The k flux™ product in the Lydall flux™ product family is designed for high temperature applications where superior and more thermally efficient materials are required. Through the combination of low emissivity metals and a high temperature low thermal conductivity insulating media, k flux™ provides marked thermal isolation for sensitive components even when exhaust temperatures exceed 900 °C.

**Metallic Layers**

(a) Aluminum
- 0.1 to 2.5 mm
- Flat or Embossed
- 1000, 3000 and 5000 Series Alloys
- Lightweight / Excellent formability
- Operating temperature < 300 °C

(i) Stainless Steel
- 0.1 to 2.5 mm
- Flat or Embossed
- Ferritic and Austenitic grades selected as a function of the environment
- Operating Temperature < 1000 °C

(s) Aluminized Steel
- 0.25 to 1.0 mm
- Flat or Embossed
- Various coating weights and draw quality steels
- Operating Temperature < 500 °C

**Insulation Layer**

(n) Lydall lambda
- Thickness: 1.0 mm to 9.0 mm
- High temperature chopped strand glass fiber
- No shot content
- Low organic content
- Low thermal conductivity
- Large diameter non-breathable fiber
- Non-hazardous material 1999/45/EC compliant
- Non-flammable

**Thermal Performance**
- Low emissivity surfaces for high infrared radiation environments
- High lateral thermal conductivity to spread heat
- Low vertical thermal conductivity to increase the temperature drop

**Acoustical Performance**
- High transmission loss for better acoustic isolation
- Low vibration amplification for reduced noise contribution

**Validation Test Results**

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Composite</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMVSS 302</td>
<td>DNI</td>
<td>DNI</td>
</tr>
<tr>
<td>ASTM E136</td>
<td>-</td>
<td>DNI</td>
</tr>
<tr>
<td>LTM T105</td>
<td>DNI</td>
<td>DNI</td>
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<tr>
<td>DHR Emissivity</td>
<td>Per Report</td>
<td>-</td>
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<tr>
<td>Corrosion</td>
<td>Per Report</td>
<td>-</td>
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<table>
<thead>
<tr>
<th>Test Method</th>
<th>lambda fiber</th>
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</thead>
<tbody>
<tr>
<td>T. °C</td>
<td>k, Wm/K</td>
</tr>
<tr>
<td>204</td>
<td>0.048</td>
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<tr>
<td>427</td>
<td>0.085</td>
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<tr>
<td>650</td>
<td>0.150</td>
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<tr>
<td>788</td>
<td>0.210</td>
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</table>
Component Thermal Response as a Function of Source Temperature Double Wall Shield

- k flux 1 mm
- k flux 3 mm
- k flux 6 mm
- No Shield

Lydall lambda™ Fiber Value Proposition
- Vertically Integrated - Fabricated in France by Lydall
- Peak operating temperature
  - 850 °C - lambda 850
  - 650 °C - lambda 650
- Non-breathable fiber that is not carcinogenic
- No ceramic fibers
- Clear legislation, no lobby effort, no protective equipment, poses no health risk to Lydall’s employees and poses no health risk to our customer’s employees.
- Low Organic Content Low Caloric Content Low Off-Gassing
  - LOI ≤ 4%
  - Proprietary PVOH Binder
  - Does Not Burn / Flame
  - Application of hyper strict flammability test methods

k flux naming convention - k_{xy}\n- The agility of the k flux product lends itself to be finely optimized through the combination of various materials for any thermal or mechanical environment
- A series of subscripts denote the metallic layers used as well as the insulation thickness.
- The first denotes Hot Side Layer metal, the second denotes the Cold Side Layer metal and the final represents the in-situ isolation thickness in millimeters.
  - The x and y are replaced by: a-Aluminum, s-Aluminized Steel, i-Stainless Steel
  - The insulation thickness can exceed 20 mm, but generally less than 10 mm