

# 3.2" Front Light Panel



12222-xx | Product Data Sheet | 2018

For more information:

WEB [flexlighting.com](http://flexlighting.com)

CONTACT [flexlighting.com/contact](http://flexlighting.com/contact)

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## Overview

The **FLEX Front Light Panel** optical film is designed to laminate to the front surface of **Sharp reflective display (LS032B7DD02)** to provide high quality on-demand display lighting. This thin plastic panel incorporates only a single LED which enables product designers to develop ultra-thin devices and minimize battery use.

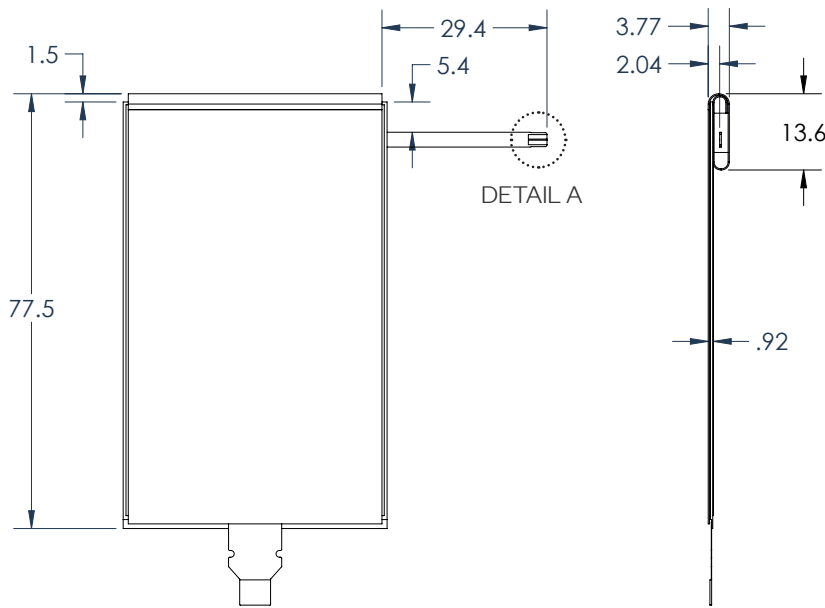
- One **low-power** LED (included in Front Light)
- Over **80x less power** compared to traditional backlighting
- 0.05 mm thick FLEX film is over **5x thinner** than alternative lightguides

**SHARP**

Approved

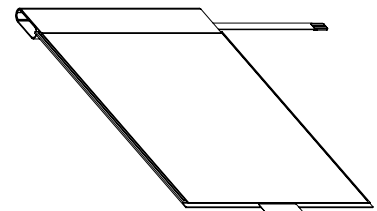
Value-Added Partner

## Mechanical

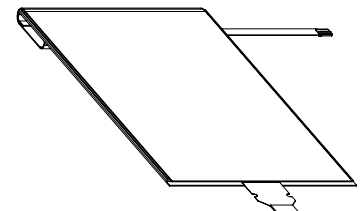


All dimensions in mm

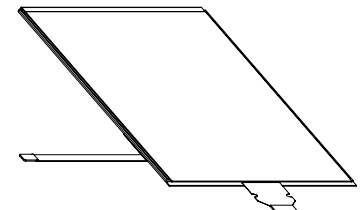
Flexible film allows for different placement options for the light source (examples below)



