

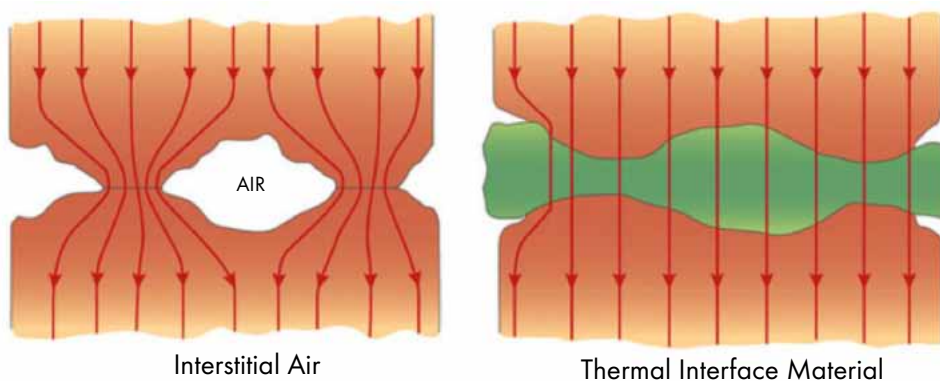
# Thermal Interface Material

## ILA-TIM-XXXX-YY Series

### Product Overview

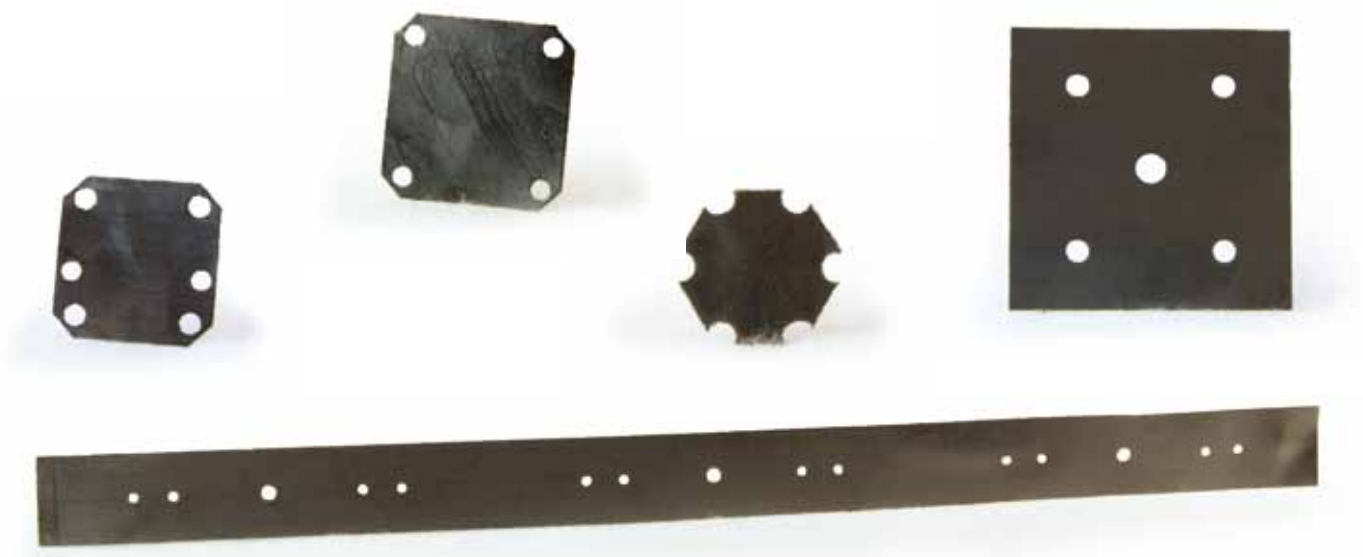
ILS have produced a range of High-performance , cost effective Thermal Interface Materials to match perfectly their standard products.

Just attaching our products to heatsinks may look like it would work, but at a microscopic level there are plenty of cavities where air gaps form. Where these cavities occur, the two surfaces aren't making full contact with one another and therefore leave a pocket of air between them. As air is a poor conductor of heat, the effective contact area is reduced and these pockets of air are enough to prevent the heatsink from working efficiently. TIM fills these tiny gaps to improve heat transfer.



Our product fills the air pockets between the two surfaces, forming a continuous layer to conduct heat away from the LED to the heatsink. As you'd imagine, this is why it's called thermal interface material.

