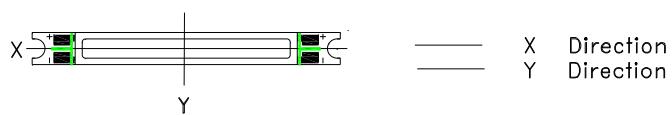
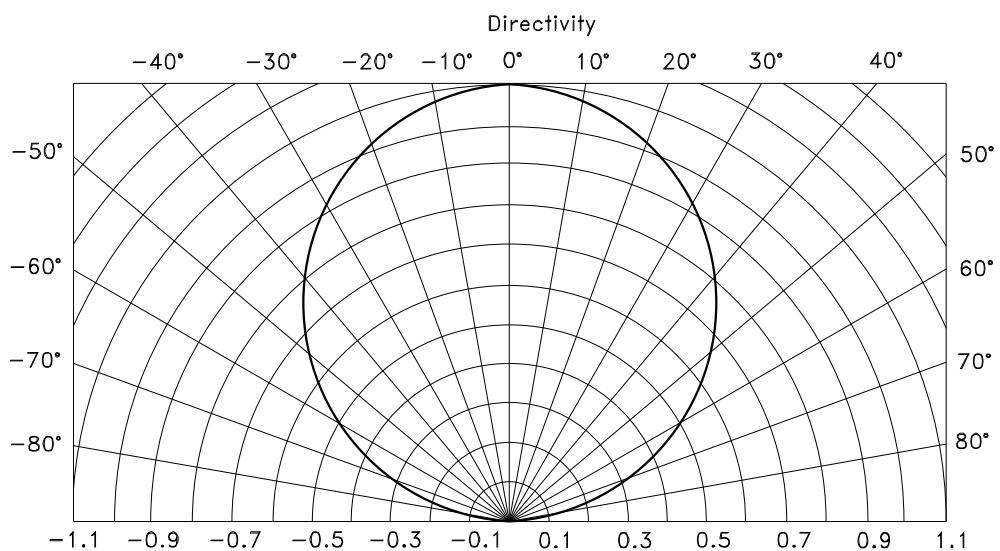
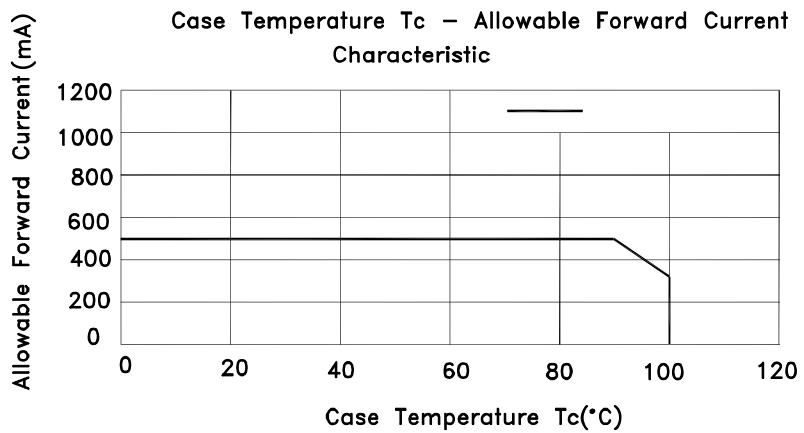
Note:

1. Forward Voltage is measured with an accuracy of +/-0.1V.

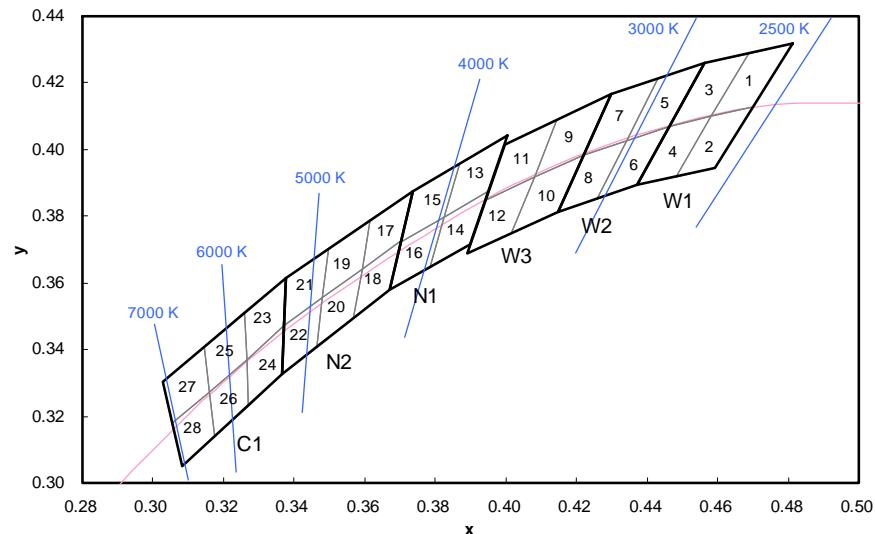
| Test Item | Test Condition |
|---------------------|-----------------------------|
| Moisture-proof Test | 85°C , 85%RH for 1000 hours |







