

Temp's With and Without Shrouds

Part One With Shrouds

This is part one of a 4 part test.

1-Testing with shrouds.

2-Testing with-out shrouds.

3-Testing with low cfm 120x25mm fans.

4- Testing the optimum placement of fans on a GTX rad.Flow in the GTX runs from front to back.

This test is being done at CrazyJoe's request.

Testing was done on a loop comprised of the following.Stinger V-8 DO 320W Pelt Block,2x18W DDC with Petra's Top, 480 GTX Rad with 4-108cfm Sunon and 4-115cfm Panaflo in matched pairs from front to back and about 6 feet of tubing I also had a double in res for the DO Stinger.Loop pressure was 9psi for all the tests.

I have a 3/4" shroud on the pull side of my rad and 1/2" shrouds on the push side of my rad. Fans and shrouds have clear silicone sealing the edges for a fairly air tight seal.

Heat load; 150 Opty stock 85.5W. 15V 320W Pelt run at 12V 235W. Total Wattage 320W.

I ran one hour of Prime 95 large FFT's, Measurements were taken in 10 minute intervals.Idle temp's were taken after 15 minutes at idle.

These tests were run with uncalibrated equipment and are meant only as a very simple test.The inline temp probes are the Alphacool brand inserted in a plastic T the tips are right in the flow.One before the rad and one after I have them attached to Compu-Nurse readouts.The air in and air out temp's are from flat tape themisters attached to a CM Areogate read-out. Room ambients are taken with a flat thermister attached to a Compu-Nurse read-out.The hardest part was keeping the room ambients the same. I finally gave up and just averaged out room ambients which will skew results some itself.

For all of the temp's I threw away the highest and the lowest full load readings and averaged out the other 4.I used the core-temp from Speed Fan 4.32 and Core Temp 0.95 which ever one was highest.

I will wait for all testing to be completed before I try to draw any type of conclusions from my readings.But as you can see water temp dropped across the rad becomes less with less air flow and the air temp's across the rad become more with less air-flow.

Please see following pic's for screen shots.They were taken in the final minute of each test.

Push-Pull With Shrouds

	Idle	Minutes	10	20	30	40	50	60	Average
Ambient	29C		29.5	29.5	29.5	29	29.5	29	29.375C
CPU	-4C		6	6	7	6	6	5	6C

Water In	32.5C	33.1	33.2	32.9	32.8	32.7	32.5	32.725C
Water Out	31.2C	32.1	32.4	31.7	31.2	31.8	31.1	31.7C
Air In	27.5C	28	27.5	27.5	27.5	27	27	27.375C
Air Out	31.5C	32.5	32	32	32	31.5	31.5	31.875C

CPU temp is 23.375C below room ambient. Ambient 29.375C

Water temp dropped across rad 1.025C

Air temp dropped across rad 4.5C

Pull Only With Shroud

	Idle	Minutes	10	20	30	40	50	60	Average
Ambient	28C		28	27.5	28	28.5	29.5	29	28.375C
CPU	-3		6	6	7	8	8	8	7.25C
Water In	32.1C		32.8	32.5	32.7	32.9	33.5	33.8	32.975C
Water Out	31.6C		31.3	31.5	31.5	31.3	32.5	32.7	31.7C
Air In	26.5C		26.5	26.5	26.5	27	27	27.5	26.75C
Air Out	31.5C		32	32	32	32	33	33.5	32.25C

CPU temp is 21.125 below room ambient. 2.25C hotter then Push-Pull. Ambient 28.375

Water temp dropped across rad 1.275C

Air temp dropped across rad 5.5C.

Push Only With Shroud

	Idle	Minutes	10	20	30	40	50	60	Average
Ambient	28.5C		29.5	29.5	29.5	29.5	29.5	29.5	29.5C
CPU	-4		8	9	9	9	10	10	9.25C
Water In	31.9C		34.1	34.2	34.2	34.3	34.2	34.2	34.2C
Water Out	30.2C		32.4C	33.2	33.1	33.6	33.1	33.5	33.35C
Air In	26.5C		27.5	27.5	27.5	27.5	28	27.5	27.5C

Air Out 31C 33.5 33.5 33.5 33.5 33.5 33.5 33.5C

CPU Temp is 20.25 below room ambient. 3.125C hotter then Push-Pull

Water temp dropped across rad 0.975C

Air temp dropped across rad 6C.

Passive With Shroud and Fans Still Attached

I only ran this test for 40 minutes. I just don't like my loop running that hot. I know it wasn't really that hot but I'm just weird about my temp's. I am also going to run it passive when I take off the shrouds in the second part of this test. I would think with the shrouds and fans not holding the heat in that it will cool a little better.

I added a probe to the top upper side of my rad in this test I was about 5 minutes into it before I thought of adding one. It is the hottest part of the rad. I wish I had thought of placing one on the middle and bottom part also for all of this testing. The middle seems fairly cool and the bottom warm but not as much as the top. My rad is inverted so my barbs are at the bottom.

I averaged all 4 temp's on this test.

Idle	Minutes	10	20	30	40	Average
Ambient 24C		26	27.8	29.5	29.5	28.2C
CPU -1C		17	20	22	24	20.75C
Water In 39C		48.6	51.5	53.5	54.4	52C
Water out 38.4C		48	51.1	53.2	54.3	51.65C
Side of rad ?		39.8	41.4	43.5	44	42.175C

CPU temp is 7.45C below room ambient. 16.3C hotter then Push-Pull

Water temp dropped across rad is 0.35C

Testing with-out shrouds to follow. If you see any mistakes let me know and I will correct them while I still have my written notes. If you would like me to add anything let me know and I will if I can.