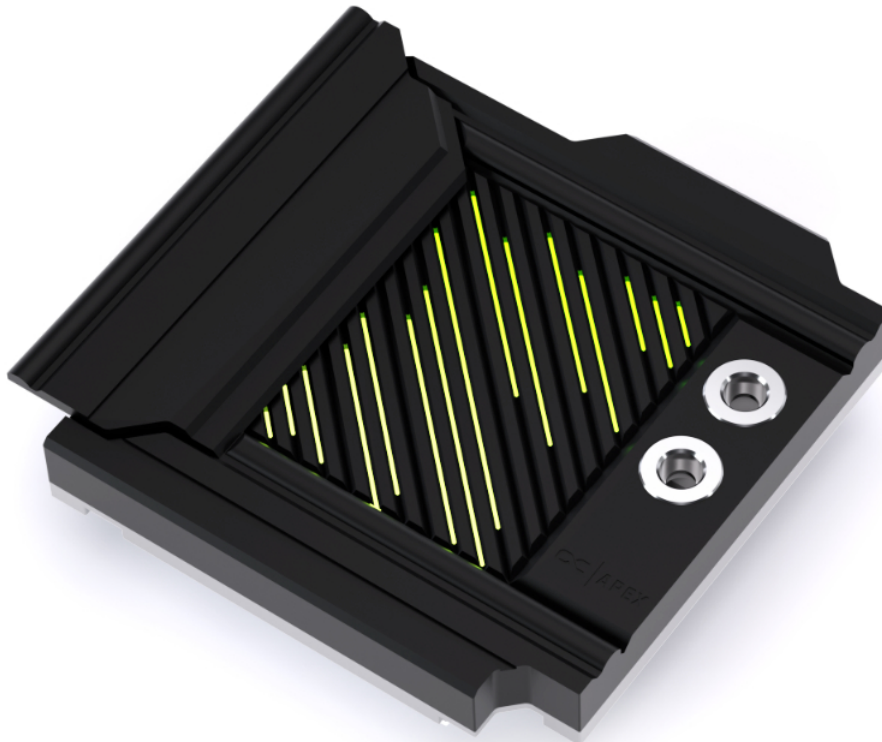


Alphacool Apex Monoblock MAG X870 TOMAHAWK WIFI

Alphacool article number: 14685



Quick Info

The Apex Monoblock is the ideal cooling solution for maximum performance, combined with an elegant design that is perfectly matched to the motherboard. Developed specifically for the motherboard, the monoblock cools the CPU, the voltage regulators (VRMs), as well as the M.2 NVMe SSD located below the CPU socket. All key motherboard components are actively cooled through the monoblock's water block.

- Processors hotspot optimized
- Fullcover M.2, VRM and CPU Cooler
- Stunning aRGB illumination

Compatibility

MSI MAG X870 Tomahawk WiFi (AM5)

Scope of delivery

1x Alphacool Apex Monoblock MAG X870 TOMAHAWK WIFI	1x 70 x 22 x 2mm thermal pad
6x M3 x 8 Screw	1x 101 x 22 x 2mm thermal pad
6x Washer	1x Thermal grease
2x 78 x 8 x 2mm thermal pad	1x Putty tool
2x 67 x 8 x 2mm thermal pad	4x AM5 Mounting Nuts
1x 12 x 12 x 2mm thermal pad	

Technical data

Dimensions (L x W x H) (in mm)	180,94 x 173,07 x 48,50
Material cooler	Chrome-plated copper (Cu-HCP)
Material cover	Aluminium (AlMg0,7Si)
Material cooler top	Plexi (LXN865)
Material terminal	Brass (CuZn39Pb3)
Threads	2x G 1/4
Material connection thread	Brass (CuZn39Pb3)
Maximum torque G1/4 thread (in Nm)	1,00
Maximum torque M2,5 thread (in Nm)	0,27
Maximum torque M3 thread (in Nm)	0,48
Maximum torque M4 thread (in Nm)	1,12
Maximum operating temperature (in °C)	60
Recommended working temperature (in °C)	20
Minimum operating temperature (in °C)	-20
Maximum tested pressure (in bar)	2,00
Recommended working pressure (in bar)	0,00 - 1,00
Thickness of cooling fins (in mm)	0,40
Distance between cooling fins (in mm)	0,40
Cooling technology	Jet engine

