



**PROGRAMMABLE,  
DIGITAL, WIDE-RANGE  
AJUSTABLE CURRENT & DIMMING  
CLASS P LISTED**

Constant Current LED Driver

**Model Number  
AC-50CDI.4APNZ**

Input Voltage: 120-277V  
Input Frequency: 50/60Hz  
Side Leads

**P1**

Dimming speed  $\leq 0.7 \text{ Sec}@0.7\text{A} \leq I_{out} \leq 1.4\text{A}$   
 $< 1 \text{ Sec. Start time/Starting with batch code AKT.48}$   
**Dim-to-0% & 10-100% (by NFC Setting)**

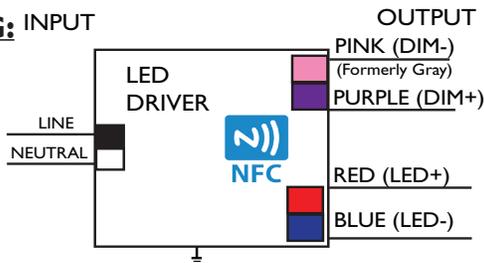
**ELECTRICAL SPECIFICATIONS:**



Output Power	Input Power	Input Current	Min PF (full load)	Max THD (full load)	Output Voltage	Output Current	T case Max	Min. Starting Temp**	Efficiency Up To	Dimming Protocol	Dimming Range	IP Rating
50W	60W	0.5A@120V 0.22A@277V	>0.90	<20	15-55V	400mA-1400mA	90°C	-40°C	85%	0 to 10V	1 to 100%	64

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

**WIRING:** INPUT



**Note:** Gray (-) dimming wire has been changed to pink per the 2020 NEC section 410.69 and NEMA.

**Lead Lengths**

Black	5.9"	Blue	5.9"
White	5.9"	Red	5.9"
Purple	7.1"	Pink	7.1"

**PHYSICAL:**



Dimensions	Length	Width	Height	Mounting
AC-50CDI.4APNZ	5.23"	2.48"	1.18"	4.84"

Tref Max Value (°C)	Tc/Tref Value (°C)	Ta/Value (°C)
90	58.2	40

PROTECTION	OVER VOLTAGE	Output Current decade mode, recovers automatically after fault condition is removed
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed
	OVER TEMP.	Shut down o/p voltage, re-power on to recover
SAFETY & EMC ENVIRONMENT	Operation TEMP.	0°C~50°C
	WORKING HUMIDITY	10%~90%
	STORAGE TEMP., HUMIDITY	-40°C~80°C
	Maximum T-Case TEMP.	90°C
	EMI/EMS	FCC Part 15 class A, UL8750, CSA C22.2 No. 250.13-14

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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.

**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  $\leq 75^{\circ}\text{C}$
- LED driver has a life expectancy of 100,000 hours at Tcase of  $\leq 65^{\circ}\text{C}$
- Warranty: 5 yrs based on max case temp of  $< 75^{\circ}\text{C}$ ; 3 yrs based on max case temp of  $90^{\circ}\text{C}^*$
- Input/Output Isolation
- FCC Title 47 CFR Part 15
- Surge Protection (2 KV)
- Gray (-) dimming wire has been changed to pink per the 2020 NEC section 410.69 and NEMA.

**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/I05C 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  $< 75^{\circ}\text{C}$ ; 3 years from date of manufacture when operated at a max case temp of up to  $90^{\circ}\text{C}$  when properly installed and under normal conditions of use. See [aceleds.com](http://aceleds.com) for complete warranty policy.

