**Overview**

The FLEX Front Light Panel optical film is designed to laminate to the front surface of Kyocera reflective display (TN0181ANVANN) 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

**Mechanical**

![Diagram](image)

**NOTES:**

- Defect Details Specification
- Technical details on Kyocera TN0181ANVNANN
- Refer to FLEX Lighting document 12536-01 for FLP

**Measurement Details**

- **Brightness** Refer to definitions
- **Uniformity** Refer to definitions
- **Reflection intensity** white display
- **Reflection intensity** black display

**Cosmetic Performance**

- (unlit) Ripple, smudge, striation No defects visible to the naked eye
- (unlit) Pinpoint, foreign matter, bubble No defects visible to the naked eye

**PRELIMINARY**

All dimensions in mm
1.8” Front Light Panel
13265-01 | Product Data Sheet | 2020

Electrical

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Typical</th>
<th>Absolute Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Current</td>
<td>I_F</td>
<td>5</td>
<td>25</td>
<td>mA</td>
</tr>
<tr>
<td>Pulse Forward Current</td>
<td>I_{FP}</td>
<td>--</td>
<td>80</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>V_R</td>
<td>--</td>
<td>5</td>
<td>V</td>
</tr>
</tbody>
</table>

Optical

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>TYP.</th>
<th>Unit</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewing Angle OR &gt;2</td>
<td>V</td>
<td>Θ11</td>
<td>60 (Degree)</td>
<td>[Remark 1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Θ12</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>Θ21</td>
<td>65 (Degree)</td>
<td>[Remark 2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Θ22</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>Front light ON</td>
<td>OR</td>
<td>14</td>
<td>--</td>
</tr>
</tbody>
</table>

Remark 1: Viewing Angle
Remark 2: Definition of Contrast Ratio

Contrast Ratio (OR) = Reflection intensity in white display / Reflection intensity in black display

Example ZIF Connectors:
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
- Molex 54548-0471 (bottom)
- Molex 505110-0492

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

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