Endicott Research Group, Inc.
2601 Wayne St., Endicott, NY 13760
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http://www.ergpower.com

# SFR3946F

RoHS Compliant

# Specifications and Applications Information

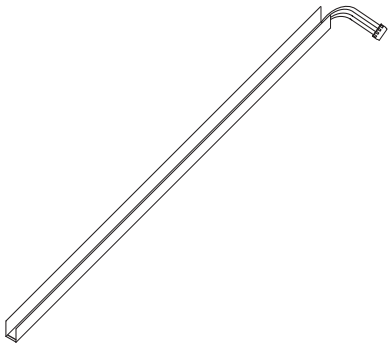
04/27/10

## Smart Force LED Backlight Unit

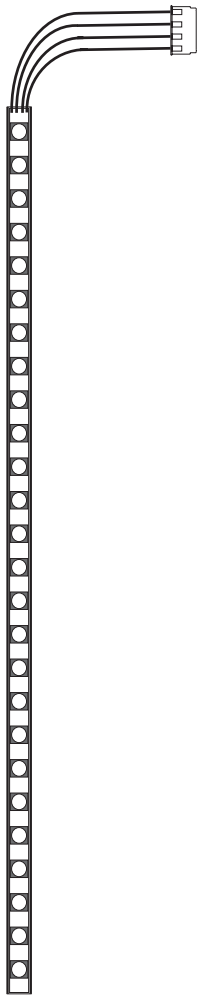
The ERG **Smart Force Series** of LED backlight units are specifically designed for applications which require wide dimming and LCD brightness stability. The SFR3946F is designed to provide backlighting for the NEC NL10276BC24-13 display.

Designed, manufactured and supported within the USA, the SFR features:

- ✓ Custom rails for specific LCDs
- ✓ High dimming ratio
- ✓ One year warranty



Package Configuration



Components are shown for reference only. Actual product may differ from that shown.

| Connector |
| --- |
| **Input Connector** |
| Molex<br>51021-0400 |
| J1-1 Cathode 1<br>J1-2 Anode 1<br>J1-3 Cathode 2<br>J1-4 Anode 2 |

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## Absolute Maximum Ratings (1)

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Forward Current (2) | $I_F$ | 150 | mA |
| Pulse Forward Current (2) (3) | $I_P$ | 300 | mA |
| Component Surface Temperature | Ts | -40 to +130 | °C |
| Storage Temperature | Tstg | -40 to +80 | °C |

## Maximum Recommended Operating Conditions

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Forward Current (4) (5) | $I_F$ | 100 | mA |
| Pulse Forward Current | $I_P$ | 200 | mA |
| Component Surface (5) Temperature | Ts | -40 to +100 | °C |

## Electrical Characteristics

Unless otherwise noted Vin = 48.00 Volts dc and Ta = 25°C

| Characteristic | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Number of Strings | - | - | 2 | - | - |
| LED Forward Voltage | $V_F$ | - | 2.9 | 3.2 | V |
| String voltage | $V_S$ | - | 37.7 | 41.6 | V |

Specifications subject to change without notice.

(1) Operation above maximum recommended operating conditions will require thermal management actions and will decrease LED lifetime.
(2) Current is specified per string.
(3) Maximum duty cycle is 50% for pulsed current drive at 200mA, pulse width <= 10ms.
(4) Strings are to be driven with a current source.
(5) Operation at or below the maximum recommended component surface temperature and forward current rating allows presumption of a 60,000 hour LED lifetime. (Lifetime is time to 70% Lumen maintenance)

