



 **OPTIMUS SIGNATURE**
4090 GPU BLOCK - STRIX -
Rev2 - Nickel Ceramic -
Copper Cold Plate

\$374.00

Product Images



Short Description

The new Signature Rev2 GPU block features increased performance and even higher mechanical reliability. The new cold plate plus improved brass midplate design reduces temps 1.5c over the previous design, thus increasing the potential overclocking by 15-30mhz. For reference, this puts the Signature block approximately 8-12c lower than competing blocks at the same wattage.

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WORLD RECORD PERFORMANCE

The Signature 4090 GPU block is the epitome of the Optimus goal to make the absolute best possible. Using the world's highest surface area GPU cold plate, highly-targeted VRAM and power delivery cooling, as well as other exclusive technologies, Optimus isn't just a few degrees better, but double digits cooler than the next closest blocks. This means you're able to achieve a previously-impossible ~10c die-to-water temp delta, even with ultra high wattage GPUs.

- Features Optimus microfin cold plate for 2-3x greater surface area than competing blocks
- New Signature full coverage block design
- Machined from 1/2" (12.7mm) US-sourced copper
- Genuine Fujipoly 0.5mm thermal pads (thinner = greater heat transfer)
- Features a true rear heatsink with full-coverage thermal pad for 100% PCB cooling
- Includes top-performing Kingpin KPX paste used for liquid nitrogen overclocking
- Features ultra-strong black ceramic Cerakote instead of nickel plating

REVOLUTIONARY 4 PIECE BLOCK DESIGN

When creating our Absolute GPU block, we started from the ground up. We knew the classic 2-piece GPU block was acceptable for low wattage GPUs, but the newer models like the 3000 and 4000 series required rethinking how to cool a GPU.

Creating the Optimus Signature GPU block meant thermal headroom upwards of 1000 watts.

To handle the temps, a new four piece design was created: the top plate, middle copper plate, cold plate on the die, and then the rear XL Heatsink (the terminal, o-rings and screws aren't counted). This new style of block sandwiches the entire PCB to create perfect pressure on the die. With our standalone cold plate with the finest microfins, the die is able to be cooled with a massive surface area compared to GPU blocks with fewer, thicker fins.

SURFACE AREA MATTERS

MORE FINS = BETTER COOLING

Cooling is simple: more surface area = better cooling. Larger radiators perform better than small radiators. Same with cold plates, more surface area is able to dissipate heat at a faster rate than lower surface area cold plates. While large fin cooling designs were acceptable for lower wattage products, these days they are easily overwhelmed by modern higher power components. This is especially critical with new, smaller dies with far greater wattages. The smaller and more powerful it becomes, the more difficult it is to cool.

THE FINEST FINS EVER CREATED

Over three years of development went into creating our truly next-level patent-pending fin technology. Using a fully CNC machining process, Optimus is able to achieve 0.1016mm (0.004") fins with 0.2032mm (0.008") micro channels. This isn't just superior craftsmanship, it's generations beyond other fin designs.

ZERO PLASTIC SCREW THREADS

The Signature block - like all Optimus products - is assembled using only metal-to-metal contact, meaning screws only ever thread into metal, not plastic. The vast majority of liquid cooling components are assembled into acrylic/plastic threads, which are extremely prone to stripping. With metal-to-metal construction, Optimus products can be reassembled multiple times without worrying about stripping or cracking the acrylic.

BUILT FOR PROFESSIONAL RELIABILITY

Every Optimus 4090 waterblock is designed for 24/7/365 performance. Originally designed for outdoor AI processing, Optimus blocks are made to take everything a home workstation can throw at it and more.

OPTIMUS XL HEATSINK VS ACTIVE BACKPLATES

The Optimus 4090 block is designed to allow max cooling on the 4090 GPU die, VRAM and power delivery areas. Our XL Heatsink works as both a mounting system and a heatsink for the PCB itself.

Interestingly, our XL Heatsink allows for vastly better GPU performance than blocks with active backplates.

How is this possible? Because older-style blocks with low fin counts simply aren't able to dissipate the heat from the critical areas. Thus, the PCB itself heats up, and a rear active backplate is used to try and capture more of that heat. But with a correctly designed main block, the heat is dissipated at the source. This is why our blocks are able to beat active-backplated blocks by significant margins.

To back this up, we compared our Signature Kingpin 3090 block that featured a massive, solid copper active waterblock vs our XL Heatsink. The 3090 has rear VRAM and a 1000w bios, so the heat should be even higher.

But we found the real-world performance differences between our ultimate active backplate and the XL

Heatsink were non-existent. This is because our main block's performance is doing exactly what it should - cooling the important parts - and any extra PCB heat is easily handled by the XL Heatsink.

If an active backplate improved performance, we'd make it. The good news is the Optimus 4090 waterblock makes active backs simply unnecessary.

WORLD'S FIRST & ONLY DUAL CHAMBER GASKET

Classic GPU blocks use a solo o-ring to seal the block. The problem with the o-ring design is the inlet channel can leak coolant into the outlet channels, bypassing the fins entirely. You'll sometimes see this in the form of liquid flowing on top of the acrylic islands in the block. With the Optimus gasket, we're able to completely isolate the inlet and outlet channels with a single, custom gasket. And because the pure EPDM gasket is designed to perfectly match the block, placing the gasket is vastly easier and requires no silicone to seal the o-ring.

