TOYOTA MK5 SUPRA

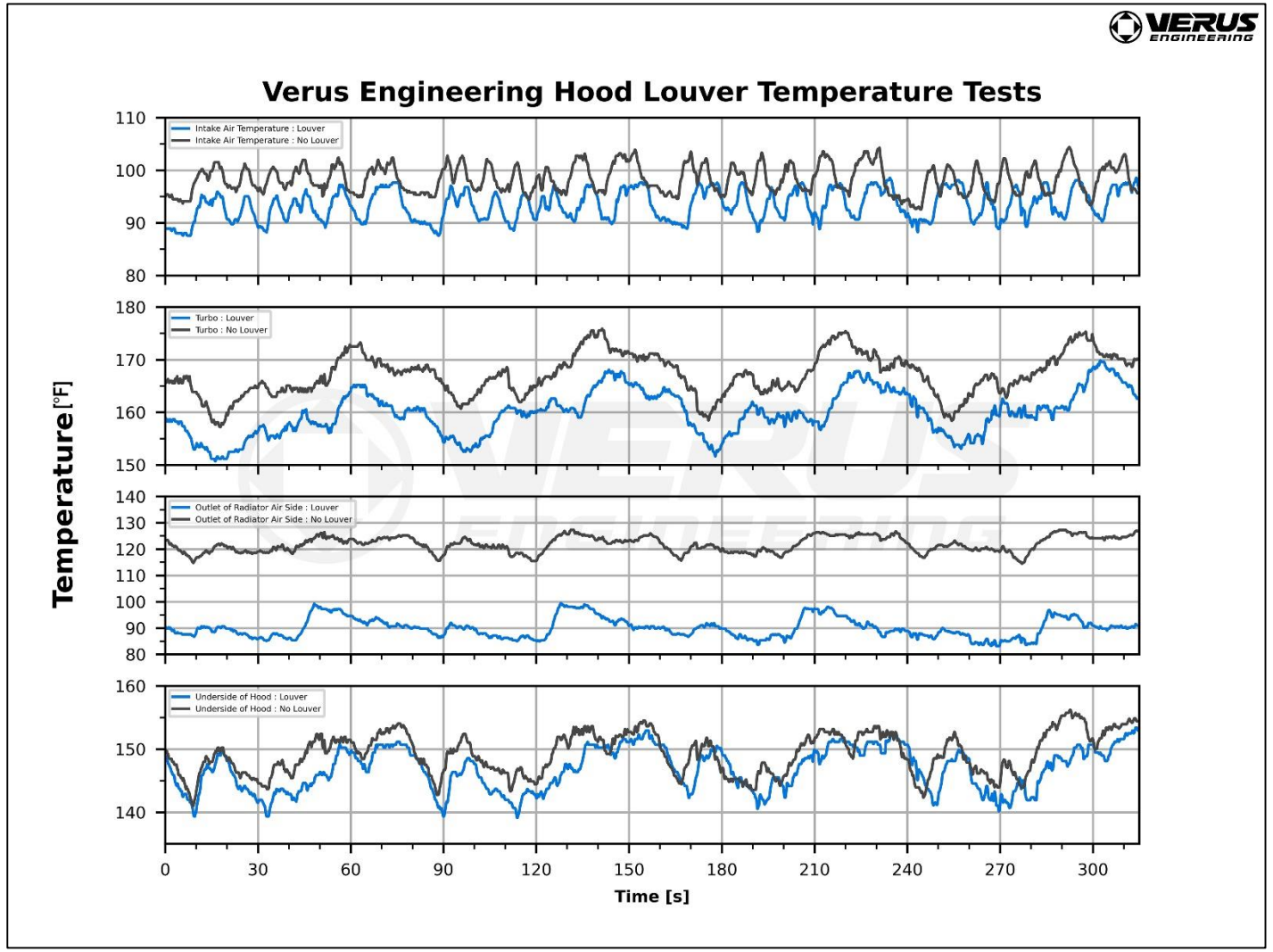
VERUS ENGINEERING HOOD LOUVER TESTING & DATA

