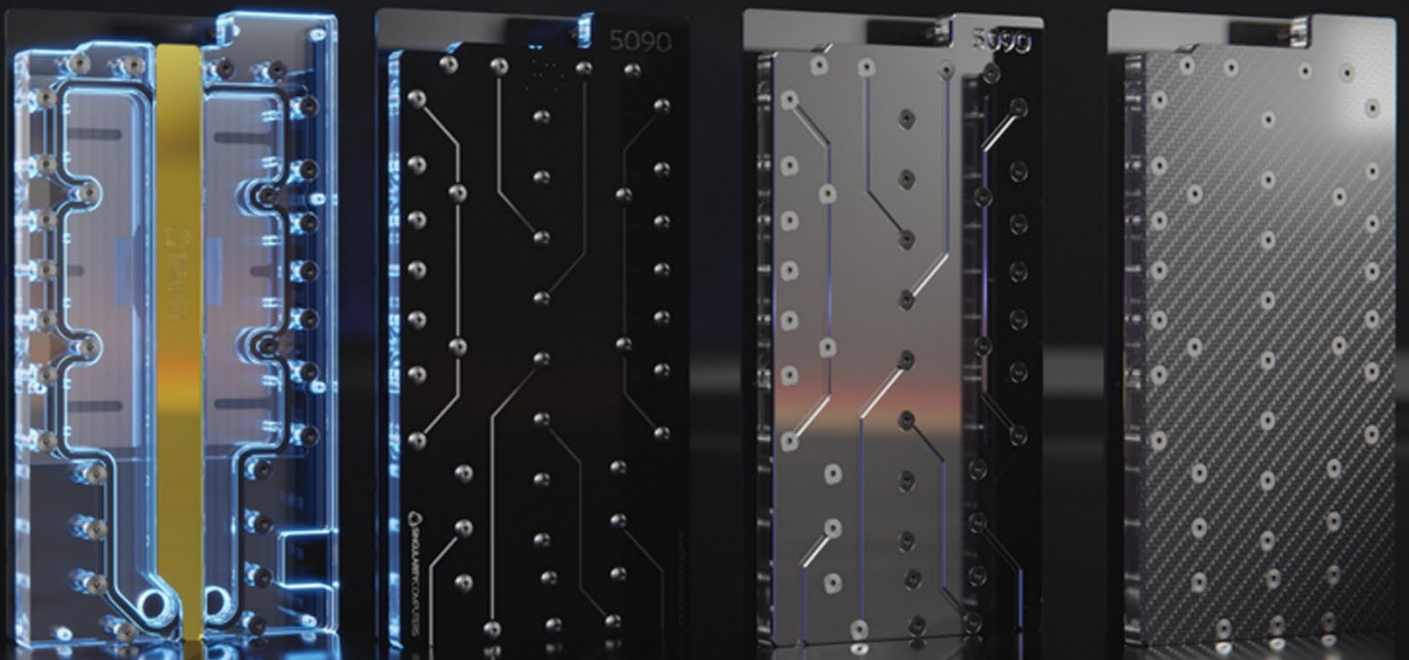


# SC 5090 ASTRAL GPU WATER-BLOCK

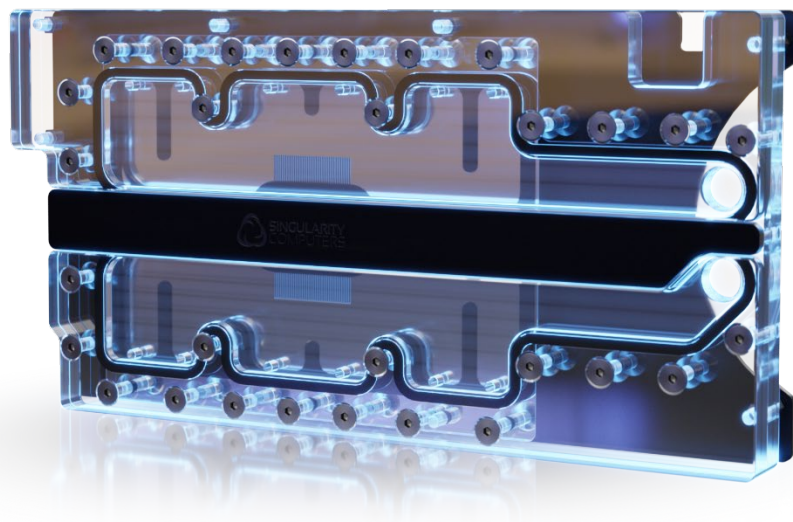


# ASSEMBLY MANUAL

Revision 1.3

