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# Alphacool Core M.2 NVMe PCIe 3.0/4.0/5.0 liquid cooler

Alphacool article number: 13079

## Quick Info

SSDs in M.2 format are now standard PC equipment. The high transfer rates and extremely low access times allow faster and more effective working or gaming on the PC. Alphacool offers the Core M.2 NVMe PCIe 5.0 Liquid Cooler so that the full performance of the M.2 NVMe SSD can be used permanently. It is a useful addition to any water cooled system and ensures that the M.2 SSD memory can unleash its full potential.

- Brilliant aRGB LED illumination
- Enables full potential release of the M.2 SSD memory
- Backward compatible to PCIe 4.0 and 3.0

## Compatibility

- M.2 NVMe PCIe 5.0 SSD
- Backward compatible to PCIe 4.0 and 3.0

We assume no responsibility for any typing errors. Alphacool International GmbH, Marienberger Strasse 1, 38122 Braunschweig Tel: (+49)0531 288 7400 Supportmail: info@alphacool.com

## Scope of delivery

1x Core M.2 NVMe PCIe 5.0 Liquid Cooler & backplate
1x M.2 NVMe PCIe 3.0/4.0/5.0 PCB
1x Low-profile IO Shield
1x 20x68x0.5mm Pad
3x 20x68x1mm Pad
1x SSD Mounting nut
1x SSD Mounting screw M3x4
4x M2x5mm Screw
1x Screw driver
1x Digital-RGB Adapter

## Technical data

| | |
|---|---|
| L x W x H | 130,7 x 56 x 24,41mm |
| Material cooler | nickle-plated copper |
| Material cooler top | acrylic |
| Material backplate | aluminium |
| Water cooling connections | 2x G1/4" |
| Thickness cooler bottom | 4mm |
| Thermal conductivity thermal pads | 3 W/mK |
| Illumination | digital aRGB LEDs |
| Power connector digital aRGB LEDs | 3-Pin JST (cable length 39cm) |
| Power digital aRGB LEDs | 5V |
| Number of digital aRGB LEDs | 5 |
| Pressure tested | 0,8 Bar |
| Maximum working temperature | 60°C |
| Weight | 361g |
| Compatibility | One slot for M.2 NVMe PCIe 3.0/4.0/5.0 SSD |

## Download links

| | |
|---|---|
| Manual | 13079_Alphacool_Core_M.2_NVMe_PCIe_3.0-4.0-5.0_liquid_cooler_Manual.pdf |
| Product pictures | 13079_Alphacool_Core_M.2_NVMe_PCIe_3.0-4.0-5.0_liquid_cooler_pics.zip |
| EU-DoC / CE / RoHS | Alphacool_EuDoc_CE_RoHS_13079.pdf |

## Packaging dimensions per unit

| | |
|---|---|
| L x W x H | 160 x 105 x 25 mm |
| Weight | 485 g |

## Other data

| | |
|---|---|
| Certificates | CE, FC, RoHS |
| EAN | 4250197130790 |
| Customs code | 84733080000 |

# Article text

SSDs in M.2 format are now standard PC equipment. The high transfer rates and extremely low access times allow faster and more effective working or gaming on the PC. Alphacool offers the Core M.2 NVMe PCIe 5.0 Liquid Cooler so that the full performance of the M.2 NVMe SSD can be used permanently. It is a useful addition to any water cooled system and ensures that the M.2 SSD memory can unleash its full potential.

**Why an active M.2 cooler?**

Due to their design, M.2 SSDs are only capable of delivering their maximum performance for a short time. The controller chip heats up extremely quickly and starts to throttle the performance of the M.2 SSD early on to avoid overheating. Independent tests have shown that during write operations, the transfer rates of uncooled M.2 SSDs can drop after just 30 seconds. With read processes, the throttling usually occurs a few seconds later. With the Alphacool Core M.2 NVMe PCIe 5.0 Liquid Cooler, the maximum performance of the SSD can be used over a significantly longer period of time. This is clearly noticeable during longer read and write processes.

**Mounting**

The Core Cooler is mounted in a free PCI Express x4 slot. It is compatible with M.2 NVMe SSDs that are populated on one or both sides. If the PCB is populated with memory chips on both sides, the 1 mm heat conduction pad is used on both sides. If memory chips are only installed on one side, then the 0.5 mm and 1 mm thermal pads are used on top of each other on the side without chips. Once the top and bottom of the SSD have been fitted with thermal pads, the SSD memory is inserted into the retaining clip of the M.2 NVMe PCIe 5.0 PCB and mounted on the cooler together with the backplate. The cooler itself can now be integrated into the water loop using the integrated G1/4" connections.