OVERVIEW

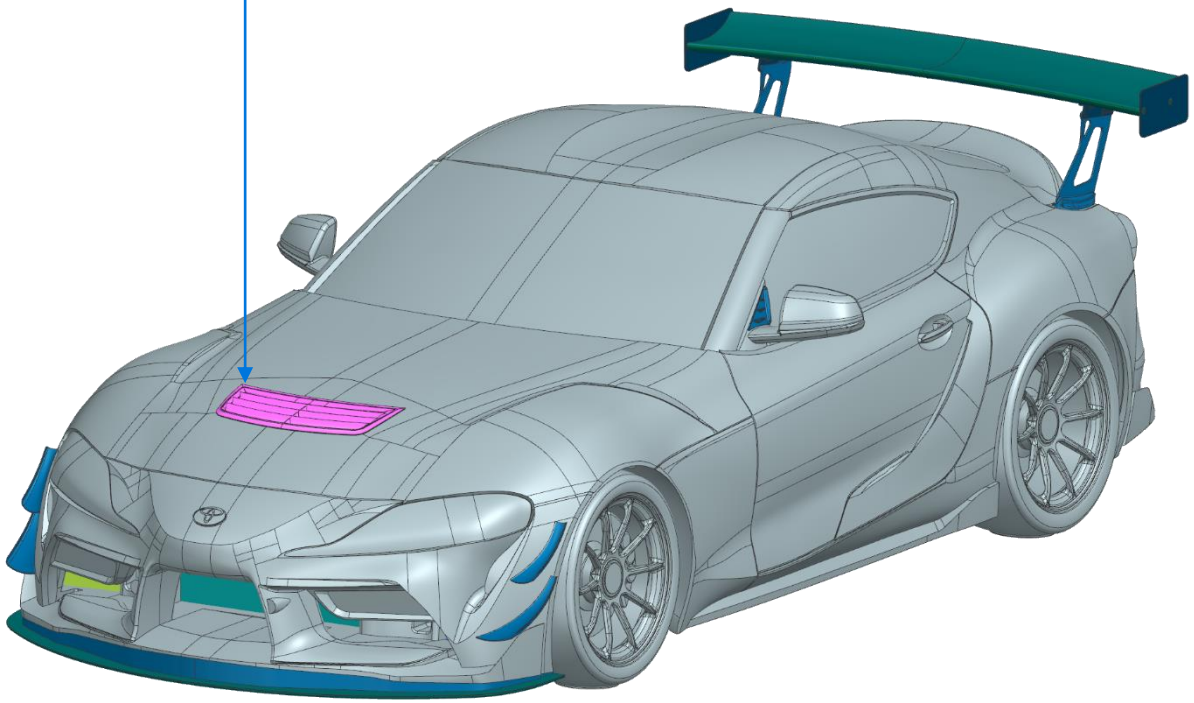
SUMMARY : OVERALL TESTING DATA

The temperature data is taken from 4 consecutive laps around Putnam Park Road Course. We installed 4 thermocouples in the engine bay (see page 5) to capture this temperature data using the AIM EVO5 data acquisition system.

The testing was done on the same day, with the same driver, same ambient temperature, similar lap times, and no traffic on track.

