

# 3.2" Front Light Panel



12936-01 | Product Data Sheet | 2020

For more information:

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

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

PHONE 773-295-0305

## 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.

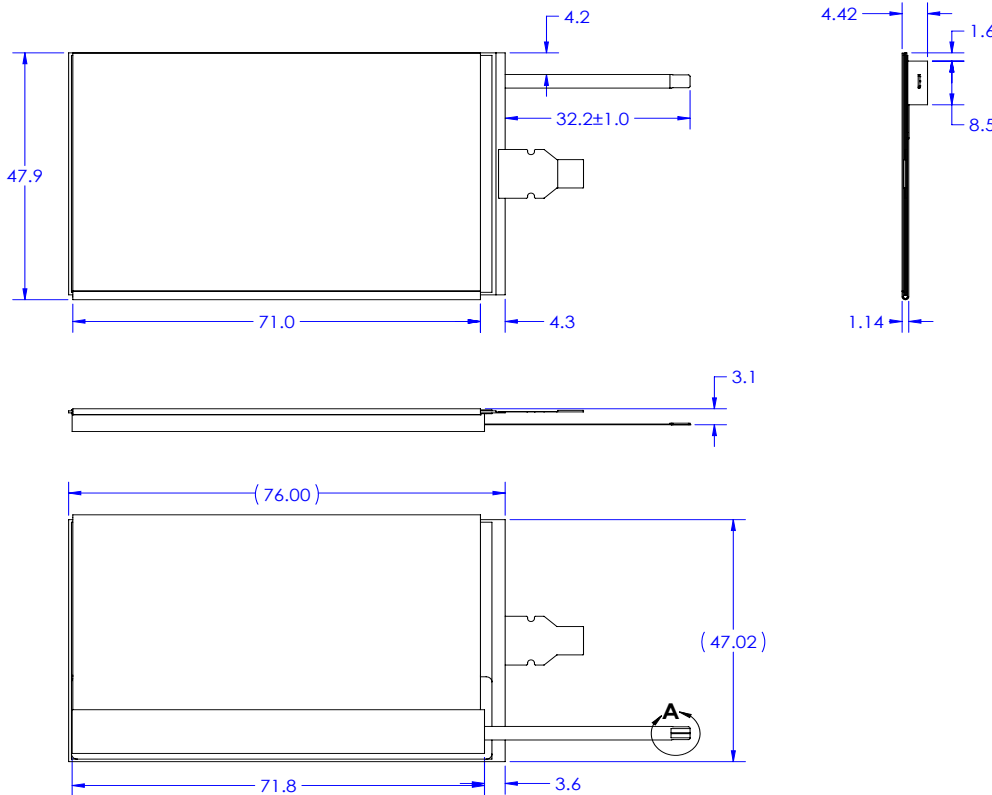
- One **low-power** LED (included in Front Light)
- Over **80x less power** compared to traditional backlighting
- 0.05 mm thick FLEX film is over **5x thinner** than alternative lightguides
- **Simple I/F** and **Connectivity** to System Board

**SHARP**

Approved

Value-Added Partner

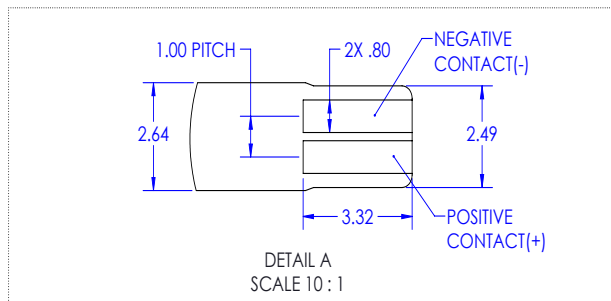
## Mechanical



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

All dimensions in mm

# PRELIMINARY



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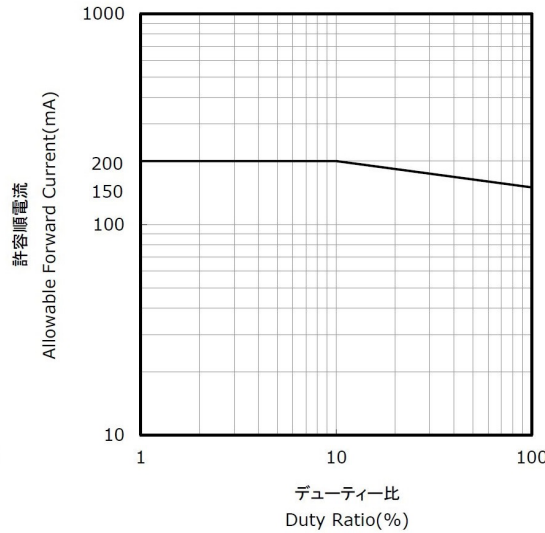
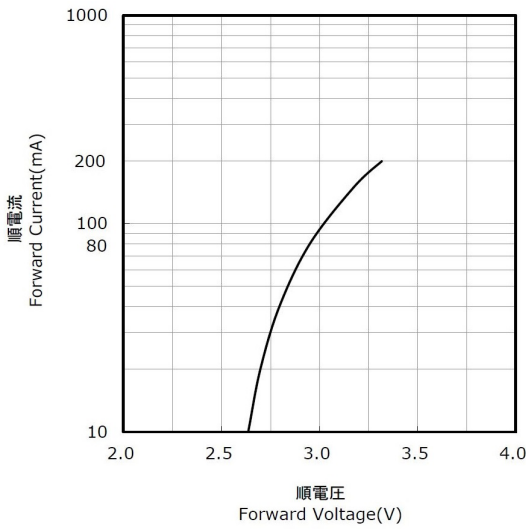
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## Electrical

| Item                  | Symbol   | Typical | Absolute Max | Unit |
|-----------------------|----------|---------|--------------|------|
| Forward Current       | $I_F$    | 40      | 60           | mA   |
| Pulse Forward Current | $I_{FP}$ | --      | 200          | mA   |
| Reverse Voltage       | $V_R$    | 2.95    | 3.4          | V    |

### Example ZIF Connectors:

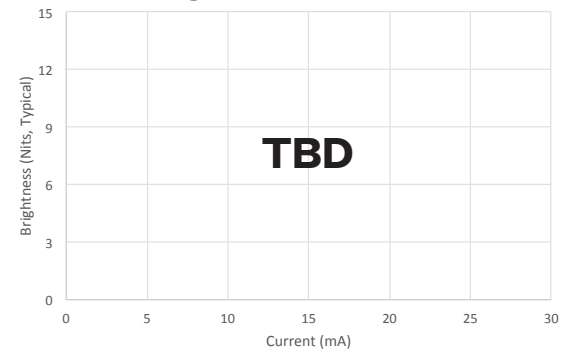
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492



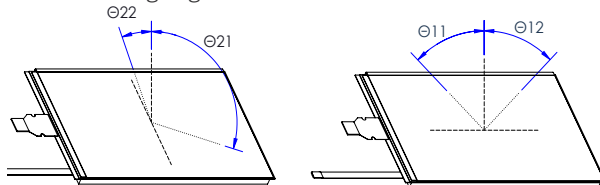
## Optical (PRELIMINARY)

| 3.2" Sharp + Front Light (12936-01) |                |                            |      |            |            |
|-------------------------------------|----------------|----------------------------|------|------------|------------|
| 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



Ref Image 1

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