SUPERSIZED REAR THERMAL PAD DESIGN

The Fujipoly 3.0mm rear thermalpad is custom designed by Fujipoly for Optimus waterblocks, for both performance and for long term use. Typically thermal pads can't handle multiple installations.

EASY INSTALLATION

The Absolute 4090 waterblock installation is designed to be extremely easy, arguably the easiest on the market. This works because the block is designed to use our integrated rear heatsink aka backplate. This heatsink provides a full-PCB support with integrated massive thermal pad to both cool every square mm of the board, stabilize the block install and to prevent any issues with PCB bending. This means that aftermarket backplates are both unnecessary and unsupported. Only with an integrated rear heatsink do we believe the best performance can be achieved

SUPER DEEP VRAM AND VRM POCKETS

Optimus GPU waterblocks not only provide max cooling on the die, but also extra cooling on the VRAM and VRM areas. By creating extremely deep recesses over the VRAM and VRM, the liquid is far closer to the chips themselves, thus the heat transfer happens faster from chip-to-liquid than a GPU block without these recesses. The challenge, however, is making blocks like this takes extra time and precision, which is why it's not common practice to see deep coolant channels.

Features

Features:

The highest performance GPU waterblock ever created, exclusively for the NVIDIA 4090 GPU.

Compatible with:

- ASUS Strix 4090 OC Edition
- ASUS Strix 4090
- ASUS TUF 4090 OC Edition
- ASUS TUF 4090

Specifications

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Materials

- TOP PLATE: Cast acrylic from Plexiglas® or Röchling-brand acetal
- COLD PLATE: US-sourced premium C110-grade copper, guaranteed ASTM B187 spec
- COLD PLATE FINISH: Raw copper or electroless nickel
- BACKPLATE: US-sourced machined 6061 aluminum, satin hard anodized
- O-RINGS: US-made plasticizer-free EPDM o-rings
- GASKET: US-made plasticizer-free EPDM and FDA-grade custom gasket
- SCREWS: US-made 18-8 stainless steel mounting screws, Optimus made stainless steel cold plate screws

Thermal Pads

- Front thermal pads: Fujipoly - GR45 - 0.5mm
- Rear thermal pad: Fujipoly - PG25 - 3.0mm

Compatibility

- Compatible with ASUS 4090 Strix and Strix OC, 4090 TUF and TUF OC.
- Not compatible with Founders or other GPU models
- BACKPLATE REQUIRED: the backplate provides cooling as well as a mounting structure for the block itself.
- ASUS MOTHERBOARDS: the XL backplate is able to work with nearly every motherboard made, including the ASUS mobos with DIMMs close to the top slot. The slim backplate is only for extremely small SFF builds that can't fit a backplate.

Included

- 1 x GPU Block
- Thermal paste syringe + spatula
- M1.5 hex key, T8 torx key, 8mm hex key
- 2 x G1/4 Plugs

FAQ

- COPPER VS NICKEL COLD PLATE? Choose raw copper for highest theoretical performance (depends on

- overclocking and overall system). Choose nickel for aesthetics and/or liquid metal compatibility
- **ACRYLIC VS ACETAL?** Our cast acrylic is actually far stronger than acetal, the traditional professional choice. Acetal won't ever crack, but it's soft and will deform with pressure and easily scratch. Our cast acrylic will survive far more abuse than acetal. So for all users, acrylic is recommended, unless you want the black look.
 - **LIQUID METAL? BARE DIE?** Go for it! Remember, liquid metal will etch copper immediately, though some builders like the performance of pure copper. Liquid metal will discolor nickel, but etching will take far longer. In both cases, performance of the cold plate won't be effected.
 - **THERMAL PASTE?** The KPX paste included with the GPU is the highest performance paste we've tested for use with the GPU block. The spread is very even and thin, which patches the polished cold plate for ideal contact.
 - **FLOW DIRECTION?** Fluid needs to flow in a specific direction -- center of fins and then out. On acrylic blocks, the "in" is connected to the center channel. On acetal blocks, the "out" shows the fins inside, while the fins can't be seen on the "in" port.
 - **FLUSHING?** All Optimus products have already been cleaned before shipping. You'll only need to flush your radiators and non-Optimus products. In fact, heavy system prep chemicals can be detrimental if they remain in small quantities in your loop. This can easily happen with fluid pressurized into o-ring grooves through heating.
 - **CLEANING?** Microfiber is your friend. Dish soap and water is ideal for our products. Always use microfiber glass cloths to prevent any scratches, especially on cold plates. Do not scrub, simply hand rinse. Isopropyl alcohol is not needed and can cause discoloration.
 - **COPPER OXIDATION?** Copper will immediately begin to oxidize (turn brown) when exposed to air. This is normal and expected and won't affect performance unless the oxidization is extreme, like the statue of liberty. But you're not leaving your blocks out by the ocean, are you?

Additional Information

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| Brand | Optimus |
| SKU | OP-SIG-4090-STRIX-NI-CU |
| Weight | 5.1000 |
| Color | Nickel |
| Vga | ASUS TUF/STRIX 4090 |
| Block GPU Type | Nvidia |
| Block Style | Satin Nickel Ceramic Finish/Copper Block |
| Vendor SKU/EAN | 850015187193 |