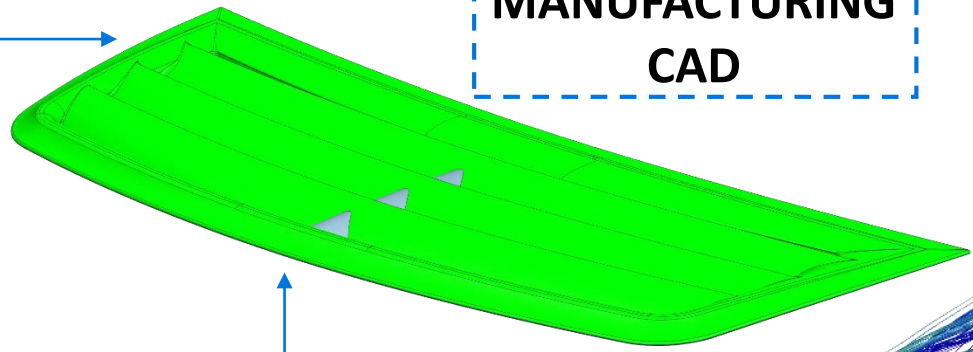


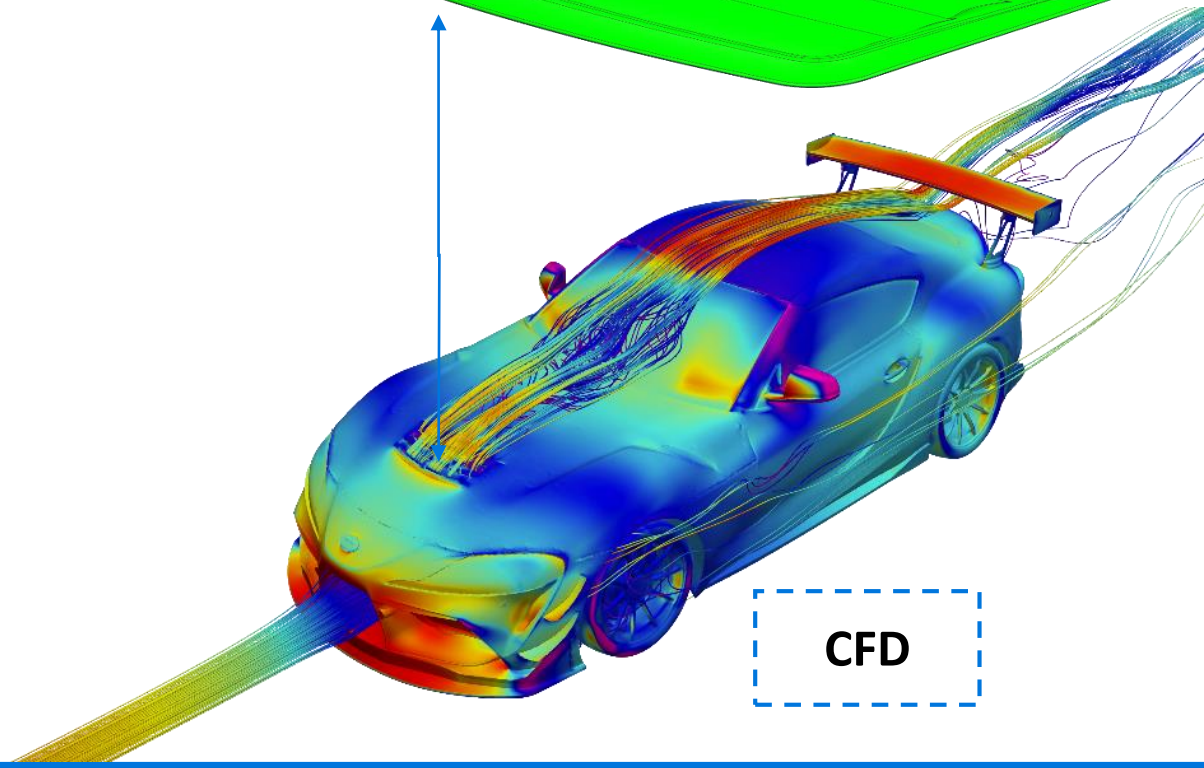
DEVELOPMENT



CAD

MANUFACTURING CAD



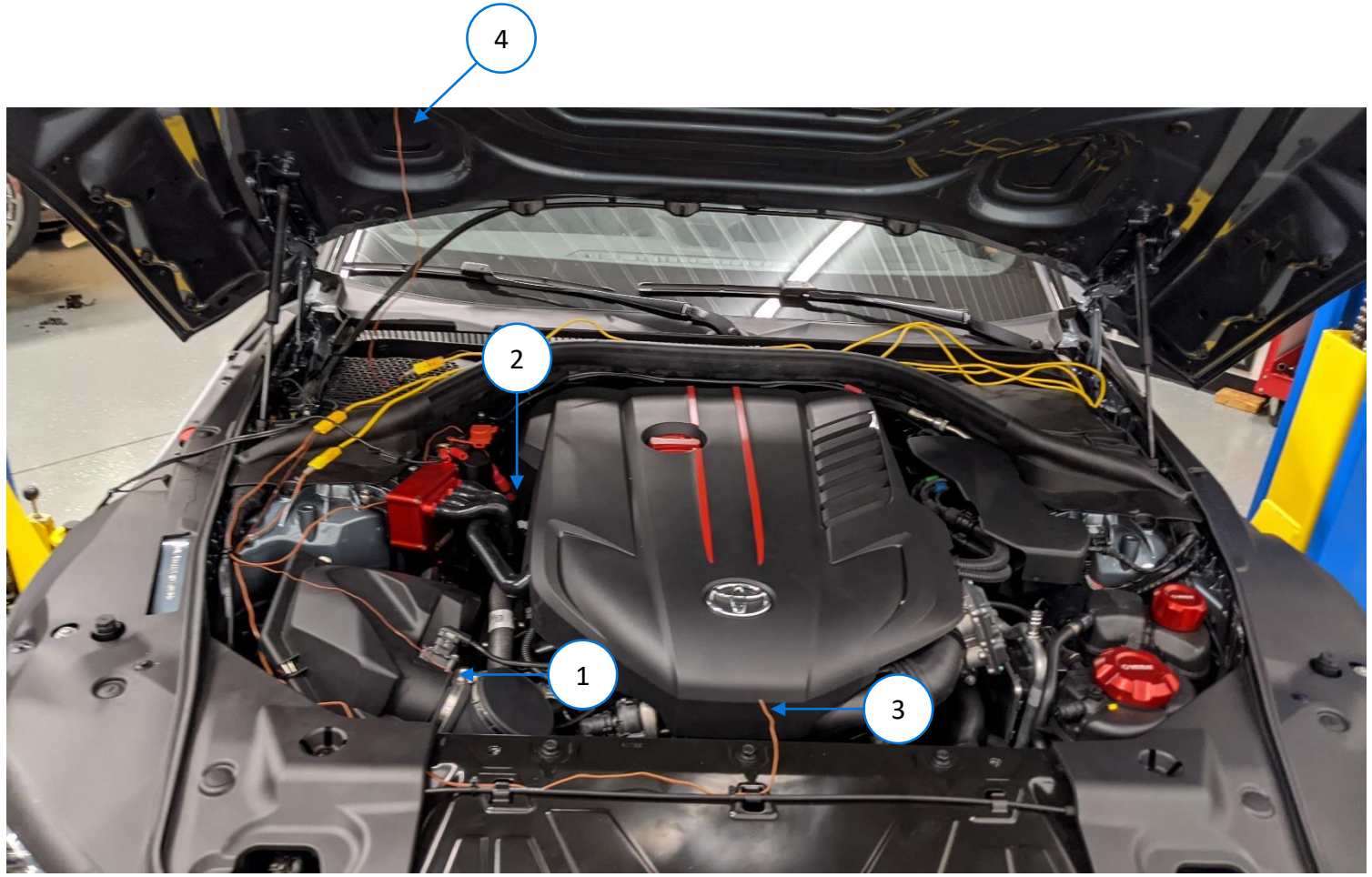


CFD

SENSOR LOCATIONS

All of these locations are separate thermocouples connected to an AIM EVO5

1. Intake Air Temperature (Inside Intake Tube, Just After Air Filter)
2. Turbo Heat Shield (Roughly 6” from Exhaust)
3. Outlet of Radiator Air Side
4. Underside of Hood

