

# 2015 Ford 2.7L EcoBoost V6 Tier 3 Fuel HD1 - Test Data Plots

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**SUGGESTED CITATION:** *2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Package*. Version 2019-11. Ann Arbor, MI: US EPA, National Vehicle and Fuel Emissions Laboratory, National Center for Advanced Technology, 2019.

- ◆ Black diamonds indicate rated torque & power points advertised by the manufacturer
- Black dots indicate speed/load points at which steady state data was acquired
- △ Blue triangles indicate speed/load points at which initial data from the transient high load method was acquired
- ▲ Green triangles indicate speed/load points at which final data from the transient high load method was acquired
- ✗ Red Xs indicate speed/load points where data was not collected or did not meet quality standards

Note: In these contour plots, individual data points may be ignored or removed, using our best engineering judgment, to correct irregularities in the visual presentation of the contour lines; additional details are contained in the test report.

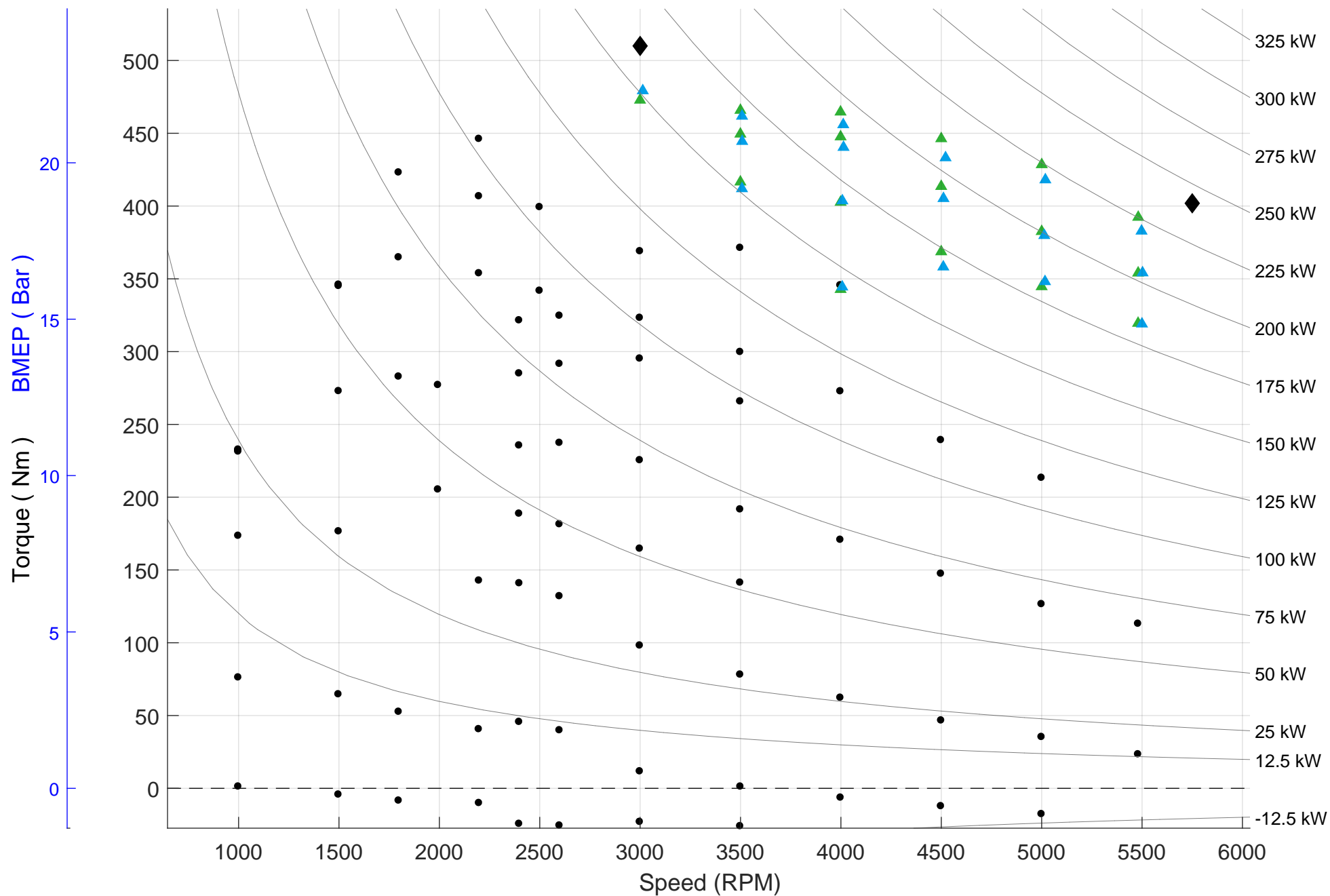
Published maximum torque data from:

2015 FORD F-150 TECHNICAL SPECIFICATIONS. (n.d.). Retrieved from

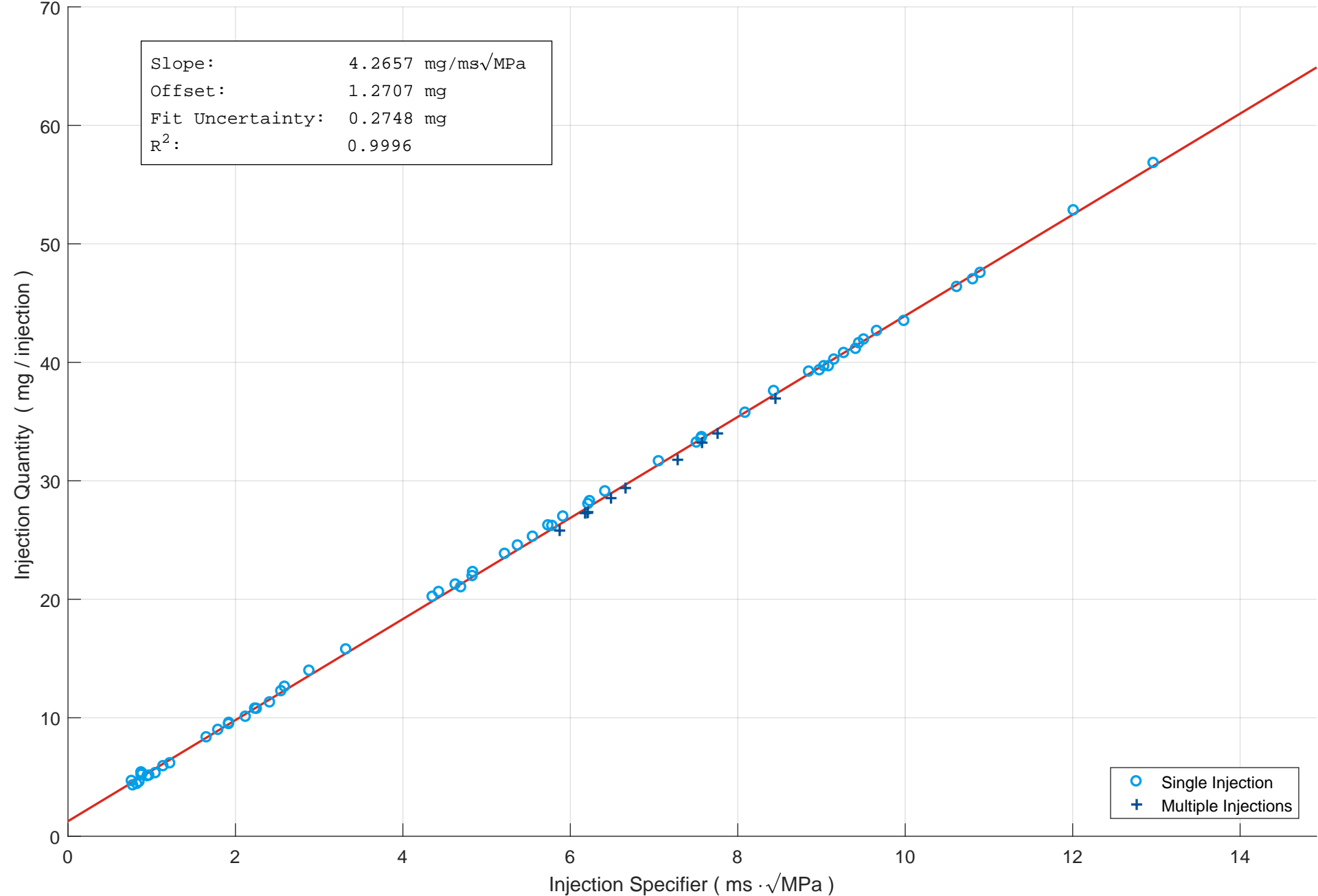
[https://media.ford.com/content/dam/fordmedia/North%20America/US/2015\\_Specs/2015\\_F150\\_Specs.pdf](https://media.ford.com/content/dam/fordmedia/North%20America/US/2015_Specs/2015_F150_Specs.pdf)