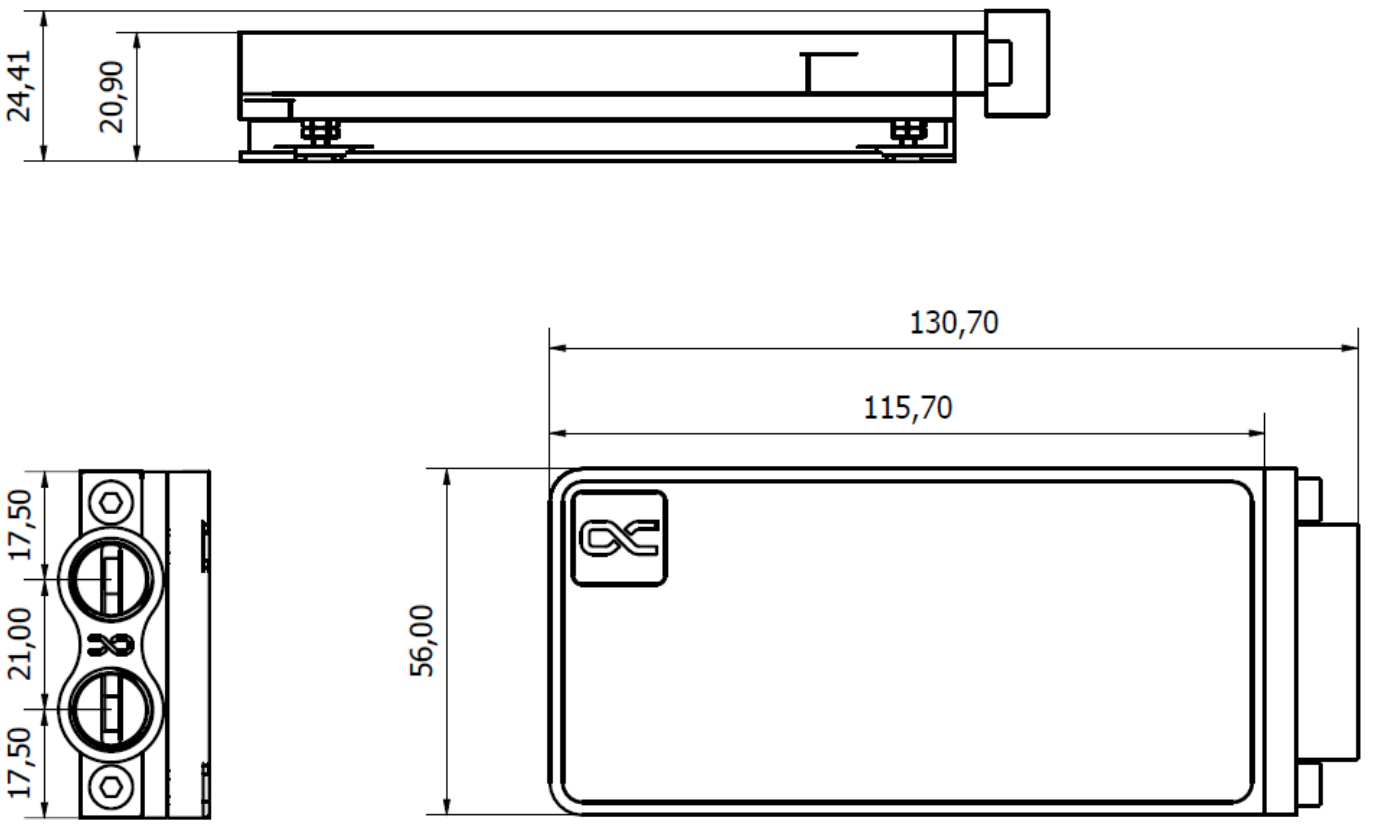
**Copper instead of aluminium!**

Alphacool only uses copper in its water coolers. The reason is simple: copper has almost twice the thermal conductivity of aluminium and is therefore the obviously better choice of material for a water cooler.

**Brilliant lighting**

5 digitally addressable 5V RGB LEDs are installed in the cooler, which create a unique, very noble-looking illumination. The digital aRGB LED illumination is connected via a JST 3-pin connector. To control the aRGB lighting, the enclosed adapter must be connected to the 3-pin female connector and connected to a digital RGB controller or a digital RGB-capable mainboard. Additional digital aRGB LEDs can be connected to the remaining 3-pin male connector.

**Note:**

Also backward compatible to PCIe 4.0 and 3.0

## Figure