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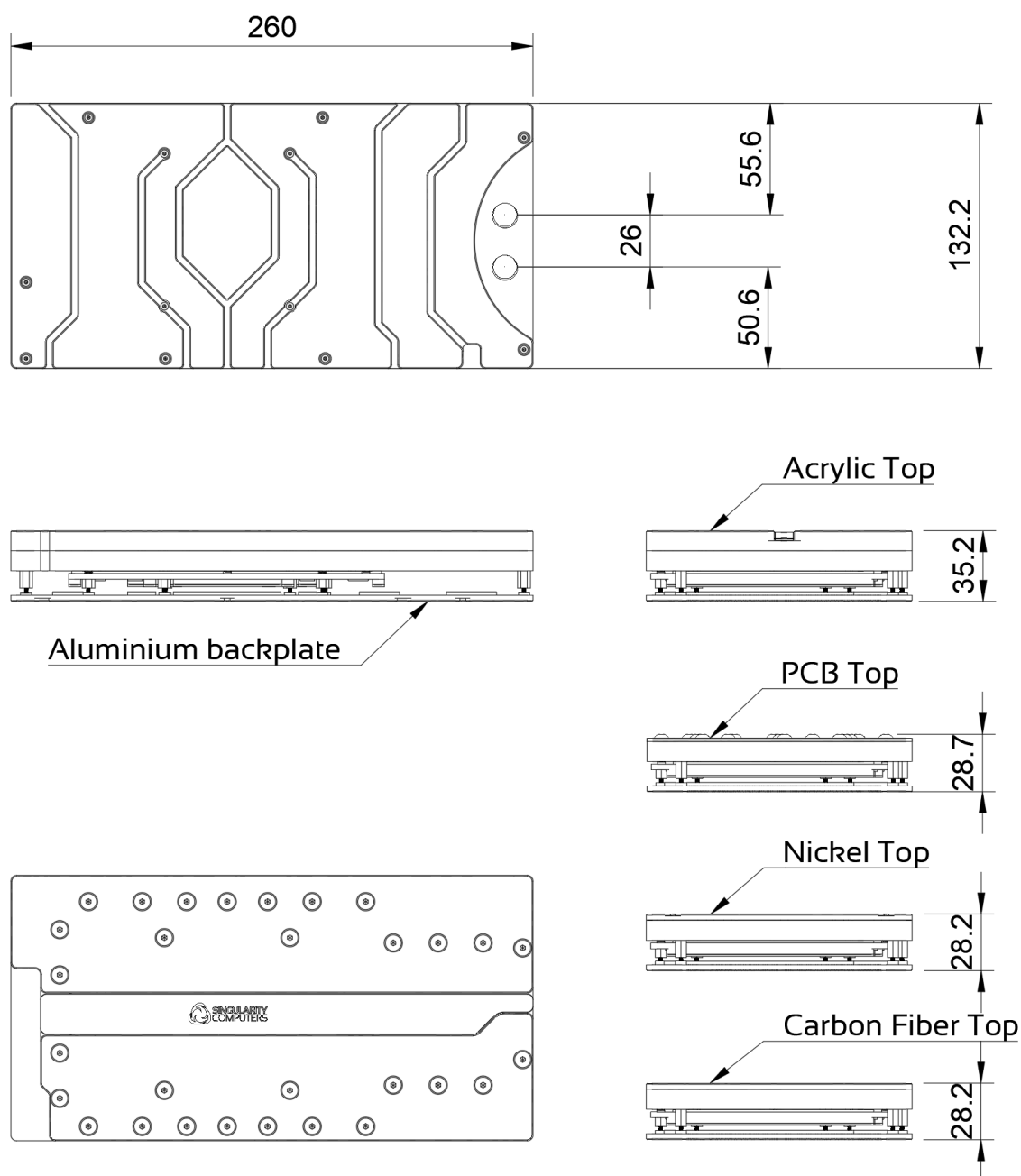
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## Introduction