# 2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots

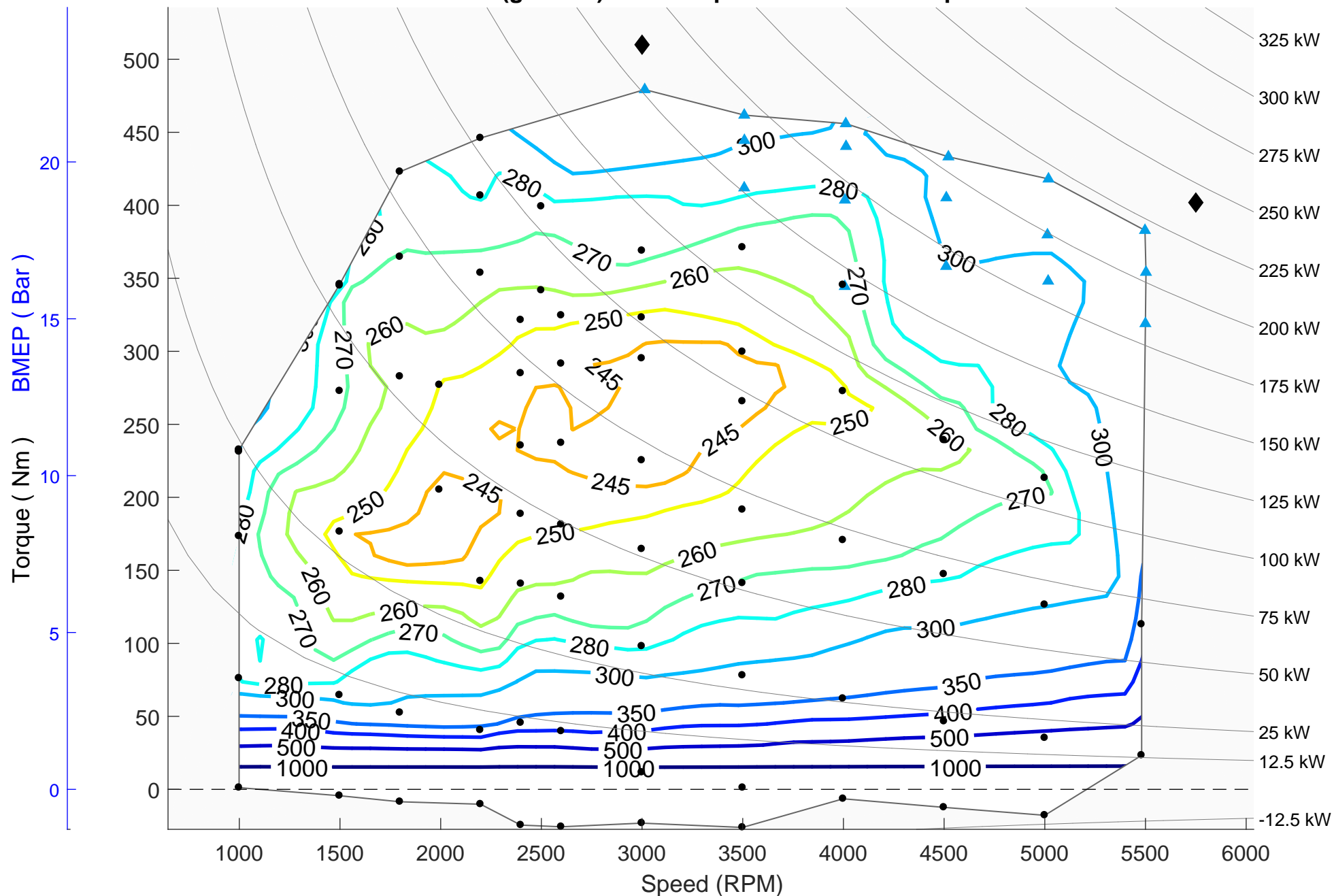
## Test Data Points



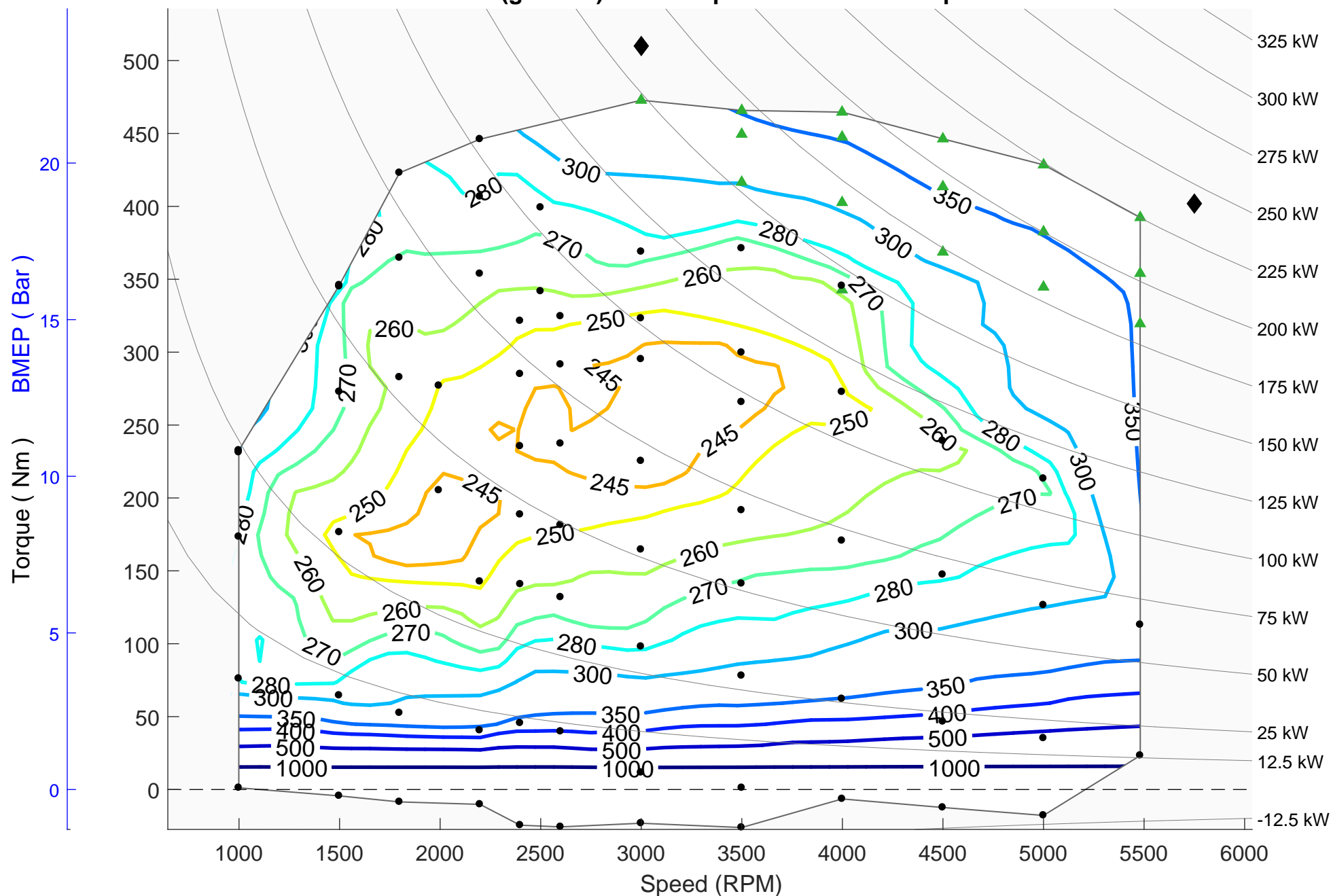
2015 Ford 2.7L EcoBoost V6 Tier 3 Fuel HD1 - Test Data Plots  
Injector Calibration



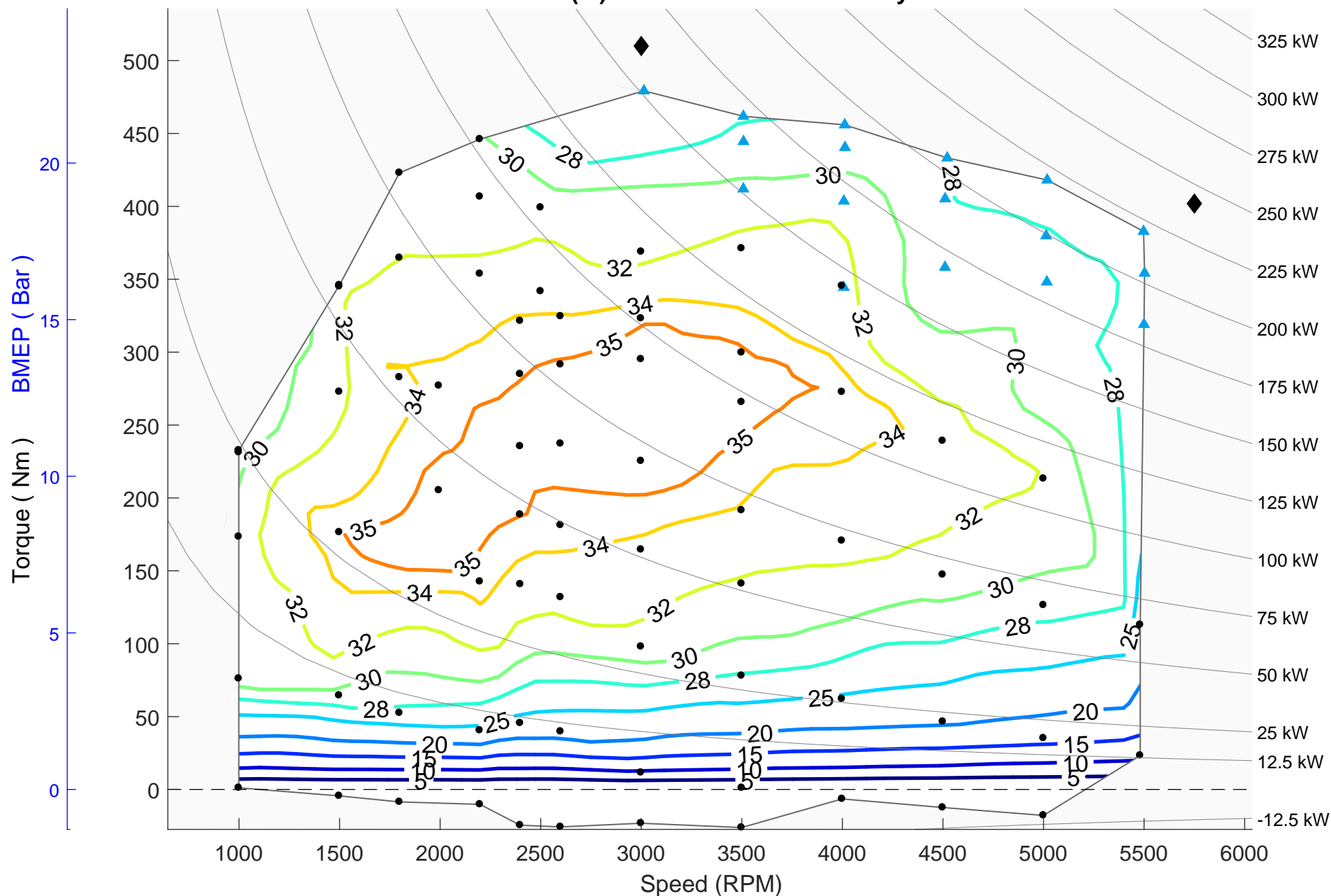
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**BSFC (g/kW-hr) - Brake Specific Fuel Consumption**



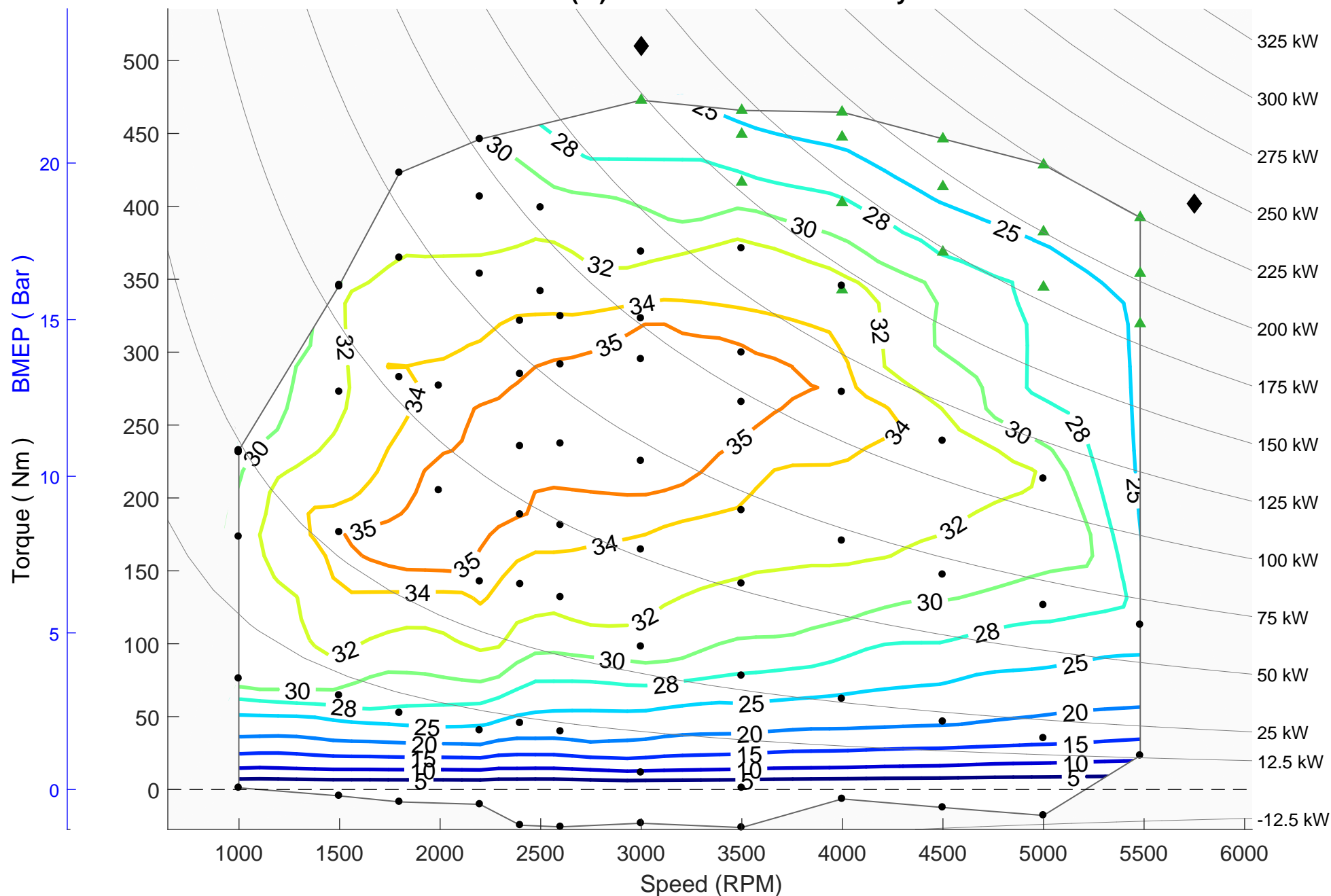
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**BSFC (g/kW-hr) - Brake Specific Fuel Consumption**



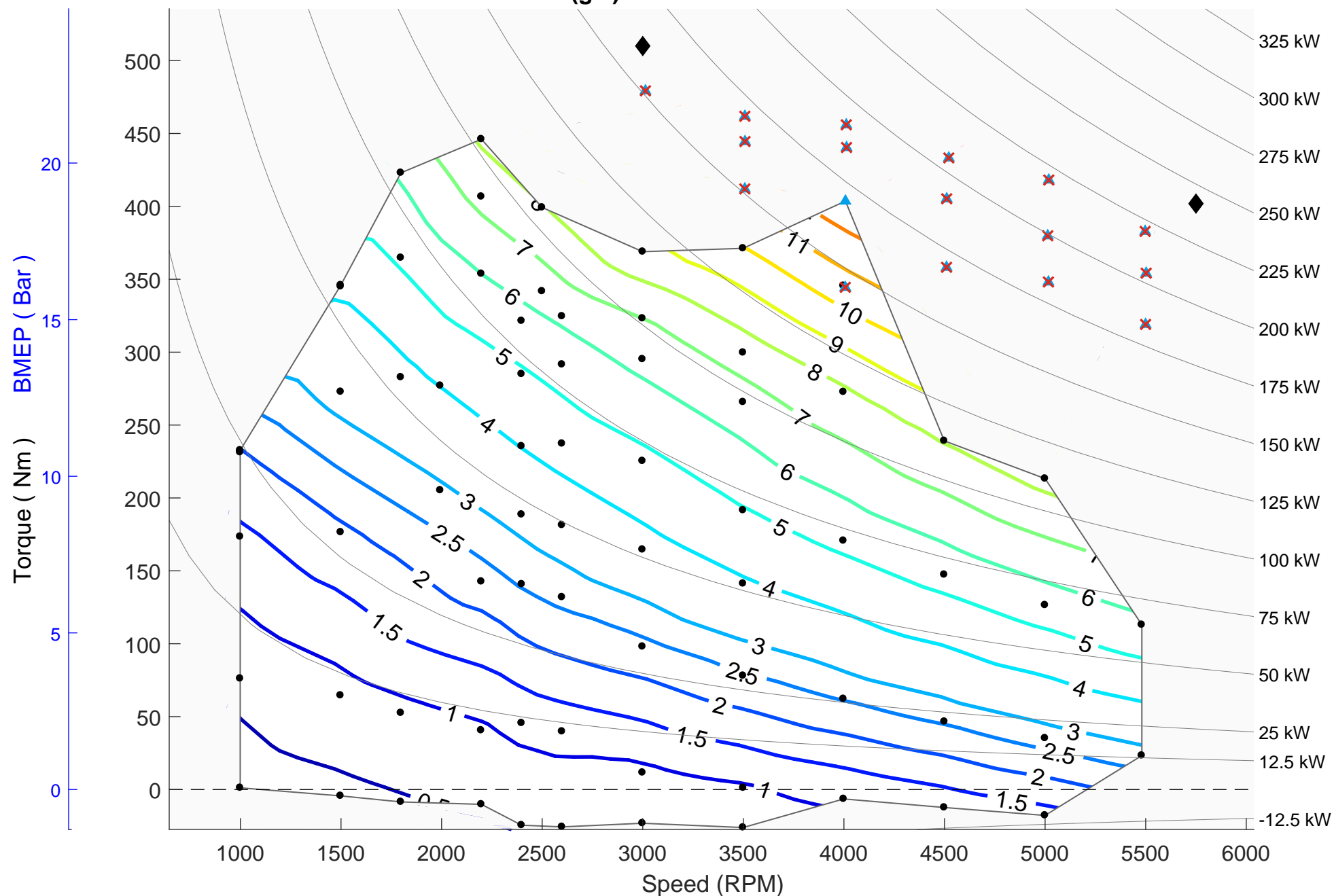
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**BTE (%) - Brake Thermal Efficiency**



