

# INTEL 1851 Mycro Direct-Die Pro RGB V1

## High Performance Cooling Solutions – Made in Germany

The Intel 1851 Mycro Direct-Die PRO RGB V1 is a water cooler optimized for the Intel LGA1851 platform. The copper base plate features micro-cooling fins with low flow resistance, designed to be mounted directly on the chip of the delidded Intel CPU. This setup ensures that the processor's heat travels the shortest possible distance to the water circuit. A current list of all verified compatible processors is available online.



### Scope of Delivery

- 1x Intel 1851 Mycro Direct-Die PRO RGB V1
- 4x Cylinder head screws UNC thread
- 1x Hexagon socket angle wrench
- 1x Torx angle wrench

### Nickel-Plated for Liquid Metal Compatibility

A nickel layer on the copper base plate allows the Intel 1851 Mycro Direct-Die Pro RGB V1 to be used with liquid metal between the CPU die and cooler. Liquid metal offers optimal thermal transfer from the silicon die to the copper cooler. The nickel plating prevents gallium-based liquid metal from diffusing into the copper, forming a barrier layer that eliminates the need for multiple liquid metal applications.

As a direct-die water cooler, the Intel 1851 Mycro Direct-Die Pro RGB V1 also functions as a contact frame, replacing the motherboard's Integrated Loading Mechanism (ILM). This design ensures optimal mounting pressure on the processor in the motherboard socket. The cooler is hand-tightened using the included angle wrench, without requiring special tools. A plastic coating on the cooler's contact surface provides insulation, preventing memory detection issues.

### Tempered Acrylic Glass, RGB Lighting, and Aluminum Cover

The Intel Mycro Direct-Die Pro RGB V1 features an anodized aluminum cover with RGB LEDs underneath that illuminate the annealed acrylic glass. This lighting can be controlled via a 3-pin ARGB header (+5V/DATA/GND) on the motherboard. The Intel Mycro Direct-Die Pro RGB V1 connects to the custom water cooling loop through G1/4-inch threaded inlets and outlets.

After milling, the acrylic glass is subjected to an annealing process, which relieves the acrylic glass of internal stresses. This ensures that no stress cracks form in the acrylic glass even after a long service life, as can occur with tempered acrylic glass. If RGB lighting is not desired, the RGB connection cable can remain unplugged for cable management.

### Short information

- Water cooler for direct-die mounting
- Micro fin cooler made of nickel-plated copper
- Replaces ILM and heat spreader
- Acrylic and aluminum cover
- G1/4-inch fittings
- CPU compatibility list available online
- For delidded CPUs only! Warning: warranty void!

### Jet System Cooling Surface and Optimized Cooling Channel Slot Width for Maximum Cooling

The top side of the Intel 1851 Mycro Direct-Die Pro RGB V1's copper base plate incorporates micro fins with a hybrid structure. Over the thermal hotspot, cooling channels have a narrower slot width, while the width over cooler chip areas is slightly larger. Combined with the U-profile at the edge of the cooling surface and a jet plate in the lid, this design minimizes flow resistance, allowing efficient heat transfer from the processor to the custom water cooling loop.

### Technical data

Unit:	Value/Description:
Material:	Copper (nickel plated) Acrylic (annealed) Aluminum (anodized)
Color:	silver, black
Typical application:	Direct Die water cooler
Connectors:	2x G1/4 inch
Length:	70 mm
Width:	53 mm
Total height:	25 mm
Package size:	10,5x9,5x4 cm
*Gross weight:	261g
*Net weight:	205g
EAN-Code:	4260711991165
Item number:	TG-MY-DD-P-RGB-i1851-V1
PU:	7 Pcs.

\*Net weight is the total weight of an article excluding the weight of packaging and accessories. The gross weight refers to the total weight of the product including accessories and packaging. Slight weight deviations are possible due to production factors.

## Intel Mycro Direct-Die Pro RGB V1 in Practice

At a pre-launch event with ASUS in Taiwan, the Intel Core Ultra 9 285K paired with the Intel 1851 Mycro Direct-Die Pro RGB V1 was tested. With a custom 360 mm radiator setup, temperatures of around 60°C were measured on the P-Cores (5.4 GHz). Comparatively, a custom water cooling with a 280 mm radiator yielded temperatures of around 90°C on the performance cores, a difference of nearly 30°C.

In internal tests\*\*, the Intel 1851 Mycro Direct-Die Pro RGB V1 outperformed the comparison cooler used in standard tests. Under laboratory conditions, the tested processor was cooled to 55°C under load with the Mycro Direct-Die, 23°C lower than the comparison cooler's average temperature of 78.6°C under load.

Testing was conducted with an engineering sample of the Intel Core Ultra 9 285K (4.7 GHz, 1.4 V, PL unlocked, LLC Level 5) in a custom loop featuring a Watercool MO-RA3 radiator and four 200 mm Noctua fans. A Keyence FD-X flow sensor was used, providing the advantage of generating no resistance within the water circuit. The Xylem Lowara D5 pump operated at approximately 3,400 RPM. Conductionaut Extreme liquid metal was applied to the die of the delidded processor.

Please note: Delidding the processor is performed at your own risk and will void the warranty!

\*It should be noted that the temperature improvements achieved depend on several factors. In addition to the quality of the individual processors ("Silicon Lottery"), test results are also influenced by the room temperature and the cooling system used. With a custom water cooling system, for example, the cooling performance depends on factors such as the pump speed and the fans and radiators used. The specified values are guide values that may be higher or lower in individual cases.

## Quality without compromise: Made in Germany

The Intel 1851 Mycro Direct Die Pro RGB V1 is manufactured to the highest quality standards at our production site in Germany. The entire production chain is continuously monitored by our expertly trained staff. Particular attention is paid to the microfins, which are specially protected from contamination during the production chain.

All Intel 1851 Mycro Direct Die Pro RGB V1 are also subjected to a compressed air test (600 mbar) as part of quality control after assembly. Each water cooler is provided with a serial number and a corresponding pressure test report is included.

Attention: Removing the heat spreader ("delidding") of a processor is at your own risk! The manufacturer's warranty expires when the CPU is delidded! Damage caused by delidding the CPU is not covered by the manufacturer's warranty!

Removing the Integrated Loading Mechanism (ILM) of the mainboard may invalidate the manufacturer's warranty of the mainboard manufacturer!

## Note on the use of KryoSheet

The Intel 1851 Mycro Direct-Die Pro RGB V1 was extensively tested internally across various scenarios. During development, great emphasis was placed on stable operation of the processor and RAM. For example, the Intel 1851 Mycro Direct Die Pro RGB V1 is mounted in such a way that the outer edges of the cooler do not rest on the mainboard. In our test series, KryoSheet in combination with the Intel Mycro Direct Die V1 was unable to achieve any significant improvements in terms of temperature and was problematic in terms of contact pressure. For this reason, we cannot recommend thermal pads because their additional thickness has a strong influence on the contact pressure and can therefore impair the function.

## Trademark Information

Thermal Grizzly is a registered trademark.

## Please note

The data in this technical data sheet are based on our current knowledge and experience. Due to the large amount of possible factors, this should not be construed as to release the users from doing their own tests and screening. No legally binding assurance of specific properties or applicability for a concrete purpose should be derived from these data. Please consider contacting us for further detail. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.