

ACI-3004

PRODUCT DATA SHEET

02/03/20

I-DRIVE, 30 WATT LED DRIVER

(12 Channel 45V, 0-55.5mA per Channel)

GENERAL DESCRIPTION

The ACI-3004 operates as a true constant current source and is capable of driving up to 12 banks of series connected LEDs with a forward voltage drop up to 45V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10.5V to +15.0V DC.

This driver is designed to power the backlight of the **AUO G190EAN01.5** 19.0" display with a maximum brightness of 700 NITS.

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

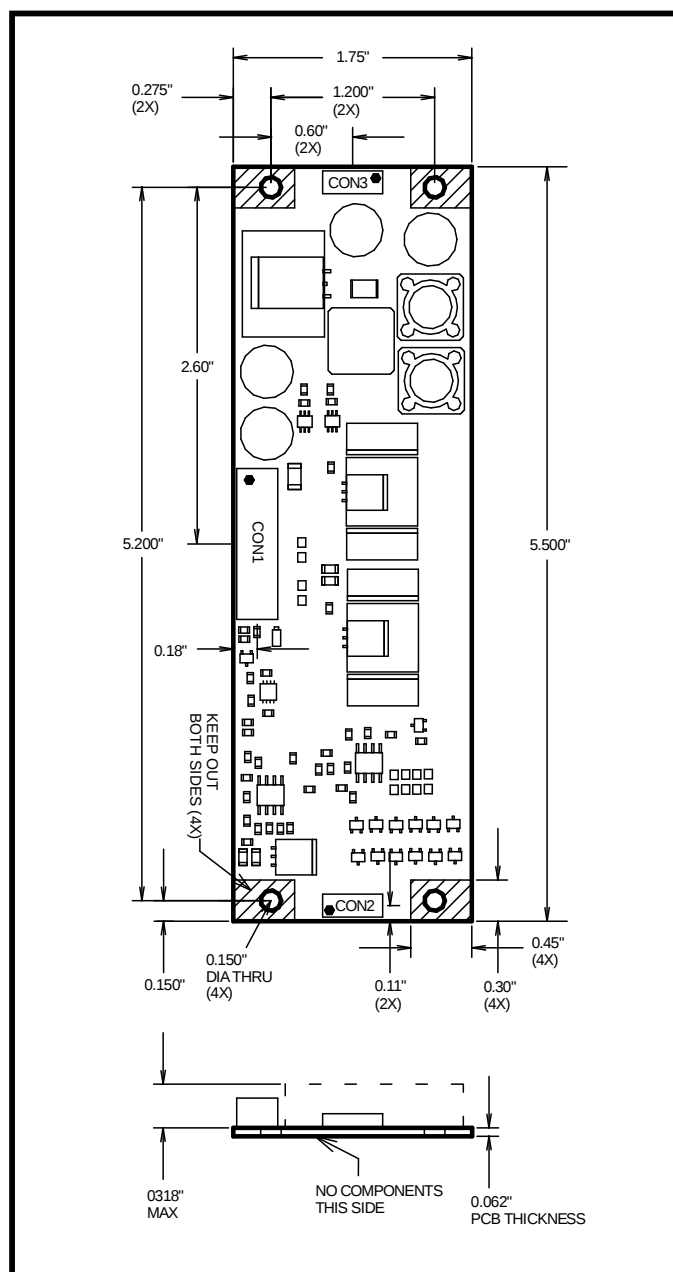
PCB thickness = 0.062 IN

Mounting Holes = 0.150 IN diameter (X4)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



Please refer to Page 3, for input and output connector pin assignments.

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)	38.5	W
Top	Operating Temperature (Still air ambient around Driver)	-30 to +85	°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)	10.5	15.0	Vdc
Vin _{ShutDown}	Supply Voltage Shutdown (Reference to Ground)	9.3	9.7	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	45	Vdc
Icntl	LED Intensity Control Voltage	0.25	4.75	Vdc
PWMcntl	Intensity Control PWM Duty-Cycle Range (User Supplied Input)	0	100	%
PWMfreq	Intensity Control PWM Frequency Range (User Supplied Input)	100	1000	Hz

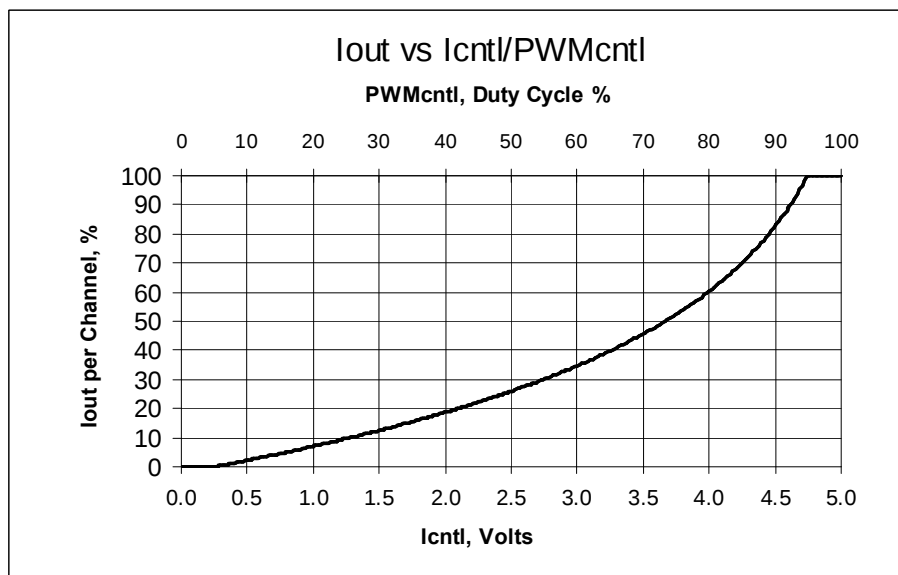
**Vin must be less than the minimum Forward-Drop Voltage (Vf).

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 45V per channel, # of channels = 12, Icntl = +4.75V, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	53	56	59	Vdc
Iout	Output Current per Channel		52.8	55.5	58.3	mAdc
Iadj	Nominal Output Current Adjust Range Per Channel	Icntl(Pin 12) <= +0.25V or PWMcntl(Pin 12) = 0%	0			mAdc
		Icntl(Pin 12) >= +4.75V or PWMcntl(Pin 12) = 100%			55.5	mAdc
PWMhi	PWM High Signal Level (V _{IH})		4.75			Vdc
PWMlo	PWM Low Signal Level (V _{IL})				0.25	Vdc
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			2.8		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 11) = 0V			0.06	Adc
Eff	Electrical Efficiency			87		%

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 +10.5 to +15.0V (PWR) 2 +10.5 to +15.0V (PWR) 3 +10.5 to +15.0V (PWR) 4 +10.5 to +15.0V (PWR) 5 GND (PWR) 6 GND (PWR) 7 GND (PWR) 8 GND (PWR) 9 GND (PWR) 10 +5VDC REF OUT 11 ENABLE 12 ICNTL / PWM _{cntl}	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)

CONNECTION DIAGRAM