CCT 2500-7000 K Bin Code



| Color | Group | Chromaticity Regions | CCT (K) | | |
|---------------|-------|------------------------|---------|------|------|
| | | | Min. | Typ. | Max. |
| Warm White | W1 | 1, 2, 3, 4 | 2580 | 2700 | 2870 |
| | W2 | 5, 6, 7, 8 | 2870 | 3000 | 3220 |
| | W3 | 9, 10, 11, 12 | 3220 | 3500 | 3710 |
| Neutral White | N1 | 13, 14, 15, 16 | 3710 | 4000 | 4260 |
| | N2 | 17, 18, 19, 20, 21, 22 | 4260 | 4700 | 5310 |
| Cool White | C1 | 23, 24, 25, 26, 27, 28 | 5310 | 6000 | 7040 |

Notes:

Shipment may contain more than one chromaticity regions. Orders for single chromaticity region are generally not accepted.

Measurement tolerance of the chromaticity coordinates is ± 0.01 .

| | x | y | | x | y | | x | y | | x | y |
|---|--------|--------|----|--------|--------|----|--------|--------|----|--------|--------|
| 1 | 0.4582 | 0.4099 | 8 | 0.4147 | 0.3814 | 15 | 0.3702 | 0.3722 | 22 | 0.3481 | 0.3557 |
| | 0.4687 | 0.4289 | | 0.4221 | 0.3984 | | 0.3736 | 0.3874 | | 0.3370 | 0.3472 |
| | 0.4813 | 0.4319 | | 0.4342 | 0.4028 | | 0.3869 | 0.3958 | | 0.3364 | 0.3328 |
| | 0.4700 | 0.4126 | | 0.4259 | 0.3853 | | 0.3825 | 0.3798 | | 0.3466 | 0.3411 |
| 2 | 0.4483 | 0.3919 | 9 | 0.4080 | 0.3916 | 16 | 0.3670 | 0.3578 | 23 | 0.3376 | 0.3616 |
| | 0.4582 | 0.4099 | | 0.4146 | 0.4089 | | 0.3702 | 0.3722 | | 0.3260 | 0.3512 |
| | 0.4700 | 0.4126 | | 0.4299 | 0.4165 | | 0.3825 | 0.3798 | | 0.3265 | 0.3371 |
| | 0.4593 | 0.3944 | | 0.4221 | 0.3984 | | 0.3783 | 0.3646 | | 0.3370 | 0.3472 |
| 3 | 0.4465 | 0.4071 | 10 | 0.4017 | 0.3751 | 17 | 0.3736 | 0.3874 | 24 | 0.3370 | 0.3472 |
| | 0.4562 | 0.4260 | | 0.4080 | 0.3916 | | 0.3616 | 0.3788 | | 0.3265 | 0.3371 |
| | 0.4687 | 0.4289 | | 0.4221 | 0.3984 | | 0.3592 | 0.3641 | | 0.3270 | 0.3230 |
| | 0.4582 | 0.4099 | | 0.4147 | 0.3814 | | 0.3703 | 0.3726 | | 0.3364 | 0.3328 |
| 4 | 0.4373 | 0.3893 | 11 | 0.3941 | 0.3848 | 18 | 0.3703 | 0.3726 | 25 | 0.3260 | 0.3512 |
| | 0.4465 | 0.4071 | | 0.3996 | 0.4015 | | 0.3592 | 0.3641 | | 0.3144 | 0.3408 |
| | 0.4582 | 0.4099 | | 0.4146 | 0.4089 | | 0.3568 | 0.3495 | | 0.3160 | 0.3274 |
| | 0.4483 | 0.3919 | | 0.4080 | 0.3916 | | 0.3670 | 0.3578 | | 0.3265 | 0.3371 |
| 5 | 0.4342 | 0.4028 | 12 | 0.3889 | 0.3690 | 19 | 0.3616 | 0.3788 | 26 | 0.3265 | 0.3371 |
| | 0.4430 | 0.4212 | | 0.3941 | 0.3848 | | 0.3496 | 0.3702 | | 0.3160 | 0.3274 |
| | 0.4562 | 0.4260 | | 0.4080 | 0.3916 | | 0.3481 | 0.3557 | | 0.3175 | 0.3139 |
| | 0.4465 | 0.4071 | | 0.4017 | 0.3751 | | 0.3592 | 0.3641 | | 0.3270 | 0.3230 |
| 6 | 0.4259 | 0.3853 | 13 | 0.3825 | 0.3798 | 20 | 0.3592 | 0.3641 | 27 | 0.3144 | 0.3408 |
| | 0.4342 | 0.4028 | | 0.3869 | 0.3958 | | 0.3481 | 0.3557 | | 0.3028 | 0.3304 |
| | 0.4465 | 0.4071 | | 0.4006 | 0.4044 | | 0.3466 | 0.3411 | | 0.3055 | 0.3177 |
| | 0.4373 | 0.3893 | | 0.3950 | 0.3875 | | 0.3568 | 0.3495 | | 0.3160 | 0.3274 |
| 7 | 0.4221 | 0.3984 | 14 | 0.3783 | 0.3646 | 21 | 0.3496 | 0.3702 | 28 | 0.3160 | 0.3274 |
| | 0.4299 | 0.4165 | | 0.3825 | 0.3798 | | 0.3376 | 0.3616 | | 0.3055 | 0.3177 |
| | 0.4430 | 0.4212 | | 0.3950 | 0.3875 | | 0.3370 | 0.3472 | | 0.3081 | 0.3049 |
| | 0.4342 | 0.4028 | | 0.3898 | 0.3716 | | 0.3481 | 0.3557 | | 0.3175 | 0.3139 |

