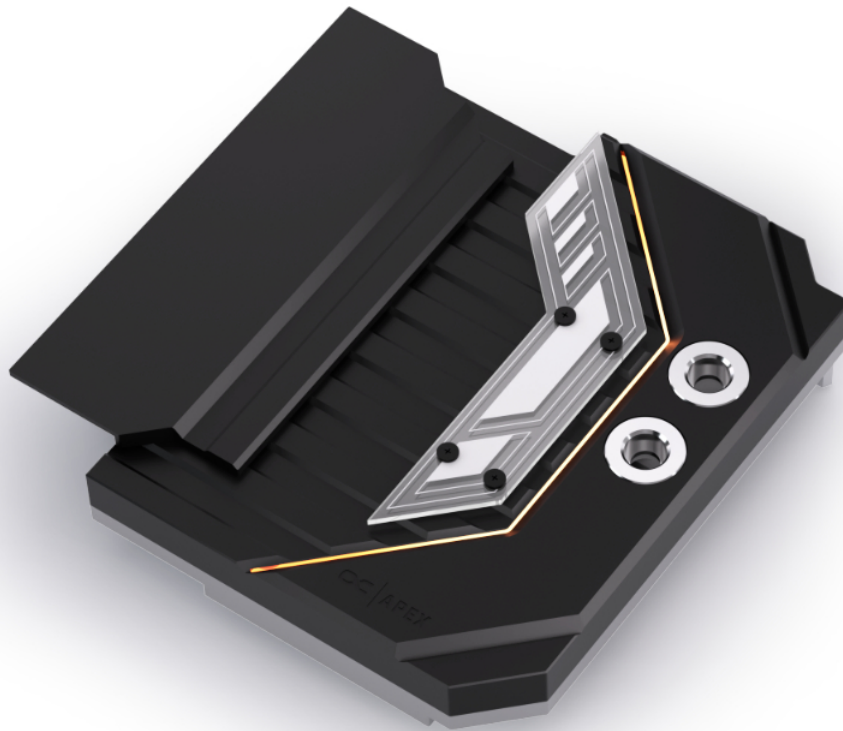


## Alphacool Apex Monoblock TUF GAMING X870-PLUS WIFI (AM5)

Alphacool article number: 14686



### 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

ASUS TUF GAMING X870-PLUS WIFI (AM5)

## Scope of delivery

1x Apex Monoblock TUF GAMING X870-PLUS WIFI (AM5)	1x Thermal grease
1x 73x22x2mm thermal pad	4x AM5 Mounting nut
1x 98x15x2mm thermal pad	7x Washer
1x 98x8x2mm thermal pad	7x M3x8mm Screw
1x 83,5x15x2mm thermal pad	1x aRGB Adapter
1x 80x8x2mm thermal pad	1x Putty tool
1x 13x15x2mm thermal pad	

## Technical data

Dimensions (L x W x H) (in mm)	169,20 x 172,50 x 47,80
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 <sup>3</sup> )	3,2 (Test method ASTM D2196)
Viscosity	150-200*10 <sup>3</sup> (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	<a href="#">14686_Alphacool_Apex_Monoblock_TUF_GAMING_X870-PLUS_WIFI_(AM5)_Manual.pdf</a>
Product pictures	<a href="#">14686_Alphacool_Apex_Monoblock_TUF_GAMING_X870-PLUS_WIFI_(AM5)_pics.zip</a>
EU-DoC / CE / RoHS	<a href="#">Alphacool_EuDoc_CE_RoHS_14686.pdf</a>

## 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	4250197146869
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.

