Thermalright TR-M.2 2280 Pro SSD

Thermalright TR-M.2 2280 Pro SSD Heatsink Instruction Manual

Model: TR-M.2 2280 Pro SSD

1. Product Overview

The Thermalright TR-M.2 2280 Pro SSD Heatsink is designed to enhance the thermal performance of M.2 2280 Solid State Drives. It features an aluminum alloy top cover, an 8mm pure copper heat pipe, and a stainless steel backplate, combined with double-sided thermal pads to efficiently dissipate heat and prevent thermal throttling during intensive operations.

Figure 1.1: Thermalright TR-M.2 2280 Pro SSD Heatsink.

This heatsink is engineered with angular cutting in multiple dimensions to maximize the heat dissipation surface area. Its robust construction ensures durability and effective cooling for your M.2 SSD.

Figure 1.2: Heatsink construction showing anodized and sandblasted aluminum for corrosion resistance and increased surface area.

Figure 1.3: Internal 8mm heatpipe for efficient heat transfer from the SSD.

2. Package Contents

- Thermalright TR-M.2 2280 Pro SSD Heatsink (Top Cover with integrated heatpipe and Bottom Plate)
- Double-sided Thermal Pads (pre-applied or separate)
- Mounting Screws (typically 4)

3. Compatibility

This heatsink is primarily designed for M.2 2280 form factor SSDs (22mm width, 80mm length). It is compatible with both single-sided and double-sided M.2 2280 SSDs. Partial compatibility may exist for M.2 2260 and 2242 SSDs, depending on the specific motherboard and mounting configuration.
Note: This heatsink is generally not compatible with M.2 interfaces mounted on the back of ITX motherboards due to space constraints.

