RD90 – Light Guide Plate

RD90 is ALP Europes innovative light guide plate, utilising optial grade PMMA resin to and a unique pattern design which increases the spread of light versus traditional light guide plate options.

RD90 is specifically engineered for edge lit applications allowing design benefits including ultra slim design, and its unpararelled uniformity of light and excellent luminance makes it the ideal choice for lighting applications.

ALP Europe can offer both in-house precision cut panels, or we can offer made to size panels to your desired requirements.

Standard sheet size: 1220 x 1220 x 3mm

Transmission: 93%
## Comparison between laser+micropattern and screen-printed LGP

<table>
<thead>
<tr>
<th></th>
<th>Normal LGP</th>
<th>Laser+micropattern LGP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td><img src="image1" alt="Normal LGP Diagram" /></td>
<td><img src="image2" alt="Laser+micropattern LGP Diagram" /></td>
</tr>
<tr>
<td><strong>Optical profile</strong></td>
<td>- Light is diffusing throughout pass</td>
<td>- More straight lighting than normal LGP</td>
</tr>
<tr>
<td><strong>Mechanism</strong></td>
<td><img src="image3" alt="Normal LGP Mechanism" /></td>
<td><img src="image4" alt="Laser+micropattern LGP Mechanism" /></td>
</tr>
<tr>
<td><strong>Images</strong></td>
<td><img src="image5" alt="One side of screen-printed" /></td>
<td><img src="image6" alt="Upper" /> <img src="image7" alt="Bottom" /></td>
</tr>
</tbody>
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<tr>
<td><strong>Pattern process</strong></td>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Brightness (%)</strong></td>
<td><img src="heatmap1" alt="Heatmap" /> 100%</td>
<td><img src="heatmap2" alt="Heatmap" /> 115% 15% increase</td>
</tr>
<tr>
<td><strong>Uniformity (Max/Min)</strong></td>
<td>1.77</td>
<td>1.61</td>
</tr>
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</table>
Comparison of laser+micropattern LGP and screen-print LGP

**Laser+pattern LGP**

- **Condition**
  - Laser+micropattern LGP
  - LGP thickness: 3.3mm
  - PS diffuser: 70% TT
  - 2 side edge LED

- **Image of laser**

- Reflective Film (125-200 micron)
- Micro-pattern side
- LGP (3.0 mm Thickness)
- Laser-dot side
- PS Diffuser (1.5mm Thickness)

1. System Flux (lumen pack): 3,784Lm
2. Luminous Efficiency: 95lm/w (3,784lm/40w)

**Screen-print LGP**

- **Condition**
  - Screen-printing LGP
  - LGP thickness: 4.0mm
  - PS diffuser: 70% TT
  - 2 side edge LED

- **Image of print**

- Reflective Film (125-200 micron)
- Screen-print Side
- LGP (3.0 mm Thickness)
- PS Diffuser (1.5mm Thickness)

1. System Flux (lumen pack): 3,216Lm
2. Luminous Efficiency: 80lm/w (3,216lm/40w)

Laser + Micropattern LGP: high light efficiency, high homogeneity possibility to reduce thickness & number of LED chips