

The Best Professional Provider of

# Philips Fortimo LED Spot Light Module SLM System

800lm-3000lm (17W-40W)



**PHILIPS**

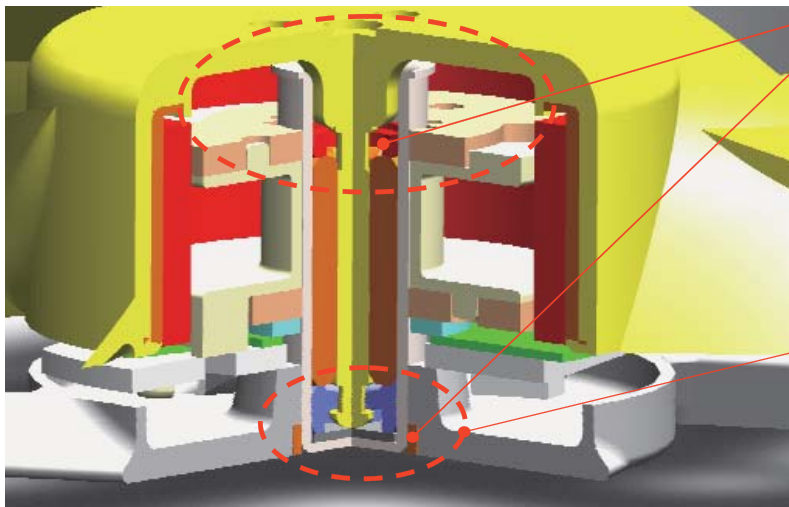
Complementary  
partner

## ◆ Sunon high-efficiency active cooling module with DR MagLev design (Dust-Resistance) provides high reliability and long service life

The two innovative design concepts of DR MagLev development are B&S (Blanked & Seamless) Technology and S&C (Seal & Clip) Design. These fans can be customized with IP5X for customer's demand.

◎ Three excellent efficiencies to extend fan life:

1. To reduce dust invasion
2. To prevent oil leakage
3. To prevent the motor components from falling



### ● S&C Design (Seal & Clip)

The innovative S&C Design provides the best resistance to dust invasion available in the marketplace.

### ● B&S Technology (Blanked & Seamless)

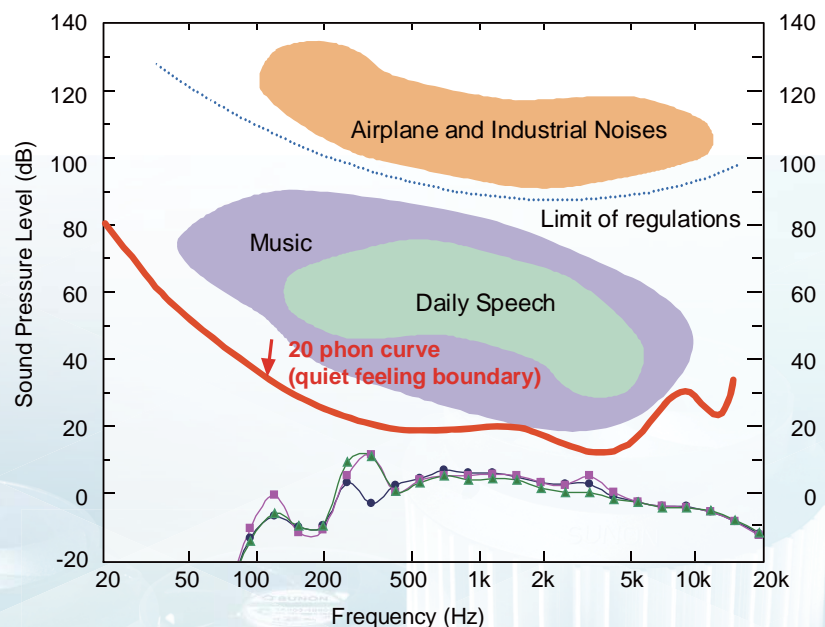
DR MagLev's one-piece structure with the B&S Technology and S&C Design provides the best prevention of oil leakage.

## ◆ Super Silence Fan

can satisfy acoustic requirement for low noise indoor lamps

Sunon's Super Silence Series is below 20 phon, the minimum level discernible in daily living. These figures are industry standards based upon the ISO 532B Hearing Sensation" test and charts on human auditory reactions plotted for different decibel and frequency levels.

