Intelligent heat for
Automated Fibre Placement
Humm3® technology represents a step change in heating for automated fibre placement (AFP): a flexible, controllable heat solution for rapid lay-up of thermosets, dry fibre and thermoplastics, with three programmable parameters.

For AFP manufacturers, the choice of heat source is no longer limited to laser, infrared or hot gas. Heraeus Noblelight’s new Humm 3 technology is a sophisticated pulsed light solution which delivers uniform, highly controllable heat to the nip point area, with a wide range of temperatures.

Three-way control

Humm3 controls the heat profile using three programmable pulse parameters (energy, duration and frequency) which allow dry fibre lay-up speeds in excess of 1 m/s.
Advantages

Humm3 delivers

- rapid heat/cool with no residual lamp heat
- heat time/temperature equivalent to laser
- small agile head, ideal for complex curvatures
- high level, 3 parameter thermal control
- control system that responds to AFP head speed
- scalable heat zone size
- enhanced safety with low energy use
  - operators can remain close to lay-up.

Humm3 is the result of several years’ development and rigorous testing by Heraeus Noblelight, winners of the 2015 Queen’s Award for Innovation and recognised for excellence in flash lamp technology, development and manufacturing worldwide.

We believe Humm3 technology represents a significant step forward for AFP manufacturing.

How the Humm3 compares with existing AFP heat sources

<table>
<thead>
<tr>
<th>Heat</th>
<th>Performance</th>
<th>Cost</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>speed of heat/cool</td>
<td>zone size</td>
<td>control</td>
<td>programmable fields</td>
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<tr>
<td>uniformity</td>
<td>focus</td>
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<tr>
<td>Humm 3</td>
<td>HIGH</td>
<td>LARGE</td>
<td>HIGH</td>
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<tr>
<td>Laser</td>
<td>HIGH</td>
<td>LARGE</td>
<td>MED</td>
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<tr>
<td>Infrared</td>
<td>LOW</td>
<td>MED</td>
<td>LOW</td>
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<tr>
<td>Hot gas</td>
<td>MED</td>
<td>SMALL</td>
<td>LOW</td>
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</table>
Hum3 technology is being demonstrated at the National Composite Centre in Bristol during 2016

For further information or to arrange a demonstration please contact

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