**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**BTE (%) - Brake Thermal Efficiency**

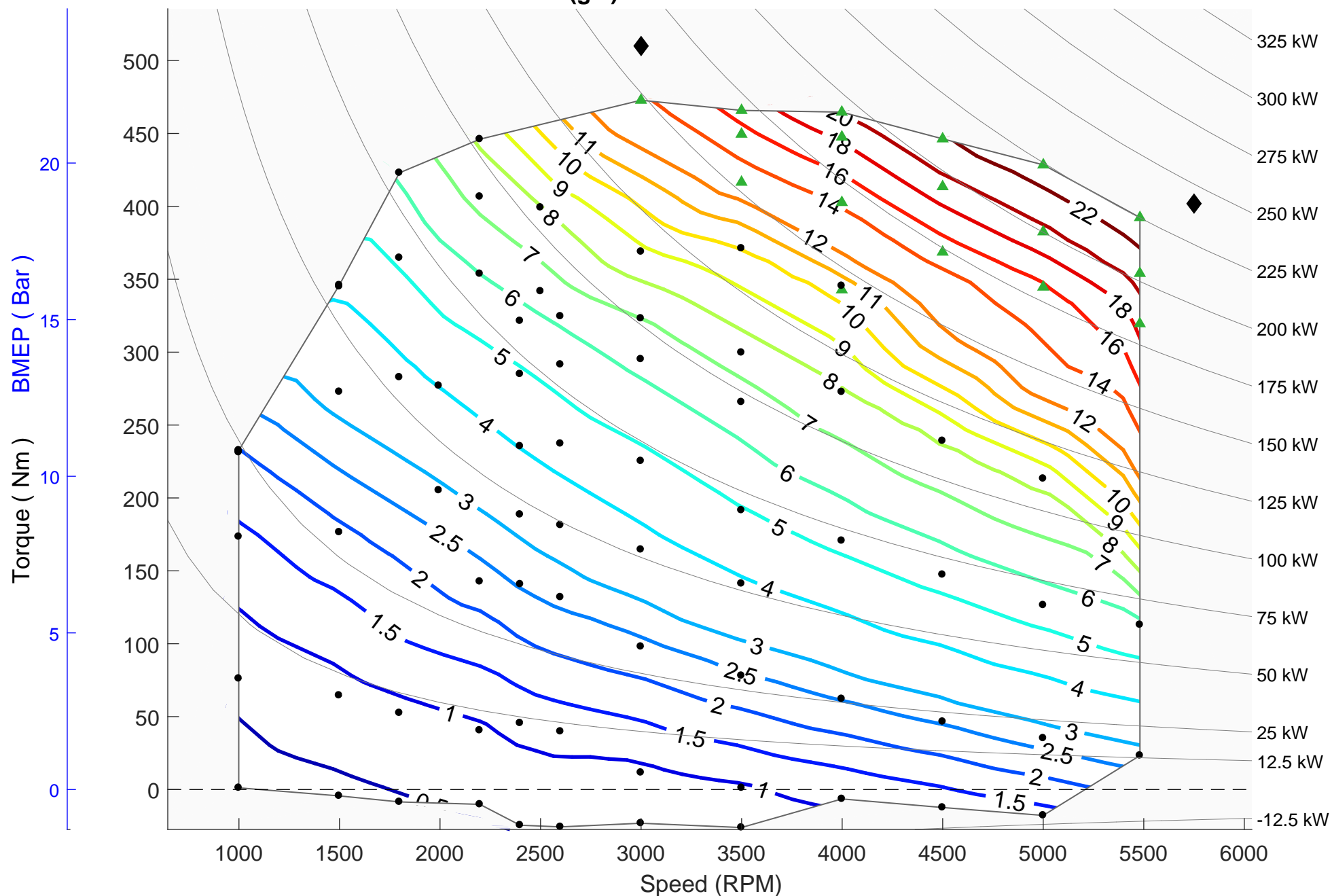


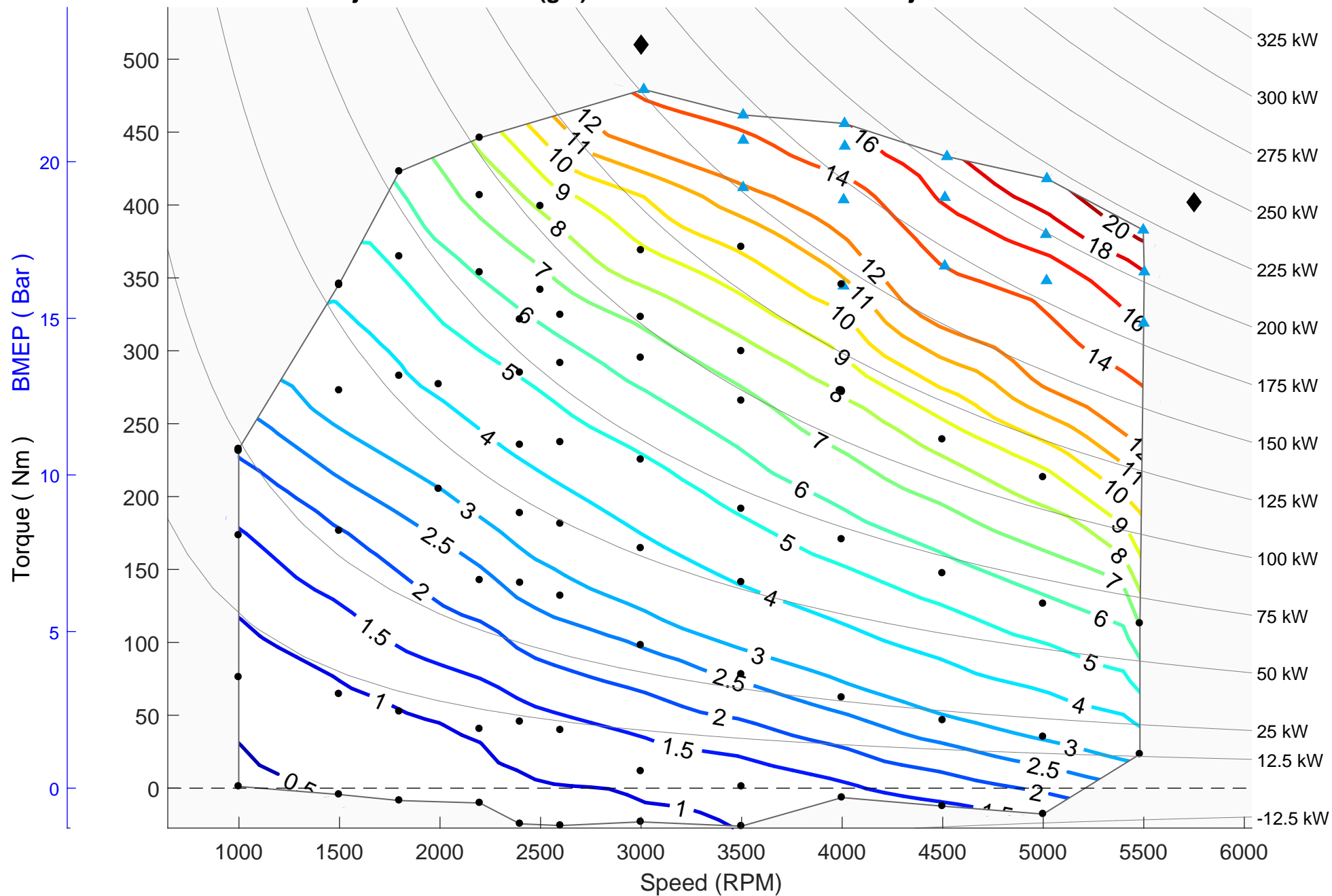
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Fuel Meter Flow (g/s) - Fuel Flow Measured with Flow Meter**

