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Subject: 2010 Chevrolet Camaro SS with 6-Speed Manual Transmission

Installation Difficulty



Testing Conditions

Test took place on a mild and dry December day. Temperatures were in the 46°F to 50°F range.

Apparatus

For hardware Mishimoto chose to use PLX sensor modules driven by the Kiwi WiFi plus iMFD. This is a wireless system from the sensor modules to the iPad or laptop computer. The software used was the Palmer Performance Scan XL pro, which has full data logging capabilities.



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Fluid temperatures were taken from both the inlet and outlet of the radiator using Mishimoto inline water temperature sensor adapters and PLX fluid temperature sensors.

A thermocouple was mounted in the grill of the Camaro to measure the temperature of the air as it entered the system.



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Experiment

The test compares the temperatures of the OEM radiator and the Mishimoto radiator. To conduct the test we drove the car on a highway between to 60mph (engine RPM ranged from 1800-2700) and cruised for approximately five miles. Special attention was given to the space between the Camaro and the car in front of it to ensure that fresh air was flowing into the radiator.

Special note: Water without antifreeze was used in both tests because we would be draining the water after testing.

Product notes:

The OEM Camaro radiator holds 0.79gal (3L) of coolant, whereas the Mishimoto radiator holds 1.29gal (4.9L) of coolant.

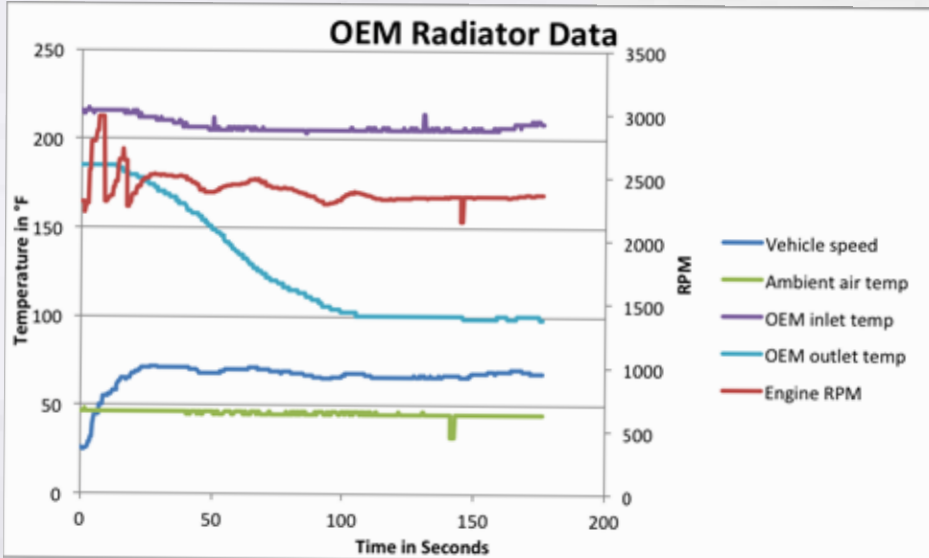


Figure 1: Highway test of OEM radiator.



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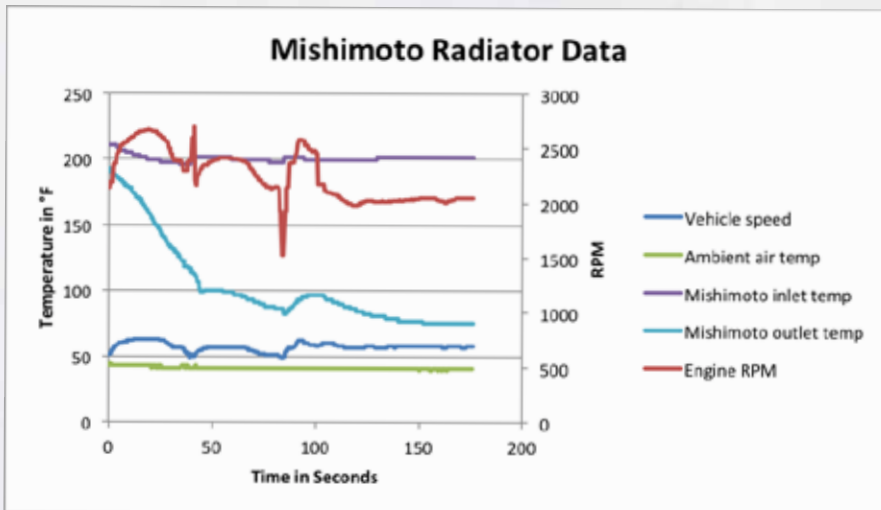


Figure 2: Highway test of Mishimoto radiator.