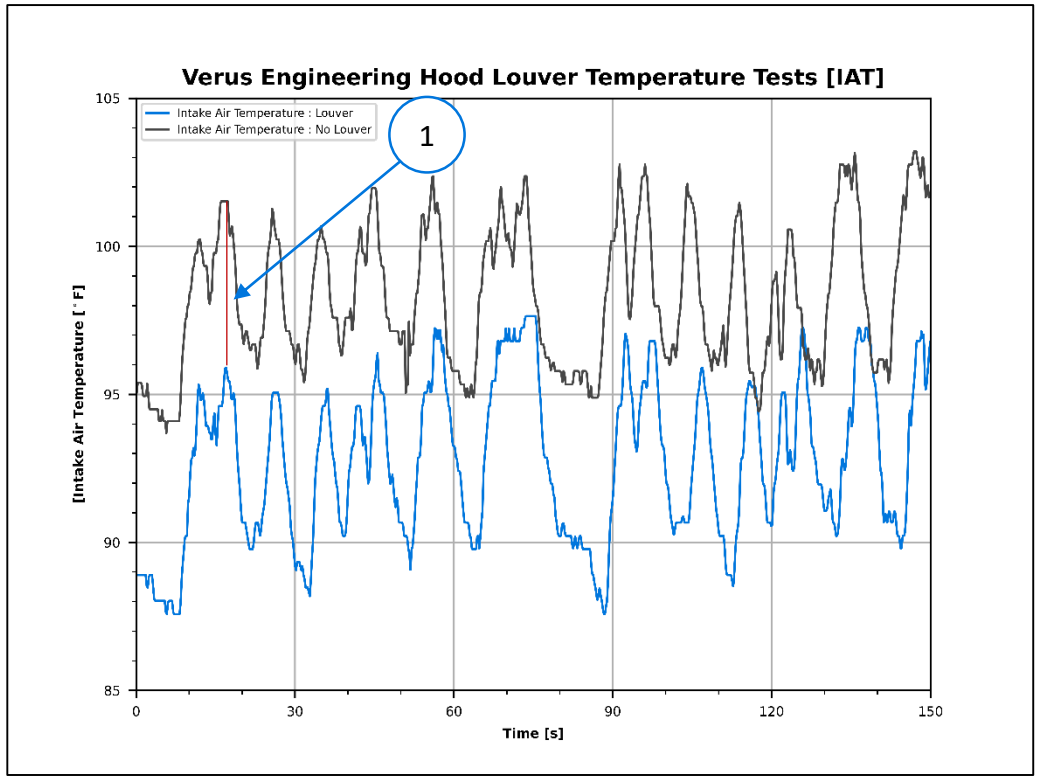


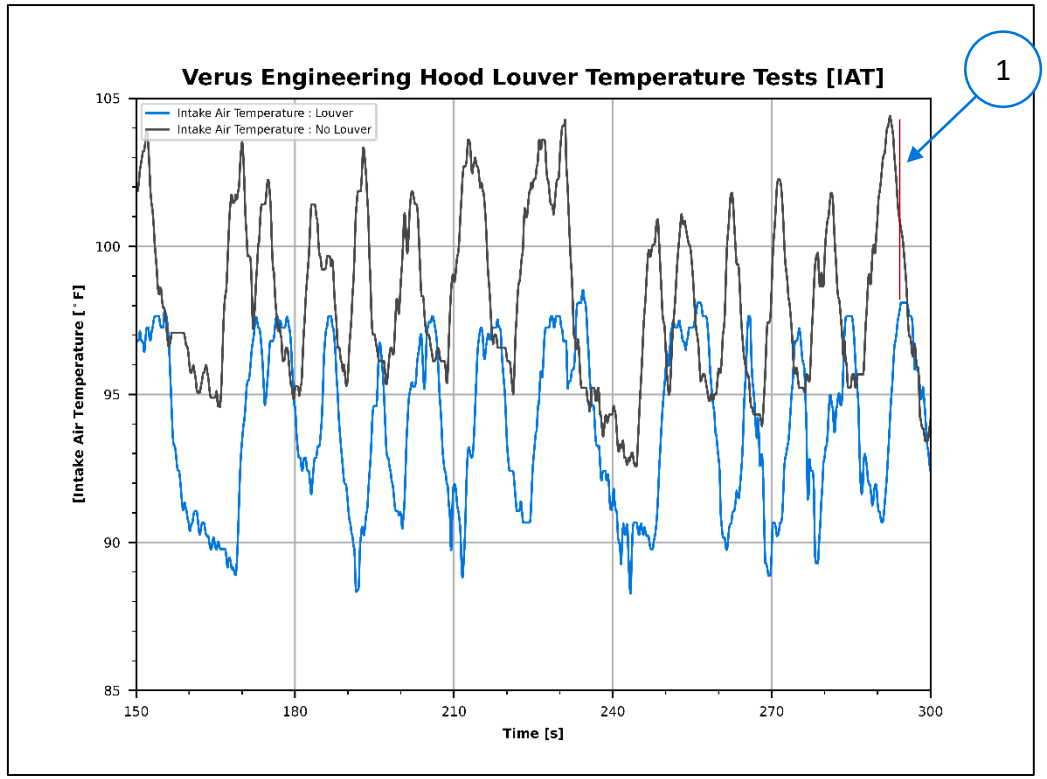
LOUVER TEST

Louver [No Tape on Louver]

No Louver [Taped off Louver]

