

SynJet® Universal DLM Cooler

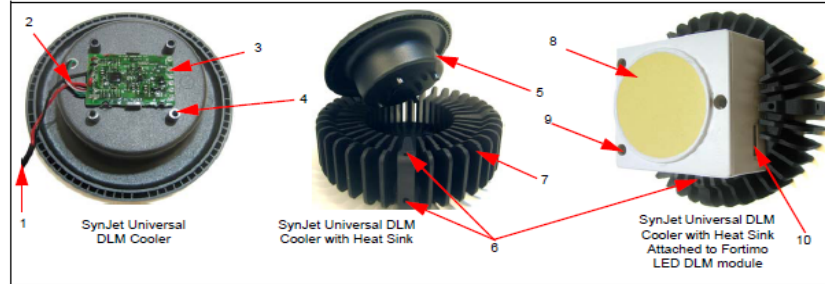
Quick Start

Assembly Overview

Excerpts from SynJet Universal DLM Cooler Assembly Guide

SynJet Universal DLM Cooler Components

The following figures illustrate the components of the SynJet Universal DLM Cooler.



- 1 SynJet Universal DLM Cooler power lead
- 2 strain relief point at edge of PCBA
- 3 SynJet Universal DLM Cooler driver board
- 4 bosses (four)
- 5 SynJet Universal DLM Cooler
- 6 external attachment points
- 7 heat sink
- 8 Fortimo LED DLM module
- 9 Fortimo LED DLM to heat sink attachment points
- 10 Fortimo LED DLM power connection

Table 2: Component Description

Component	Description
SynJet Universal DLM Cooler	This is the air mover of the cooling system. It creates turbulent pulses of air, i.e., synthetic jets, which are directed between heat sink fins.
Heat Sink	The heat sink spreads the heat dissipated from the Fortimo LED DLM over a large surface area. The heat sink is die cast aluminum and is coated with an electro-coating for protection.
SynJet Universal DLM Cooler Driver Board	The driver board contains the electronic components needed to operate the SynJet Universal DLM Cooler.
Power Leads	The power leads are the electrical wiring connection to the Fortimo LED Driver or to an external DC power supply. The leads have stripped and tinned ends for easy insertion into the spring push-in connection points, for optional soldering, or for connection to a connector.
External Attachment Points	The heat sink has 12 holes located 90 degrees apart. They may be used for attachment of the SynJet Universal DLM Cooler and the Fortimo LED DLM assembly to an external mounting structure. Attachment can be from the four side holes, the four lower holes, and/or the four top holes.
Fortimo LED Driver 1100-2000 TD	Converts AC mains power to the following: <ul style="list-style-type: none"> ■ LED power for Fortimo LED DLM ■ 12-Vdc power for the SynJet Universal DLM Cooler
Fortimo LED DLM module	Light module assembly shown installed in the heat sink.
Fortimo LED DLM to Heat Sink Attachment Points	Three holes in the Fortimo LED DLM for screw attachment to the heat sink.
Fortimo LED DLM Power Connection	Fortimo LED DLM power and control signal cable connection point.
Fortimo LED cable	Cable with power and control signals for the Fortimo LED DLM.
Strain Relief Point	Wires are tied to the housing with a small cable clamp at the edge of the PCBA.
Ground Wire Attachment Point	Three sets (upper, side, and lower) of four external mounting holes are located around the perimeter of the heat sink. Any of these can be used for attachment of a heat sink ground wire if required by applicable safety standards.

ASSEMBLY STEPS

1. SynJet Cooler to Heat Sink

- A. Locate the four thread forming screws
- B. Align the housing with correct four holes so Red/Black Wires exit in correct direction
- C. Pass thread-forming screws thru heatsink into housing
- D. Screw into plastic bosses on cooler



Align the housing to the heat sink so the red and black wires from the PCBA pass out through the heat sink fins near the Fortimo LED DLM single attachment screw, not between the two screws on the opposite end. This will place the red and black wires near the Fortimo LED DLM cable connector. Then, they can be run together to the Fortimo LED driver.



Thread-forming screw x 4
Attach SynJet Cooler to Heat Sink

2. Fortimo LED DLM to Heat Sink

- A. Apply TIM to Heat Sink mating surface (remove any protective film from TIM)
- B. Place/align triangle screw patterns - Fortimo LED DLM on Heat Sink
- C. Pass the 3 screws through holes in Light Emitting Face to threaded holes in heat sink
- D. Tighten screws firmly for good thermal conduction
- E. Note: For best lifetime thermal performance, in production builds, apply Loctite 222MS to screws

Note: 3 Screws shown here started into heat sink ONLY to help identify hole pattern on black surface. Place DLM on heat sink BEFORE starting Screws.