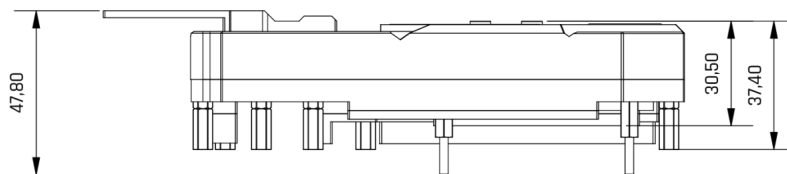
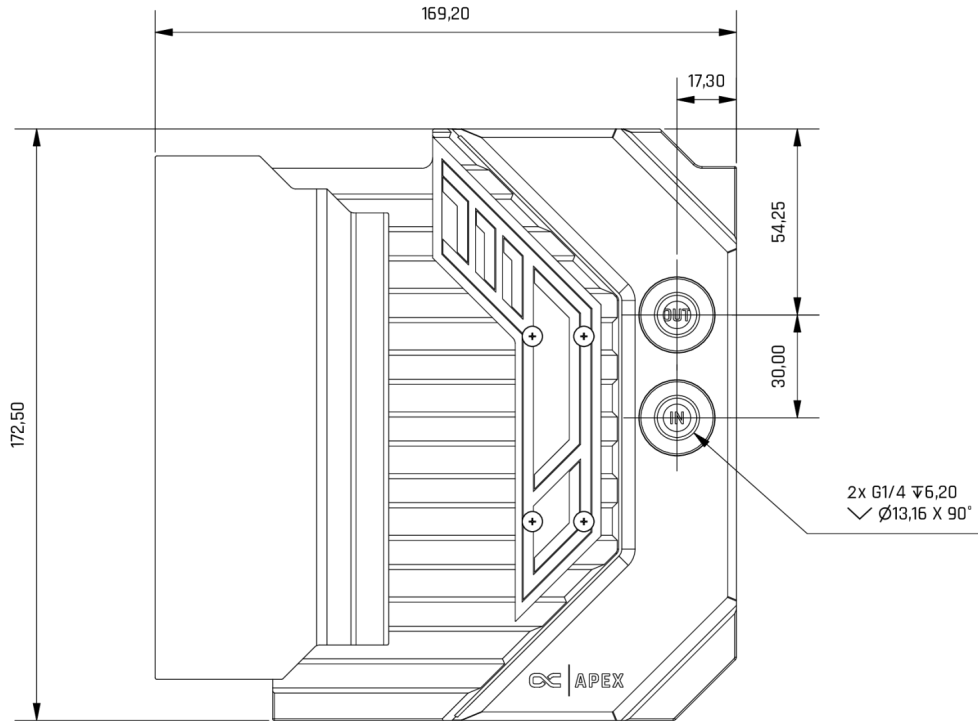
The cooler is milled from a solid block of copper. The G1/4" connection terminal is made of brass and, together with the copper base, ensures long durability as well as excellent thermal conductivity.

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



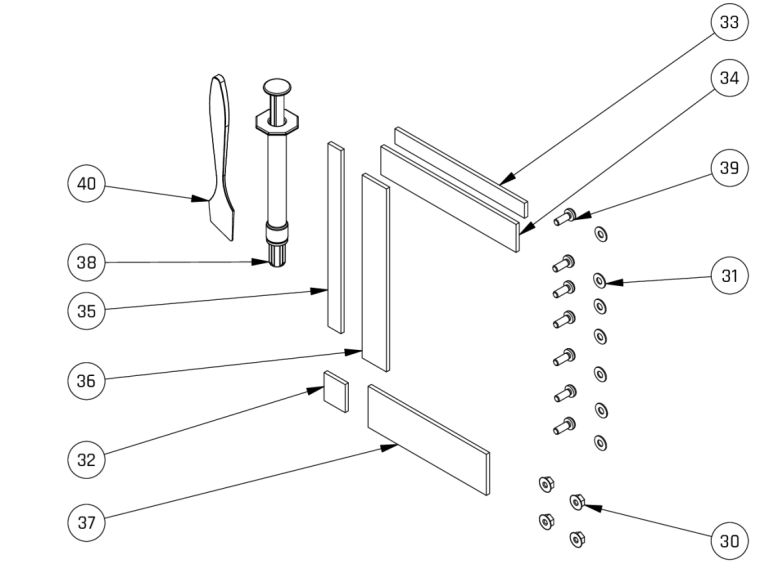
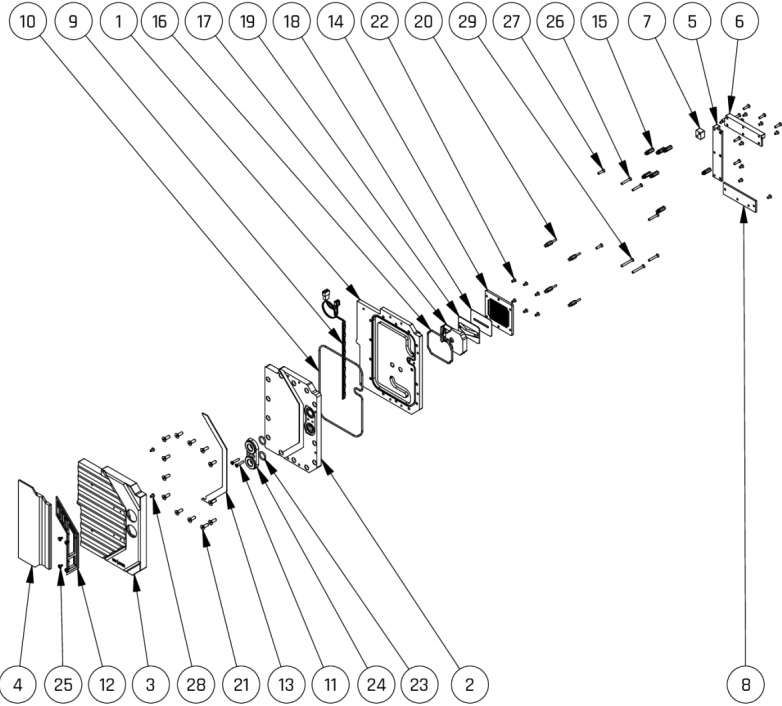
GND  
DATA  
VCC 5V DC

