



# APPLIED CONCEPTS INC.

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# AC5-12-1480

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## CCFL INVERTER

(For Multiple Tube Applications)

8/16/04

### GENERAL DESCRIPTION

The AC5-12-1480 is designed to power 5 CCFL's to a nominal power level of 18 watts.

Intensity control (0-100%) is accomplished by the user providing a variable dc level of 5V(off) to 0V(full-on) at pin 5 of CON1.

Enable control is accomplished @ pin 3 of CON1 (0V=off, 5V=on). In addition, a +5V reference voltage is available @ pin 4 of CON1 for external use.

All outputs are open and short circuit protected.

UL 1950 Recognized (File# E201813).

### MECHANICAL / ENVIRONMENTAL

Weight = 60 grams

Altitude = 10,000 Ft maximum

Humidity < 85% non-condensing

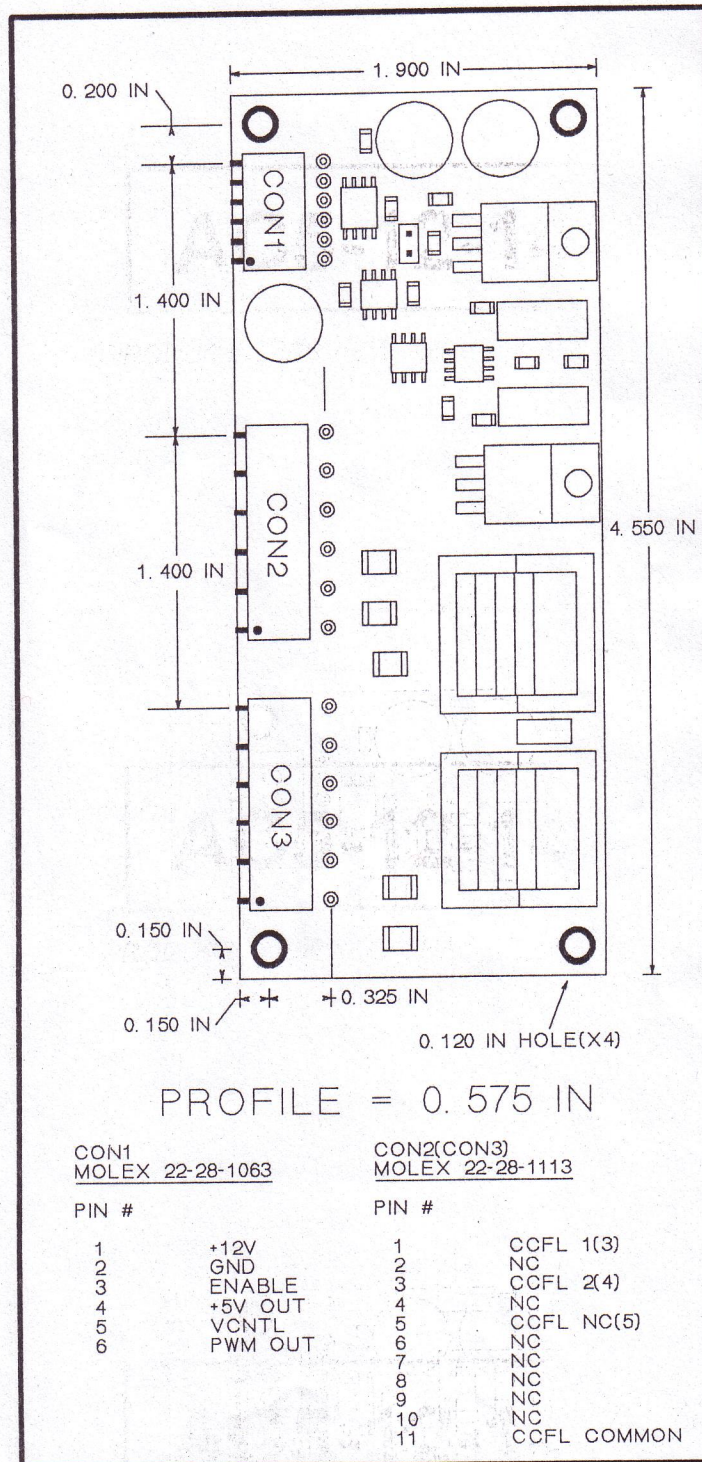
Size (L x W x H) = 4.55 IN x 1.90 IN x 0.575 IN

PCB thickness = 0.062 IN

Mounting Holes = 0.120 IN diameter (X4)

Input Power & Control Connector = CON1

CCFL Output Connectors = CON2, CON3





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## MAXIMUM RATINGS\*

| Symbol | Parameter                                                 | Value       | Unit             |
|--------|-----------------------------------------------------------|-------------|------------------|
| Vin    | Supply Voltage (Referenced to Ground)                     | -0.7 to 14  | 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 Pin             | +/- 10      | mA <sub>dc</sub> |
| Pin    | Input Power (DC Input Voltage x DC Input Current)         | 25          | W                |
| Top    | Operating Temperature (Still air ambient around Inverter) | 0 to +70    | DegC             |
| Tstg   | Storage Temperature                                       | -40 to +105 | DegC             |

\* Maximum Ratings are those values beyond which damage to the inverter may occur

## RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter                                        | Min  | Max  | Unit |
|--------|--------------------------------------------------|------|------|------|
| Vin    | Supply Voltage (Referenced to Ground)            | 10.8 | 13.2 | Vdc  |
| Lsv    | Cold Cathode Fluorescent Lamp Sustaining Voltage | 400  | 700  | Vrms |
| Vcntl  | Intensity Control Voltage                        | 0    | 5    | Vdc  |

## ELECTRICAL CHARACTERISTICS

Vin = +12V, Lsv = 550Vrms, Vcntl = 0V, ENon = +5V unless otherwise specified

| Symbol | Parameter                        | Test Conditions           | Min  | Max  | Unit              |
|--------|----------------------------------|---------------------------|------|------|-------------------|
| Lstart | Lamp Starting Voltage            |                           | 1800 |      | Vrms              |
| Lout   | Lamp Output Current              |                           | 6.75 | 7.75 | mA <sub>rms</sub> |
| Lfreq  | Lamp-Current Frequency           |                           | 35   | 41   | Khz               |
| Pfreq  | PWM Dimming Frequency            | Vcntl (Pin 5) = +2.5V     | 95   | 101  | Hz                |
| Pdc    | PWM Duty Cycle Range             | Vcntl (Pin 5) = +5V to 0V | 0    | 100  | %                 |
| ENoff  | Enable Control, unit OFF (Pin 3) |                           | 0    | 0.7  | Vdc               |
| ENon   | Enable Control, unit ON (Pin 3)  |                           | 3.5  | 5.0  | Vdc               |
| +5Vout | +5V Reference Out (Pin 4)        | 10k load to ground        | 4.6  | 5.3  | Vdc               |
| PWMlo  | PWM output signal low (Pin 6)    | 10k load to ground        | 0    | 0.5  | Vdc               |
| PWMhi  | PWM output signal high (Pin 6)   | 10k load to ground        | 4.5  | 5.0  | Vdc               |
| Iin    | Input Current Draw               |                           |      | 2.0  | Adc               |
| Eff    | Electrical Efficiency            |                           | 90   |      | %                 |