SM550/SM560
Thermal Benchmarks

SLIGER

Process Summary

SETUP

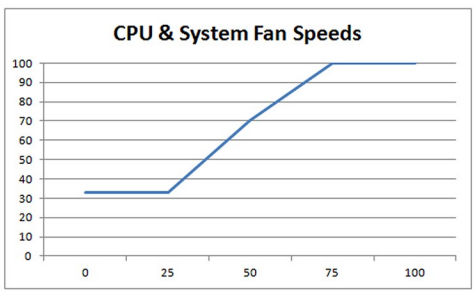
For our tests we used an Intel i5-9600K CPU, Asus ROG Strix Z370-I Gaming Motherboard, Corsair Vengeance RGB Pro 16GB 2666MHz Memory, Asus ROG Strix 1070 GPU, MSI RTX 2070 Gaming Z GPU, two Cooler Master Blade Master 120 case fans, and a variety of CPU heatsinks.

We ran a series of baseclock tests as well as overclocked. For overclocking we set the CPU to 4.4 GHz with -.100 PSU offset. We chose not to overclock GPU for consistency between both cards being used, due to them both having different overclocking capabilities.

TESTING

For testing we used AIDA64 and Unigine's Superposition 8k for system stressing. and HWiNFO set to 2 seconds for logging results. Logging was run for a total of 13 minutes per set up, with the first minute being used to establish idle temperatures, followed by ten minutes of stress testing and two minutes for the system to cool.

CPU and system fan speeds were automatically set in BIOS via fan optimization.

