

# Large-Diameter Patterned Sapphire Substrates (PSS)

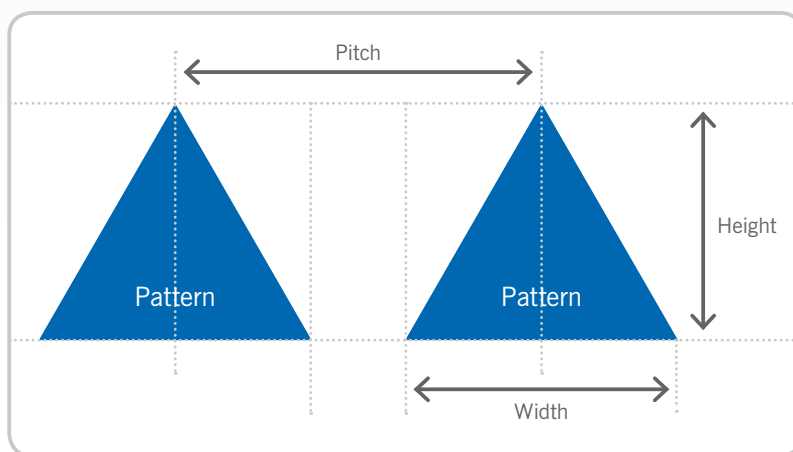
Rubicon Technology, Inc., the global leader in large-diameter sapphire substrates, has leveraged its unique expertise to create a complete line of Patterned Sapphire Substrates—PSS—in 4" through 8" diameters. We offer fully customizable sub-micron patterning capability with tight dimensional tolerances, within  $\pm 0.1 \mu\text{m}$ . With an edge exclusion zone as small as 1 mm, Rubicon provides you more usable area to maximize the number of chips per wafer.

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### Currently Available Pattern Dimensions

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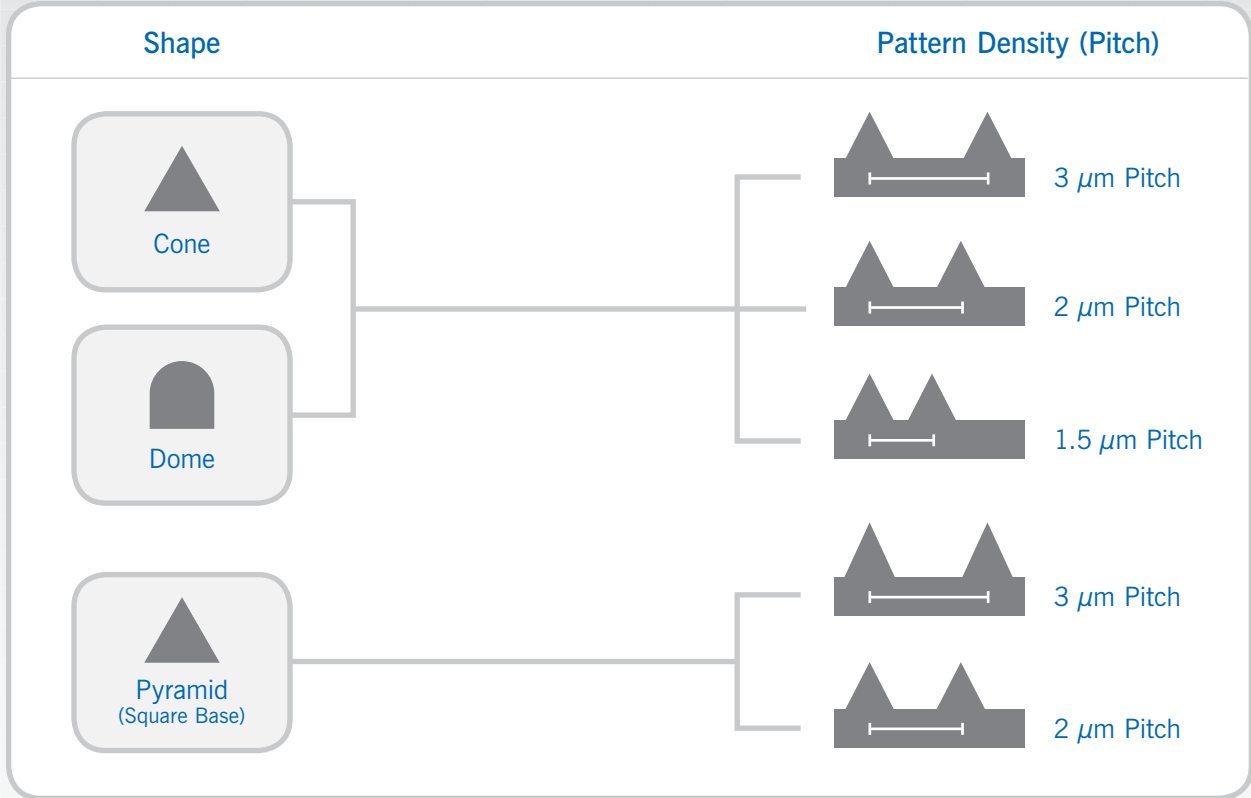
- ▶ Pitch: 3  $\mu\text{m}$ , 2  $\mu\text{m}$  & 1.5  $\mu\text{m}$
  - ▶ Width: 1.3–2.8  $\mu\text{m}$
  - ▶ Height: 0.65–2.0  $\mu\text{m}$
- ▶ Pitch under 1  $\mu\text{m}$  available on request
- Dimensional tolerance down to  $\pm 0.1 \mu\text{m}$   
Edge exclusion down to 1 mm



