

File E328847
Project 13SC03129

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REPORT

On

COMPONENT - DRIVERS FOR LIGHT-EMITTING-DIODE ARRAYS, MODULES AND CONTROLLERS

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DESCRIPTION

PRODUCT COVERED:

USR/CNR - Class 2 LED Drivers, Models AC-D80C2.2ARDL, AC-65CD1.75AMG, AC-80CD2.2BRMD, AC-80CD2.2BRMD, AC-D54C1.5ARDM, **AC-54CD1.5ARNT**, AC-54CD1.5BRMA, AC-54CD1.5BRMA, AC-D40C1.1ARDN, AC-40CD1.1BRLZ

GENERAL:

The units are switch-mode constant-current isolating power supplies **consisting** of an isolation transformer and other related electronic circuitry connected in the end-use application via an input and output terminal block and connector, respectively.

ELECTRICAL RATINGS:

| *Cat. No. | Input Voltage (V) 50/60 Hz | Input Current (A) | Max Output Voltage (Vdc) | Output Current (mA) Constant Current | Driver Type |
|---|-------------------------------|----------------------|-----------------------------|--|-------------|
| AC-D80C2.2ARDL AC-65CD1.75AMG | 120-277 | 0.83-0.33 | 48 | 2200 | TL |
| AC-80CD2.2BRMD | 347 | 0.29 | 48 | 2200 | TL |
| AC-D54C1.5ARDM AC-54CD1.5ARNT | 120-277 | 0.58-0.25 | 48 | 1500 | TL |
| AC-54CD1.5BRMA | 347 | 0.21 | 48 | 1500 | TL |
| AC-D40C1.1ARDN | 120-277 | 0.41-0.18 | 48 | 1100 | TL |
| AC-40CD1.1BRLZ | 347 | 0.14 | 48 | 1100 | TL |

TECHNICAL CONSIDERATIONS (NOT FOR UL FIELD REPRESENTATIVE USE):

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by UL LLC.

USR - Indicates investigation to the United States requirements UL Standard for Safety for Light Emitting Diode (LED) Equipment for Use In Lighting Products, UL 8750.

CNR indicates investigation to Canadian Standard for Light Emitting Diode (LED) Equipment for Lighting Applications, CAN/CSA C22.2 No. 250.13-12

CN - Either the Canadian Standards Association Certification or Component Acceptance Mark or the UL Listing or UL Recognition Mark for Canada.

PWB spacings have been evaluated in accordance with an Overvoltage Category II and Pollution Degree 1 (potted enclosure) per Clause 7.8.3 and Table 7.4 of UL 8750 with live parts to enclosure spacings evaluated per Table 7.6 and CSA C22.2 No. 250.13-12, Clause 8.7.3, Table 5 with live parts to enclosure spacings evaluated per Table 6.

Conditions of Acceptability - When installed in the end-use equipment, the following are among the considerations to be made:

1. The LED drivers, Models AC-D80C2.2ARDL, AC-D54C1.5ARDM, AC-D40C1.1ARDN, have been evaluated using an electronic or resistive load resulting in an output rated current of 1.1A, 1.5A, and 2.2A

Models AC-65CD1.75AMG, AC-80CD2.2BRMD, AC-54CD1.5ARNT, AC-54CD1.5BRMA, and AC-40CD1.1BRLZ have been evaluated using LED loads.

2. All units utilize a Class F insulation system for the isolation transformer (T2).

Transformer T1 Coil: 93.2°C
Tc Point on Case above T1: 70.7°C

The maximum recorded temperatures on the isolation transformer for Model AC550S20M were as follows when tested at an ambient of 50°C.

Transformer T1 Coil: 98.2°C
Tc Point on Case above T1: 76.3°C

The maximum recorded temperatures for Model were as follows when tested at an ambient of 40°C and normalized to 70°C. The need to repeat the temperature test shall be determined in end-use product if temperatures exceed the following:

**Transformer T2 Coil: 102.2°C
Tc Point on Case above T1: 80.4°C**

The need to repeat the temperature test shall be determined in end-use Product investigation.

3. The products were tested while connected to a 20A branch circuit.
4. The Leakage current test was only conducted between exposed conductive surface and the grounded pole of the supply circuit.
5. The enclosure is required to be grounded in the end-use application.
6. The temperatures on the input (J1) and output (J2) connectors shall not exceed 105°C and 75°C respectively.

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7. All models comply with LVLE requirements per CSA C22.2 No. 250.13-12, Annex A and CSA Informs Ref. No. I13-020 and therefore can be marked Class 2 for Canada. These outputs shall not be accessible and shall be determined in the end-use application.
8. The following models were evaluated per the Temperature Limited (Type TL) requirements per Supplement SB of UL8750 and the measured $T_{ref\ max}$ temperature associated with the measured T_c and T_a values are as follows:

| Model | $T_{ref\ max}$ Value (°C) | T_c/T_{ref} Value (°C) | T_a Value (°C) |
|--------------------------------|---------------------------------|--------------------------------|------------------------|
| AC-40CD1.1BRLZ | 82 | 66 | 40 |
| AC-54CD1.5BRMA | 82 | 66 | 40 |
| AC-80CD2.2BRMD | 85 | 74 | 40 |
| AC-D40C1.1ARDN, | 89 | 71 | 40 |
| AC-D54C1.5ARDM, AC-54CD1.5ARNT | 89 | 71 | 40 |
| AC-D80C2.2ARDL, AC-65CD1.75AMG | 88 | 72 | 40 |