The SC 5090 Astral GPU Water-block has an electroless nickel plated copper cold plate which actively cools not only the GPU but also the VRMs and Memory. It has a jet plate and fin array with a triple layer design for maximum flow, and for even flow over the components. The fin stack is fine for maximum heat transfer. High-quality materials and precision CNC machining. There are four types available: Acrylic, Nickel, PCB Cover and Carbon Fiber. The difference between these is the material the cover is made from. The acrylic version also has various color and finish options available.

## Dimensions



## Features

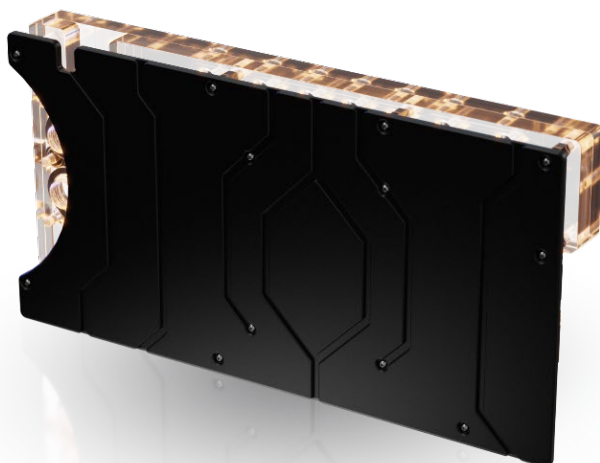
The SC 5090 Astral GPU Water-block offers significant cooling not just to the GPU core but to the memory chips and to the voltage regulators as well. The acrylic version is a see-through design while the PCB, Nickel and Carbon Fiber versions are for more understated, stealthy builds. The acrylic and PCB tops have built-in ARGB and UV lighting with a switch to choose between them. There are 2x G1/4 ports on the back side of the block placed in the recognizable circular shaped cutout in the Astral PCB. This block design is bi-directional so any of the ports can be inlet or outlet. The included aluminum backplate offers extra thermal cooling and mechanical protection to the card.

## Specifications

|                                              |                                                                                                                         |   |                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------|
| <b>Materials &amp; Manufacturing Process</b> | Nickel Plated CNC Machined Copper. CNC Machined Cast Acrylic.                                                           |   |                                   |
| <b>Electronics Integration</b>               | PCB with ARGB and UV LEDs.                                                                                              |   |                                   |
| <b>Fasteners</b>                             | Stainless Steel.                                                                                                        |   |                                   |
| <b>Thermal Pads</b>                          | Included.                                                                                                               |   |                                   |
| <b>Gaskets</b>                               | Silicone Black.                                                                                                         |   |                                   |
| <b>G ¼" Threads</b>                          | x2 for fittings up to 25mm outer diameter.                                                                              |   |                                   |
| <b>Lighting</b>                              | The acrylic and PCB editions have ARGB and UV LED lighting while the Nickel and Carbon fiber versions have no lighting. |   |                                   |
| <b>Water-Block Dimensions</b>                | Acrylic top                                                                                                             | : | 260mm(L) x 132.2mm(W) x 35.2mm(H) |
|                                              | PCB top                                                                                                                 | : | 260mm(L) x 132.2mm(W) x 28.7mm(H) |
|                                              | Nickel top                                                                                                              | : | 260mm(L) x 132.2mm(W) x 28.2mm(H) |
|                                              | Carbon fiber top                                                                                                        | : | 260mm(L) x 132.2mm(W) x 28.2mm(H) |
| <b>Packaged Dimensions</b>                   | 300mm(L) x 120mm(W) x 30mm(H)                                                                                           |   |                                   |
| <b>Packaged Weight</b>                       | 3.5 – 4 kg                                                                                                              |   |                                   |