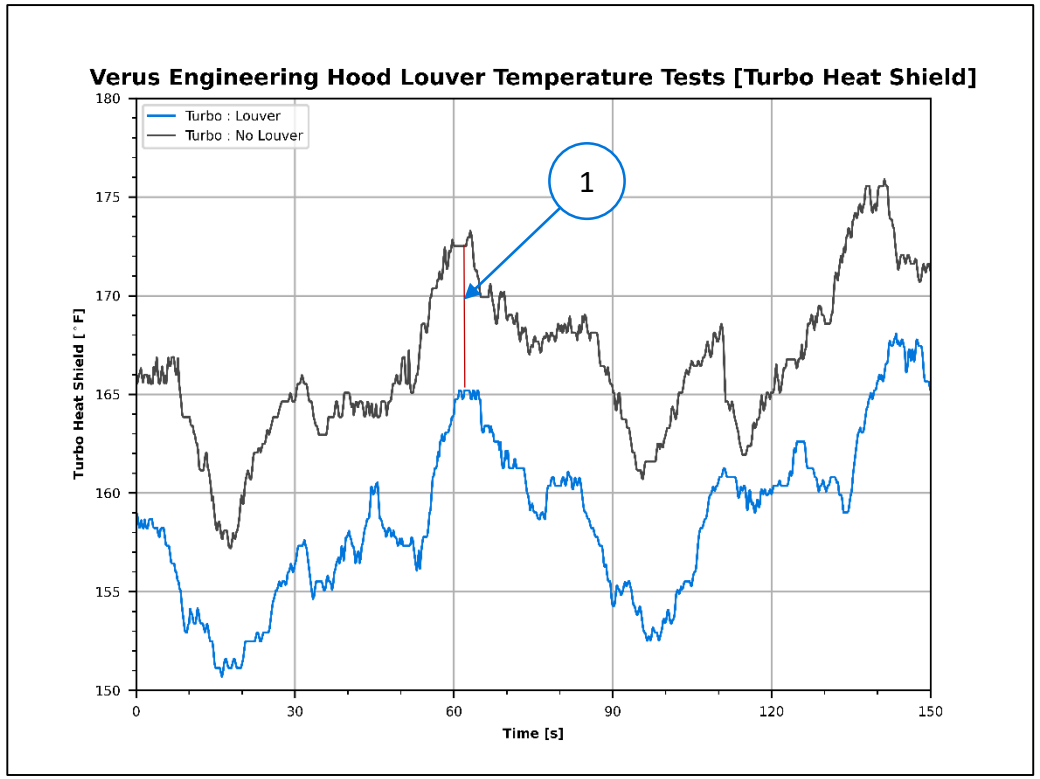
INTAKE AIR TEMPERATURE

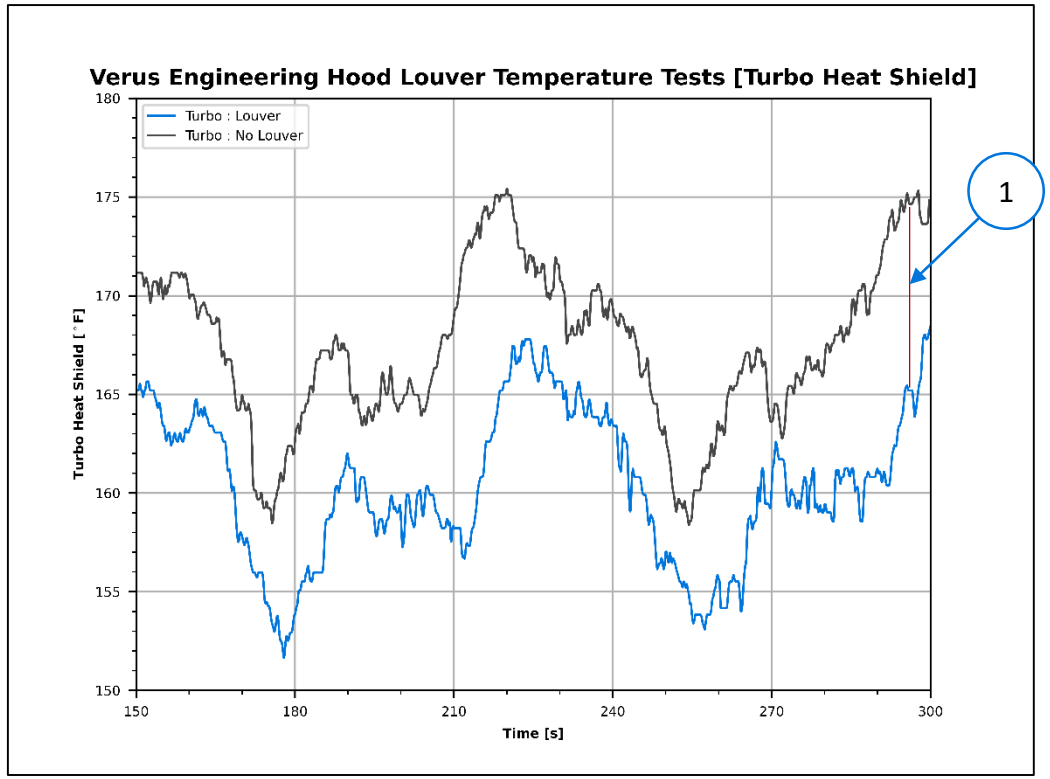




The temperature just after the airbox [Intake Air Temperature] is around 4-6 degrees Fahrenheit **lower** with the Verus Engineering Hood Louver. The hood louver helps evacuate the higher temperatures in the engine bay which helps drop the intake air temperature. Lowering the IAT's can increase horsepower output.