AASL4805 Application Note

Introduction

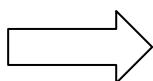
The AASL4805 LED light bar provide very high light output, and can be configured to suit a wide rage of applications. However the heat generated during operation, if not handled properly, could shorten the product life significantly. Therefore for optimal performance, proper thermal management should be incorporated to keep it below the rated temperature. This document describes the heat sink attachment procedure.

Attachment to Heat sink

1. Apply a thin layer (0.1 ~ 0.2 mm) of thermal grease on the bottom of the AASL4805 LED light bar.

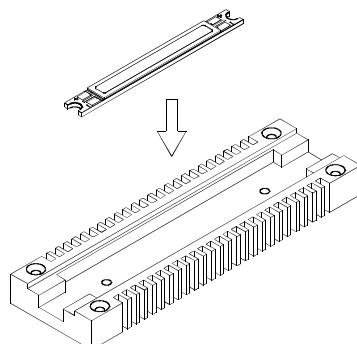


Rear surface



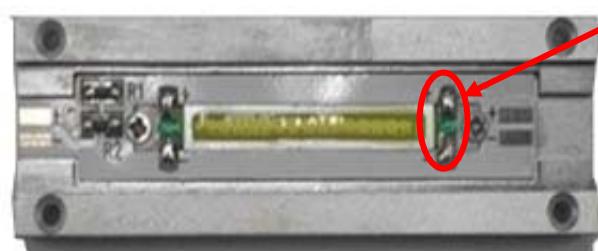
Thermal glue on rear surface

2. Press the AASL4805 LED light bar firmly on the heat sink to ensure good contact between the heat sink and the LED light bar. A guide for heat sink size selection at various driving currents is listed in the table below.



3. A specifically designed electronic circuit is required to power the LED light bar. Do not connect the product directly to the main power.

| | | | | |
|---|--------|--------|--------|--------|
| Current (mA) | 350 | 500 | 600 | 700 |
| Heat sink surface area (mm ²) | 10,000 | 15,000 | 17,000 | 21,000 |



It is strongly recommended that temperature of pad be not higher than 75°C when you use the product.

PACKING & LABEL SPECIFICATIONS

AASL4805QR425S/5

PACKING & LABEL SPECIFICATION

(1) Primary packing

50 pieces are contained in each tray.

Two trays which collectively contain 100 pieces are stacked together with an additional empty tray as lid.

Tray (Dimensions:398x218x12mm, materials:electrically conductive PS.)

(2) Secondary packing

A set of three trays is placed in bag. (100 pieces per bag.)

An indication label which specifies product name,quantity,lot number and shipment date is attached to the outside of the 9# box.(800 pieces per box.)