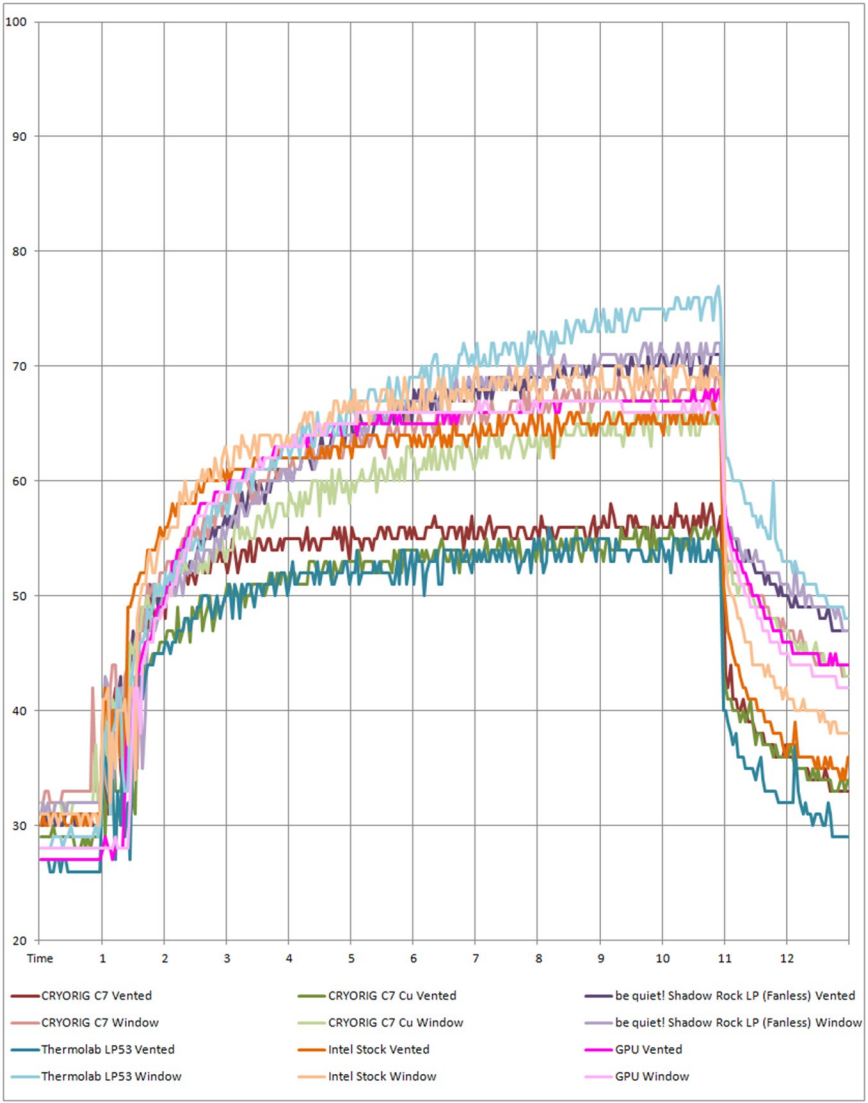


The following heatsinks were tested

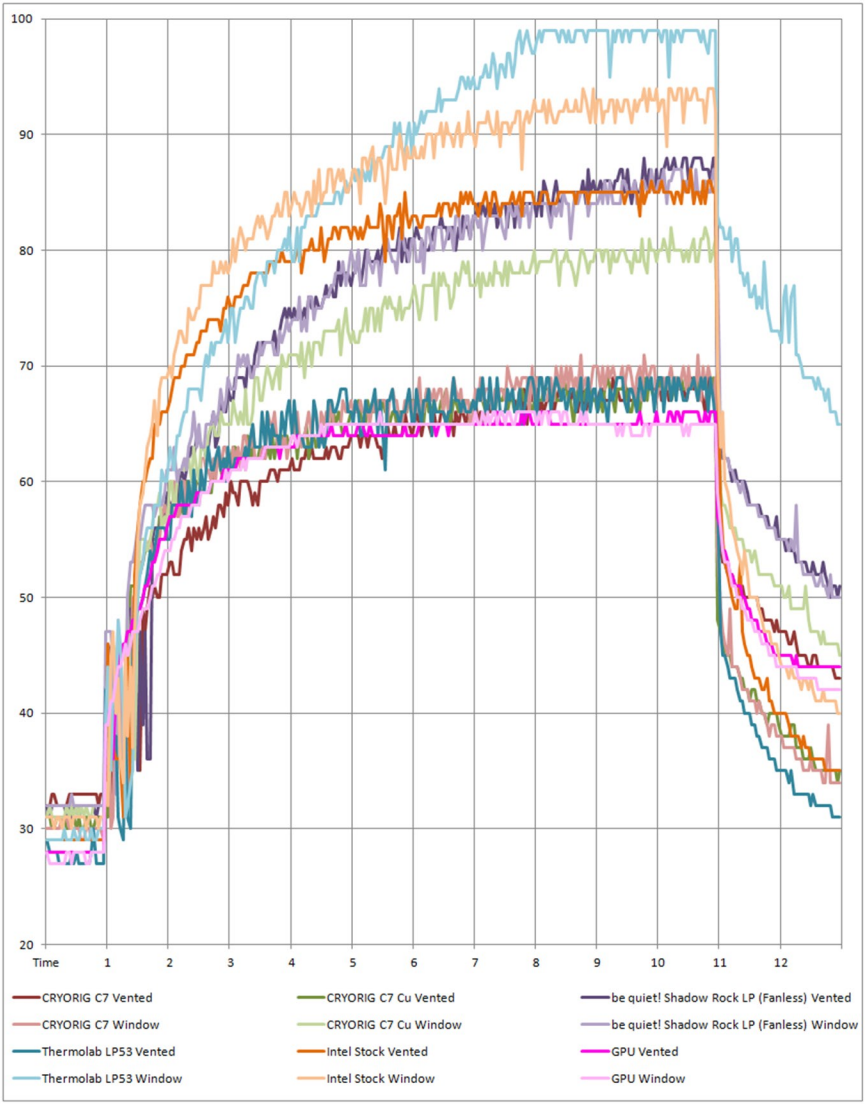
- CRYORIG C7
- CRYORIG C7 Cu
- be quiet! Shadow Rock LP without an attached fan
- Thermolab LP53 with stock fan
- Intel stock fan and heatsink

All graphs and temperatures measured in celsius.