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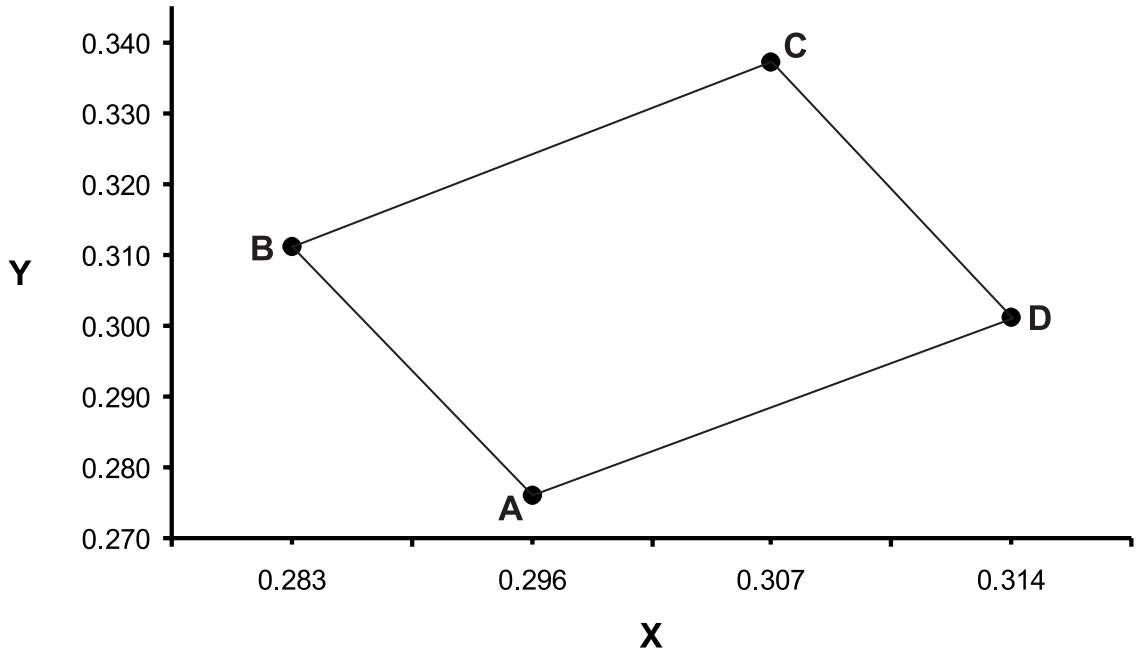
## Backlight Chromaticity Coordinate Boundaries (1)

(Ta = 25°C)

| | A | B | C | D |
|---|---|---|---|---|
| X | 0.296 | 0.283 | 0.307 | 0.314 |
| Y | 0.276 | 0.311 | 0.337 | 0.301 |

(1) Each column (A, B, C and D) represents an X,Y coordinate on the CIE 1931 chromaticity diagram.

CIE 1931 CHROMATICITY DIAGRAM




Made in USA

J1, pins:

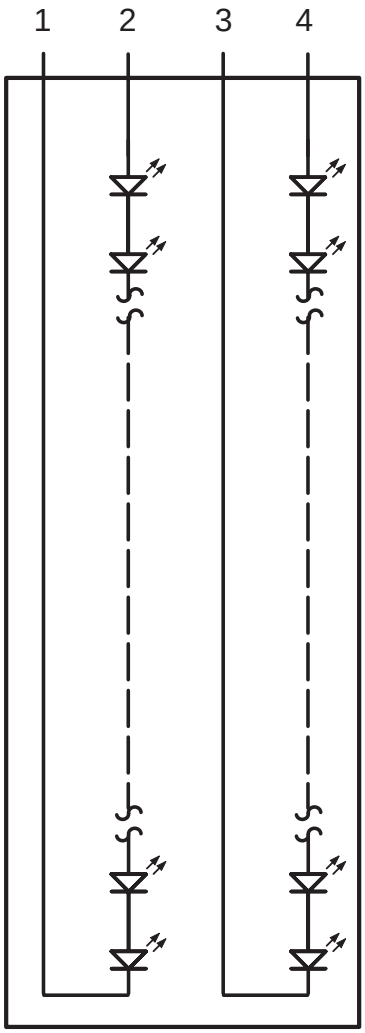



Figure 1

SFR Connectivity