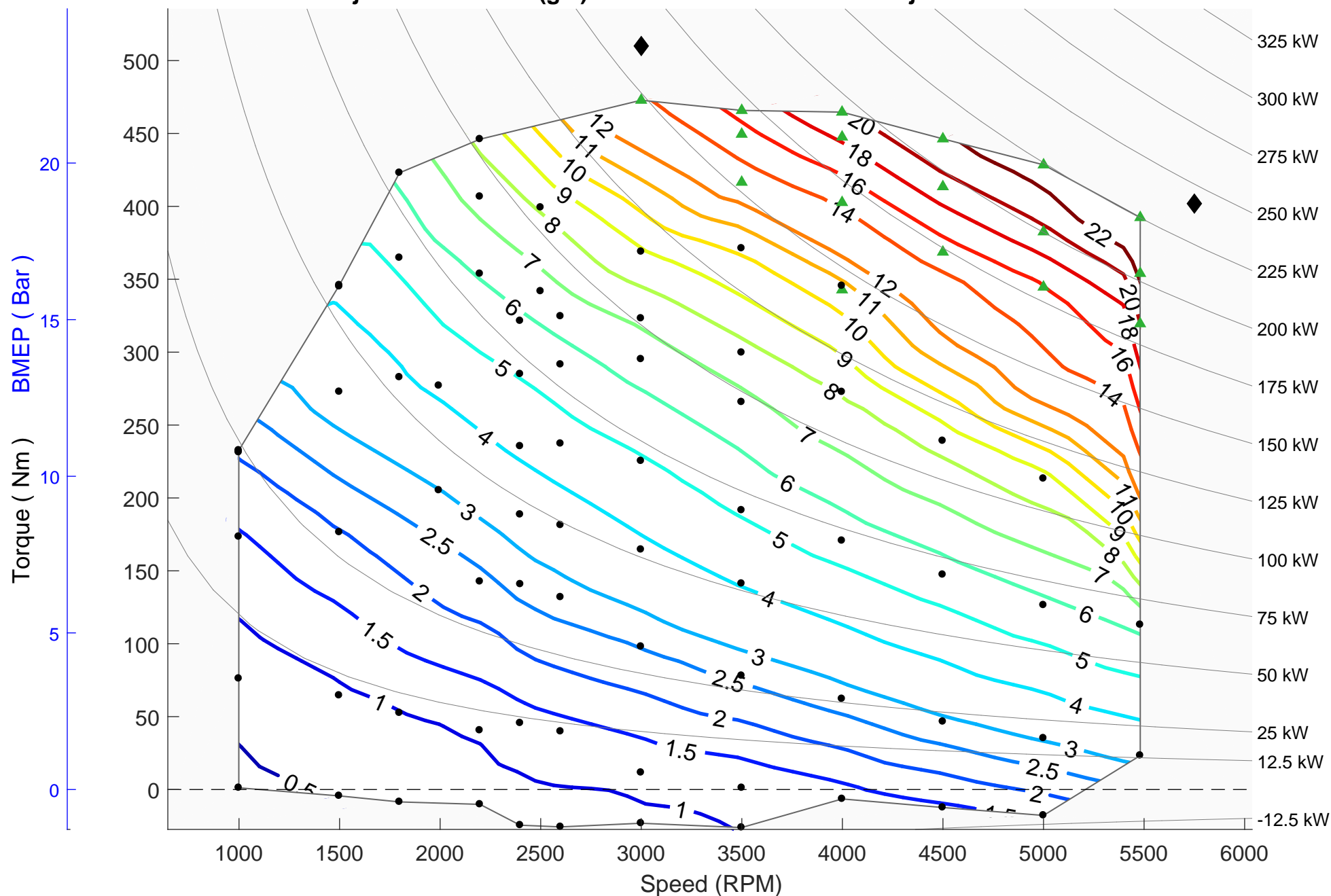




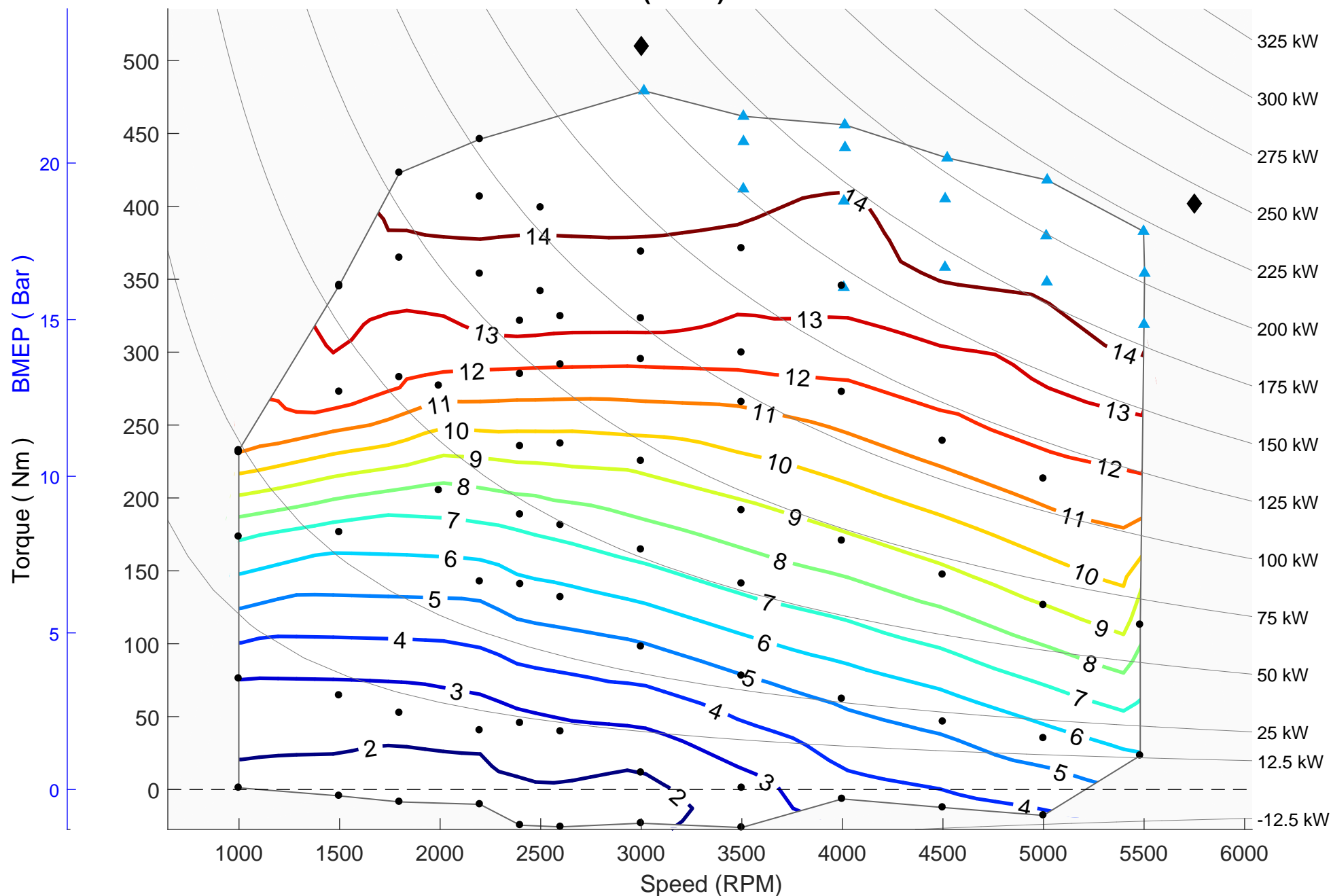
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Fuel Meter Flow (g/s) - Fuel Flow Measured with Flow Meter**





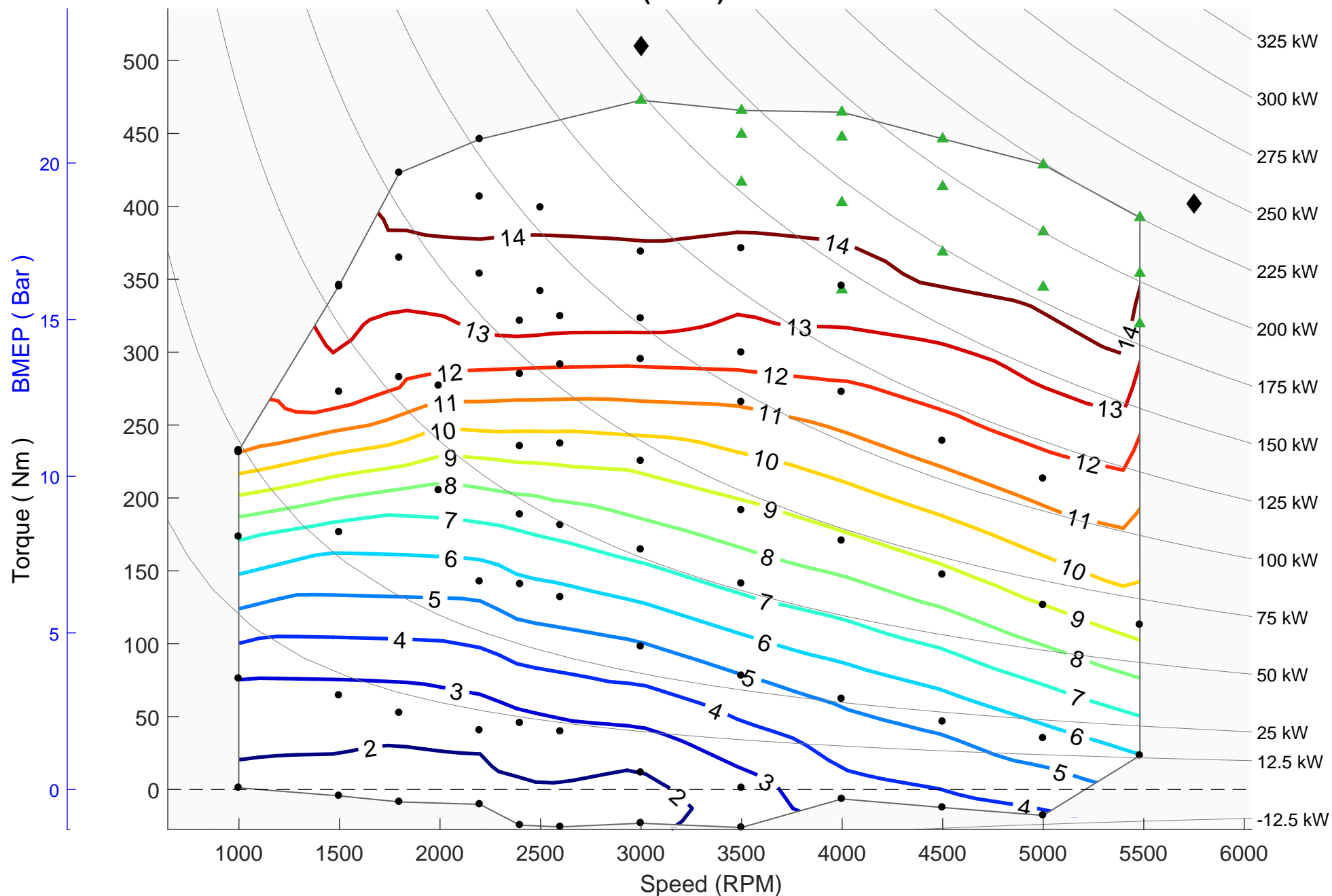


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Fuel Rail Press (MPaG) - Fuel Rail Pressure\***