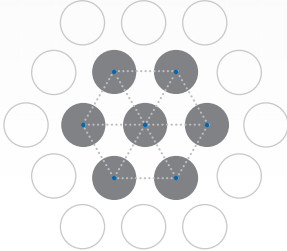
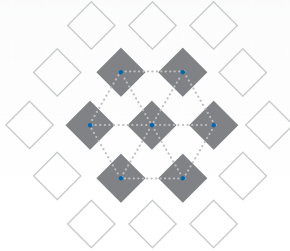
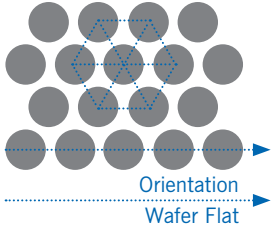
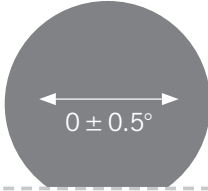
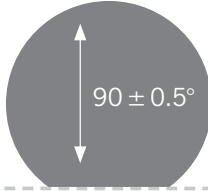
### Base Substrate Options

- ▶ Diameter: 100, 150, 200 mm
- ▶ M-tilt: 0.0 to 0.5°, with tight tolerance ( $\pm 0.03^\circ$ )
- ▶ Flatness (global and site)
- ▶ Flat Length and Notch: SEMI, JEITA, or Custom
- ▶ Thickness: Standard or Custom
- ▶ Lasermark format: Standard or Custom

We offer a choice of shape and pattern density to optimize your MOCVD recipe.



Further customization of geometry, pattern and orientation is available to match your exact requirements.

	Cone or Dome	Square Pyramid
Geometry		
Hexagon Orientation (with respect to Flat or Notch)		 <p>Horizontal</p>  <p>Vertical</p>



## Rubicon is the world leader in sapphire crystal growth technology and large-diameter sapphire substrates.

With its unmatched, end-to-end ability to manufacture and deliver superior quality sapphire, Rubicon helps LED manufacturers achieve challenging targets for product performance, yield and total cost. As demand for larger diameter sapphire escalates, more manufacturers in dynamic, growing markets trust Rubicon and its proven ability to deliver high volumes of the highest quality substrates.

Rubicon Technology is the only sapphire manufacturer that is vertically integrated from the processing of raw aluminum oxide powder to the creation of highly customized patterned sapphire substrates. Vertical integration has fostered the ability to grow progressively larger sapphire while maintaining exceptional sapphire quality, controlling cost, and excelling as the industry's most reliable, consistent and innovative technology partner.

Talk to your account representative to create your custom specification.

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