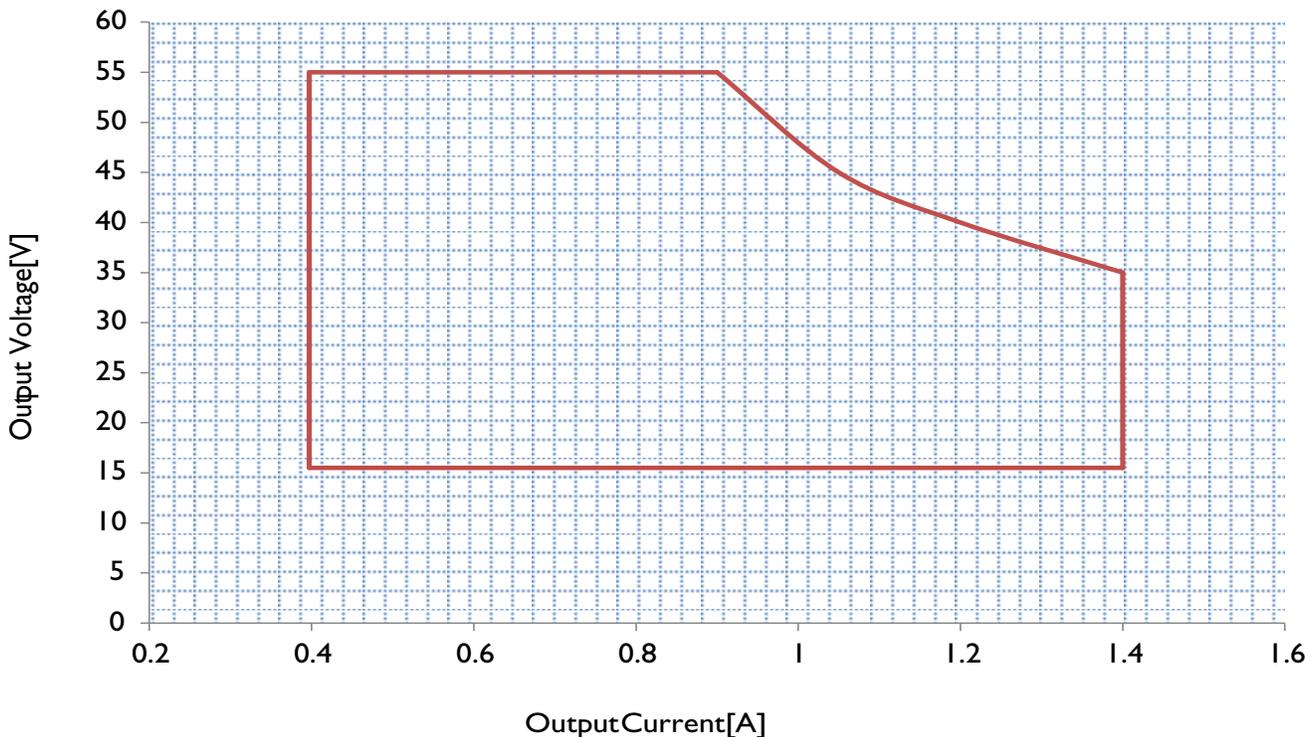
**GENERAL INFORMATION**

WARRANTY	5 Years $\text{TC} \leq 75^{\circ}\text{C}$ , 3 Years $75^{\circ}\text{C} \leq \text{TC} \leq 90^{\circ}\text{C}$
Inrush Current	35A
MTBF	10,000 Hrs Type
Protection	Overload/Over temperature/Short circuit protection