## Parts List

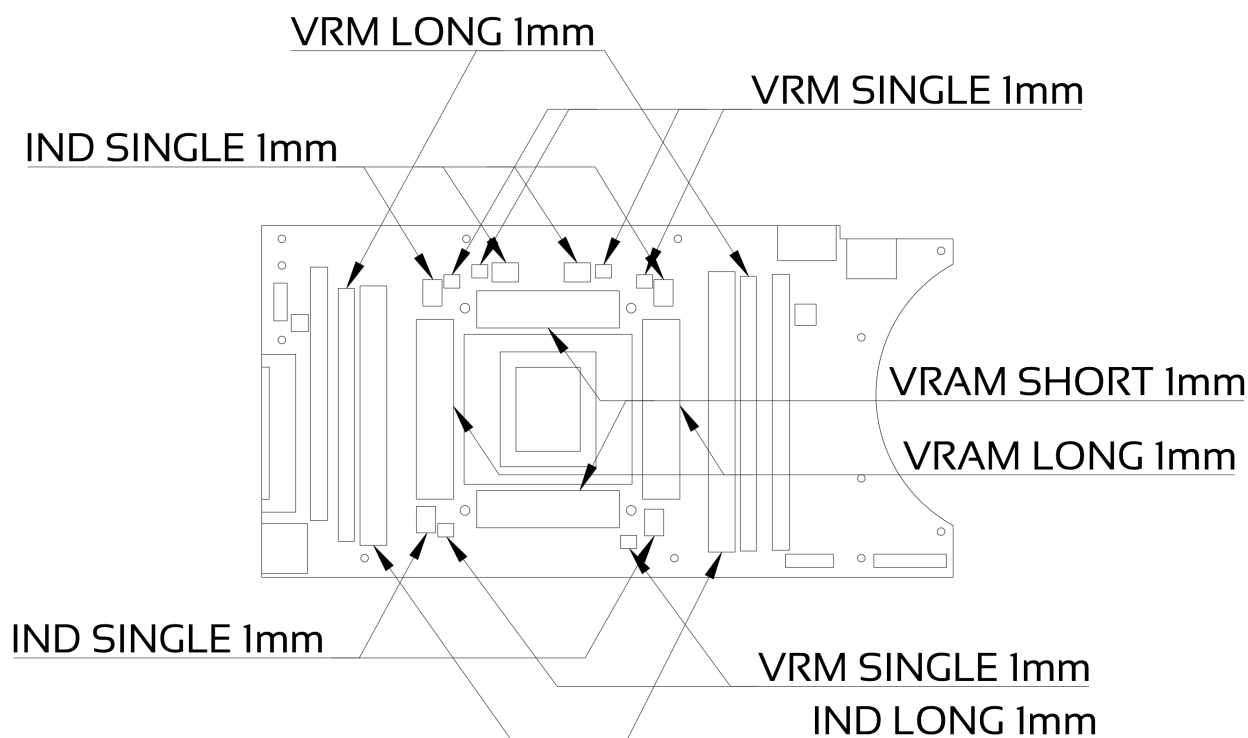
- 1x SC 5090 Astral Water-block pre-assembled
- 1x GPU BACK 20x25x1mm thermal pad
- 1x CONN 25x17x2mm thermal pad
- 6x IND SINGLE 10x7.2x1mm thermal pad
- 6x VRM SINGLE 6x5x1mm thermal pad
- 2x IND LONG 10x105.4x1mm thermal pad
- 2x IND LONG 20x105.4x2mm thermal pad
- 2x VRAM LONG 14x67.5x1mm thermal pad
- 2x VRAM LONG 14x67.5x2mm thermal pad
- 2x VRAM SHORT 14x53.6x1mm thermal pad
- 2x VRAM SHORT 14x53.6x2mm thermal pad
- 2x VRM LONG 6x103.2x1mm thermal pad
- 1x Thermal Paste
- 1x ARGB cable
- 1x Allen-key