— TA004-10003  
— TA003-10003  
— TA001-11002





## LED Spot Lighting Specification

|                                       |                   |  |  |  |
|---------------------------------------|-------------------|---|--|---|
|                                       |                   | 1100 / 1500lm   | 2000lm   | 3000lm  |
| Model No.                             |                   | TA001-11002   | TA003-10003  | TA004-10003   |
| Module Dimension                      |                   | φ 86 x 30.4 mm  | φ 86 x 52.4 mm   | φ 86 x 52.4 mm  |
| Weight                                |                   | 114g  | 237g   | 233g  |
| Thermal Resistance                    |                   | 0.85°C / Watt   | 0.70°C / Watt  | 0.52°C / Watt   |
| Cooling Module Noise @ 1M             |                   | 14.0dB(A)   | 15.1dB(A)  | 16.2dB(A)   |
| Rated Voltage                         |                   | 12VDC   | 12VDC  | 12VDC   |
| Power Consumption                     |                   | 0.28Watts   | 0.28Watts  | 0.34Watts   |
| Fan Speed (with Heat Sink)            |                   | 2200 RPM+/- 10%   | 2200 RPM+/- 10%  | 2200 RPM+/- 10%   |
| Heat Sink Material                    |                   | AL6063  | AL6063   | AL6063  |
| Safety                                |                   | UL/CUR/TUV/CE   | UL/CUR/TUV/CE  | UL/CUR/TUV/CE   |
| Philips<br>Fortimo SLM<br>LED Modules | SLM 1100 lm(17W)  | Tc=47 °C @Ta=35°C   | Tc=45 °C @Ta=35°C  | Tc=42 °C @Ta=35°C   |
|                                       | SLM 1500 lm(20W)  | Tc=50 °C @Ta=35°C   | Tc=47 °C @Ta=35°C  | Tc=44 °C @Ta=35°C   |
|                                       | SLM 2000 lm(32W)  | Tc=58 °C @Ta=35°C   | Tc=54 °C @Ta=35°C  | Tc=49 °C @Ta=35°C   |
|                                       | SLM 3000 lm(43W)  | X   | Tc=60 °C @Ta=35°C  | Tc=54 °C @Ta=35°C   |
|                                       | SLM 5000 lm(75W)  | X   | X  | Tc=68 °C @Ta=35°C   |
|                                       | SLM Lexel TW(22W) | Tc=50 °C @Ta=35°C   | Tc=48 °C @Ta=35°C  | Tc=44 °C @Ta=35°C   |
| SLM Lexel RGB(25W)                    |                   | Tc=52 °C @Ta=35°C   | Tc=49 °C @Ta=35°C  | Tc=45 °C @Ta=35°C   |

1. Tc : Maximum Surface Temperature of LED Module, Ta : Ambient Temperature
2. All specifications were tested in free air.
3. Products or Information are subject to change without notice. Please contact with Sunon Sales.
4. If you have inquiry for TIM (Thermal Interface Materials), Please contact sales.

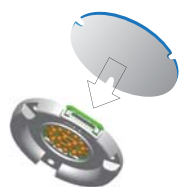
### Standard function

|   |                             |
|---|-----------------------------|
| 1 | Fan Rated Voltage_12V       |
| 2 | Auto Restart                |
| 3 | Reverse Polarity Protection |

### Optional function

|   |                                    |
|---|------------------------------------|
| 1 | Fan Rated Voltage_5V               |
| 2 | PWM speed control                  |
| 3 | Protection IP 51                   |
| 4 | Fan 3rd wire signal ( F / R type ) |
| 5 | Temperature controller             |

## Easy Assembly in 4 Steps



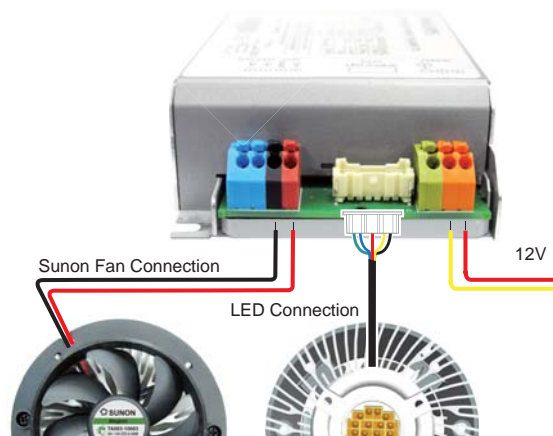
- 1 To attach tight the Thermal Interface Materials※ (TIM) bought by yourself to LED cooling substrate. To make sure there is no air bubbles between TIM and cooling substrate to avoid reducing the cooling efficiency.