**APPROVALS**

UL Class2, FCC Class A, RoHs, Type HL

**IOUT/VOUT CURVE**

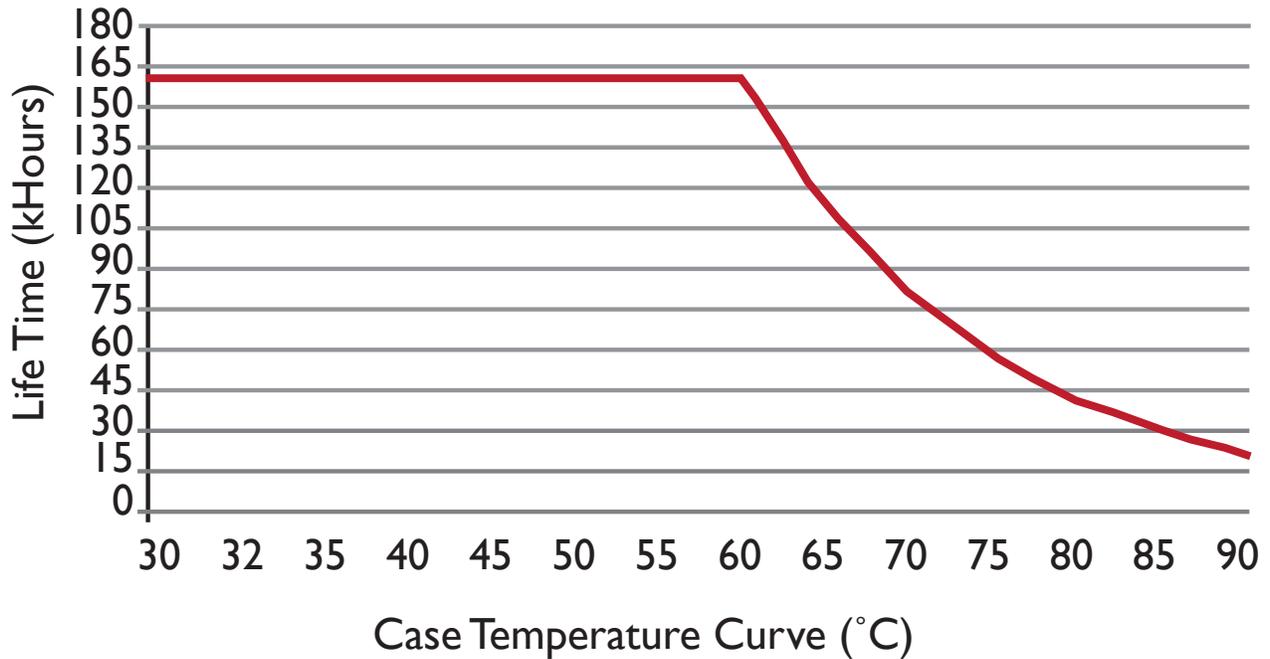


**CONTROL THE IOUT WITH THE PROGRAMMING WAND. DOWNLOAD SOFTWARE FROM <http://www.aceleds.com/products-programmable.php>**

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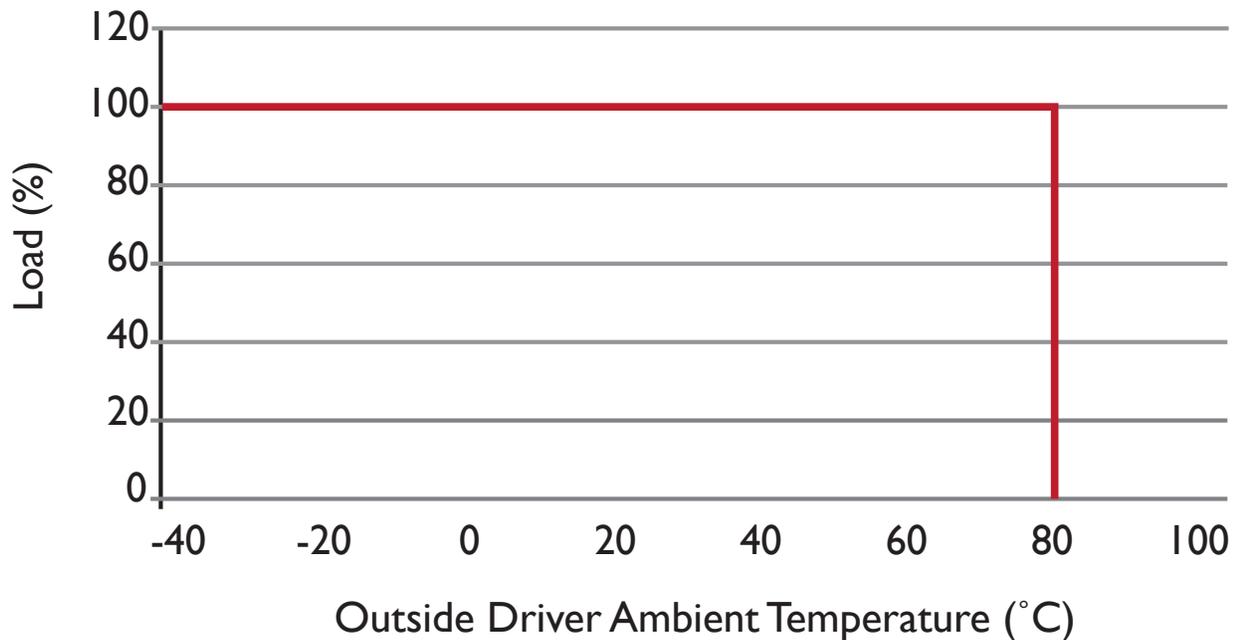
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Life Time v.s. Case Temperature Curve