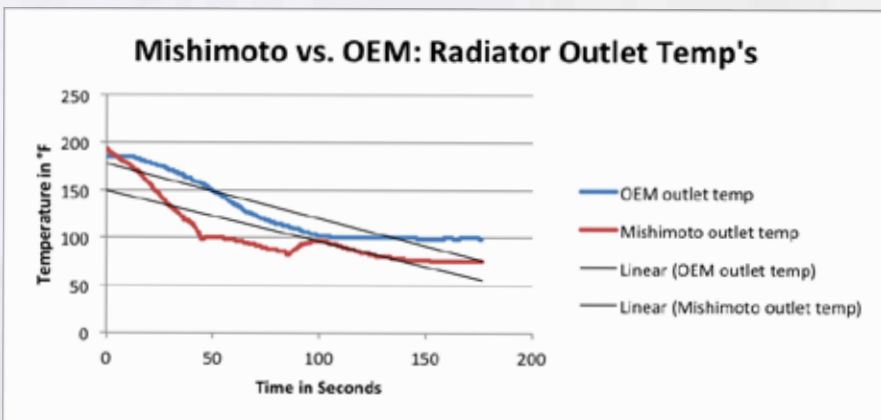


Figure 3: Comparison of radiator outlet temperatures measured from both the OEM and Mishimoto radiators. Notice that the temperatures recorded from the Mishimoto radiator are an average of 20°F cooler than the temperatures recorded from the OEM.



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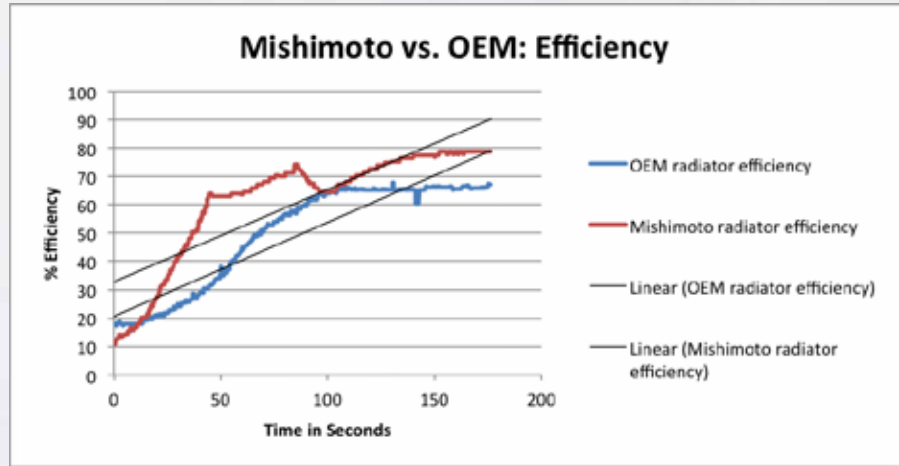


Figure 4: Comparison of efficiency between the OEM and MISHimoto radiators. Notice that at the beginning of the test, both radiators have quite a low rate of efficiency. As time goes on, the efficiency increases drastically because the radiators were heat soaked from sitting at idle for a few minutes prior to testing. At the beginning of the test the Mishimoto radiator was 8% less efficient than the OEM, but within the first minute of driving on the highway, the Mishimoto radiator's efficiency increased to more than 30% over the OEM. This observation proves that the Mishimoto radiator has a higher capacity than the OEM to keep the Camaro engine running cooler.

Summary

From the data above it can be concluded that the Mishimoto radiator is more efficient than the OEM radiator. The Mishimoto radiator holds 0.5gal (1.9L) more coolant than the OEM radiator, resulting in roughly 20% more efficiency under test conditions and an average of 20°F decrease in coolant temperatures.

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