Constant Current LED Driver

**Model Number**

**AC-50CD1.4APUQ**

**Input Voltage:** 120-277V

**Input Frequency:** 50/60Hz

**Side Mount/Leads Options**

- < 1 Sec. Start time
- Surge Protection (2Kv)

**Dim-to-0% & 10-100% (by NFC Setting)**

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**ELECTRICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Output Power Max</th>
<th>Input Power</th>
<th>Input Current</th>
<th>Min PF (full load)</th>
<th>Max THD (full load)</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>T case Max</th>
<th>Min. Starting Temp**</th>
<th>Efficiency Up To</th>
<th>IP Rating</th>
<th>Dimming Protocol</th>
<th>Dimming Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>50W</td>
<td>60W</td>
<td>0.5A@120V</td>
<td>&gt;90</td>
<td>&lt;20</td>
<td>15-55V</td>
<td>400mA-1400mA</td>
<td>90°C</td>
<td>-40°C</td>
<td>85%</td>
<td>30</td>
<td>0 to 10V</td>
<td>1 to 100%</td>
</tr>
</tbody>
</table>

**Note:** This driver can operate down to -40°C in a non-dimming condition. Below 0°C some flicker may be observed.

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**PHYSICAL:**

**Model**

AC-50CD1.4APUQ

**Length**

12.4”

**Width**

1.3”

**Height**

1.08”

**Mounting**

11.8”

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**OVER CURRENT**

105~110%

Decade mode, recovers automatically after fault condition is removed

**SHORT CURRENT**

Hiccup mode, recovers automatically after fault condition is removed

**OVER TEMP**

Shut down o/p voltage, re-power on to recover

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**SAFETY & EMC**

**WORKING TEMP.**

-40°C~50°C • FCC Part 15 class A, UL8750, CSA C22.2 No. 250.13-14, ICES-005 Issue 4

**WORKING HUMIDITY**

10%~90%

**STORAGE TEMP., HUMIDITY**

-40°C~80°C, 10 ~ 95% RH

**TEMP. COEFFICIENT**

± 3% °C

**ENVIRONMENT**

**VIBRATION**

10 ~ 500Hz, 5G 12min./1 cycle, period for 72min. each along X, Y, Z axes

**Maximum T-Case TEMP.**

90°C

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Data is based upon tests performed by AC Electronics in a controlled environment and representative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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Revised 03/18/2019
SAFETY:

• Class P
• Class A sound rating
• Overload Protection
• Open/Short Circuit Protection
• LED driver has a life expectancy of 50,000 hours at Tcase of ≤75°C
• LED driver has a life expectancy of 100,000 hours at Tcase of ≤65°C

INSTALLATION:

• Max Remote installation distance is 18 ft
• LED driver cases should be grounded
• LED drivers shall be installed inside electrical enclosures
• 18 AWG 600V/105°C tinned stranded copper lead-wires are required for installation

Ac Electronics/AC LED Power Designs warrants to the purchaser that each LED Driver will be free from defects in material or workmanship for a period of 5 years when operated at max case temp of up to 75°C; 3 years from date of manufacture when operated at a max case temp of up to 90°C when properly installed and under normal conditions of use. See aceleds.com for complete warranty policy.


GENERAL INFORMATION

<table>
<thead>
<tr>
<th>WARRANTY</th>
<th>5 Years TC≤75°C, 3 Years TC≤90°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inrush Current</td>
<td>35A</td>
</tr>
<tr>
<td>MTBF</td>
<td>10,000 Hrs Type</td>
</tr>
<tr>
<td>Protection</td>
<td>Overload/Over temperature/Short circuit protection</td>
</tr>
</tbody>
</table>

APPROVALS

UL Class2, FCC Class A, RoHs, Type HL

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Performance Characteristics

Life Time v.s. Case Temperature Curve

Case Temperature Curve (°C)

Derating Curve 120Vac & 277Vac

Outside Driver Ambient Temperature (°C)

Life Time (kHours)

Load (%)
Performance Characteristics

Efficiency v.s. Load

Load (%)

Load (%)

Power Factor v.s. Load

Load (%)

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Performance Characteristics

Output Current v.s. Dimming

Output Current v.s. Resistance

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Performance Characteristics

NFC CONTROLLER

NOTE:

1. The NFC controller can program the output current, voltage and timer delays.
2. The NFC programming is a non-contact process, therefore much safer compared to traditional programming methods.
3. Power devices can be programmed without AC power applied to the driver.

Programmable Driver Options (App Note)

All programmable drivers accept a 16-bit hexadecimal code to program the output current (Iout) of the driver. The Iout programming codes are documented in the computer based-programming software (ST-TOOLS.exe) or from the driver’s IOUTCODE.pdf file. The Locations below 0, 1, 2, 3 contain the basic code for a specific output current value (example 84 03 00 01 = 1050 mA for AC-50CD1.4APNZ).

<table>
<thead>
<tr>
<th>Location</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

For drivers containing Revision C of their firmware (contact factory for date code of implementation), it is also possible to adjust the minimum dimming level and the dimming speed. This adjustment is made by modifying location 2 of the programming code while keeping the other locations set for the desired output current. Specifically, the location 3 values are defined as:

- 00 => Dim to 1%, Speed ≤ 1.0 sec
- 01 => Dim-To-OFF, Speed ≤ 1.0 sec
- 02 => Dim to 10%, Speed ≤ 1.0 sec
- 03 => Dim to 1%, Speed ≥ 2.5 sec
- 04 => Dim-To-Off, Speed ≥ 2.5 sec
- 05 => Dim to 10%, Speed ≥ 2.5 sec

As an example, if the programming code value of 84 03 00 01 is programmed, the output current will be 1050 mA, and the driver will dim to 1% and the dimming speed will be ≤ 1.0 sec. If the programming code of 84 03 04 01 is programmed, the output current will be 1050 mA, and the driver will dim to off and the dimming speed will be ≥ 2.5 sec.