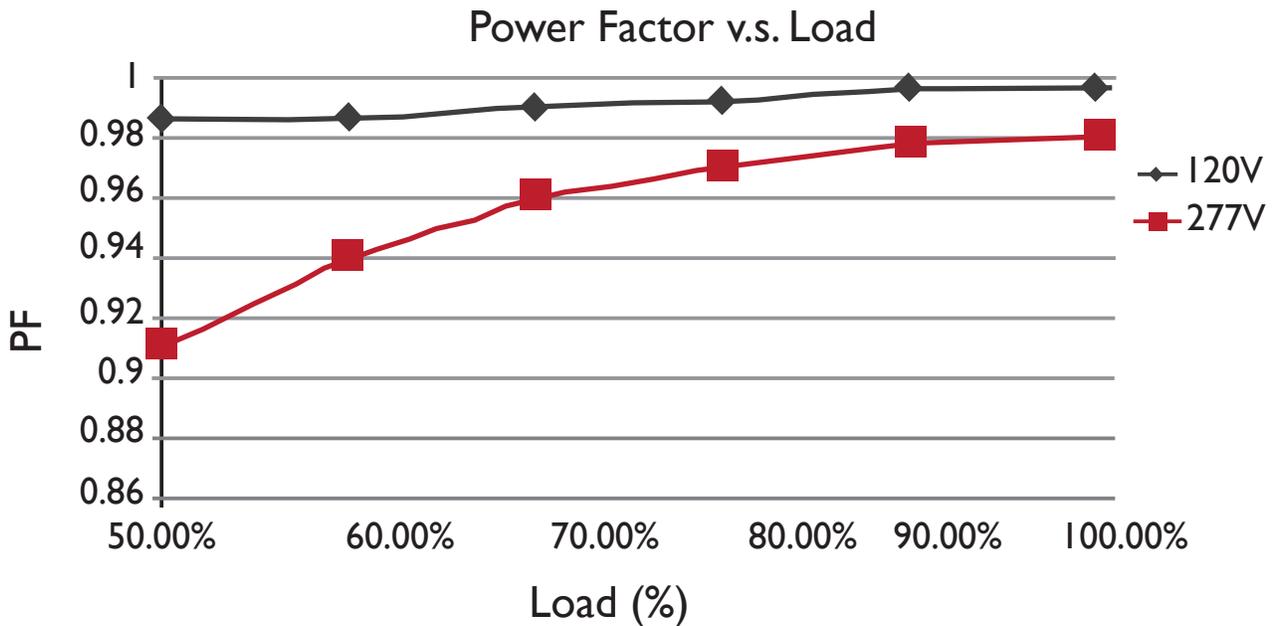
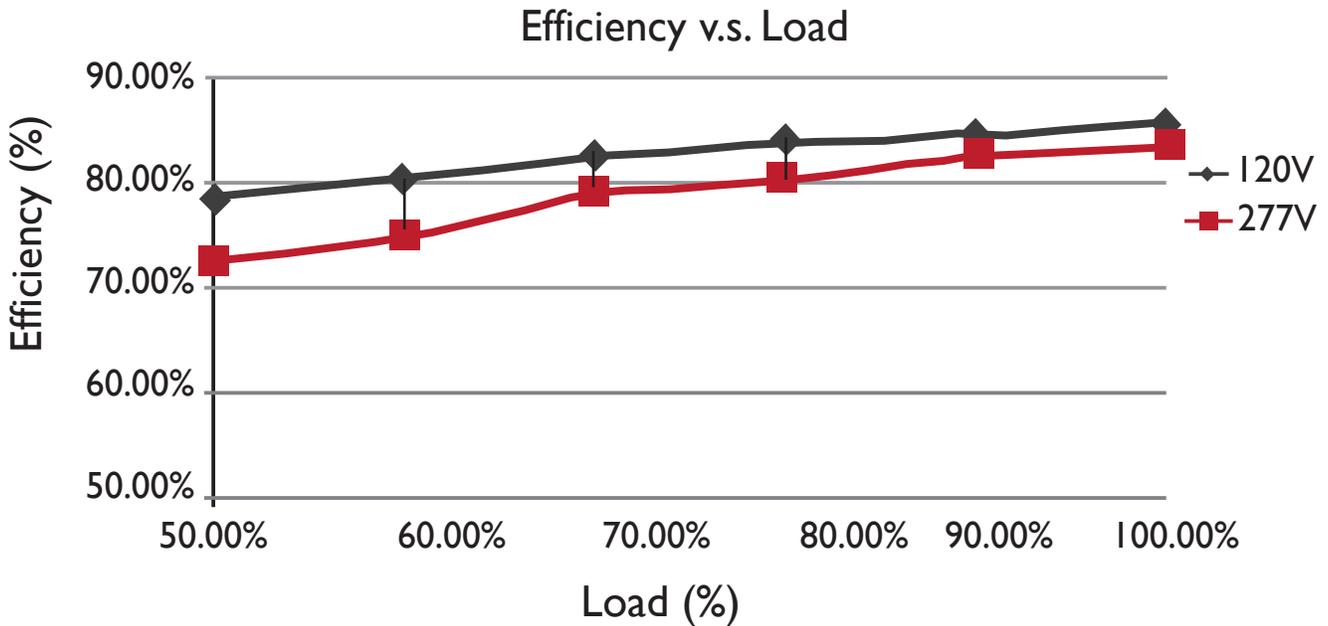
Derating Curve

