

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc

Conditions of Acceptability - When installed in the end product, consideration shall be given to the following:

1. The driver shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the ultimate application.
2. The maximum available parameters of the output met the Class 2 - Inherently Limited as specified in Table 30.1 of UL 1310, Standard for Class 2 Power Units.
3. The driver is suitable for use in "Dry" and "Damp" locations.
4. When installed in the end-use application, the measured case temperature at the (Tc) location specified on the marking label must not exceed 87°C.
5. The enclosure case of the driver must be connected to earth ground when installed in the end-use application.
6. The dimming circuit (0-10V) and Fan output are isolated and the maximum available output parameters met the limitations for the Class 2 inherently limited per the UL 1310 standard.
7. If the leakage current measurements are required in the end-use application, the test shall be performed on the combination at the equipment connection in the end-use product. However, the maximum measured leakage current in accordance with UL1310 standard was 0.26 mA while was connected to a 120 V and was 0.61 mA while was connected to a 277 V.

8. LED Driver model XI050C100V054DNMX employs a Safety Related Electronic Control Circuit. The circuit along with an external NTC (physically located in a LED array) forms a thermal management system. This system has been evaluated to provide equivalent safeguards that are normally fulfilled using a thermal protector to comply with the requirements for Recessed luminaires in accordance with Section 11.5 and Clause 11.5.1 of UL 1598, the Standard for luminaires. The Safety Related Control Circuit system, which is described in this report, is comprised of a circuit contained within the Class 2 circuit of this LED driver and an NTC sensor that is remotely mounted on the circuit board of an LED array.

External NTC- The overall thermal protection system is achieved by monitoring two NTCs. One NTC is located in the circuit within the LED driver and the other NTC is located on the LED array. The leads from the external NTC mounted on the LED array are connected to the VIOLET and GREEN terminals of the LED Driver. The external NTC sensor (located in the LED array) that was evaluated as part of this system was type NCP18WF104F12RB by Murata Mfg Co. Ltd. (R/C XGPU2/8). This specific NTC must be used in the LED array, in order for this system to be utilized as a Thermal Protective Device for Luminaires. The following table indicates the specific modules from the Fortimo LED DLM GEN 4 and DLM FLEX - 3000 Lumen series for which use of this specific NTC has been verified:

Manufacturer	LED Module Part Numbers
Philips Lighting Electronic N A (DLM GEN 4)	9290 008 95706X, 9290 008 78303X, 9290 008 78403X, 9290 008 78503X
Philips Lighting Electronic N A (DLM FLEX)	9290 009 46906, 9290 009 47006, 9290 009 47106, 9290 009 47206

Luminaire testing - As the LED Driver model XI050C100V054DNMX and the LED array that includes the external NTC described above are integrated into a Luminaire, the applicable Temperature test requirements of Section 14 and the Abnormal Temperature test requirements in Section 15 of UL 1598 must be performed.

Luminaire thermal protector - If the luminaire tests are completed with acceptable results, a thermal protector for the luminaire will not be necessary.

9. Since model XI050C100V054DNMX and model XI050C100V054DNM1 do employ the identical construction, critical components and electrical ratings except model XI050C100V054DNMX employs additional electronic safety related circuit, for luminaires currently employing driver model XI050C100V054DNM1, model XI050C100V054DNMX may be added as an alternate without additional testing.