ILS offer out TIM in three options – double sided adhesive, single sided adhesive and no adhesive



## Product Options

| Product                | Non Adhesive             | Single Sided Adhesive    | Double Sided Adhesive     |
|------------------------|--------------------------|--------------------------|---------------------------|
| Star                   | ILA-TIM-STAR-0A          | ILA-TIM-STAR-1A          | ILA-TIM-STAR-2A.          |
| 25x25mm Cluster        | ILA-TIM-CLUSTER-25x25-0A | ILA-TIM-CLUSTER-25x25-1A | ILA-TIM-CLUSTER-25x25-2A. |
| 30x30mm Cluster        | ILA-TIM-CLUSTER-30x30-0A | ILA-TIM-CLUSTER-30x30-1A | ILA-TIM-CLUSTER-30x30-2A. |
| 300x20mm Strip         | ILA-TIM-STRIP-300x20-0A  | ILA-TIM-STRIP-300x20-1A  | ILA-TIM-STRIP-300x20-2A.  |
| 25x15mm Strip          | ILA-TIM-STRIP-25x15-0A   | ILA-TIM-STRIP-25x15-1A   | ILA-TIM-STRIP-25x15-2A.   |
| 58x58mm Square         | ILA-TIM-SQUARE-58X58-0A  | ILA-TIM-SQUARE-58X58-1A  | ILA-TIM-SQUARE-58X58-2A.  |
| Dragon 72 Flood        | ILA-TIM-72FL-235X170-0A  | ILA-TIM-72FL-235X170-1A  | ILA-TIM-72FL-235X170-2A   |
| Oslon 72 Flood         | ILA-TIM-72FL-235X170-0A  | ILA-TIM-72FL-235X170-1A  | ILA-TIM-72FL-235X170-2A   |
| Oslon 27 Flood         | ILA-TIM-27FL-180X180-0A  | ILA-TIM-27FL-180X180-1A  | ILA-TIM-27FL-180X180-2A   |
| Stanley 3J/6J 27 Flood | ILA-TIM-27FL-180X180-0A  | ILA-TIM-27FL-180X180-1A  | ILA-TIM-27FL-180X180-2A   |
| Oslon 17 Flood         | ILA-TIM-17FL-215X194-0A  | ILA-TIM-17FL-215X194-1A  | ILA-TIM-17FL-215X194-2A   |

## Single Sided and Non Adhesive products

| Construction & Composition     | Flexible Graphite            | Test Method           |
|--------------------------------|------------------------------|-----------------------|
| Color                          | Pewter                       | Visual                |
| Thickness                      | 0.005" (0.13mm)              |                       |
| Thickness Tolerance            | ± 0.001" (± 0.025mm)         |                       |
| Density                        | 2.20 g/cc                    | Helium Pycnometer     |
| Hardness                       | 85 Shore A                   | ASTM D2240            |
| Tensile strength               | 650 psi                      | ASTM D412             |
| Outgassing TML                 | 0.15%                        | ASTM E595             |
| Outgassing CVCM                | 0.09%                        | ASTM E595             |
| UL Flammability rating         | 94 VO                        |                       |
| Temperature range              | -240°C to 300°C              |                       |
| Thermal conductivity - Z Axis  | 5 W/mK                       | ASTM D5470 (modified) |
| Thermal conductivity - XY Axis | 240 W/mK                     | ASTM D5470 (modified) |
| Thermal resistance @ 100 psi   | 0.07 °C-in <sup>2</sup> /W   | ASTM D5470 (modified) |
| Thermal resistance @ 681 Kpa   | 0.42 °C-cm <sup>2</sup> /W   | ASTM D5470 (modified) |
| Volume resistivity (In-Plane)  | 11 x 10 <sup>-5</sup> ohm-cm | ASTM D257             |

## Double Sided Adhesive

|                                               |                         |           |
|-----------------------------------------------|-------------------------|-----------|
| Colour                                        | Cream                   | Visual    |
| Thickness                                     | 0.007" ( 0.16mm )       |           |
| Thickness tolerance                           | 0.001" ( +/- 0.02mm )   |           |
| Hardness                                      | 90+/-5                  | Shore A   |
| Tensile Strength                              | 22 Mpa                  | ASTM D412 |
| Elongation                                    | 8%                      | ASTM D412 |
| Temperature Range                             | -240°C to 300°C         |           |
| Thermal Resistance - 50 psi assembly pressure | 1.1'c in/W : 7.1'c cm/W |           |
| Tear Resistance                               | 48 kN/m                 | ASTM D624 |
| Adhesive Strength                             | 5.5 N/cm                |           |
| Dielectric Constant @ 1000MHz                 | 2.6                     | ASTM D150 |

## For further information please contact ILS.

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.