120Vac & 277Vac



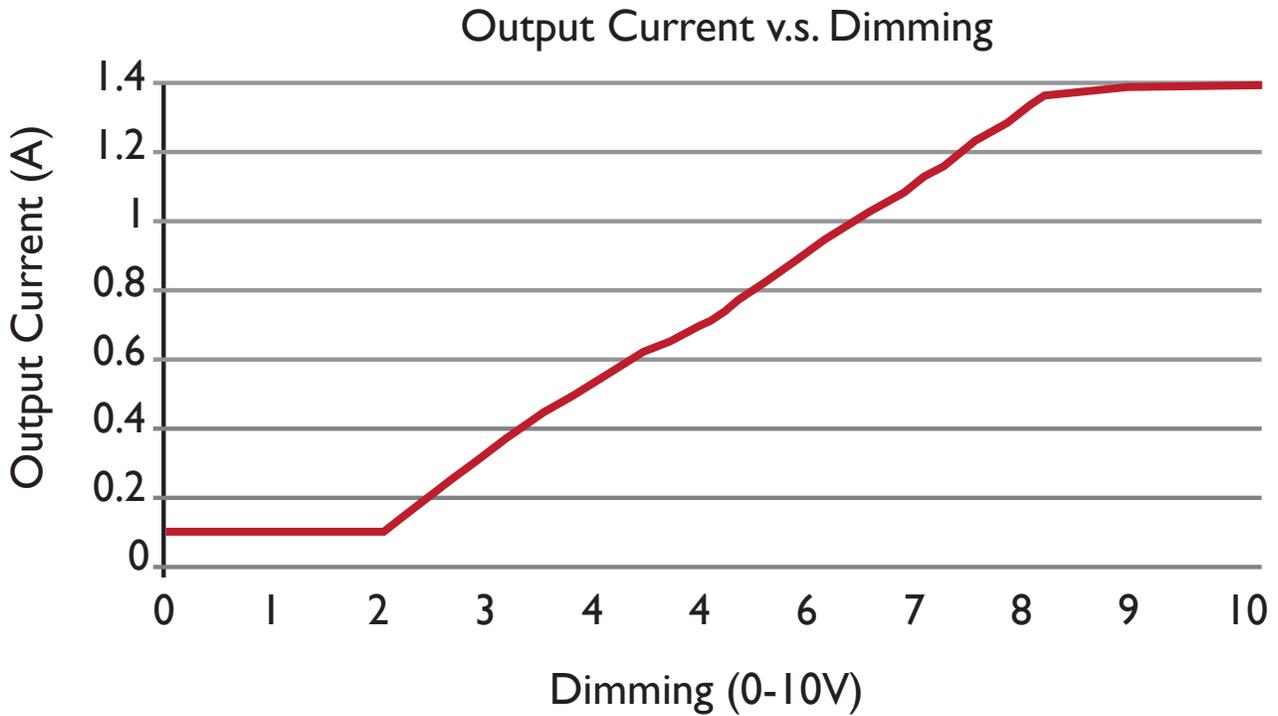
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**Put the programmable wand above the NFC mark of the driver to start programming**

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### Programmable Driver Options (App Note)

All programmable drivers accept a 16-bit hexadecimal code to program the output current ( $I_{out}$ ) of the driver. The  $I_{out}$  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-50CDI.4APNZ).

Location | 0 | 1 | 2 | 3 |

Value | 00 | 00 | 00 | 00 |

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  $\leq$  1.0 sec
- 01 => Dim-To-OFF, Speed  $\leq$  1.0 sec
- 02 => Dim to 10%, Speed  $\leq$  1.0 sec
- 03 => Dim to 1%, Speed  $\geq$  2.5 sec
- 04 => Dim-To-Off, Speed  $\geq$  2.5 sec
- 05 => Dim to 10%, Speed  $\geq$  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  $\leq$  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  $\geq$  2.5 sec.