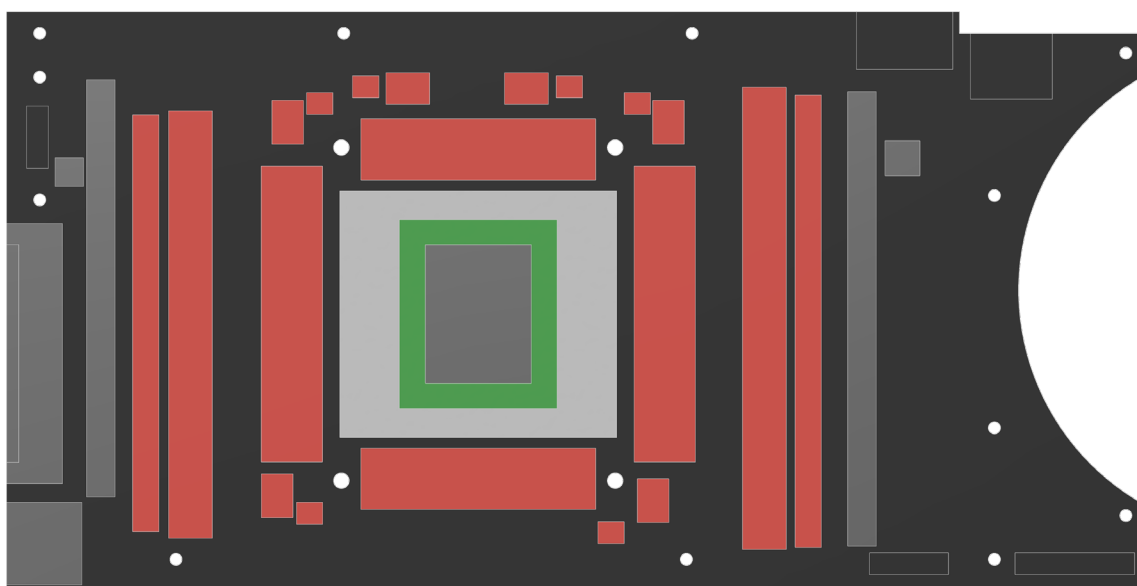
## Installation

**Step 1** – Remove the aluminum backplate from the water-block assembly using the included Allen-key.

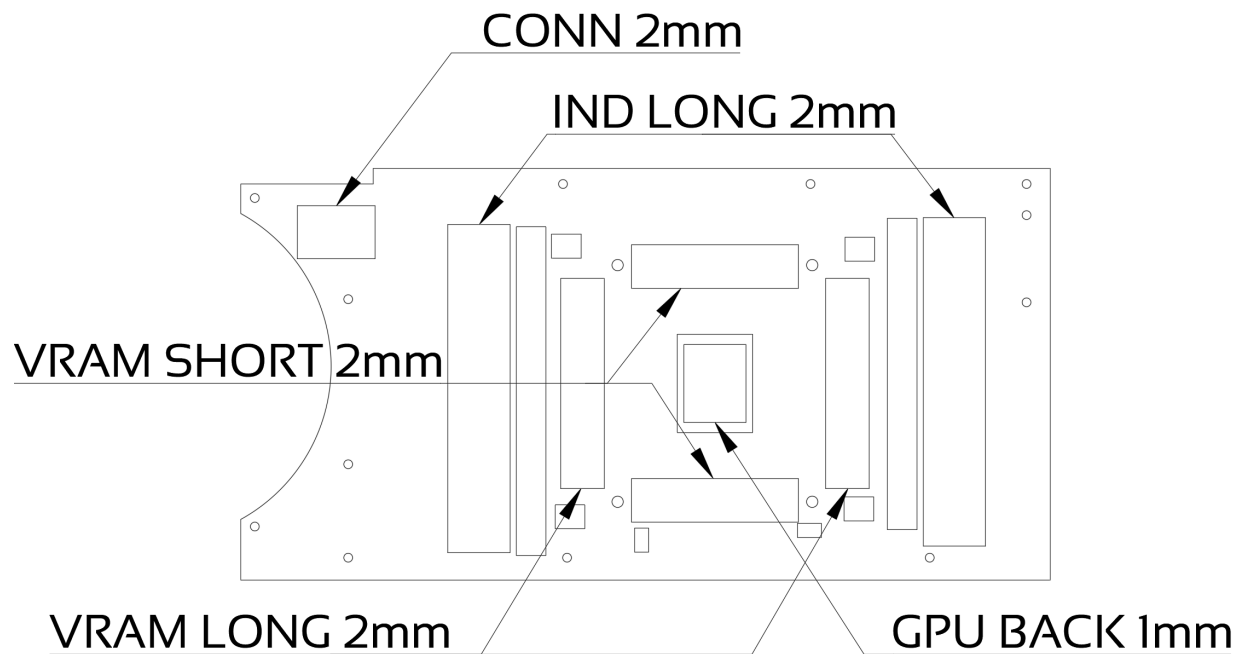