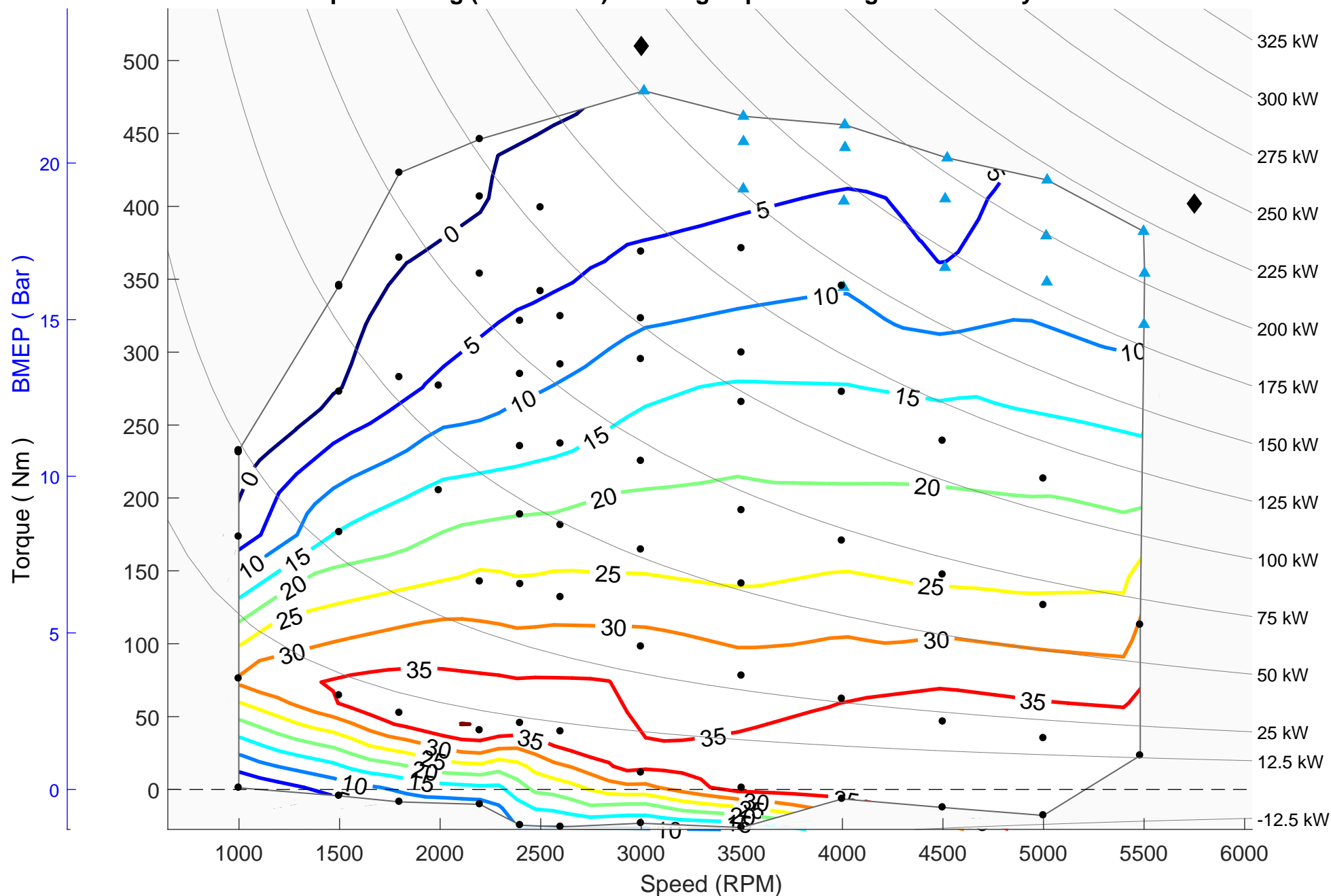


\* Reference Only- Voltage Measurement

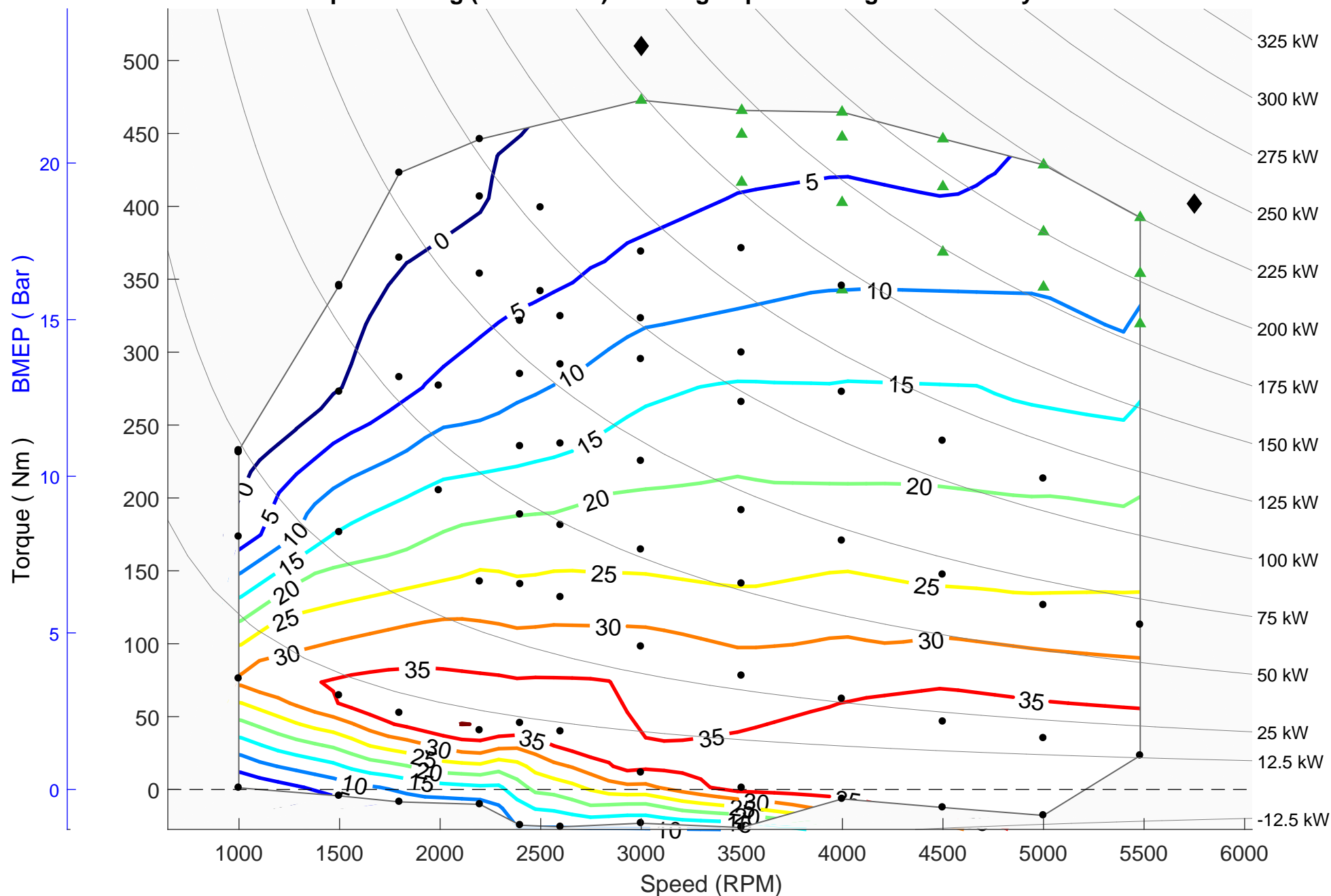
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Fuel Rail Press (MPaG) - Fuel Rail Pressure\***



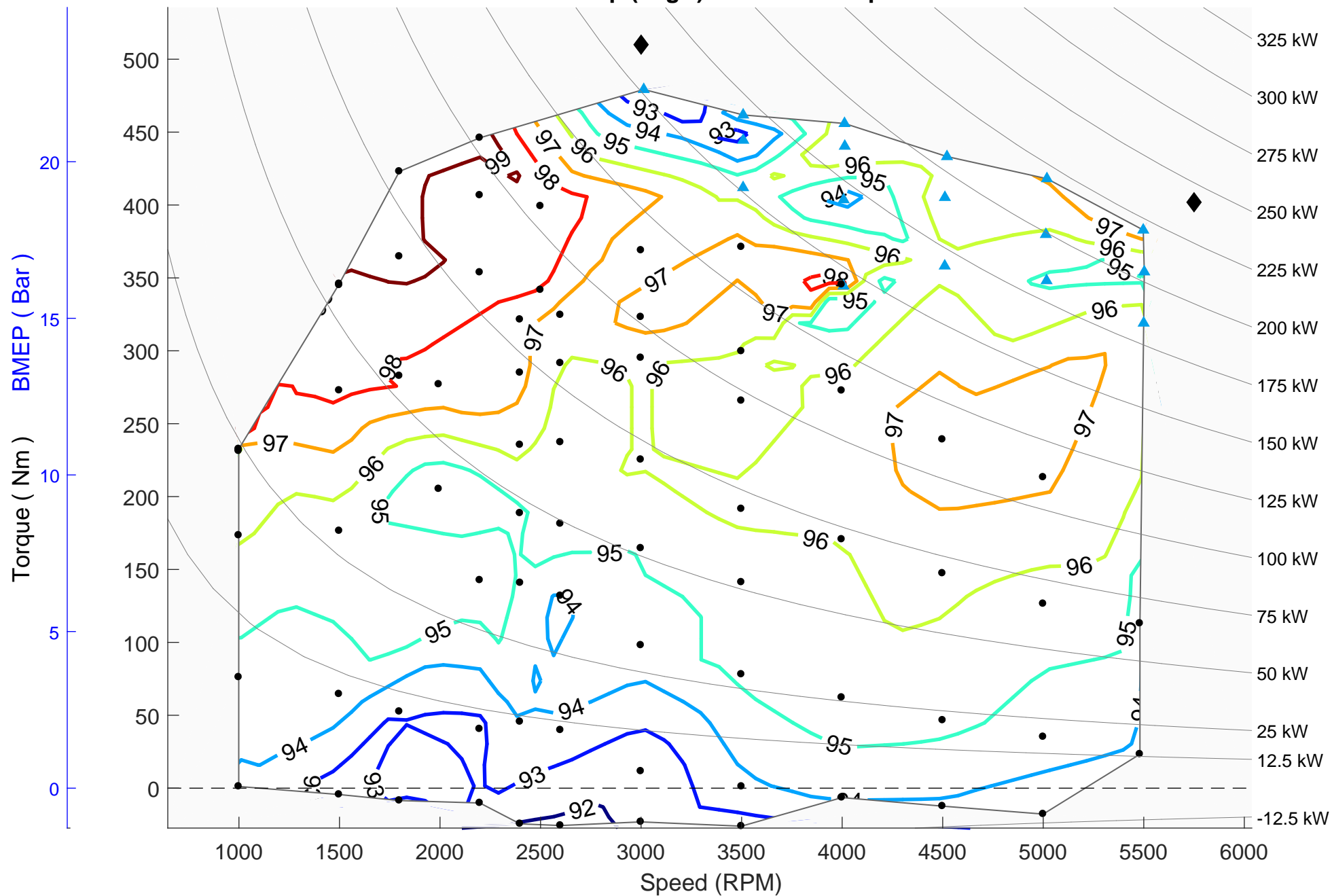
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Spark Timing (CAD BTDC) - Average Spark Timing Across all Cylinders\***



**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Spark Timing (CAD BTDC) - Average Spark Timing Across all Cylinders\***