12222-01

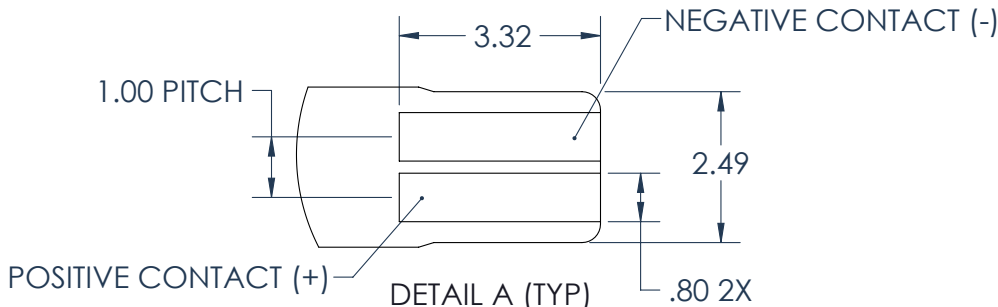


12222-03



12222-06  
PRELIMINARY

12222-03  
UNDER DISPLAY



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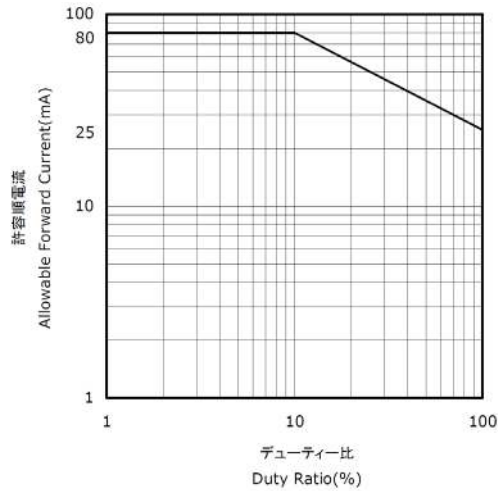
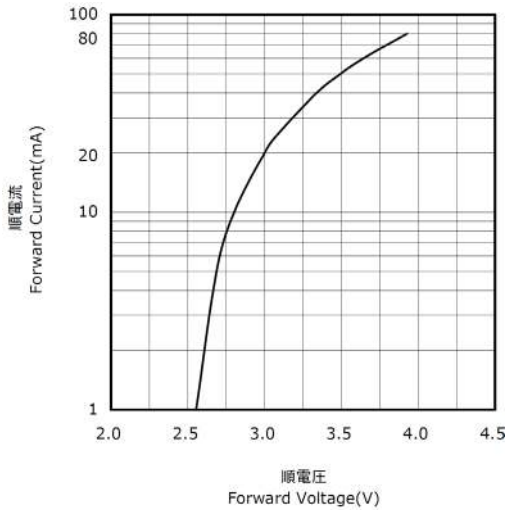
PHONE 773-295-0305

## Electrical

| Item                  | Symbol   | Typical | Absolute Max | Unit |
|-----------------------|----------|---------|--------------|------|
| Forward Current       | $I_F$    | 10      | 25           | mA   |
| Pulse Forward Current | $I_{FP}$ | --      | 80           | mA   |
| Reverse Voltage       | $V_R$    | --      | 5            | V    |

### Example ZIF Connectors:

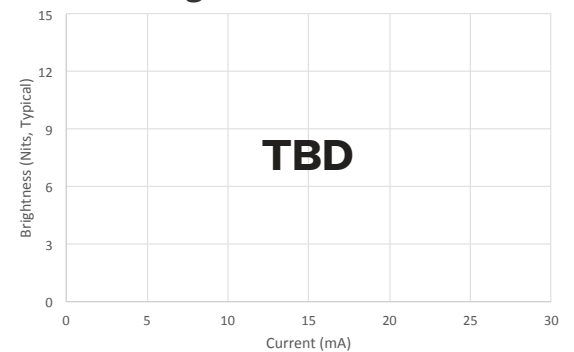
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492



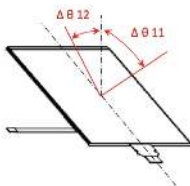
## Optical (PRELIMINARY)

| 3.2" Sharp + Front Light (12222-06) |                |                                |      |            |            |
|-------------------------------------|----------------|--------------------------------|------|------------|------------|
| Item                                | Symbol         | TYP.                           | Unit | Remark     |            |
| Viewing Angle<br>CR > 2             | V              | $\Theta_{11}$<br>$\Theta_{12}$ | --   | ° (Degree) | [Remark 1] |
|                                     | H              | $\Theta_{21}$<br>$\Theta_{22}$ | --   | ° (Degree) |            |
| Contrast Ratio                      | Front light ON | CR                             | 9    | --         | [Remark 2] |

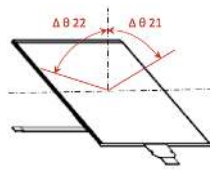
### Brightness vs. Power



Remark 1: Viewing Angle



Remark 2: Definition of Contrast Ratio



$$\text{Contrast Ratio (CR)} = \frac{\text{Reflection intensity in white display}}{\text{Reflection intensity in black display}}$$

Measurements taken with a Minolta Chroma Meter CS-100 at a 17" view distance