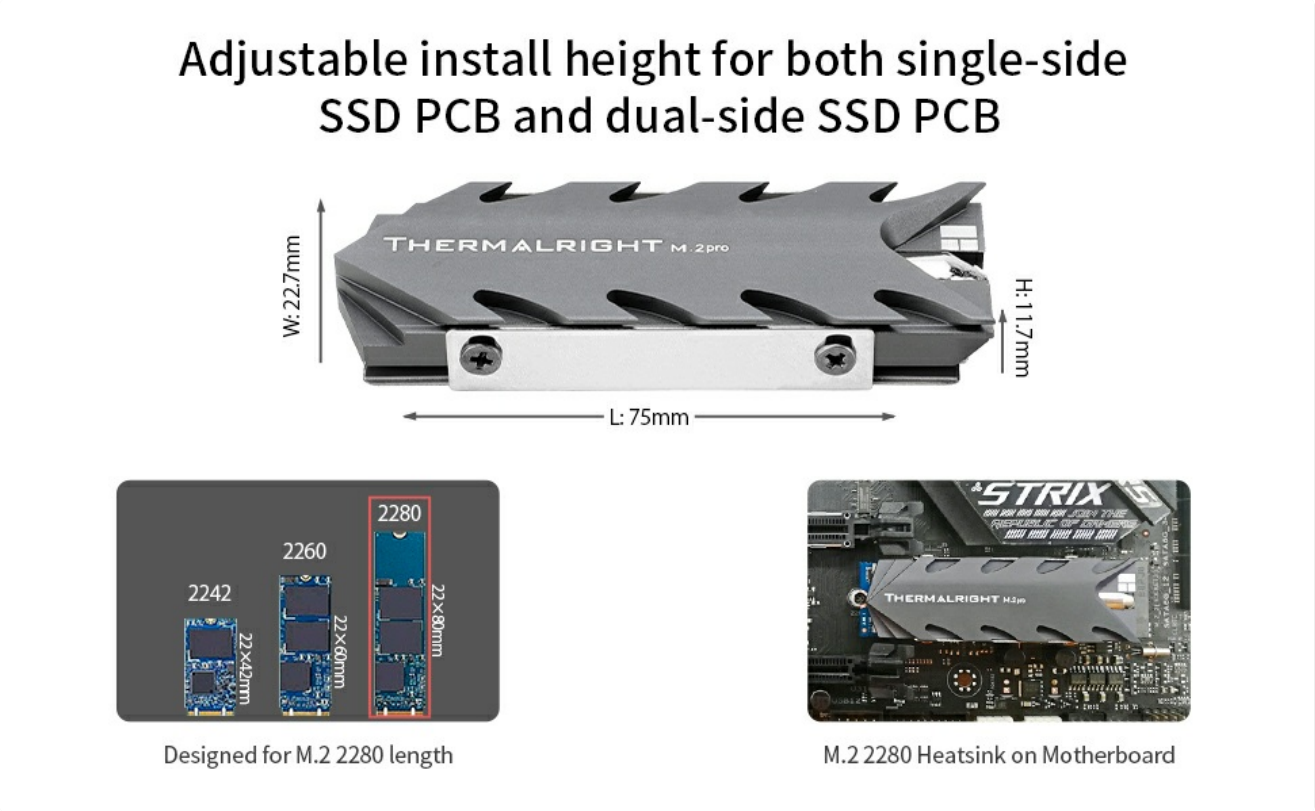

Figure 3.1: Heatsink compatibility with various M.2 SSD lengths and installation on a motherboard.

4. Installation Guide

Follow these steps to install the Thermalright TR-M.2 2280 Pro SSD Heatsink:

1. **Prepare your M.2 SSD:** Ensure your M.2 SSD is clean and free of dust or debris.
2. **Prepare Thermal Pads:** If the thermal pads are not pre-applied, carefully remove the protective film from both sides of the thermal pads.
3. **Attach Thermal Pads:** Place one thermal pad onto the top surface of your M.2 SSD. If your SSD is double-sided, place another thermal pad onto the bottom surface of the SSD.
4. **Assemble Heatsink:** Place the M.2 SSD with thermal pads onto the bottom plate of the heatsink. Then, align the top cover of the heatsink over the SSD and bottom plate.
5. **Secure Heatsink:** Use the provided mounting screws to secure the top cover and bottom plate together, sandwiching the SSD and thermal pads firmly. Ensure the screws are tightened evenly but do not overtighten.
6. **Install on Motherboard:** Insert the assembled SSD and heatsink into the M.2 slot on your motherboard. Secure it with the motherboard's M.2 retention screw. Ensure proper alignment to avoid interference with other components.

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Video 4.1: Installation tutorial for the Thermalright M.2 2280 Pro SSD cooler series. This video demonstrates the steps for applying thermal pads and assembling the heatsink onto an M.2 SSD.