**Step 2** – Install thermal pads on the front side of the PCB in the below locations:



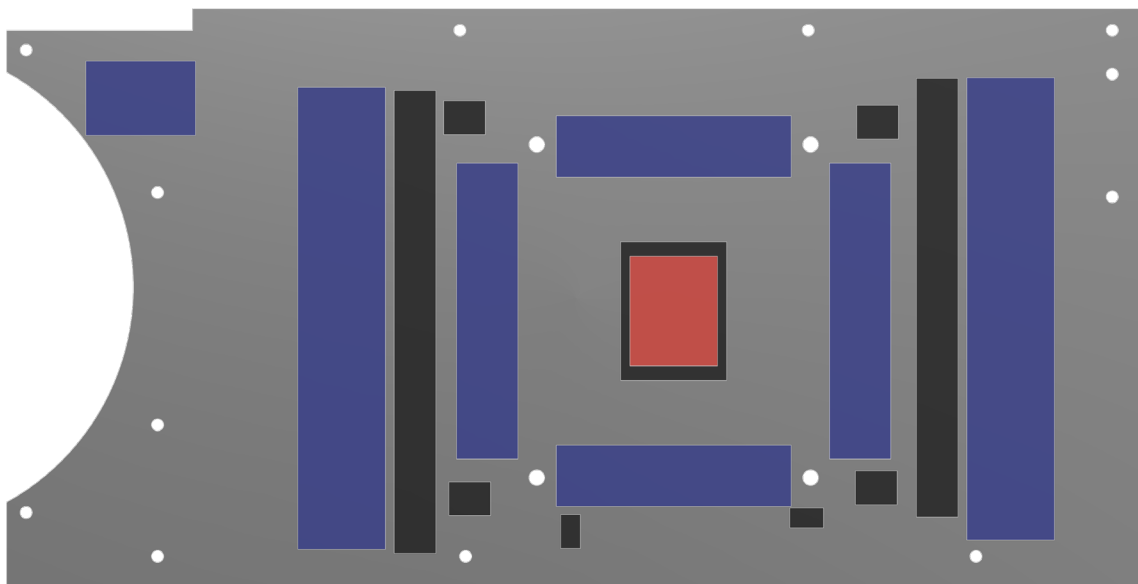
*On the front side of the card only 1mm (red highlight) thermal pads are used:*