Technical data thermalpads

Thermal conductivity of thermal pads (in W/mK)	7
Thermal pads Hardness ASTM 2240	35 Shore 00

Technical data thermalpaste

Evaporation rate	Less than 0,5
Density (g/cm ³)	3,2 (Test method ASTM D2196)
Viscosity	150-200*10 ³ (Test method ASTM D2196)
Operating temperature (°C)	-40°C to 120°C
Breakdown voltage (V/mil)	250 (Test method ASTM D149)
Thermal impedance (°C in 2/W)	0.1 +/- 0.01 (Test method ASTM D5470)
Maximum operating pressure (psi)	40
Quantity (in gramm)	1g
Color	Grey

Download links

Manual	14685_Alphacool_Apex_Monoblock_MAG_X870_TOMAHAWK_WIFI_Manual.pdf
Product pictures	14685_Alphacool_Apex_Monoblock_MAG_X870_TOMAHAWK_WIFI_pics.zip
EU-DoC / CE / RoHS	Alphacool_EuDoc_CE_RoHS_14685.pdf

Packaging dimensions per unit

L x W x H	290 x 250 x 105 mm
Weight	2000 g

Other data

Certificates	CE, FC, RoHS
EAN	4250197146852
Customs code	84195080900
Guarantee	5 years

Article text

The Apex Monoblock is the ideal cooling solution for maximum performance, combined with an elegant design that is perfectly matched to the motherboard. Developed specifically for the motherboard, the monoblock cools the CPU, the voltage regulators (VRMs), as well as the M.2 NVMe SSD located below the CPU socket. All key motherboard components are actively cooled through the monoblock's water block.

Like the Apex 1 CPU cooler, the Apex Monoblock uses an offset cold plate. This allows the coolant flow to hit the thermal hotspot of the AM5 CPU directly. In combination with the proven cross-slot structure and the 3D Jetplate 2.0, this design generates high water pressure, enabling particularly efficient heat dissipation. Ideal for overclocking or continuous operation.

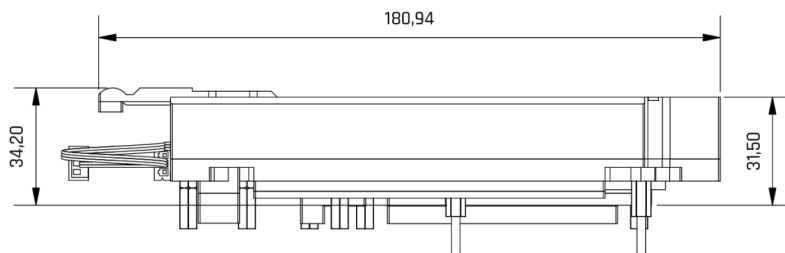
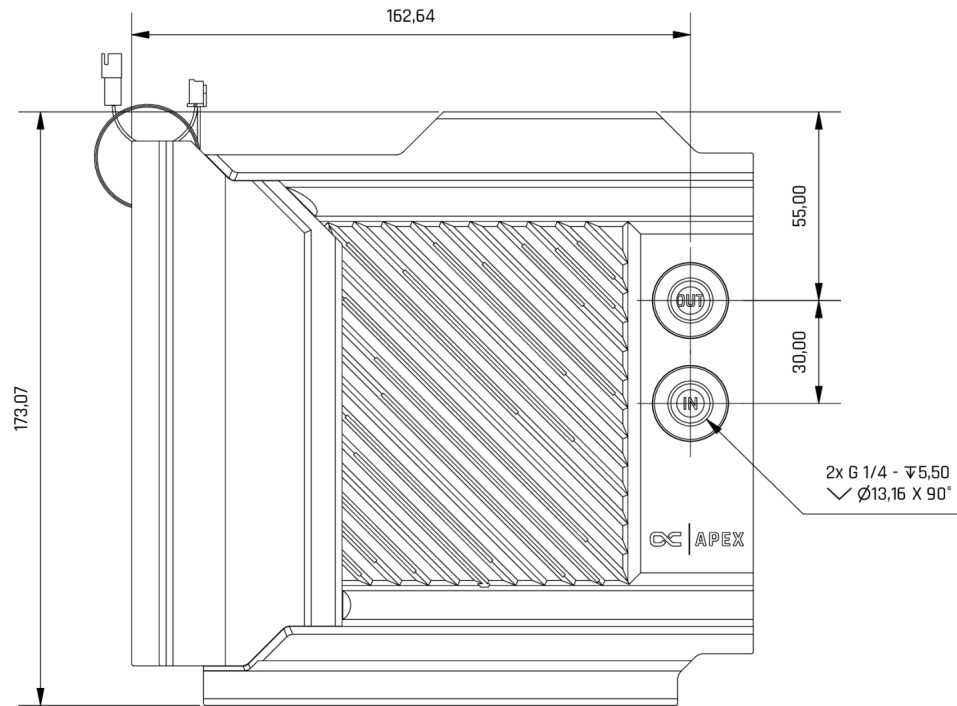
The cooler is milled from a solid block of copper. The G1/4" connection terminal is made of brass and, together with the copper base, ensures long durability as well as excellent thermal conductivity.

