

# 1.28" (Color) Front Light Panel



12378-xx | Product Data Sheet | 2018

For more information:

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

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

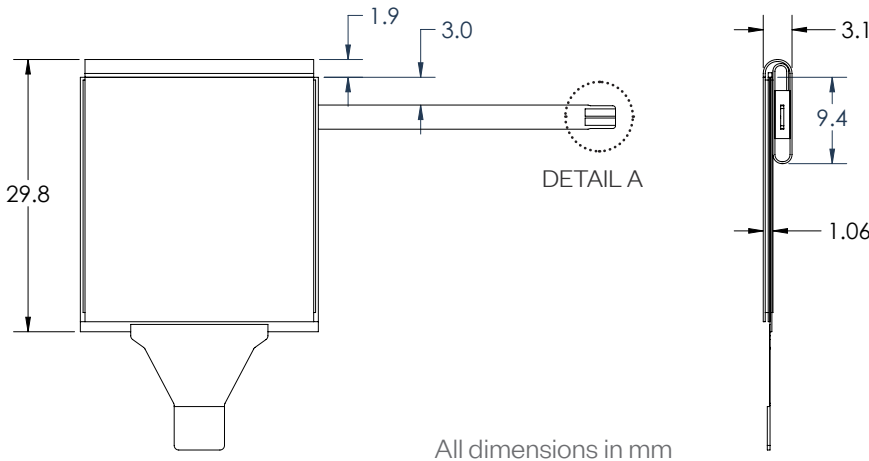
PHONE 773-295-0305

## Overview

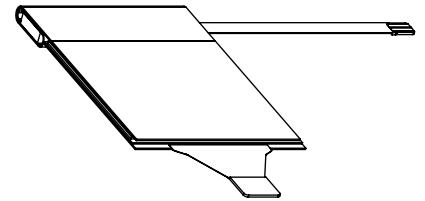
The **FLEX Front Light Panel** optical film is designed to laminate to the front surface of **JDI reflective display (LPM013M126A)** to provide high quality on-demand display lighting. This thin plastic panel incorporates only a single LED which enables product designers to develop ultra-thin devices 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

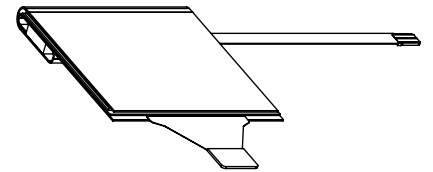
## Mechanical



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



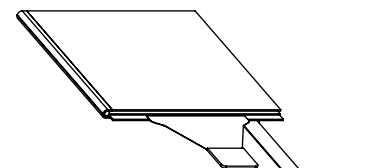
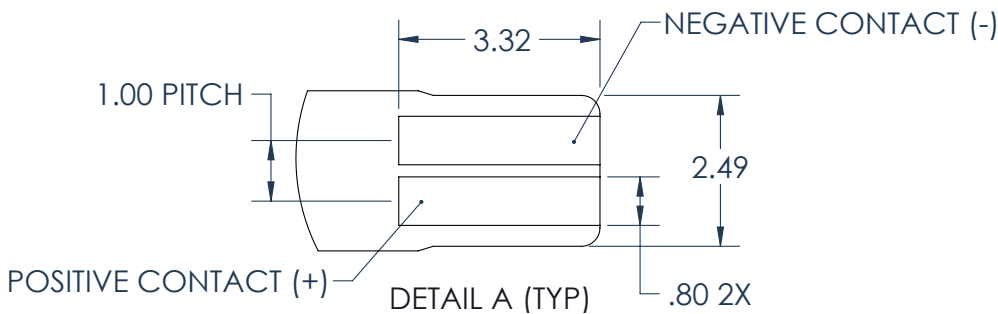
12378-01



12378-03



12378-03  
UNDER DISPLAY



12378-06  
PRELIMINARY

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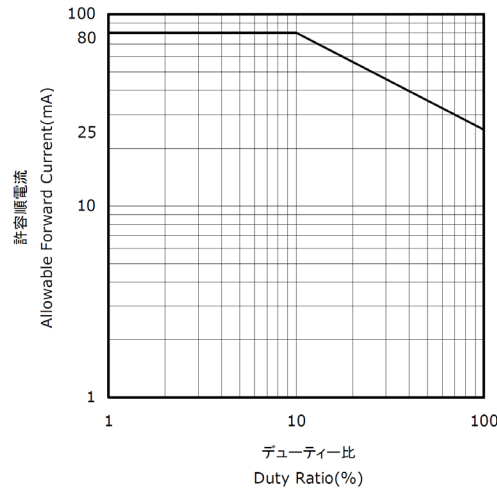
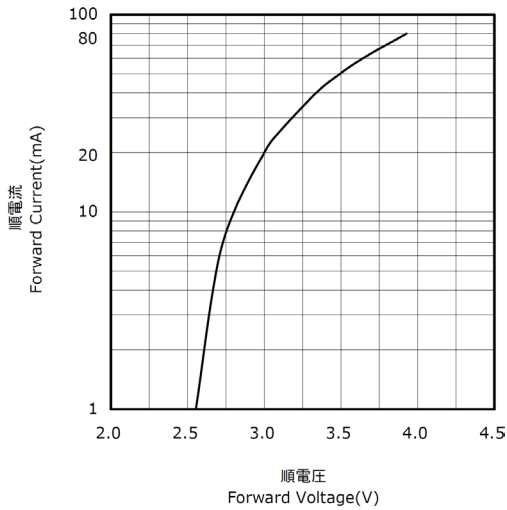
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## Electrical

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

### Example ZIF Connectors:

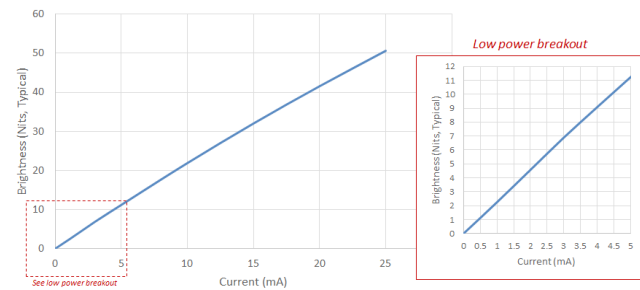
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492



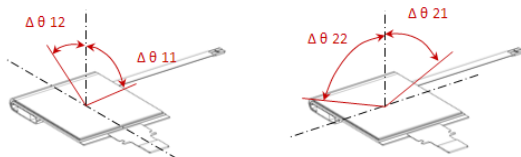
## Optical

1.28" JDI + Front Light (12378-01)					
Item	Symbol	TYP.	Unit	Remark	
Viewing Angle CR > 2	V	$\Theta 11$ $\Theta 12$	60 30	° (Degree)	[Remark 1]
	H	$\Theta 21$ $\Theta 22$	65 65		
Contrast Ratio	Front light ON	CR	14	--	[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