



NOTES FOR CERTIFICATE AND APPLICATION

1. Introduction

It is our pursuit to make LED drivers that comply with all major, global safety standards and certificate requirements. This note provides high level guidance for suitability of LED driver use for end products, such as a luminaire, and for finding unique product information related to safety and certificates. It is intended to serve as a supplemental technical summary for safety certifications. Electrical specifications and other critical product features are issued in other documents.

2. Scope

This file is focused on suitability of LED drivers for general lighting use.

3. Certificate and application notes for NA standard.

3.1 NA standard

US	CN
UL 8750	CAN/CSA-C22.2 No. 250.13
Note : The Conditions of Acceptability (CoA) provides detailed conditions in which the LED driver has been approved for use in the end product.	

3.2 Class 2 Output

LED Drivers marked with Class 2 outputs have been evaluated to meet Class 2 LED driver requirements. Refer to the CoA for details to ensure suitable use in the end product.

3.3 LVLE Output

LED Drivers marked with LVLE outputs have been evaluated to meet LVLE LED driver requirements. Refer to the CoA for details to ensure suitable use in the end product.

3.4 Control Circuit

Isolated and non-isolated dimming control circuits are both eligible for UL 8750, but have different end use installation requirements.

3.4.1 Non-isolated Control Dimming

Refer to the technical file « Application Note : Dimming Control Circuit » issued by INVENTRONICS for details.

3.4.2 Isolated Control Dimming

Refer to the LED driver CoA for details.

Isolated control circuits for dimming are Class 2 circuits if (1) The adjacent or external circuit is also Class 2 or LVLE (2) the control circuit offering auxiliary power meets Class 2 circuit requirements.

3.5 Class P LED Driver

The wire temperature rating used with Class P LED drivers shall be at least 90°C. And the Class P LED driver must be installed inside an enclosure if sourced with field-wiring leads, field-wiring terminals, or push-in terminals.

For connections, use wire rated for at least 90 °C, Le pilote de LED de classe P doit être installé à l'intérieur d'un boîtier s'il est fourni avec des fils de câblage sur le terrain, des

bornes de câblage sur le terrain ou des bornes poussoirs [For Canada use only]

3.6 Touch current

Refer to the LED driver CoA for the specific touch current test value which test in ungrounded state, and the conformity of standard is evaluated within the end product and luminaire standard.

Note: If the driver provide a protection earth terminal it must be connected to ground of the power grid or of the building.

3.7 Environment

The LED driver meets the requirement of Dry, Damp, or Wet location for different constructions. Refer to the CoA for details.

4. Certificate and application notes for IEC standard or equivalent

4.1 Standard of CB or ENEC certificate.

IEC Standard	EN Standard
IEC 61347-1	EN 61347-1
IEC 61347-2-13	EN 61347-2-13
	EN 62384
Note : refer to detail certificate for the standard version.	

4.2 Control Circuit

Isolated and non-isolated dimming control circuits are both eligible for standard, but have different end use installation requirements.

4.2.1 Non-isolated Control Dimming

For details, refer to the “Dimming Control Circuit Application Note”, issued by Inventronics.

4.2.2 Isolated Control Dimming

The isolated control dimming interface has evaluated as SELV circuit, there have an internal reinforced insulation from live parts and not any risk to touch the control dimming interface of LED driver when it is connected to a controller with double insulation, or when it is not connected. But in some installations, such as 0-10V system, DALI control wiring, is not provided a reinforced insulation with respect LV supply, in this condition, the control dimming interface may be not safe to be touch, additional protection need to add to protect against the fault of the insulation of external control circuit.

4.3 Insulation Types

See 4.3.1 and 4.3.2 for insulation construction of LED driver.

4.3.1 LED Driver without Isolated Output

Insulation type between	Input (LV supply)	Output	Control circuit (Dimming)	Enclosure (PE)	Enclosure (FE)
Input	--	--	R or D	B	R or D
Output	--	--	R or D	B	R or D
Control circuit (Dimming)	R or D	R or D	--	B	B
Enclosure (PE)	B	B	B	--	--
Enclosure (FE)	R or D	R or D	B	--	--

Note: R=reinforced insulation; D=[double insulation] ; B=[basic insulation] ;

4.3.2 LED Driver With Isolated Output

Insulation type between	Input(LV supply)	Output(SELV)	Output (Non-SELV)	Control Circuit(Dimming)	Enclosure (PE)	Enclosure (FE)
Input(LV supply)	--	R	R	R	B	R
Output(SELV)	R	--	R	B	B	B
Output (Non-SELV)	R	R	--	R	B	R
Control circuit(Dimming)	R	B	R	--	B	B
Enclosure (PE)	B	B	B	B	--	--
Enclosure (FE)	R	B	R	B	--	--
Note: R=reinforced insulation; D=[double insulation] ; B=[basic insulation] ;						

4.4 Touch Current

The touch current of product is meet the requirement of standard.

Note : For Class I LED driver, whenever to keep the protection earth connect to ground of AC mains or building permanent and reliable.

4.5 Operation Environment

Products meet various ingress protection requirements with ratings such as IP20, IP66, IP67.

Refer to the certificate for details.

Note: Although these products have passed the IP test in line with IEC 60529, it may be necessary to add further protection against dust and water ingress, depending on the environment, such as extreme weather or water conditions.

For other matters that are not mentioned above, please refer to other technical documents corresponding to the product. Please feel free to contact us for feedback and communication if you have any questions.