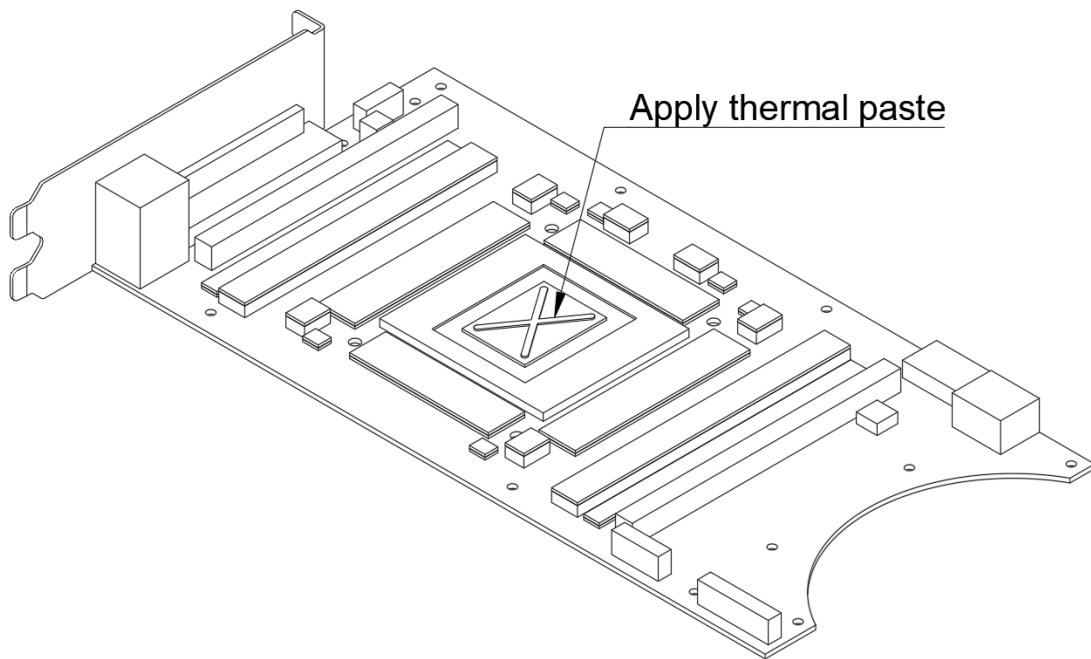
**Step 3** - Install thermal pads on the back side of the PCB in the below locations:



*On the back side of the card both 2mm (blue highlight) & 1mm (red highlight) thermal pads are used:*