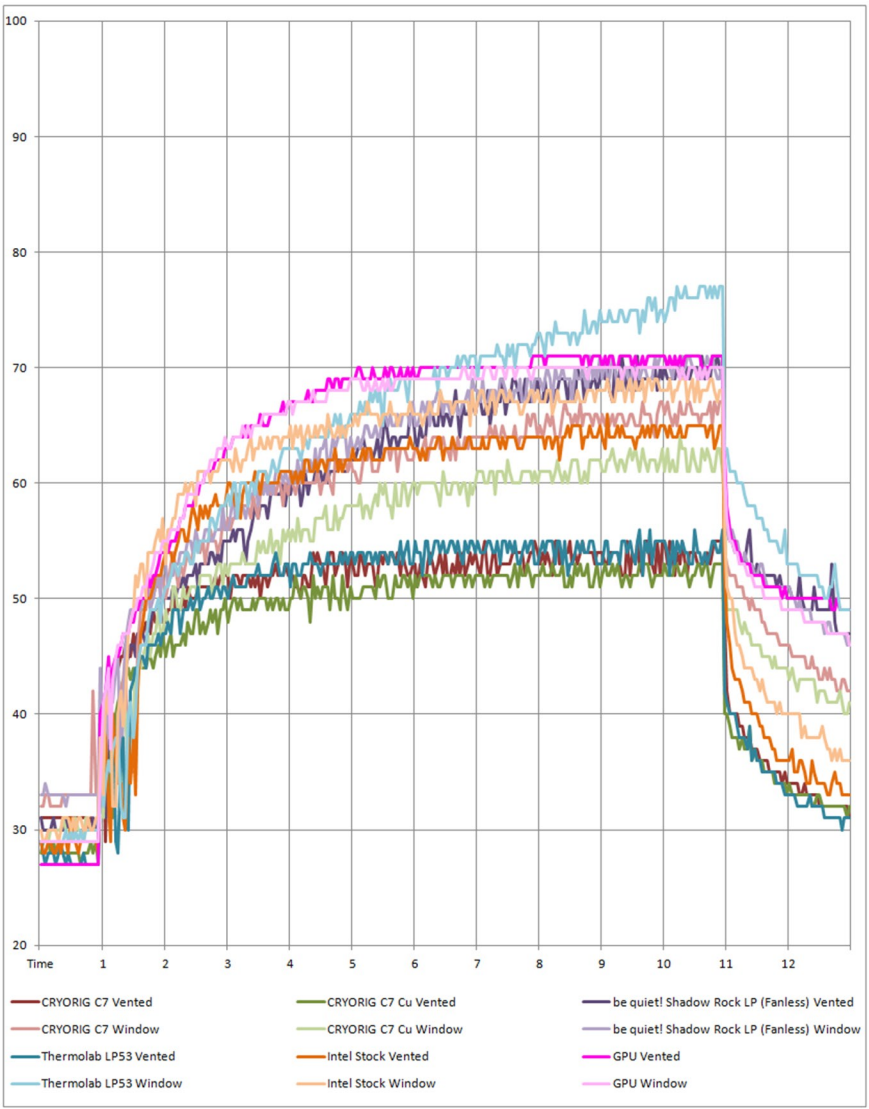
Stock 9600K with GTX 1070



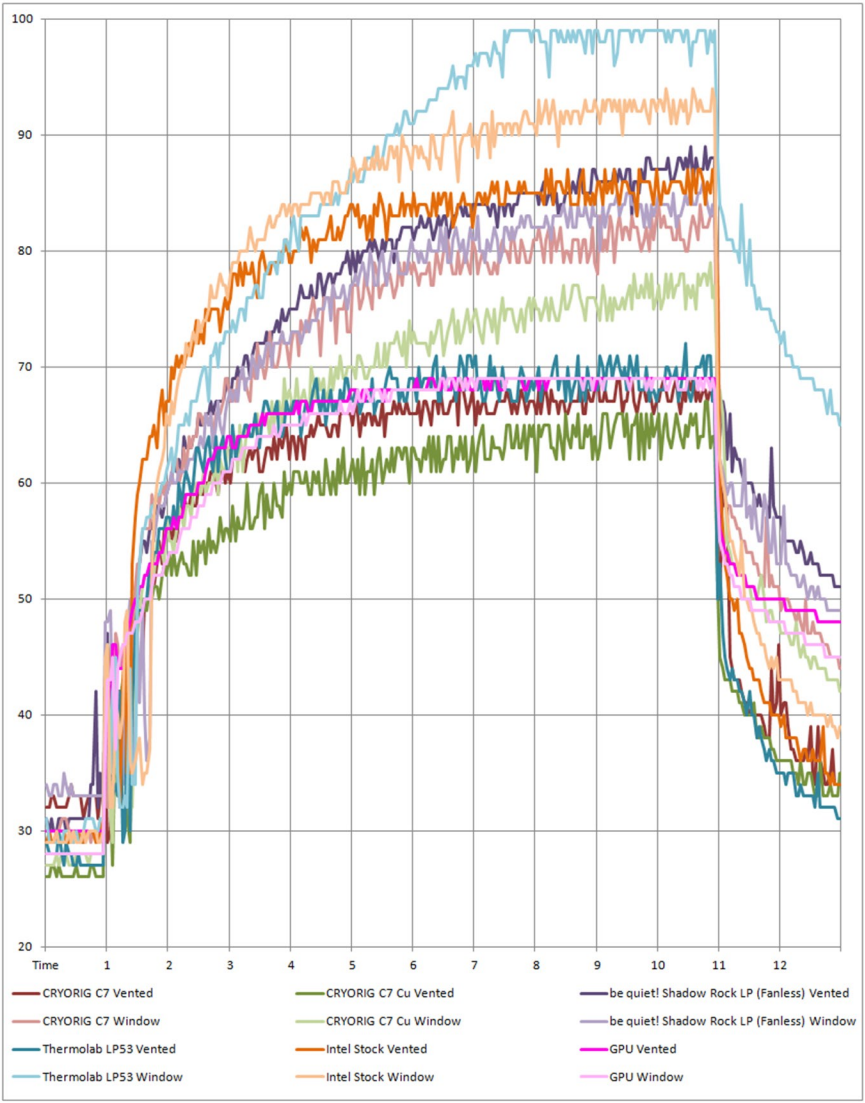
Overclocked 9600K with GTX 1070



Stock 9600K with RTX 2070



Overclocked 9600K with RTX 2070



Results Summary

GPU Temperature Results

For the most part, regardless of CPU cooling option, the GPU temperatures stayed the same. That shouldn't be surprising as any fans directly interacting with the GPU were consistent throughout testing.

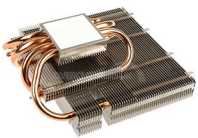
CRYORIG C7 Cu - Great Temps, Mightly Loud

Given the array of fans and heatsinks we used, the CRYORIG C7 Cu performing the best might not be too surprising. With a peak max CPU core temp of 82 °C in our most heat intensive test, it beat it's runner up and sibling CRYORIG C7 by 5°.

CRYORIG C7 - Economical Choice, Still Loud

The CRYORIG C7 is a solid choice for most stock clock build and even lower end CPUs with modest overclocks. Temperatures were acceptable across all tests, but to achieve this the CPU fan as running at full speed for almost the entire test.

be quiet! Shadow Rock LP - Silent, Slightly Hot



Temperatures were much higher than other coolers when over-clocked, but stock clocks were in line with all other coolers on window panels.

For noise sensitive builds where higher temperatures are acceptable the Shadow Rock LP is a solid choice. However, if looking for maximum performance and noise not being a concern there are much better options.

Thermolab LP53 - Swap The Fan

With our window panels on, the LP53 was the only cooler to thermally throttle. However, vented panel results were best of the tested coolers narrowly edging out the C7 CU.

Replacing the LP53s stock fan with Noctua's slim 92x15mm this cooler could make this cooler a solid #1 choice above the C7 CU for less noise and equal performance.

Intel Stock Cooler - It didn't throttle!

Most surprising of all was the Intel stock cooler. While it didn't do amazing in any test, it never throttled and actually was on par with some of the others on base clock tests, so we'll count that as a win.