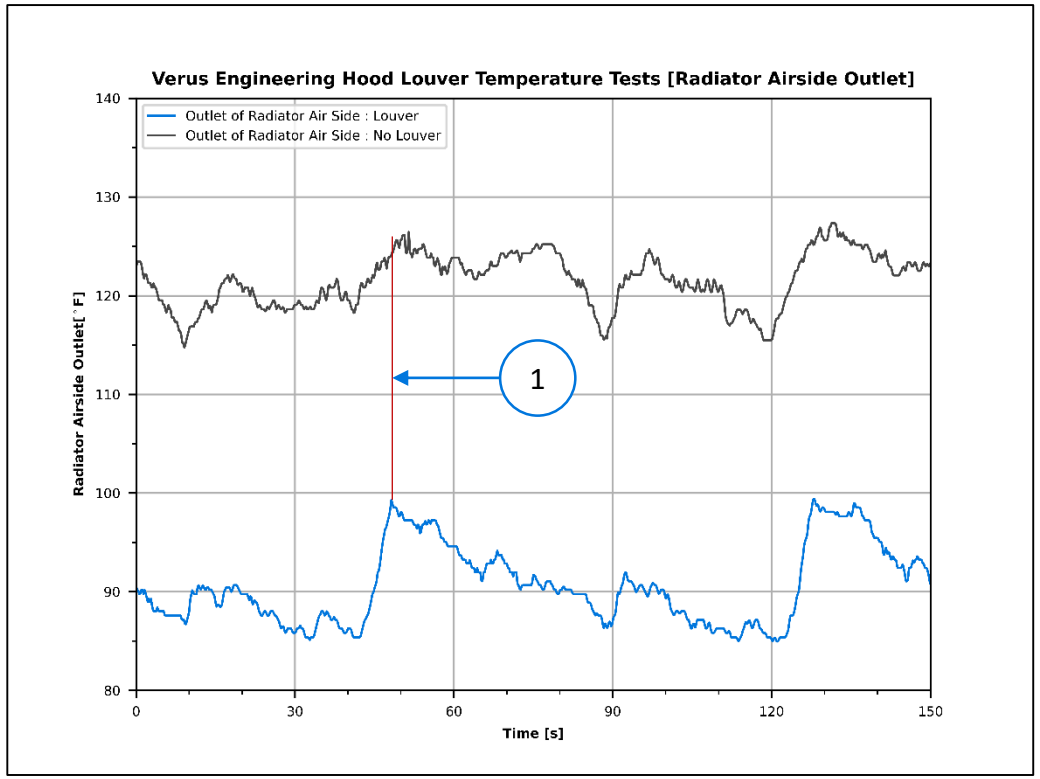
TURBO HEAT SHIELD TEMPERATURE

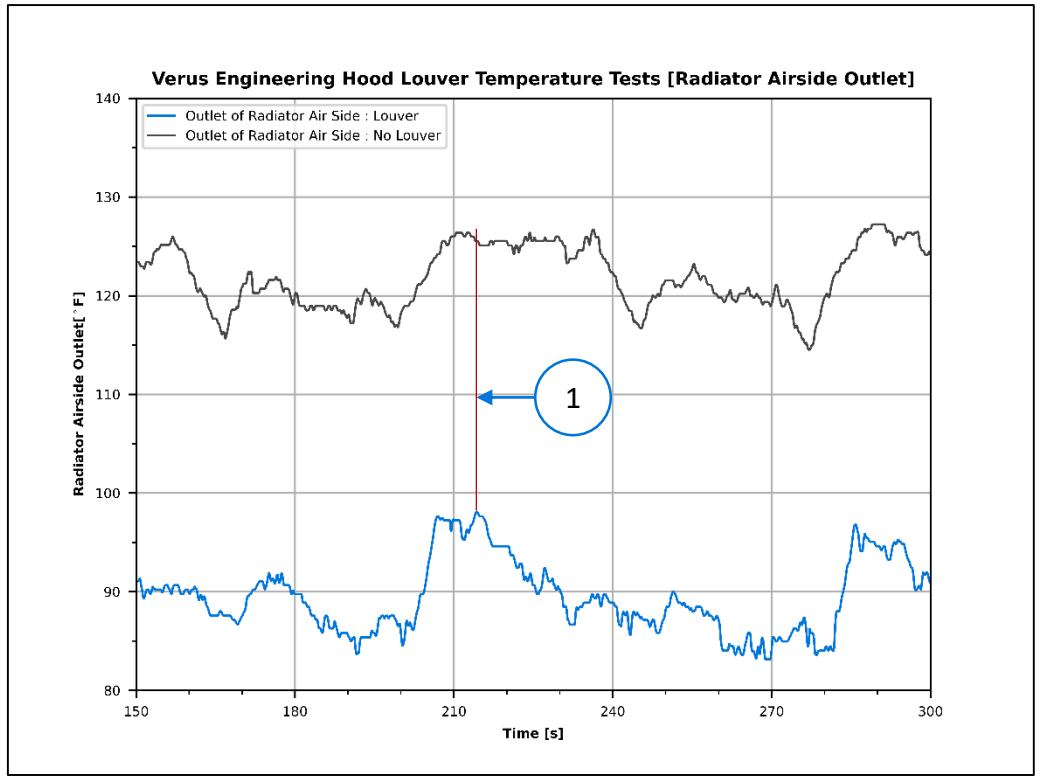




The temperature around the turbo heat shield and turbo is around 6-8 degrees Fahrenheit lower with the Verus Engineering Hood Louver. The hood louver helps evacuate the higher temperatures in the engine bay which helps evacuate the heat produced by the turbocharger and manifold.