IMPORTANT

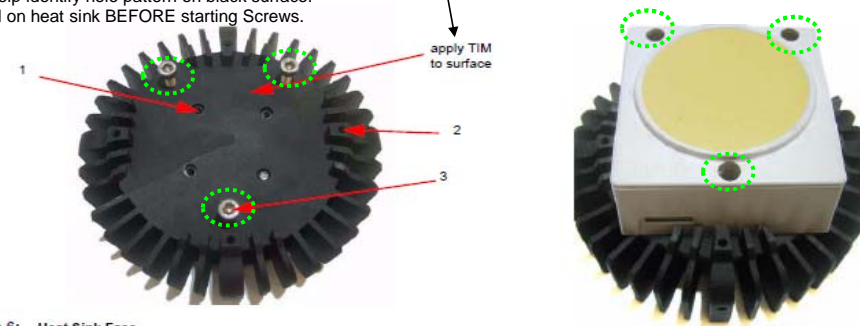


Figure 6: Heat Sink Face

- 1 four holes for attaching the SynJet to the heat sink
- 2 four holes for attaching the heat sink to the luminaire
- 3 three holes for attaching the Fortimo LED DLM to the heat sink

Nuventix, the Nuventix logo, and SynJet are trademarks or registered trademarks of Nuventix. All other brand and product names may be trademarks of their respective companies.

Major Hardware Elements:

- SynJet Universal DLM Cooler
- Heat Sink
- Fortimo LED DLM
- Fortimo LED Driver

SAFETY

Electrical

Failure to follow these instructions carefully may result in personal injury as well as incorrect assembly leading to overheating of components.

Hot Surfaces

The SynJet Universal DLM Cooler voltages and currents are low and are typically not a hazard. The Fortimo LED DLM driver and connections may have higher voltages present. This could be a risk during rework operations. Be sure all electrical power is disconnected.

Sharp Corners

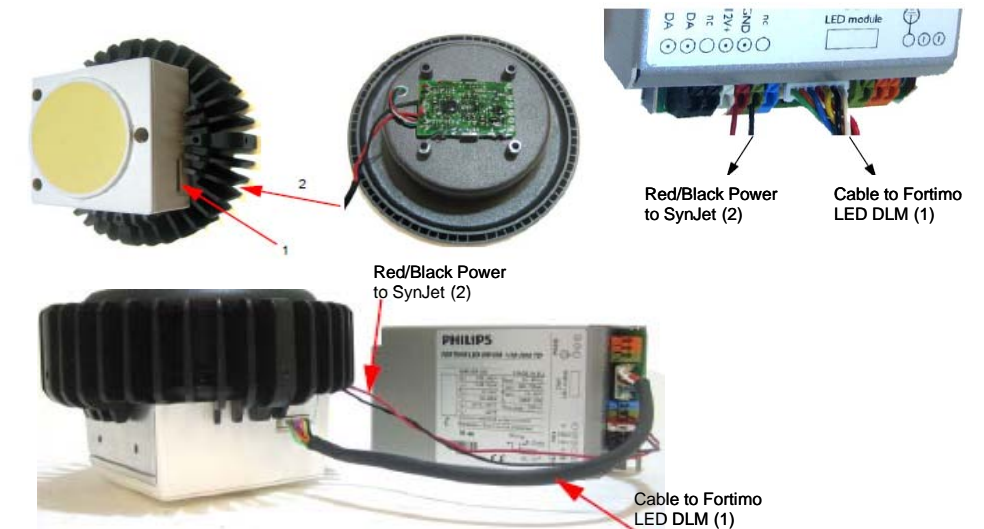
The heat sink may have pointed corners or sharp edges. Use care when handling and during assembly.

3. Connect SynJet Power

- A. Red Wire to 12V, Black Wire to GND, on the Fortimo LED Driver spring push-in connector
- B. Optional - twist wires several times so they stay together

4. Connect Fortimo LED DLM Power

- A. Attach one end of cable to Fortimo LED DLM connector
- B. Attach other end of cable to Fortimo LED Driver connector
- C. Optional cable dress - use 3 cable ties to bind red/black wires to cable as one assembly



5. Visually review and verify assembly and connections

6. Turn Power On and Verify Operation

Note: Due to its extremely quiet air flow, you must be in close proximity to feel the air flow and hear the SynJet Universal DLM Cooler operating.

Additional References for SynJet Universal DLM Cooler:
Product Specification
Assembly Guide
Design Guide

Current Updates:
www.nuventix.com
www.philips.com/fortimo

Nuventix, Inc.
4635 Boston Lane
Austin, TX 78735

www.nuventix.com
Copyright © 2008 Nuventix
All Rights Reserved

Phone: 512-382-8100
Fax: 512-382-8101
Contact Sales: 512-382-8100