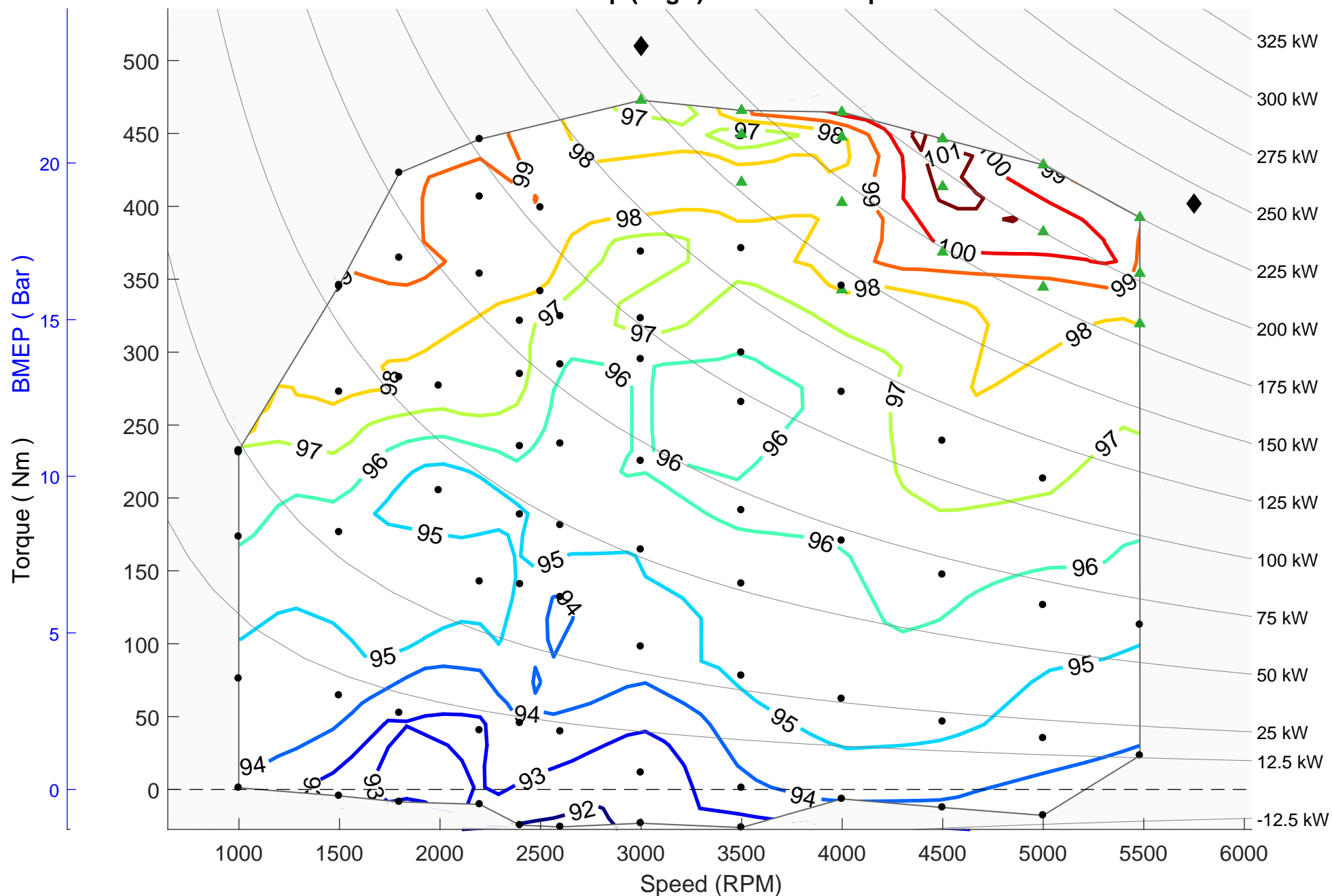




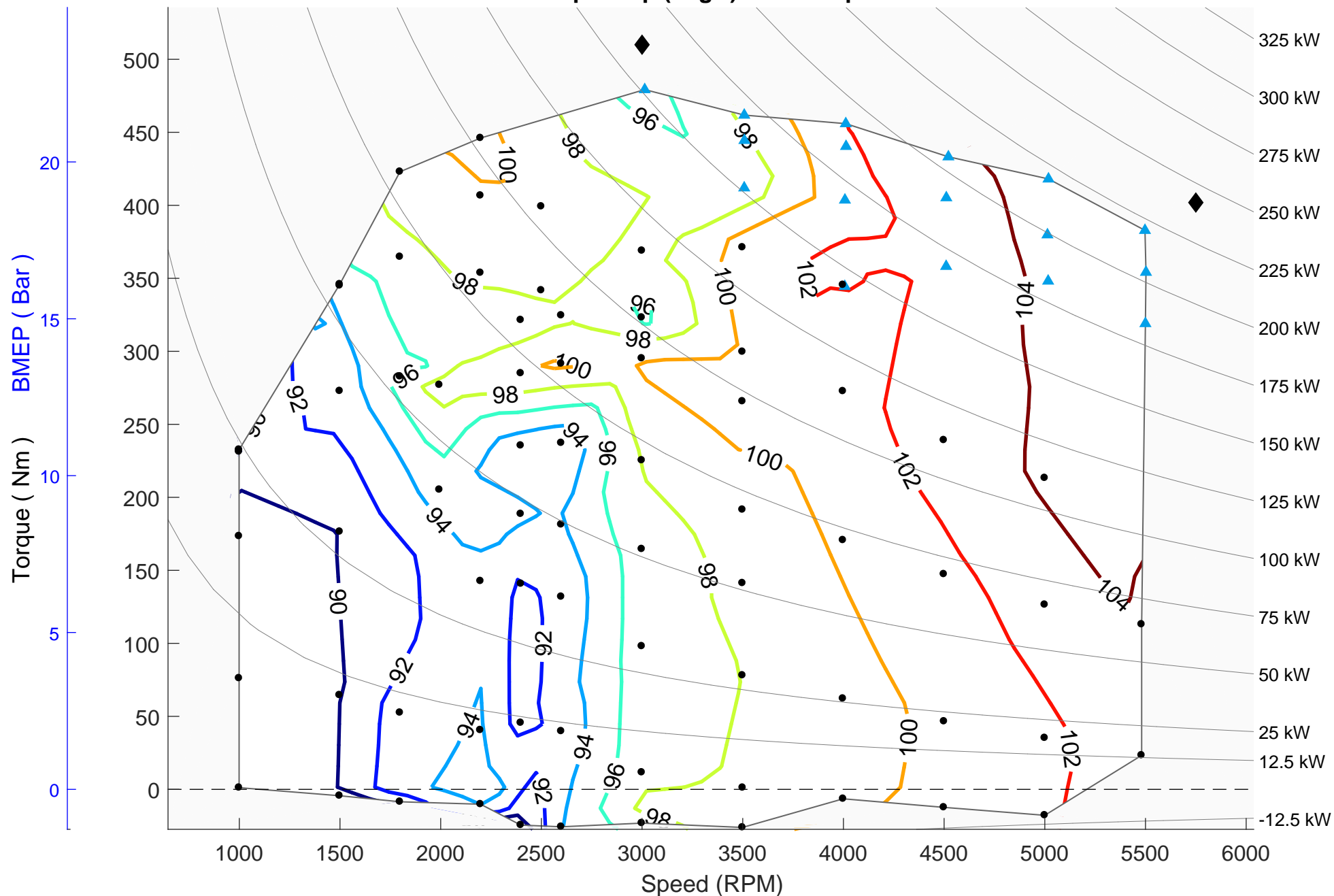




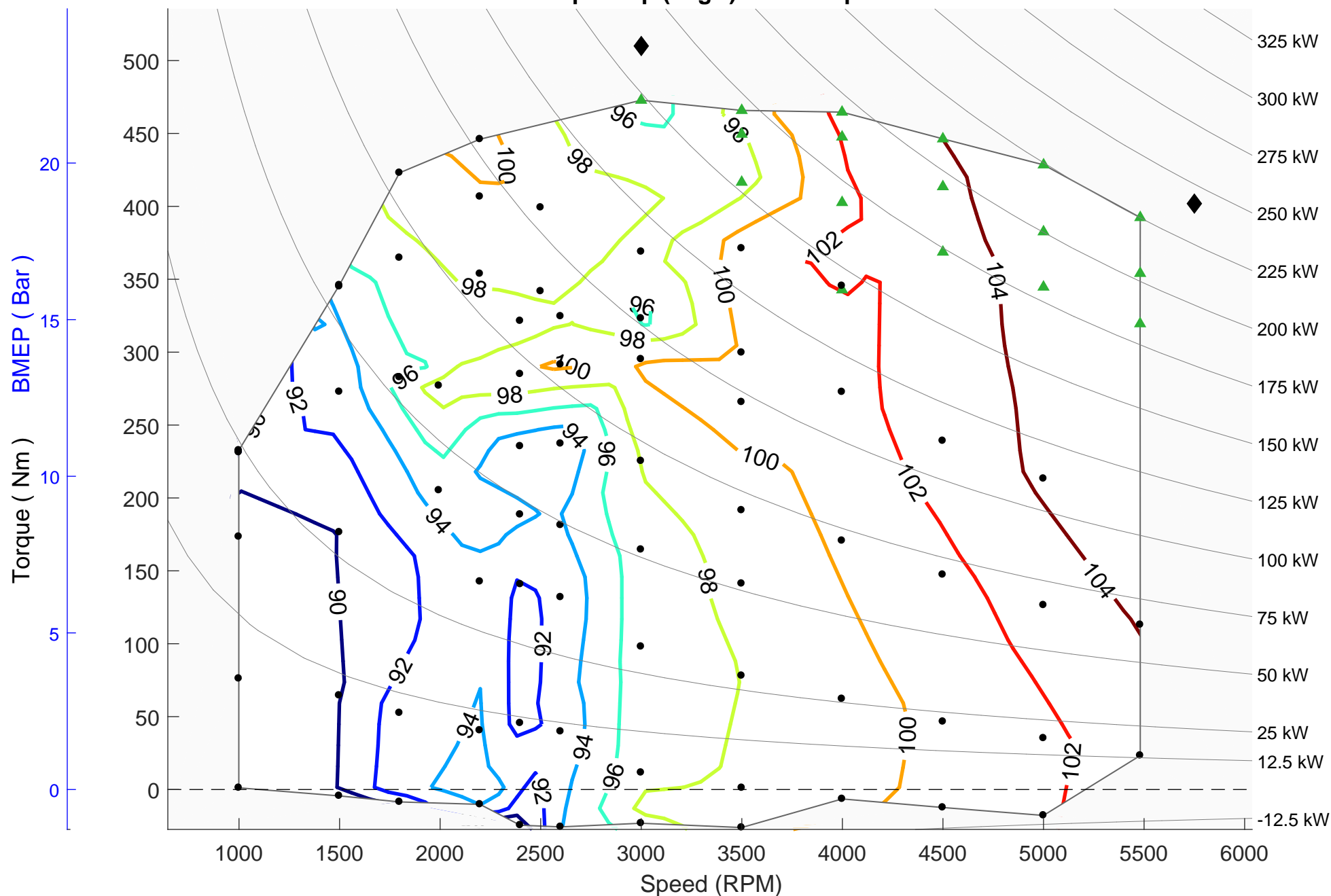
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Coolant Temp (degC) - Coolant Temperature**



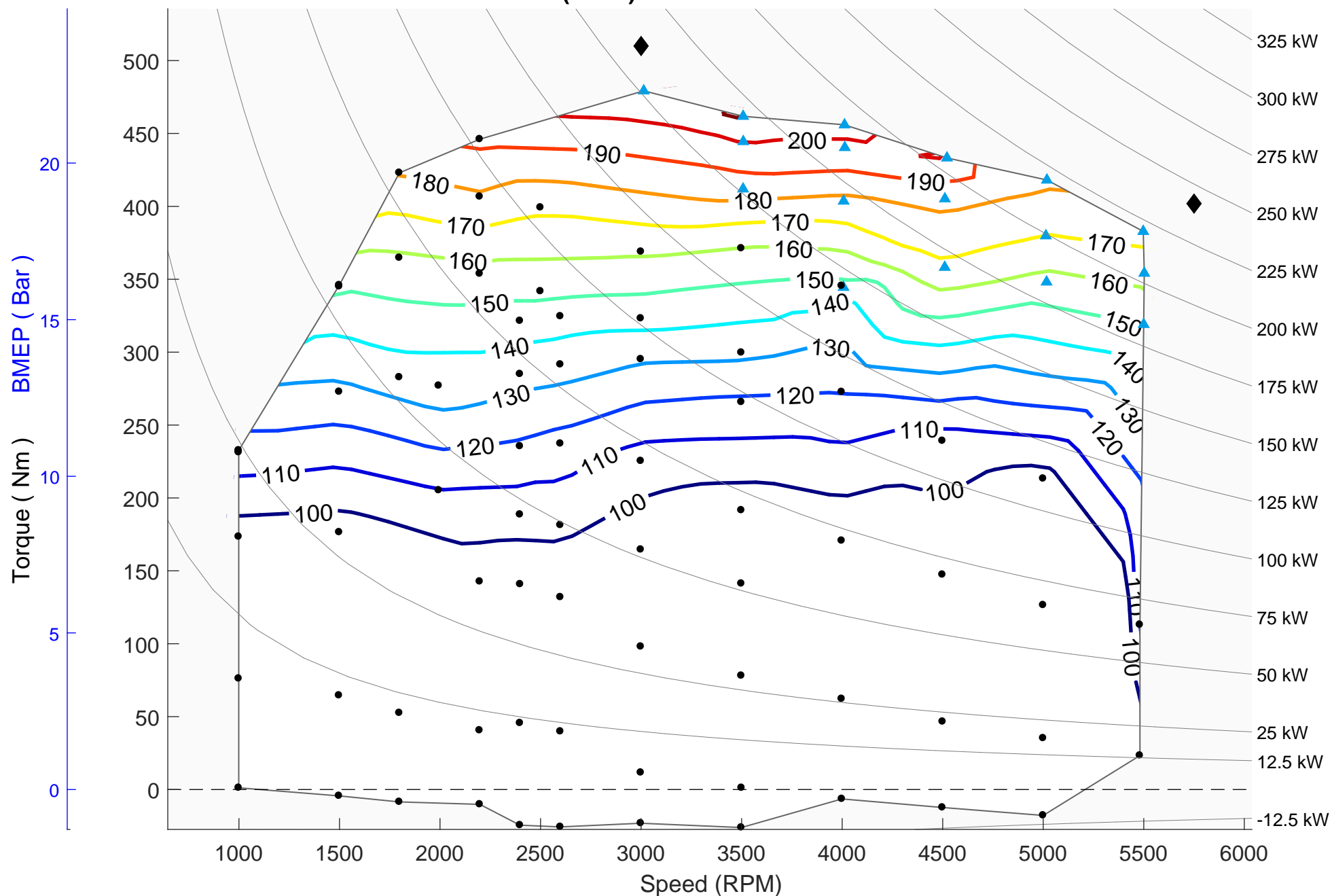
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Oil Sump Temp (degC) - Oil Temperature**



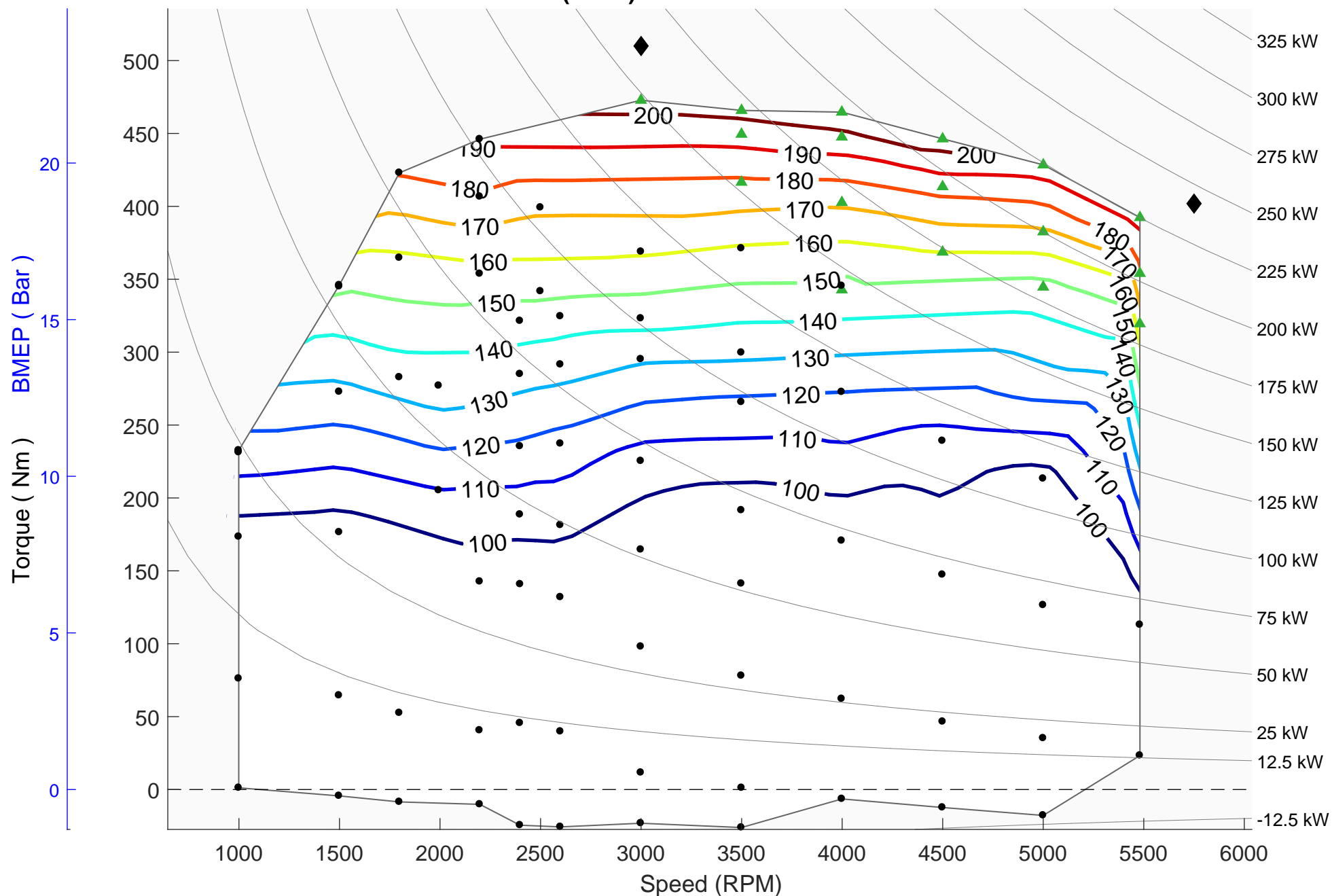
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Oil Sump Temp (degC) - Oil Temperature**



