



397 Route 281
Tully, New York 13159
Phone: 315 696-6676
Fax: 315 696 9923
Email: sales@acipower.com
www.acipower.com

ACI-2516

PRODUCT DATA SHEET

10/23/14

I-DRIVE, 54 WATT LED DRIVER (36V, 12 Channels ¹, 0 – 125mA per Channel)

GENERAL DESCRIPTION

The ACI-2516 operates as a true constant current source and is capable of driving up to 12 parallel banks of series connected LEDs with a forward voltage drop up to 36V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10V to +15V DC.

Please refer to Table 1 on page 3, for the maximum output current per channel, based on the number of channels connected.

Simple to connect and operate, this driver solution is capable of providing precise control to support wide dimming applications.

This unit features enable and intensity control inputs.

MECHANICAL/ENVIRONMENTAL

Weight = 40.2 grams

Altitude = 40,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 5.50 IN x 1.75 IN x 0.380 IN

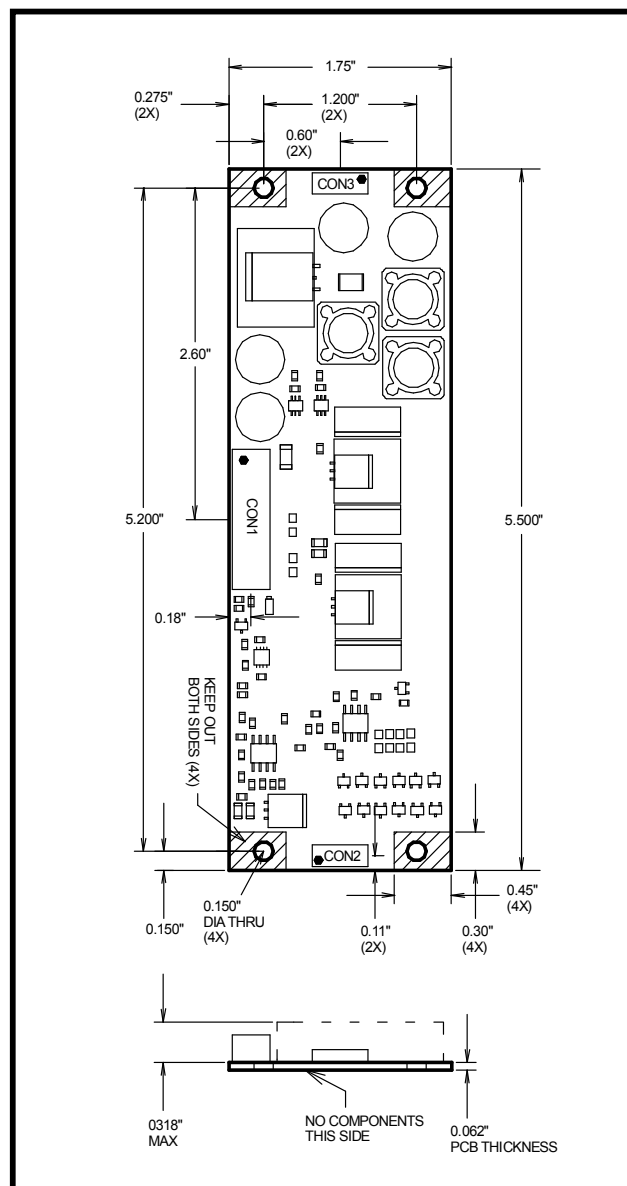
PCB thickness = 0.062 IN

Mounting Holes = 0.150 IN diameter (X4)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



Please refer to Page 4, for input and output connector pin assignments.

¹ When using less than the total number of channels available, please refer to table 1 on page 3.

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MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 18	Vdc
Vip	Voltage applied to any Input Pin (Referenced to Ground)	-0.7 to 5.7	Vdc
Iop	Current sourced or sinked from any Output Control Pin	+/- 10	mAdc
Pin	Input Power (DC Input Voltage x DC Input Current)	67	W
Top	Operating Temperature (Still air ambient around Driver)	-30 to +70	°C
Tstg	Storage Temperature	-40 to +105	°C

*Maximum Ratings are those values beyond which damage to the driver may occur.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	10.0	15.0	Vdc
VinShutdown	Supply Voltage Shutdown (Reference to Ground)	9.3	9.7	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	36	Vdc
Icctl	LED Intensity Control Voltage	0.5	4.5	Vdc

**Vin must be less than the minimum Forward-Drop Voltage (Vf).

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 36V, Number of Channels = 12, Icctl = +4.5V, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	40	45	50	Vdc
Iout	Output Current per channel		118.8	125	131.3	mAdc
Iadj	Nominal Output Current Adjust Range Per Channel	Icctl(Pin 12) ≤ +0.5V	0			mAdc
		Icctl(Pin 12) ≥ +4.5V			125	mAdc
ENoff	Enable Control, Unit Off				0.5	Vdc
ENon	Enable Control, Unit ON		2.0			Vdc
+5Vref	+5V Output Reference Voltage	1K Ohm Load to Ground (Pin 10)	4.75	5.0	5.25	Vdc
Iin	Input Current Draw			5.0		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 11) = 0V			0.06	Adc
Eff	Electrical Efficiency			89		%