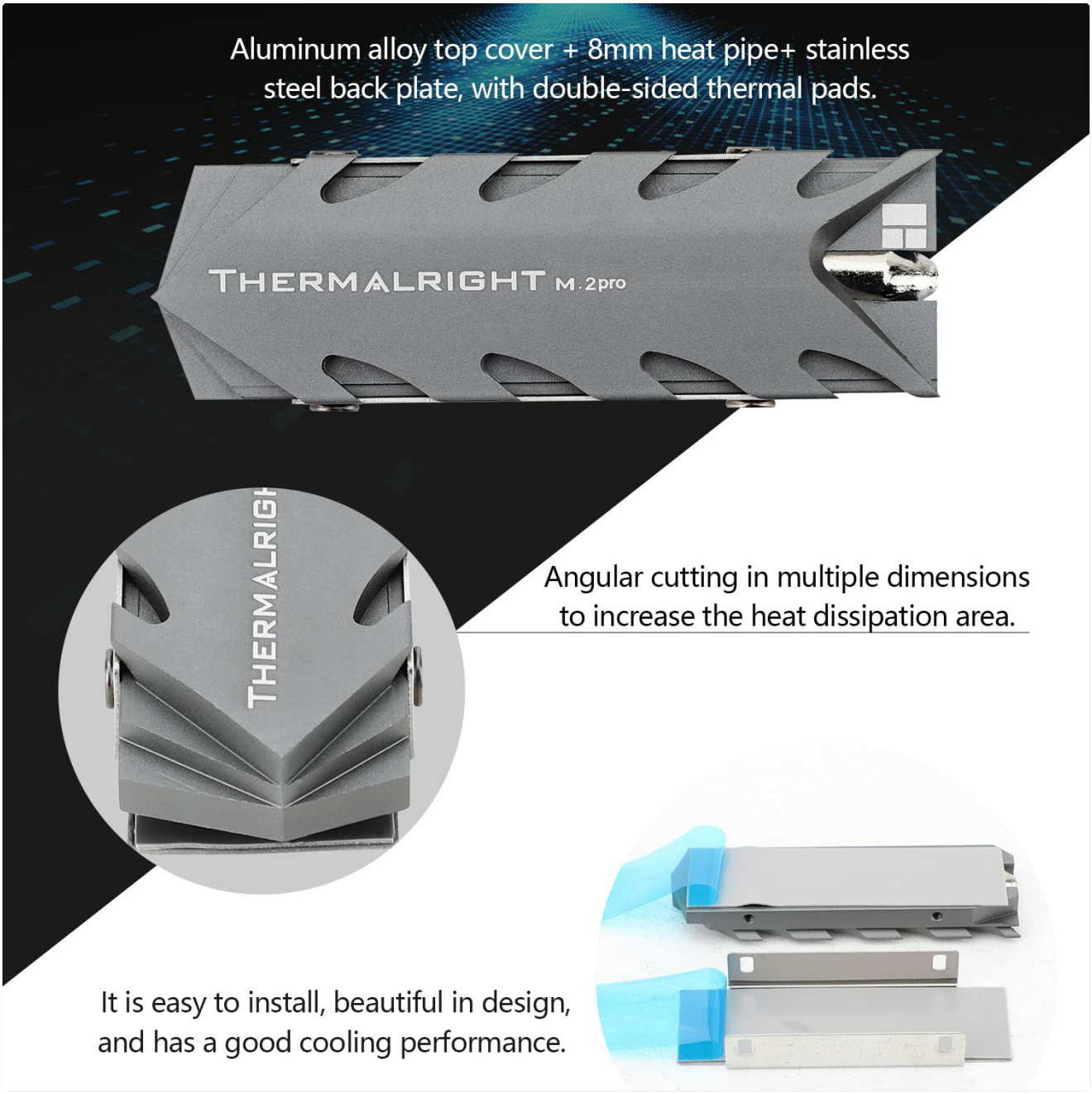

Figure 4.2: Visual guide for applying thermal pads and assembling the heatsink components.

Figure 4.3: Illustration of the heatsink's thickness (8.5mm) and its compatibility with surrounding components on a motherboard.

5. Operating Principles

The Thermalright TR-M.2 2280 Pro SSD Heatsink operates passively. The thermal pads establish direct contact with the SSD's components, transferring heat to the aluminum heatsink and the integrated copper heat pipe. The heat pipe efficiently moves heat away from the SSD to the larger surface area of the aluminum fins, which then dissipate the heat into the surrounding air within your computer case. This process helps maintain optimal operating temperatures for your M.2 SSD, preventing performance degradation due to overheating.

Figure 5.1: The 8mm pure copper heat pipe, crucial for rapid heat transfer and buffering high temperatures.

6. Maintenance

The heatsink requires minimal maintenance. Periodically, inspect the heatsink for dust accumulation. If dust is present, gently clean it using compressed air or a soft brush. Ensure no foreign objects obstruct the fins, as this can reduce cooling efficiency. Avoid using liquid cleaners directly on the heatsink or SSD.

7. Troubleshooting

- **High SSD Temperatures:**
  - Verify that the heatsink is installed correctly and securely.
  - Ensure the thermal pads are making full contact with both the SSD and the heatsink surfaces.
  - Check for adequate airflow within your computer case. Poor case ventilation can hinder heatsink performance.
  - Confirm that the heatsink is compatible with your specific M.2 SSD model and motherboard configuration.
- **Heatsink Not Fitting:**

- Double-check the dimensions of your M.2 SSD and the available clearance on your motherboard, especially near other components like GPUs or CPU coolers.
- Ensure you are not attempting to install on an incompatible M.2 slot (e.g., back of an ITX motherboard).