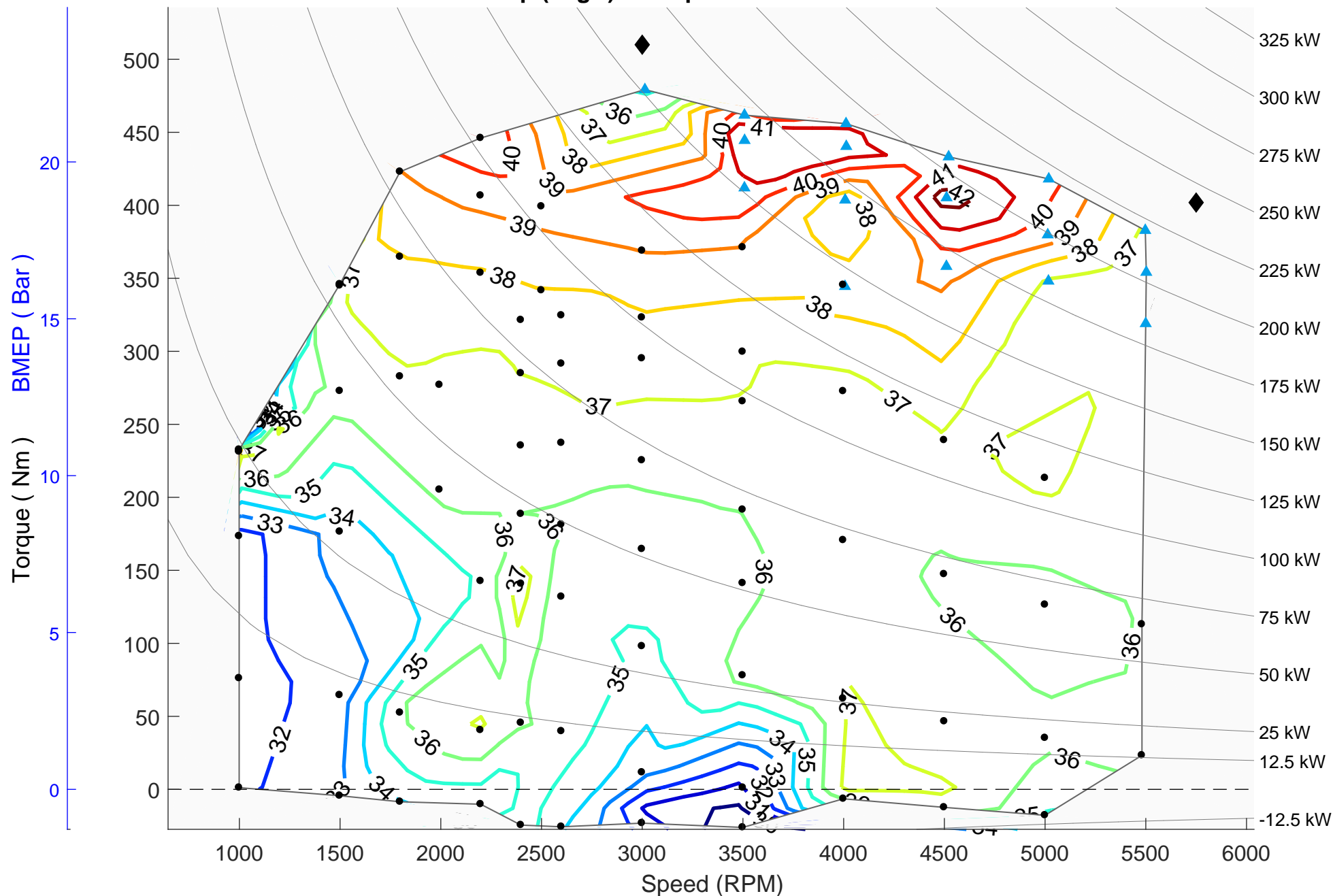
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Intake Manifold Press (kPaA) - Pressure Measured in the Intake Manifold**



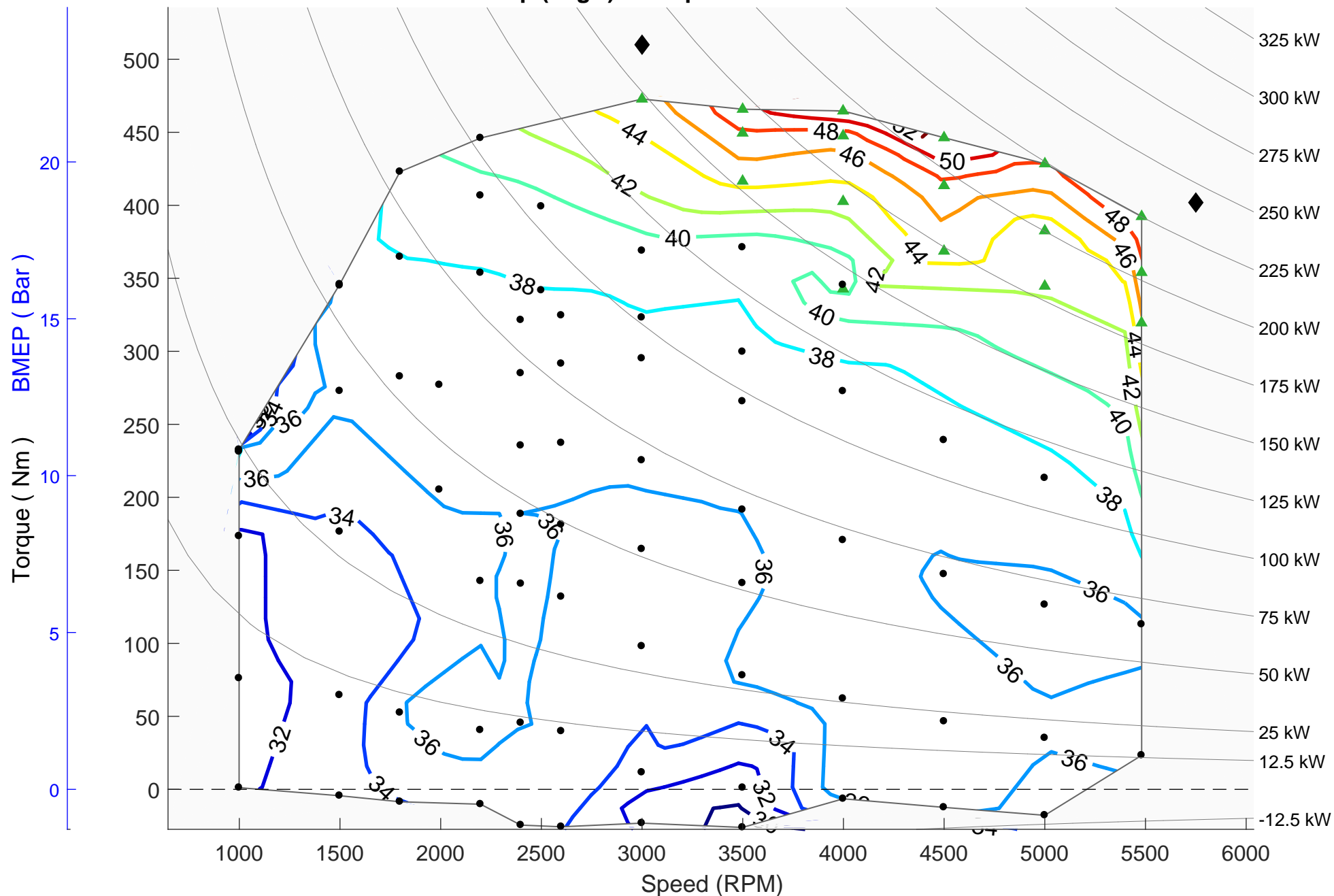
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Intake Manifold Press (kPaA) - Pressure Measured in the Intake Manifold**



**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Intake Manifold Temp (degC) - Temperature Measured in the Intake Manifold**

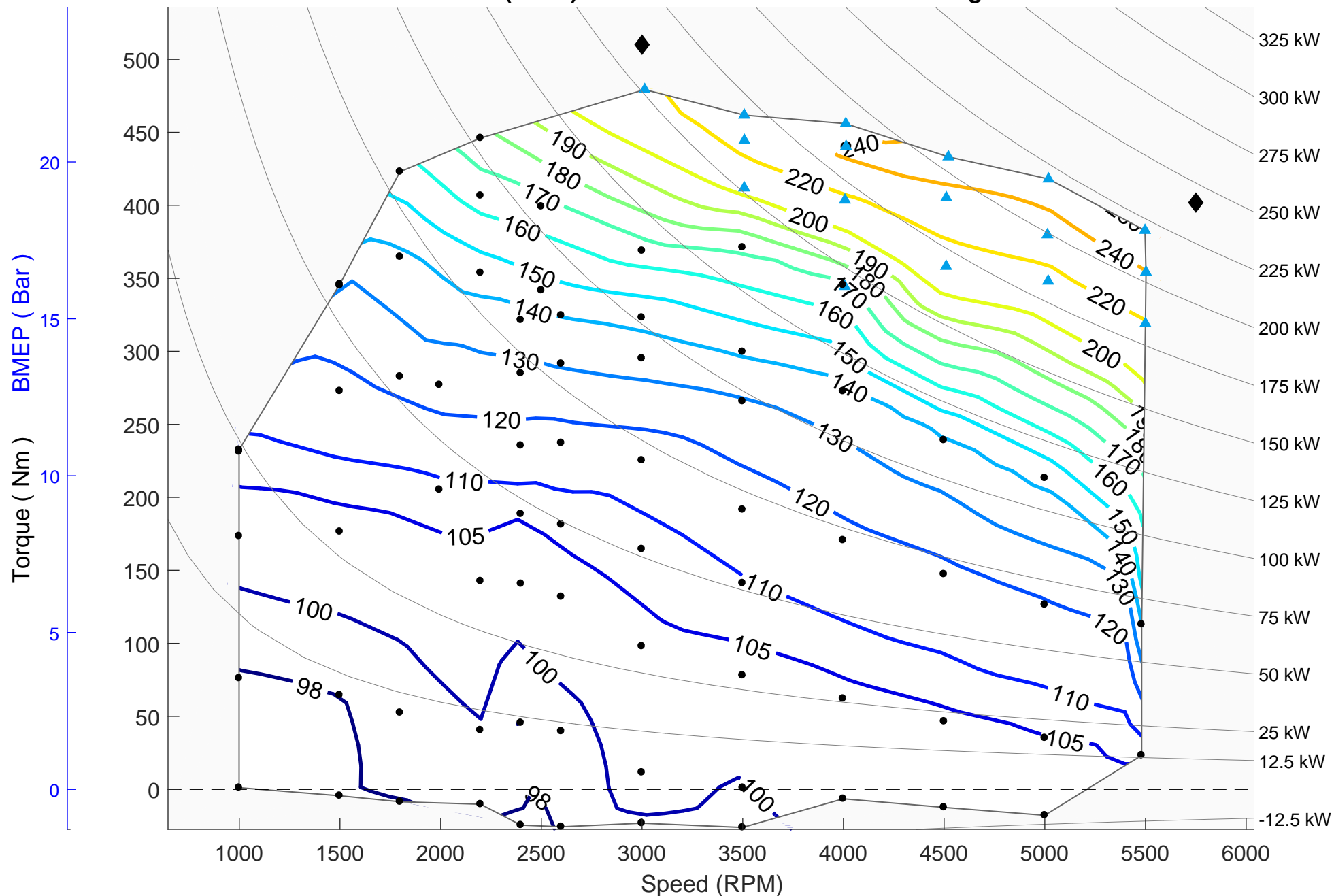


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Intake Manifold Temp (degC) - Temperature Measured in the Intake Manifold**



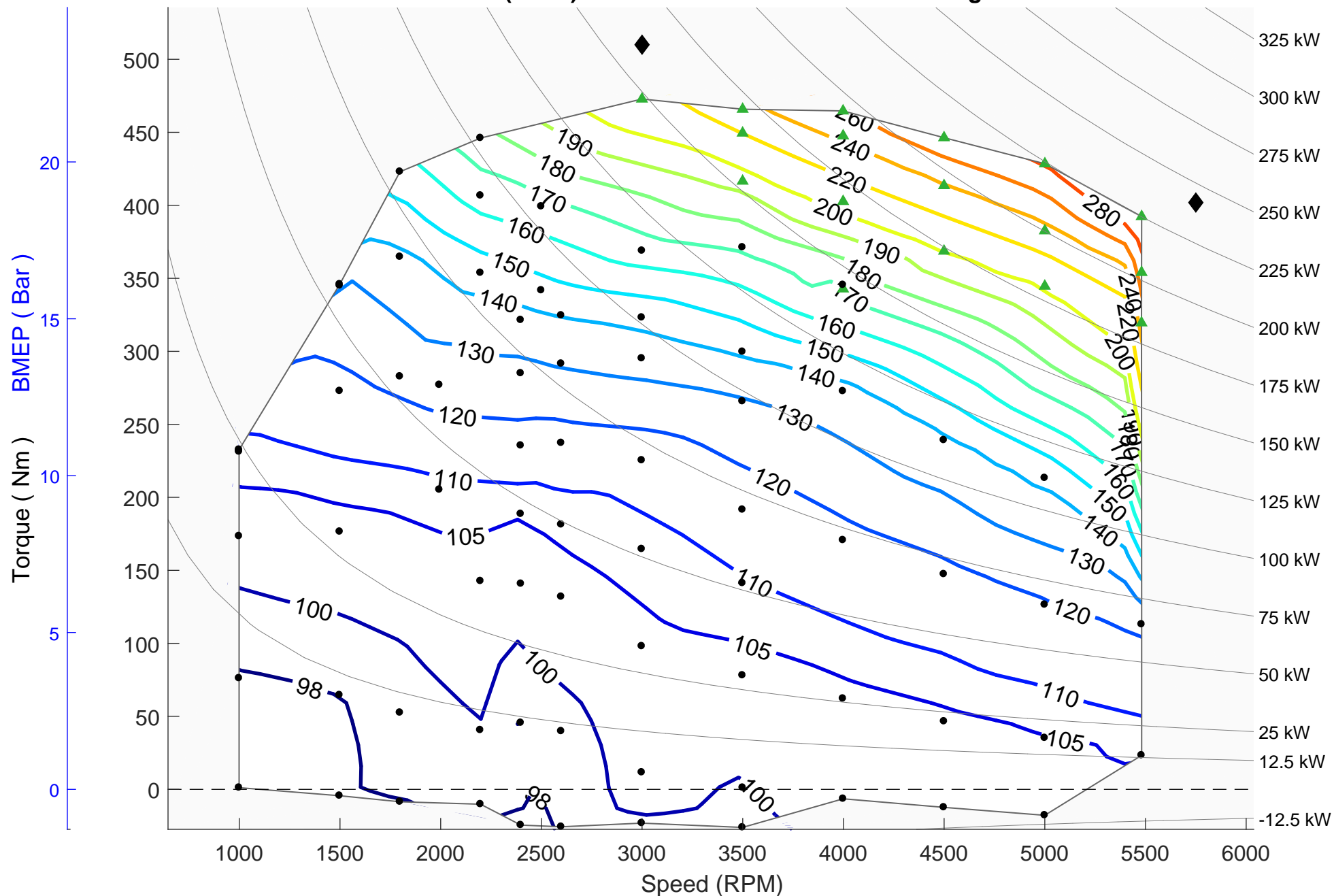


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Turbine Inlet Press (kPaA) - Pressure Measured at Turbocharger Turbine Inlet**