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

# Figure (2)

**Mechanical properties:**

LED quantity and length	9,0pc. / L =149,4 mmm	Minimum temperature t min =	-20°C	Maximum torque of G thread M max =	G1/4 = 1,0Nm
LED Voltage V =	5 V	Working temperature t =	20°C	ISO 228-1 Parallel Whitworth pipe thread BSPP (GB)	
LED Ampere A =	0,06 A	Maximum temperature t max =	60°C	Maximum torque of M thread	M max = M3X0,5 = 0,48Nm
LED Power W =	2,7 W	Working pressure p =	0,0 - 1,0Bar	DIN 13-1 Metric ISO standard thread	
		Maximum pressure p max =	2,0Bar		M4X0,7 = 1,12Nm



1026078 14686  
AC Apex Monoblock ASUS Tuf Gaming X870-Plus Wifi

Parts List			
Number	Quantity	Description	Material
1	1	Copper	Cu-HCP
2	1	PMMA	LXN865
3	1	Deco 1	AlMg1SiCu
4	1	Deco 2	AlMg1SiCu
5	1	Extension 98 x 20 x 8,76 mm	Cu-HCP
6	1	Extension 83,5 x 20 x 8,76 mm	Cu-HCP
7	1	Extension 13 x 11 x 8,56 mm	Cu-HCP
8	1	Extension 73 x 22 x 2,51 mm	Cu-HCP
9	1	aRGB LED 149,4mm (9 LEDs)	-
10	1	O-Ring 150 x 2	NBR Shore 70
11	2	ISO 7046-1 - M3 x 16	X5CrNi18-10
12	1	Fibre optics	DX001
13	1	Lightspreader	DX001
14	1	Apex 1 LGA 1700 Copperplate V4 Rebuild Small	Cu-HCP
15	7	Distance Bolts 13,80mm M4 x 3 M3 x 7	CuZn39Pb3
16	1	Apex 1 ORing 55 x 2	VMQ Shore A 70
17	1	Apex 1 Rubberinlay	VMQ Shore A 70
18	1	Apex 1 Jet sealing	VMQ Shore A 70
19	1	Apex 1 Jetplate PPS	PPS-GF30
20	4	Apex 1 AM5 Spacer 10,3mm SW5 M2,5	CuZn39Pb3
21	13	ISO 10642 M4 x 12	X10CrNi18-8
22	6	ISO 70461 M3 x 6 4.8 H	X10CrNi18-8
23	2	O-Ring 11 x 2	NBR Shore 70
24	1	Core GPX Terminal TOP Part	CuZn39Pb3
25	4	GPX Flat head screw M2X0,4 x 5_6	X10CrNi18-8
26	4	M3 x 20	X10CrNi18-8
27	10	M3 x 12	X10CrNi18-8
28	10	M3 x 6	X10CrNi18-8
29	2	M3 x 25	X10CrNi18-8

Accessories			
Number	Quantity	Description	Material
30	4	Apex 1 AM5 Mounting Nuts	X5CrNi18-10
31	7	ISO 7089 - 3 - PA66	PA 66,GF25 FR(V-2)
32	1	PAD 13 x 15 x 2	7W/mK - Shore-00 35 - 2.00 mm
33	1	PAD 80 x 8 x 2	7W/mK - Shore-00 35 - 2.00 mm
34	1	PAD 83,5 x 15 x 2	7W/mK - Shore-00 35 - 2.00 mm
35	1	PAD 98 x 8 x 2	7W/mK - Shore-00 35 - 2.00 mm
36	1	PAD 98 x 15 x 2	7W/mK - Shore-00 35 - 2.00 mm
37	1	PAD 73 x 22 x 2	7W/mK - Shore-00 35 - 2.00 mm
38	1	Alphacool Subzero Thermal grease 1g	-
39	7	M3 x 8	X10CrNi18-8
40	1	Putty Tool	-