The Apex Monoblock design, tailored to the respective motherboard, not only delivers optimal cooling performance but also integrates seamlessly into the motherboard's appearance.

It features an integrated I/O cover, creating a clean and cohesive look that blends perfectly with the motherboard's design.

The monoblock combines performance, design, and functionality, making it a highlight of any custom water-cooling setup.

Figure (1)



aRGB
Connection



VCC 5V DC
DATA
GND

aRGB
Socket



GND
DATA
VCC 5V DC

General tolerance: $\pm 0,25\text{mm}$
Dimension in millimeter

Figure (2)

Mechanical properties:

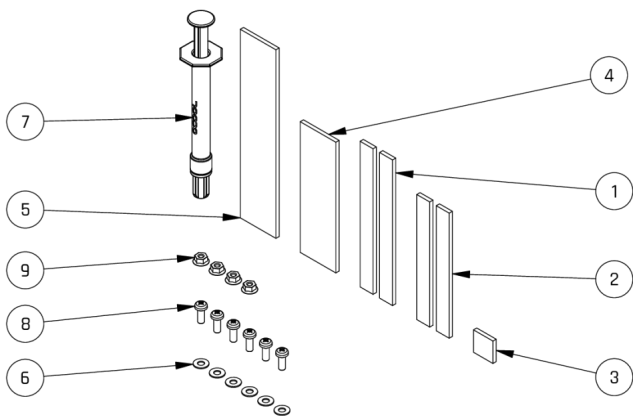
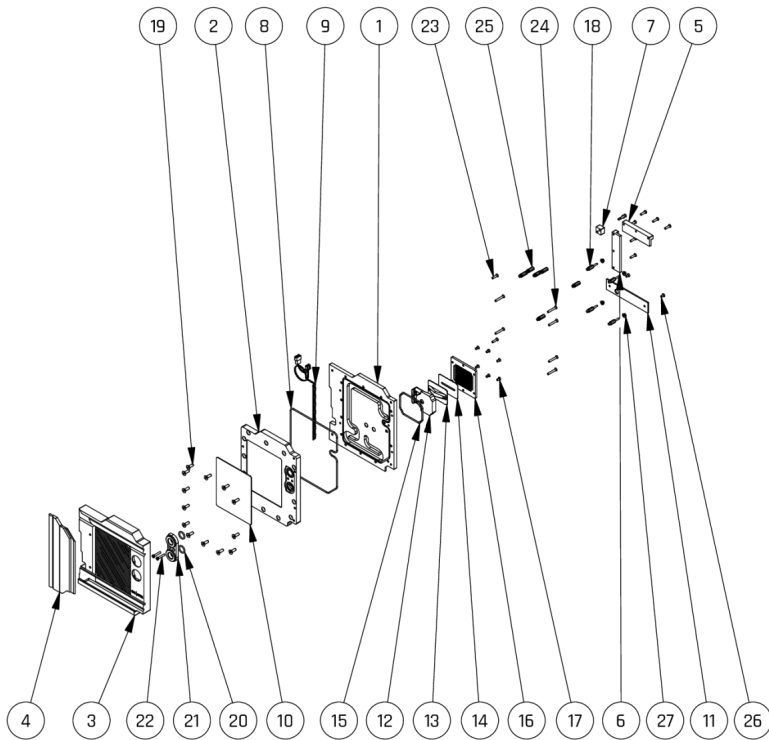
LED quantity and length	7pc. / L =116,2 mmm
LED Voltage V =	5 V
LED Ampere A =	0,06 A
LED Power W =	2,1 W
Minimum temperature t min =	-20°C
Working temperature t =	20°C
Maximum temperature t max =	60°C