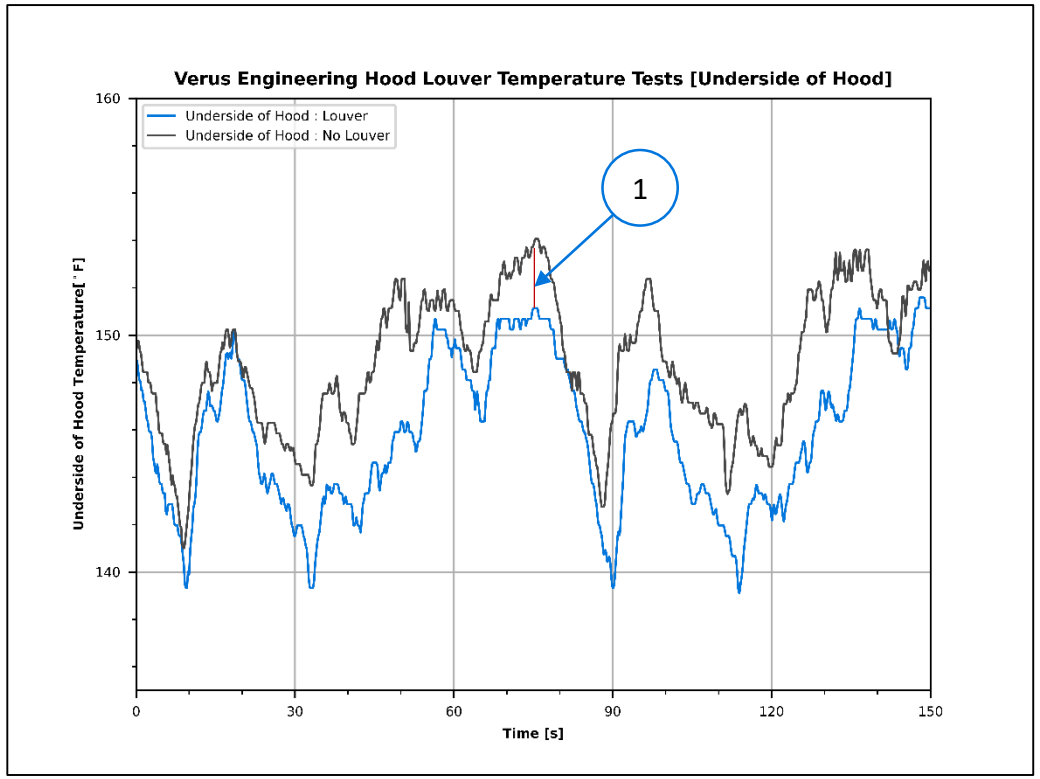
RADIATOR AIR SIDE OUTLET

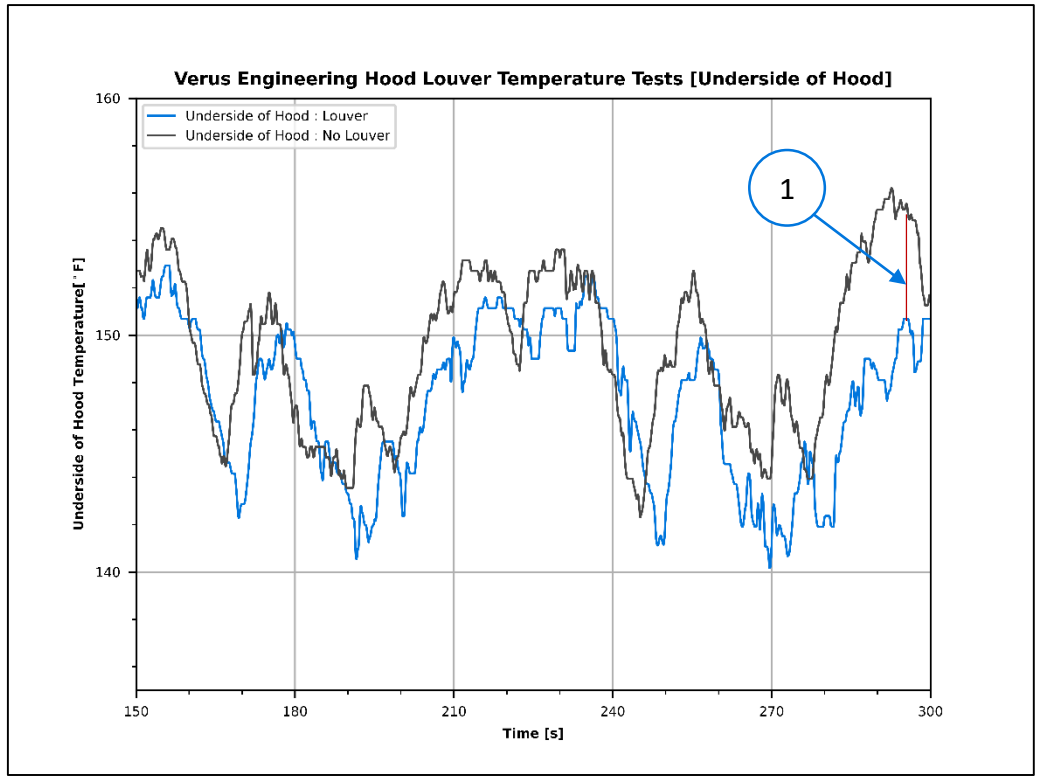




The temperature behind the radiator [Outlet of Radiator Air Side] is around 25 degrees Fahrenheit lower with the Verus Engineering Hood Louver. The hood louver helps evacuate the hot air that has passed through the radiator.

UNDERSIDE OF HOOD

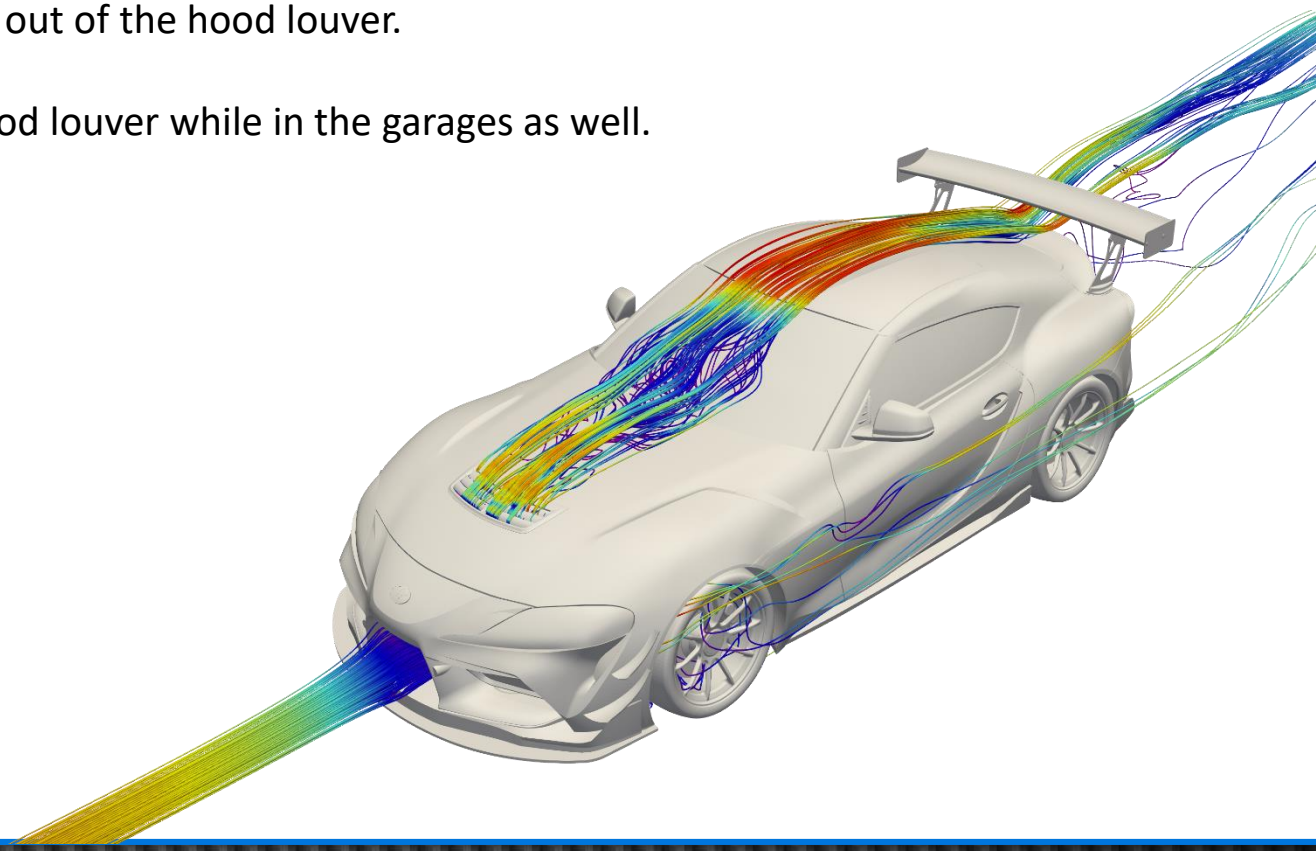




The temperature under the hood is around 3-5 degrees Fahrenheit lower with the Verus Engineering Hood Louver. The hood louver helps keep the engine bay cooler by evacuating the hot air from the engine bay.

Conclusion

- We saw temperature decreases in all (4) locations we placed sensors when allowing the hood louver to vent the engine bay air on track.
- While at speed, we had issues keeping the tape on the louver after 5 laps. The louver is evacuating high pressure air which increases downforce as well.
- In the garage, when we came to a stop, heat waves would pour out of the hood louver.
- Temperatures in the engine bay stayed much lower with the hood louver while in the garages as well.



TOOLBOX