

I-DRIVE, 22 WATT LED DRIVER

(Single Channel 170V, 0-130mA)

GENERAL DESCRIPTION

The ACI-E170130-1984 represents the 5th generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving up to 56 LEDs in series. This driver provides a complete integrated solution that is regulated over an input range of +10V to +15V.

Simple to connect and operate, this driver solution is capable of providing precise control to support dimming applications with a minimum of 3000:1.

This unit features enable and intensity control inputs and is designed to work with the Digital View LCD Controller and Button Board (See page 3 for more information).

MECHANICAL/ENVIRONMENTAL

Weight = 33.2 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 3.25 IN x 2.00 IN x 0.47 IN

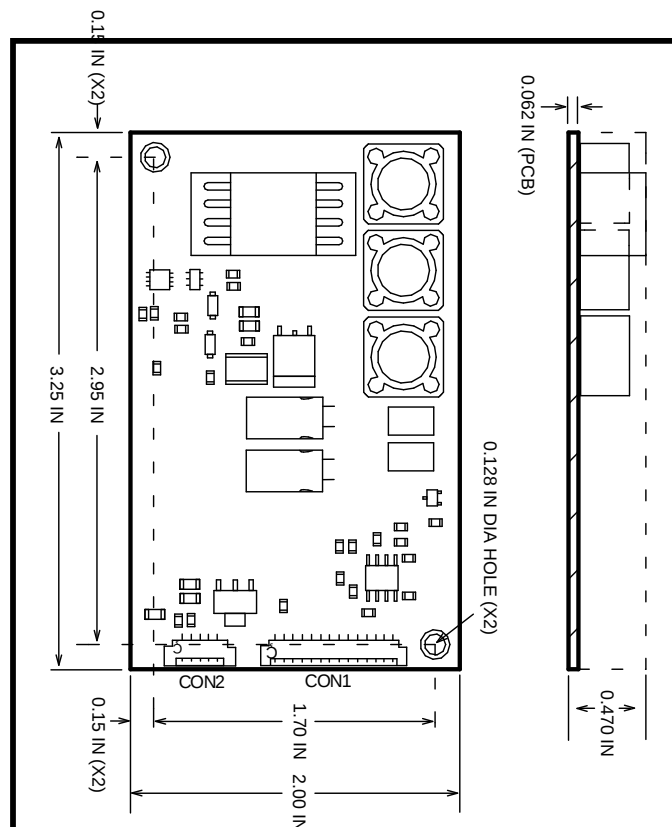
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connector = CON2

RoHS Compliant



INPUT CONNECTOR

CON1

MOLEX 53261-1471

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	ENABLE
10	ICNTL
11	TBD
12	TBD
13	+5VDC REF OUT
14	GND (SIGNAL)

OUTPUT CONNECTOR

CON2

MOLEX 53261-0571

PIN# FUNCTION

1	+ LED (ANODE)
2	+ LED (ANODE)
3	NC
4	- LED (CATHODE)
5	- LED (CATHODE)

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 20	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)	28.4	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)	10.0	15.0	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	20	167	Vdc
Icntl	LED Intensity Control Voltage	0.5	4.5	Vdc

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 167Vdc, Icntl = +0.5V, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	175	184	193	Vdc
Iout	Output Current		123.5	130	136.5	mAdc
Icntl	Nominal Output Current Adjust Range	Icntl(Pin 10)= +4.5V to +0.5V	0		130	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 13)	4.75	5.0	5.25	Vdc
Iin	Input Current Draw			2.0		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency		89			%

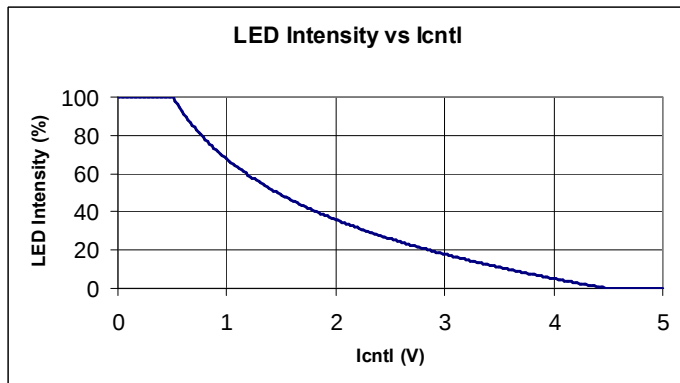


Figure 1. – LED Intensity Curve of Driver Alone

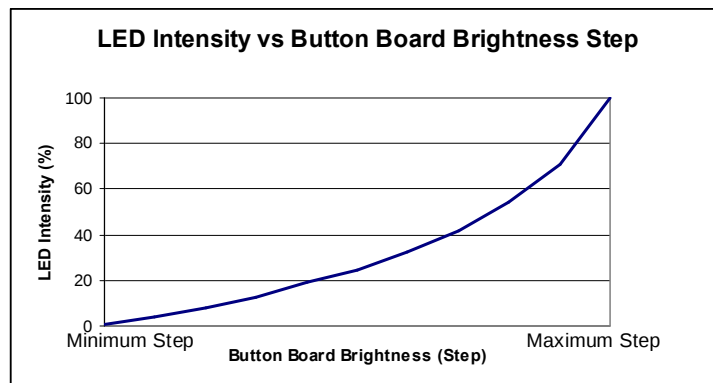


Figure 2. – LED Intensity Curve of Driver controlled with Video Card

The ACI-E170130-1984 LED Driver has an inverted LED Intensity curve as shown in Figure 1, so that when the LED Driver is controlled with the Digital View video card SHV-1920 (P/N 4171700XX-3), the resulting LED Intensity curve is realized in Figure 2.

Popular Component Combinations

Display	Driver(s)	Video Card, Video Cable and Button Board	Cable Assembly(s)
Optrex T-55519D150J-LW-A-ABN 15"	Applied Concepts (2) ACI-E170130-1984	Digital View Video Card SHV-1920 (P/N 4171700XX-3) Video Cable (P/N 426492100-3) Button Board (with 8 Buttons) Video Card Settings: JA3 = 3V3 Closed JA5 = 1-3 and 2-4 JA6 = 1-3 and 2-4 Use the default jumper settings: JB2 = 2-3 JB3 = 1-2 JB5 = 1-2 SW3 Settings: 00000010 12345678 SW4 Settings: 011000 123456	Applied Concepts (2) 27-R0088 (Used to connect LED Driver output to Display backlight) (1) 27-R0089 (Used to control LED Drivers with Video Card. Connects to connector CNB1 of video card)