Number of Channels Connected	1**	2	3	4	5	6	7	8	9	10	11	12
Maximum Output Current per Channel (mA)	1500	750	500	375	300	250	214.3	187.5	166.7	150	136.4	125

Table 1 - Maximum Output Current per Channel, based on the number of channels connected



*Pin 1 of CON2 is the Master Channel and must always be used.



**When only a single channel is required, use at least 2 output channels in parallel, to remain under the 1A maximum rating per pin. See Figure 1, for example connection.

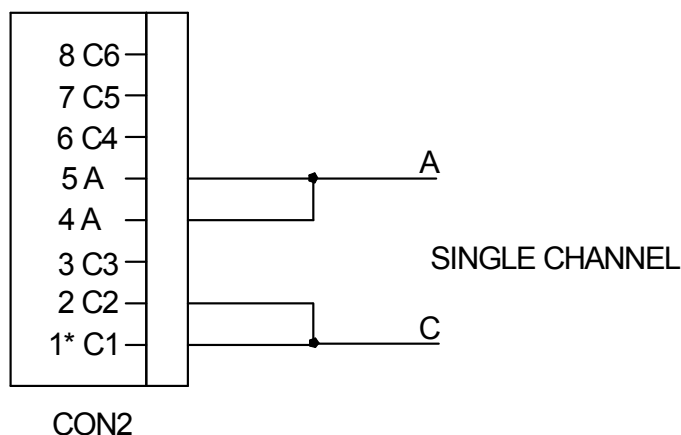
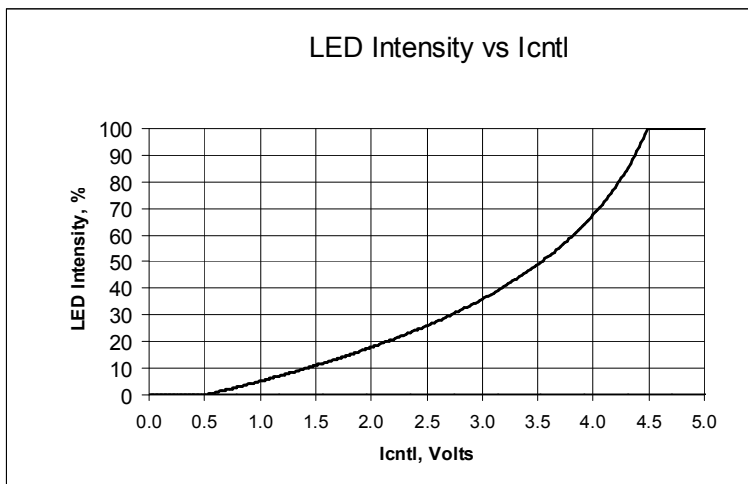


Figure 1. – Example Connection, When only a single channel is required.

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BRIGHTNESS CURVE



INPUT AND OUTPUT CONNETOR PIN ASSIGNMENTS

INPUT CONNECTOR CON1 JST S12B-PH-SM4-TB(LF)(SN) 12 POS, 2.00MM SIDE ENTRY	OUTPUT CONNECTOR CON2 CVILUX CI1408M1HR0-NH 8 POS, 1.00MM SIDE ENTRY HEADER	OUTPUT CONNECTOR CON3 CVILUX CI1408M1HR0-NH 8 POS, 1.00MM SIDE ENTRY HEADER
PIN# FUNCTION 1 +10 to +15V (PWR) 2 +10 to +15V (PWR) 3 +10 to +15V (PWR) 4 +10 to +15V (PWR) 5 GND (PWR) 6 GND (PWR) 7 GND (PWR) 8 GND (PWR) 9 GND (SIGNAL) 10 +5VDC REF OUT 11 ENABLE 12 ICNTL	PIN# FUNCTION 1 -LED (CATHODE 1) Master* 2 -LED (CATHODE 2) 3 -LED (CATHODE 3) 4 +LED (ANODE) 5 +LED (ANODE) 6 -LED (CATHODE 4) 7 -LED (CATHODE 5) 8 -LED (CATHODE 6)	PIN# FUNCTION 1 -LED (CATHODE 7) 2 -LED (CATHODE 8) 3 -LED (CATHODE 9) 4 +LED (ANODE) 5 +LED (ANODE) 6 -LED (CATHODE 10) 7 -LED (CATHODE 11) 8 -LED (CATHODE 12)

* Pin 1 of CON2 is the Master Channel and must always be used.