- 2 To make sure the three screw holes on LED chip are aligned to the three highlighted holes on the heat sink.



- 3 Then firmly tighten the three screws (Tapping Screw M3\*10mm) in to the heat sink and make sure the LED chip and cooling module are firmly assembled.

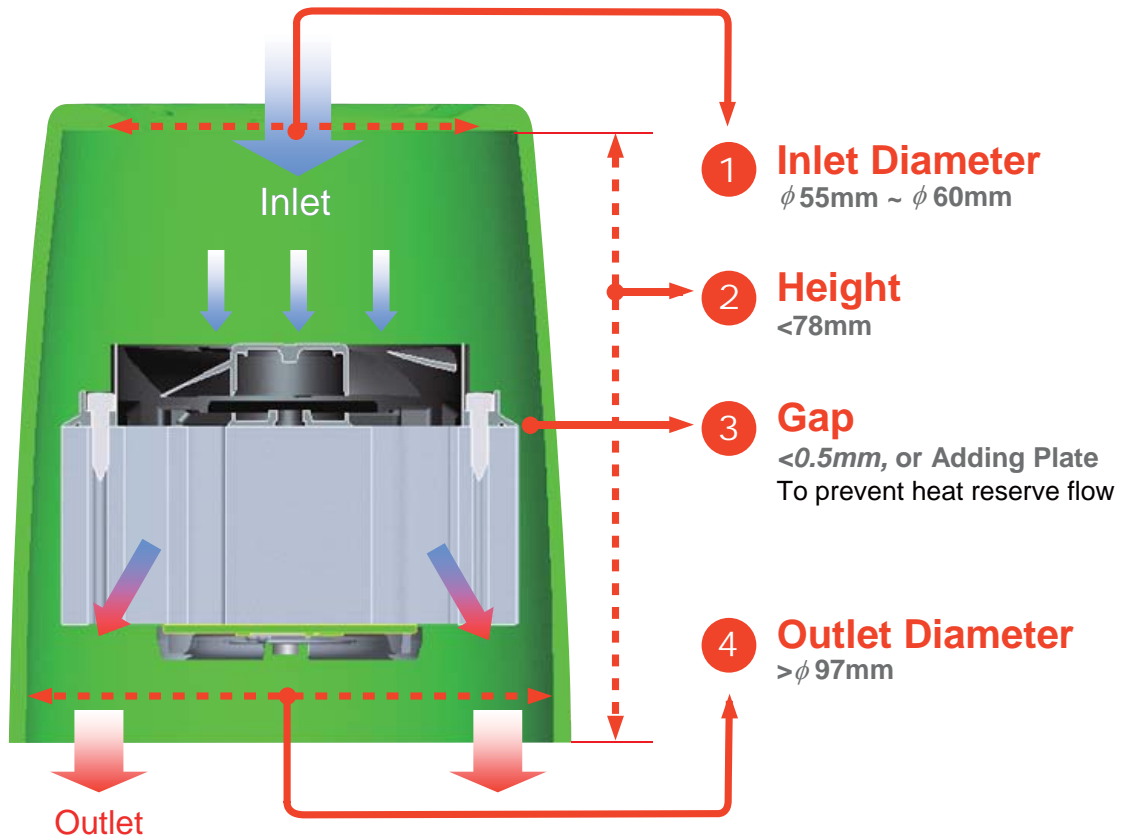


- 4 To join the red & black lines which control the fan (connect the red line to 12V power and the black line is ground wire) and LED connection to complete the entire assembly.

※ Please contact us to know more about the TIM.

