LED Manufacturer Concern:

“LED manufacturing is very competitive due to industry consolidation and the decreasing price of LED bulbs. I am under pressure to lower manufacturing costs to protect my gross margins while adding capacity to my fab. We are running at about 90% capacity right now and need to add capacity to meet accelerating demand for general lighting adoption. Therefore, we need high productivity, high yield and reliable MOCVD systems.”

Solutions:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Introduced</th>
<th>Reactor Size (mm)</th>
<th>4” Wafers</th>
<th>6” Wafers</th>
<th>Yield</th>
<th>Software Features</th>
<th>Productivity</th>
<th>Multi-Reactor Capable</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIK700</td>
<td>2014</td>
<td>700</td>
<td>62</td>
<td>24</td>
<td>Best</td>
<td>Best</td>
<td>Best</td>
<td>√</td>
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<tr>
<td>MaxBright</td>
<td>2011</td>
<td>465</td>
<td>56</td>
<td>24</td>
<td>Better</td>
<td>Better</td>
<td>Better</td>
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<tr>
<td>K46S1</td>
<td>2010</td>
<td>465</td>
<td>12</td>
<td>6</td>
<td>Better</td>
<td>Better</td>
<td>Good</td>
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</tbody>
</table>

MaxBright’ Multi-Reactor MOCVD System
- Cluster tool in 2 or 4 chamber configuration
- Central robot to transfer wafer carriers
- Modular frame and shared gas panel design
- Nexus control software

TurboDisc’ MOCVD Product Release Timeline

K46S1’ MOCVD System
- Uniform gas injector FlowFlange® for improved flow distribution
- Enhanced uniformity and yield
- Improved ease-of-use
- Nexus® control software

MaxBright’ Multi-Reactor MOCVD System
- Cluster tool in 2 or 4 chamber configuration
- Central robot to transfer wafer carriers
- Modular frame and shared gas panel design
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EPIK700’ MOCVD System
- Up to 20% cost per wafer reduction compared to previous generations
- Best-in-class uniformity drives greater yield in a tighter bin
- Highest productivity reactor generates 2.5x throughput advantage compared to previous reactors
- Seamless process transfer from existing TurboDisc MOCVD systems