8. Specifications

Feature	Detail
Model	TR-M.2 2280 Pro SSD
Dimensions (L x W x H)	75mm x 22.7mm x 11.7mm (2.95"L x 0.89"W x 0.46"H)
Body Material	Aluminum Alloy (anodized and sandblasted)
Heat Pipe	8mm Pure Copper Heat Pipe
Thermal Interface Material	Double-sided Thermal Pads
Compatibility	M.2 2280 SSDs (single-sided and double-sided), partly compatible with M.2 2260/2242 SSDs
Weight	0.05 Kilograms

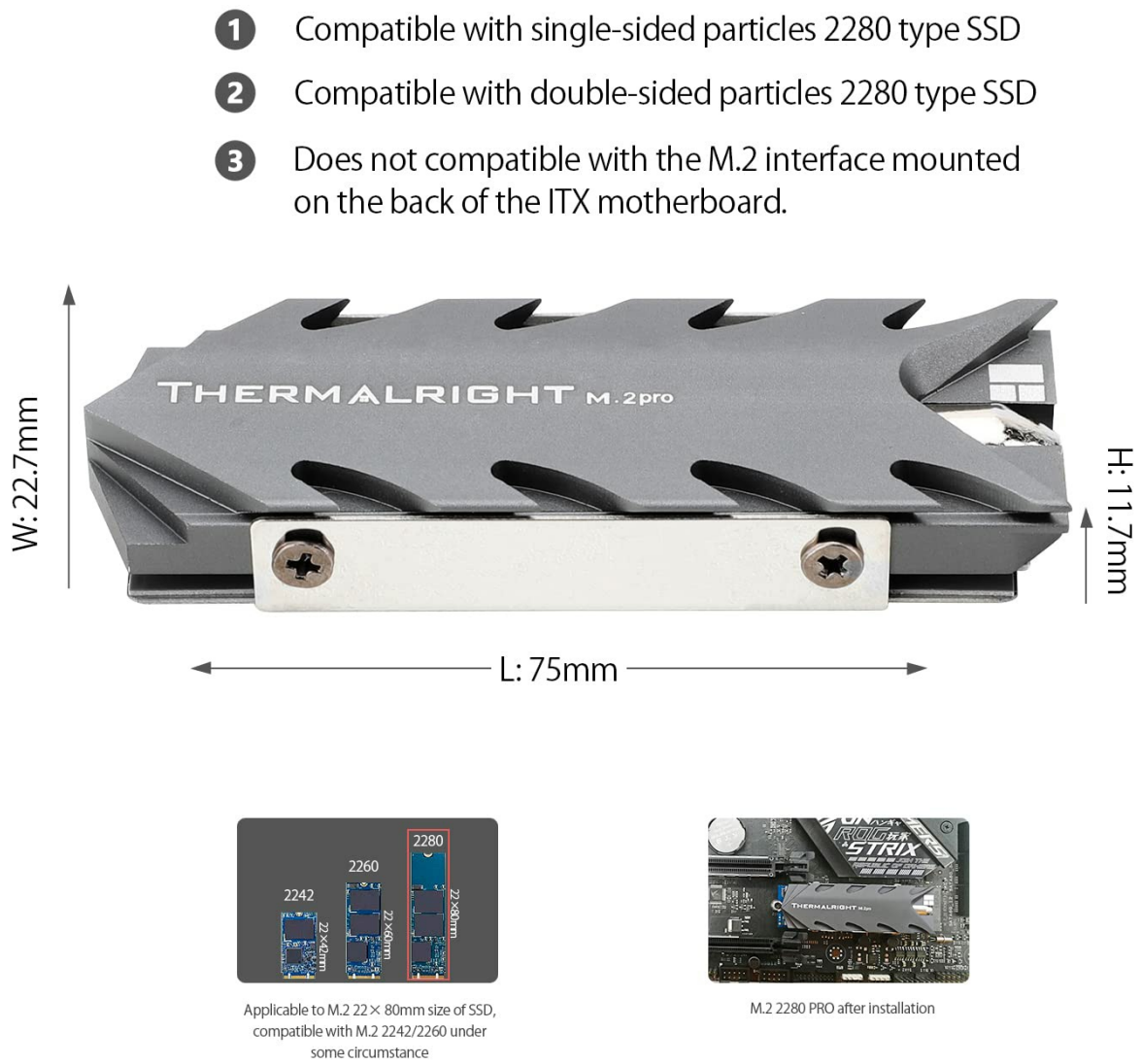

Figure 8.1: Detailed dimensions of the heatsink and M.2 SSD compatibility.

9. Warranty and Support

For warranty information, please refer to the documentation included with your purchase or visit the official Thermalright website. For technical support or further inquiries, please contact Thermalright customer service through their official channels.

Official Thermalright Website: www.thermalright.com