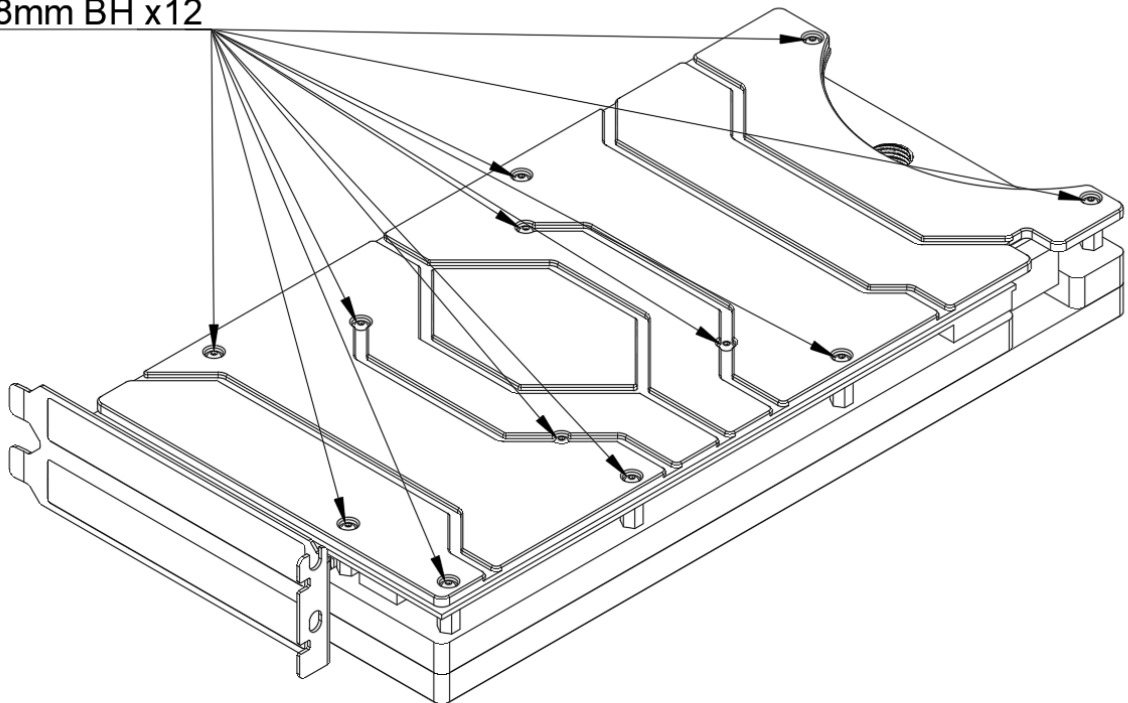


**Step 4** - Apply thermal paste to the GPU die:



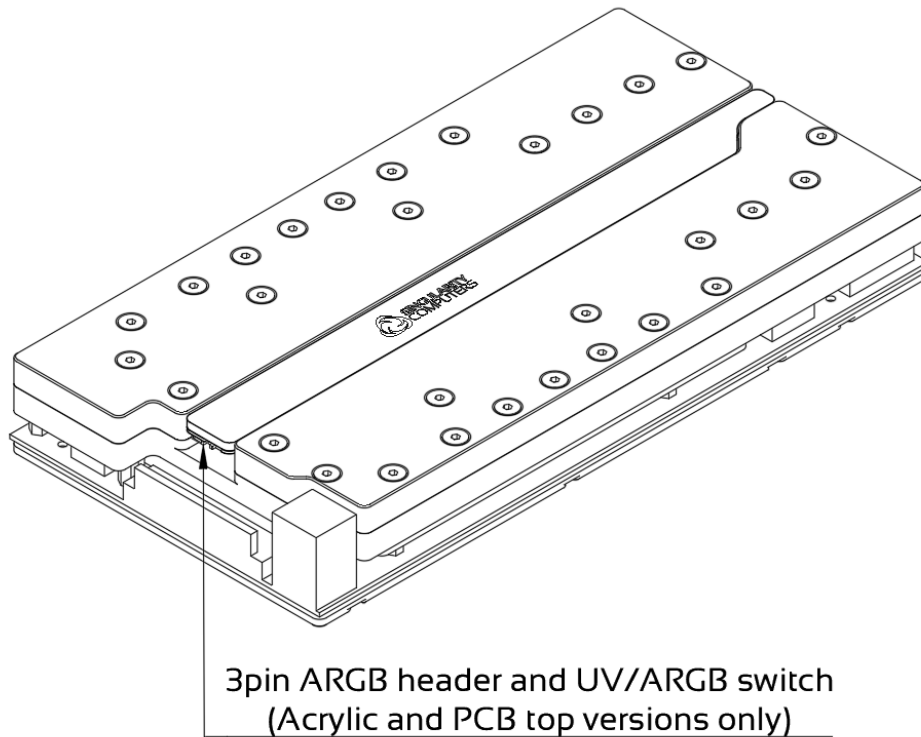
**Step 5** - Place the water-block face-down, lower the GPU PCB down on it then place the backplate on top and mount it with the included M2 8mm BH fasteners using the included Allen-key:

M2 8mm BH x12



**⚠ Warning ⚠** Do not over-tighten the fasteners, drive them in until the thermal pads squeeze and the fasteners bottom out. Standoffs limit the maximum compression, not fastener tension.

**Step 6 (Optional)** - Connect the ARGB cable to the ARGB PCB and plug it into a motherboard 3-pin +5V addressable RGB header. Use the switch to choose between ARGB and UV LEDs.



**⚠ Warning ⚠** Use distilled water at your own risk, coolant is recommended. Do not disassemble the water-block or tighten its fasteners, unless specifically instructed to do so.