Maximum filling volume ml =	-
Working pressure p =	0,0 - 1,0Bar
Maximum pressure p max =	2,0Bar
Maximum torque of G thread M max =	G1/4 = 1,0Nm

ISO 228-1 Parallel Whitworth pipe thread BSPP (GB)

Maximum torque of M max =	M2X0,4 = 0,13Nm
M thread	M2,5X0,45 = 0,27Nm
	M3X0,5 = 0,48Nm
	M4X0,7 = 1,12Nm

DIN 13-1 Metric ISO standard thread



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Alphasool Apex Monoblock MAG X870 TOMAHAWK WIFI

Spare parts list

Number	Quantity	Description	Material
1	1	copper	Cu-HCP
2	1	pmma	LXN865
3	1	cover	AlMg1SiCu
4	1	cap	AlMg1SiCu
5	1	Extension 67 x 7 x 8,89 mm	Cu-HCP
6	1	Extension 78 x 7 x 8,89 mm	Cu-HCP
7	1	Extension 12 x 12 x 8,76 mm	Cu-HCP
8	1	O-Ring 160 x 2	NBR Shore 70
9	1	aRGB LED 116,2mm (7 LEDs)	-
10	1	Lightspreader	DX001
11	1	SSD Extension	Cu-HCP
12	1	Apex 1 Rubberinlay	VMQ Shore A 70
13	1	Apex 1 Jetplate PPS	PPS-GF30
14	1	Apex 1 Jet sealing	VMQ Shore A 70
15	1	Apex 1 ORing 55 x 2 NBR 70	VMQ Shore A 70
16	1	Apex 1 LGA 1700 Copperplate V4 Rebuild Small	Cu-HCP
17	6	ISO 70461 M3 x 6 4.8 H	X10CrNi18-8
18	4	Apex 1 AM5 Spacer 10,3mm SW5 M2,5	CuZn39Pb3
19	13	ISO 10642 M4 x 12	X10CrNi18-8
20	2	O-Ring 11 x 2	NBR Shore 70
21	1	Core GPX Terminal TOP Part	CuZn39Pb3
22	2	ISO 70461 M3 x 18 4.8 H	X10CrNi18-8
23	10	M3 x 12	X10CrNi18-8
24	6	M3 x 20	X10CrNi18-8
25	6	Distance Bolts 13,80mm M4 x 3 M3 x 7	CuZn39Pb3
26	2	M3 x 6 Countersunk screw	X10CrNi18-8
27	4	Apex 1 AM5 Mounting Nuts	X5CrNi18-10

Spare parts list

Number	Quantity	Description	Material
1	2	PAD 78 x 8 x 2	7W/mK - Shore-00 35 - 2.00 mm
2	2	PAD 67 x 8 x 2	7W/mK - Shore-00 35 - 2.00 mm
3	1	PAD 12 x 12 x 2	7W/mK - Shore-00 35 - 2.00 mm
4	1	PAD 70 x 22 x 2	7W/mK - Shore-00 35 - 2.00 mm
5	1	PAD 101 x 22 x 2	7W/mK - Shore-00 35 - 2.00 mm
6	6	ISO 7089 - 3 - PA66	PA 66,GF25 FR(V-2)
7	1	Alphasool Subzero Thermal grease 1g	-
8	6	M3 x 8	X10CrNi18-8
9	4	Apex 1 AM5 Mounting Nuts	X5CrNi18-10