## ◆ Design Suggestions for Lamp Covers

When working with Sunon's active cooling modules, please refer to these five suggestions for an effective lamp cover design :

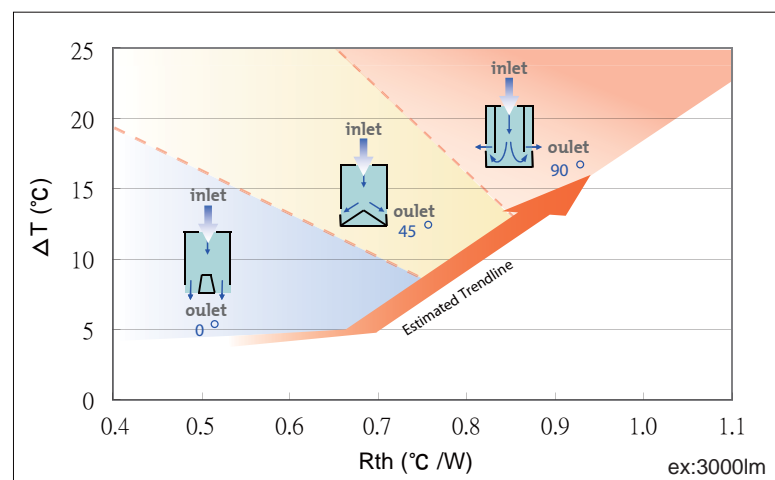


## 5 Estimated Trendline Rth V.S. $\Delta T$ Trendline

show the impact of lamp shape design on the cooling efficiency

$R_{th} : (T_{case} - T_{inlet}) / W_{th}$   
 ( Thermal resistance in lampshade )

$\Delta T : T_{outlet} - T_{inlet}$   
 (  $T_{outlet}$  vary with air smoothly flow to environment )





# LED Solution for Philips Fortimo LED SLM System

Sunon is at the forefront of developing key technologies for cooling modules and successfully manufacturing high-efficiency, cost effective modules for over three decades. We know that solving cooling issues is the biggest key point to develop high-power LED lighting and have combined high-end cooling design and micro-cooling technology with active cooling modules for miniaturized high-power LED lighting and lightweight advanced products.

Because of Sunon's innovative thermal technology and the serviceability of its products, the R&D Team of industry-leader Philips R&D team has chosen Sunon to design essential cooling modules for their products. The Sunon high-efficiency active cooling module meets the high-power cooling requirements of the Philips Fortimo LED SLM system, while allowing its 17W~40W LED Spotlight to give the highest quality lighting possible. For further application in LED lighting, Sunon have many others solutions are under development.

## 5 Designing Advantages

- **Active Cooling Module**  
Effectively stabilizes LED lighting output
- **High Reliability Cooling Fan**  
Prolongs LED lamp service life  
5 years warranty option
- **Miniaturized and Lightweight Design**  
Enhances LED lamp design and appearance
- **Super Silence Fan**  
Optimizes sound quality of indoor lamps to less than 20 phon
- **Dust-resistance System**  
Patented DR MagLev design helps prevent dust invasion and extends motor life





**SUNON®**

SUNON Thermal Solution for LED spot light module

## Comparison Chart for Passive Cooling versus Active Cooling

| Cooling Solution         | Passive Cooling Solution   | Sunon's Active Cooling Solution  |
|--------------------------|--|--|
| LED Power                | Reduced practicality for high-power LED  | Ideal cooling solution for high-power LED  |
| Cooling efficiency       | Low cooling efficiency   | High cooling efficiency  |
| Weight of lamp           | Heavy, reinforced mounting needs to be considered                                    | Low cost mounting, increased mounting options  |
| Size of lamp             | Large size compromises design/aesthetic options                                      | Allows for miniaturized design   |
| Heat sink Material       | More material required   | Less material required   |
| Lamp cover and ID design | Metallic lamp cover required for high cooling efficiency                             | Allows for a more flexible and elegant ID design   |
| Cooling stability        | The temperature of Tcase will increase over time and reduce service life of LED chip | Offers better cooling stability with lower Tcase temperature   |
| Dust influence           | Cooling efficiency is greatly compromised by dust accumulation                       | Dust-resistant design minimizes dust accumulation<br>Optional Smart Dust Self-Cleaning Fan helps prevent dust build-up |
| Sound                    | No noise   | Optimal sound quality of less than 20 phons  |

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