

# 4.4" Front Light Panel



12561-06 | Product Data Sheet | 2020

For more information:

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

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## Overview

The **FLEX Front Light Panel** optical film is designed to laminate to the front surface of **Sharp reflective display (LS044Q7DH01)** 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.

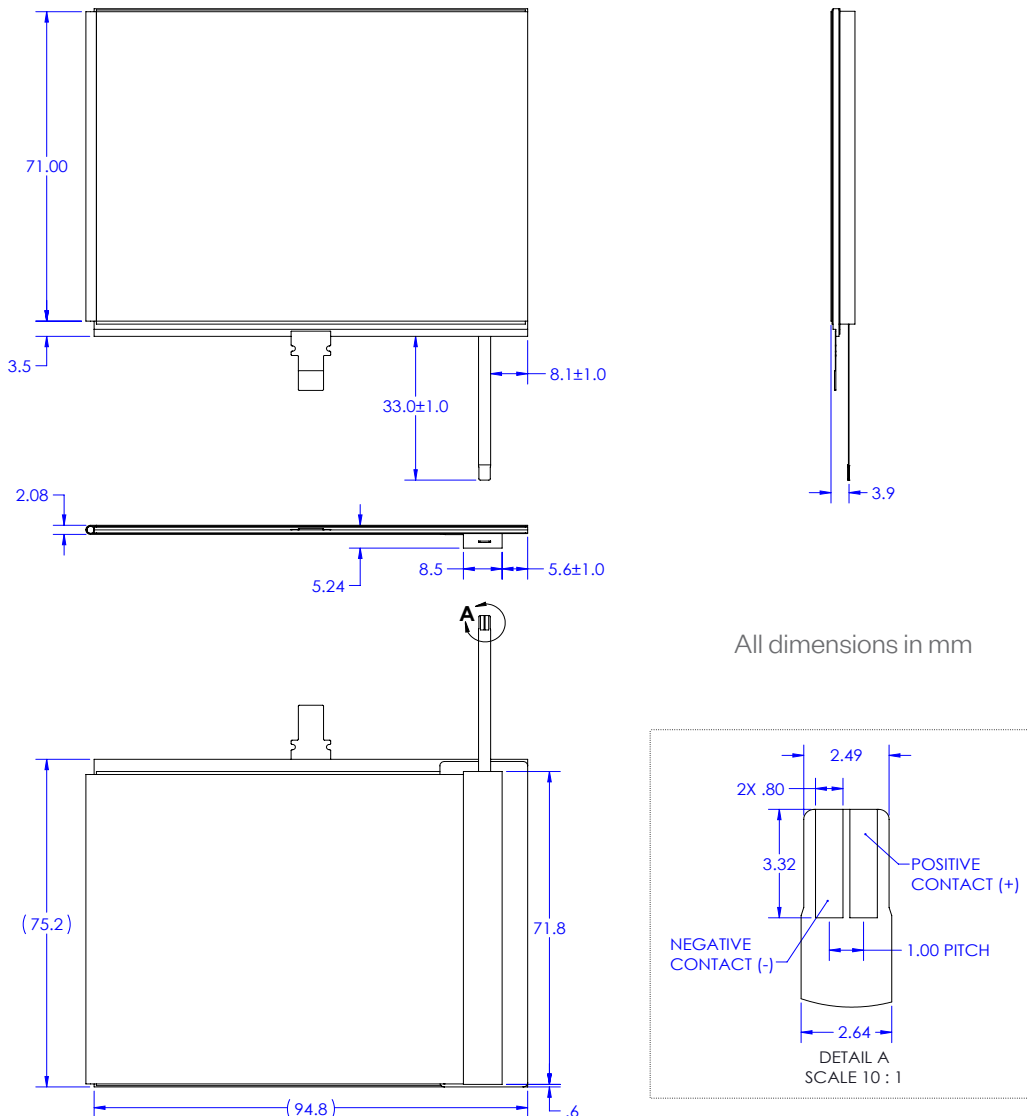
- One **low-power** LED (included in Front Light)
- Over **80x less power** compared to traditional backlighting
- 0.05 mm thick FLEX film is over **5x thinner** than alternative lightguides
- **Simple I/F** and **Connectivity** to System Board

**SHARP**

Approved

Value-Added Partner

## Mechanical



**PRELIMINARY**

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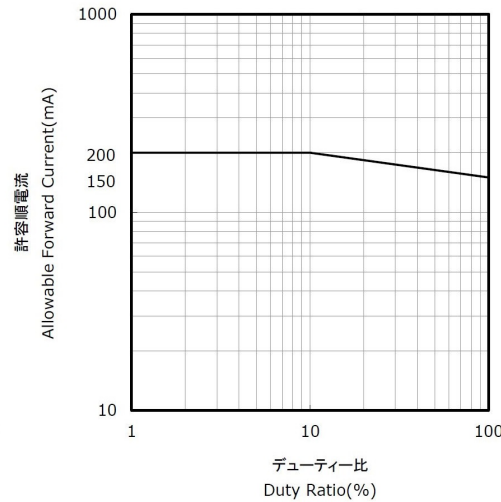
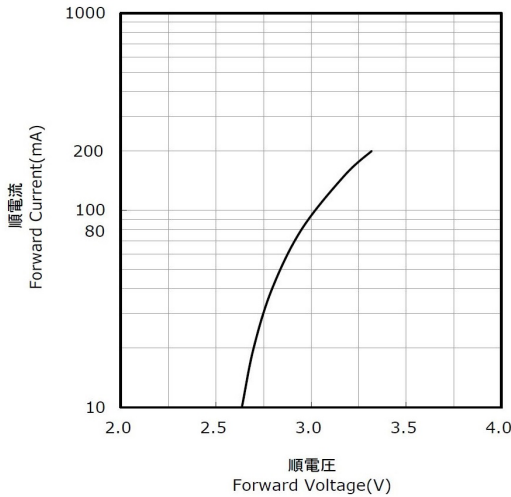
PHONE 773-295-0305

## 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:

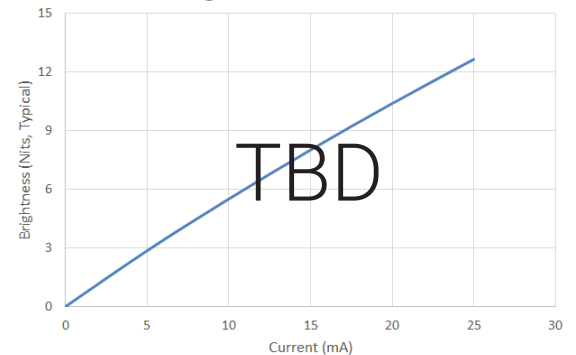
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492



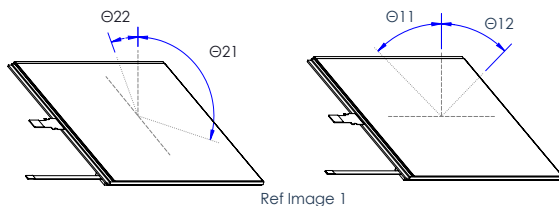
## Optical (PRELIMINARY)

4.4" Sharp + Front Light (12561-06)					
Item	Symbol	TYP.	Unit	Remark	
Viewing Angle CR > 2	V	$\Theta_{11}$ $\Theta_{12}$	--	° (Degree)	[Remark 1]
	H	$\Theta_{21}$ $\Theta_{22}$	--	° (Degree)	
Contrast Ratio	Front light ON	CR	10	--	[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