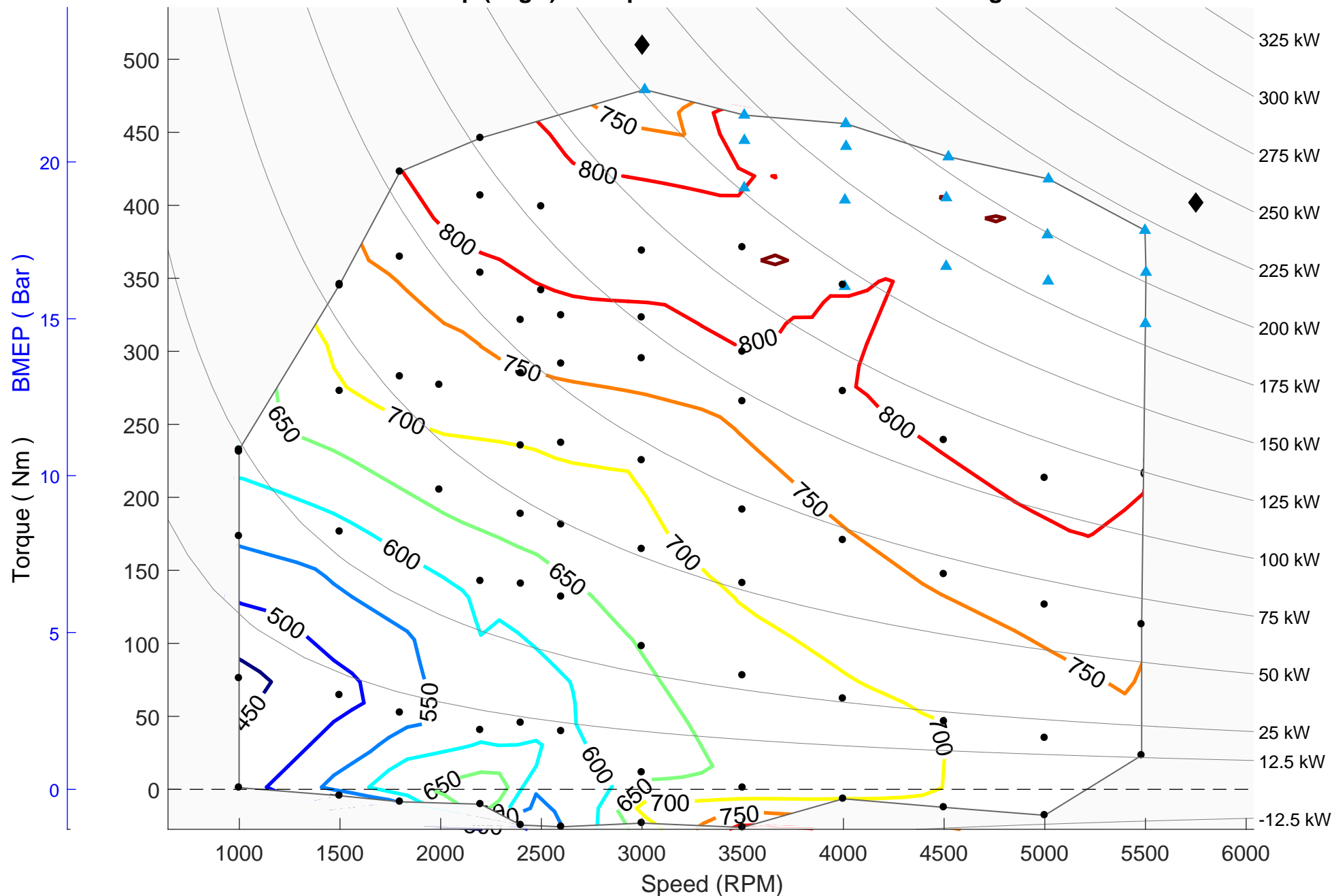




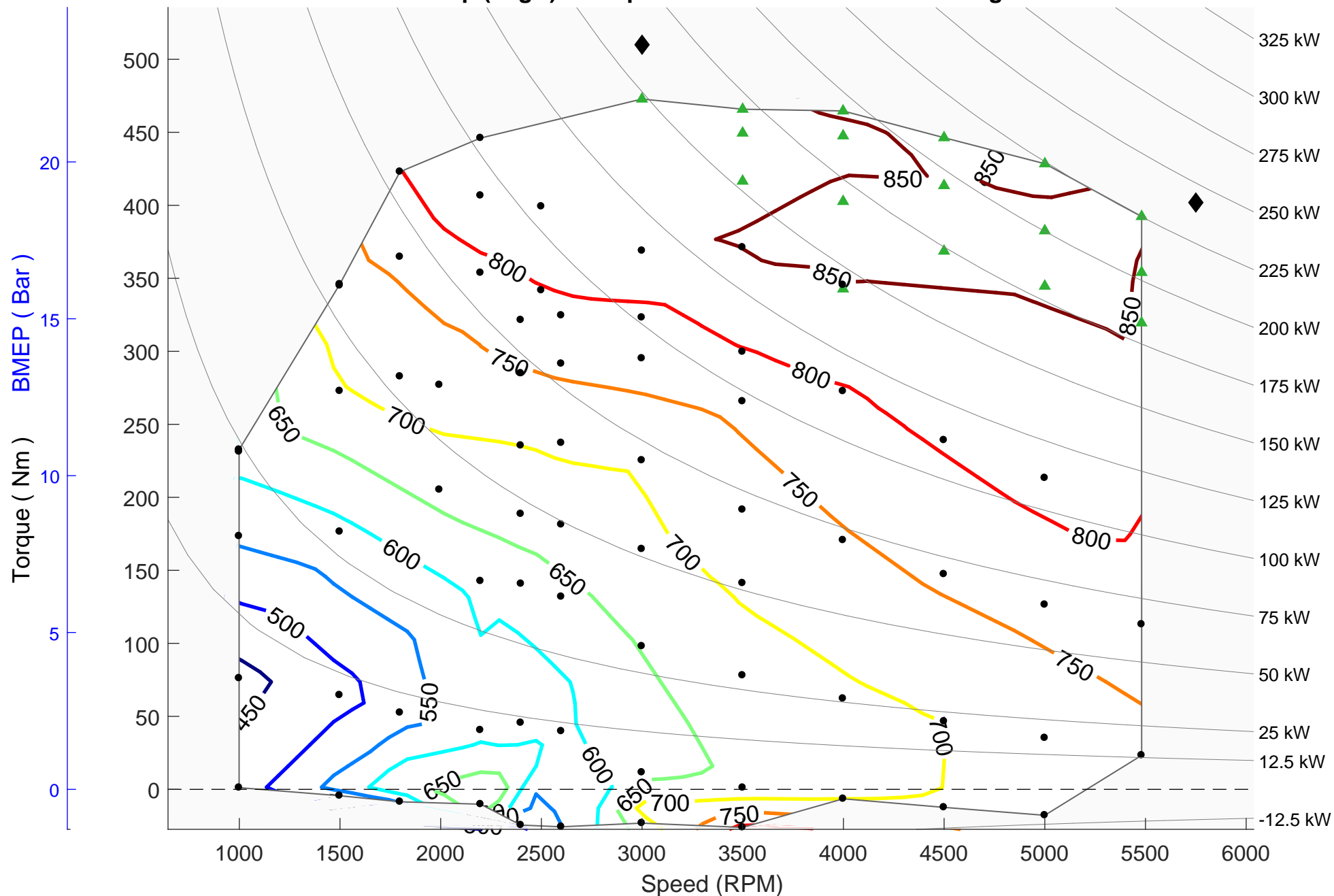
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Turbine Inlet Press (kPaA) - Pressure Measured at Turbocharger Turbine Inlet**



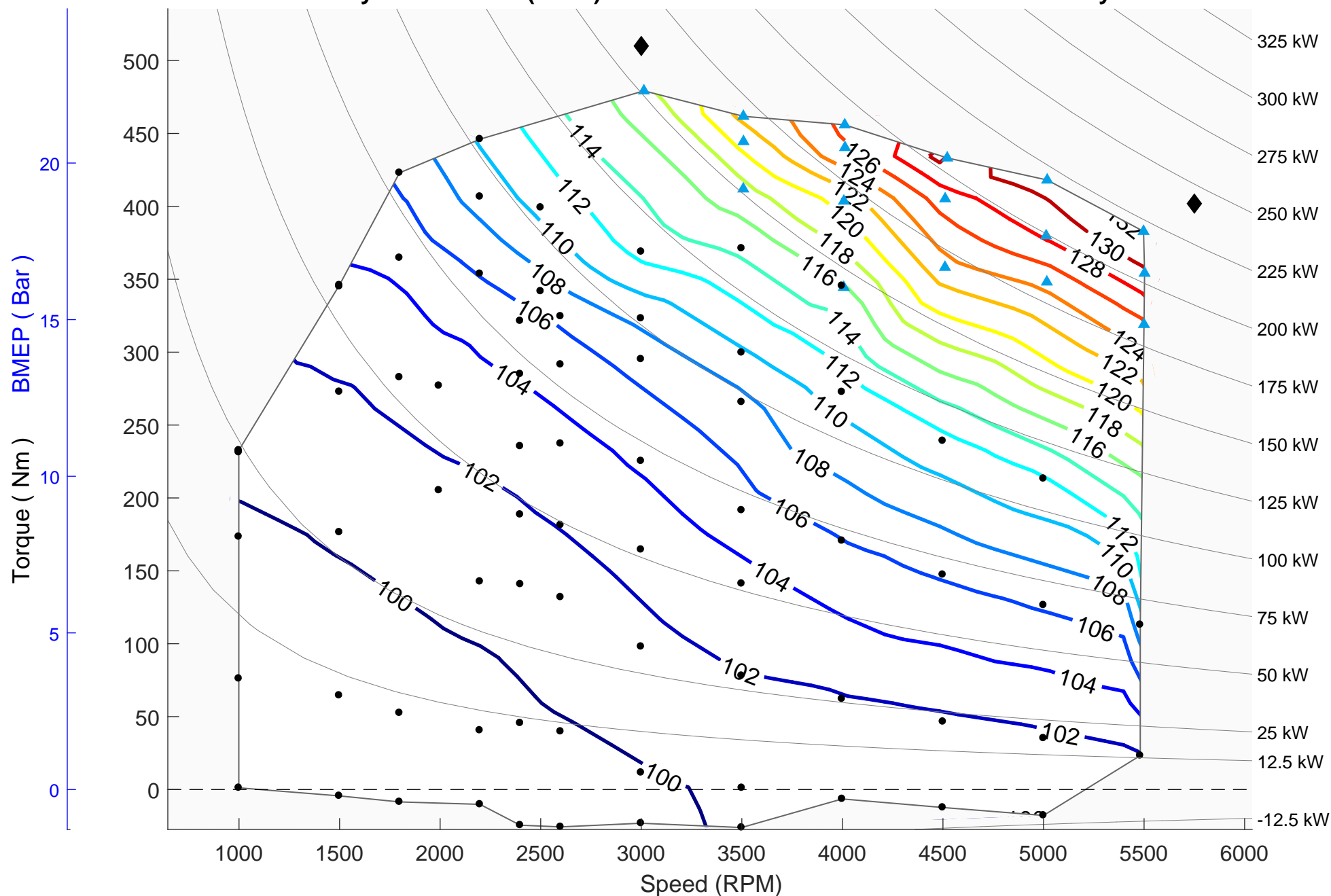
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Turbine Inlet Temp (degC) - Temperature Measured at Turbocharger Turbine Inlet**



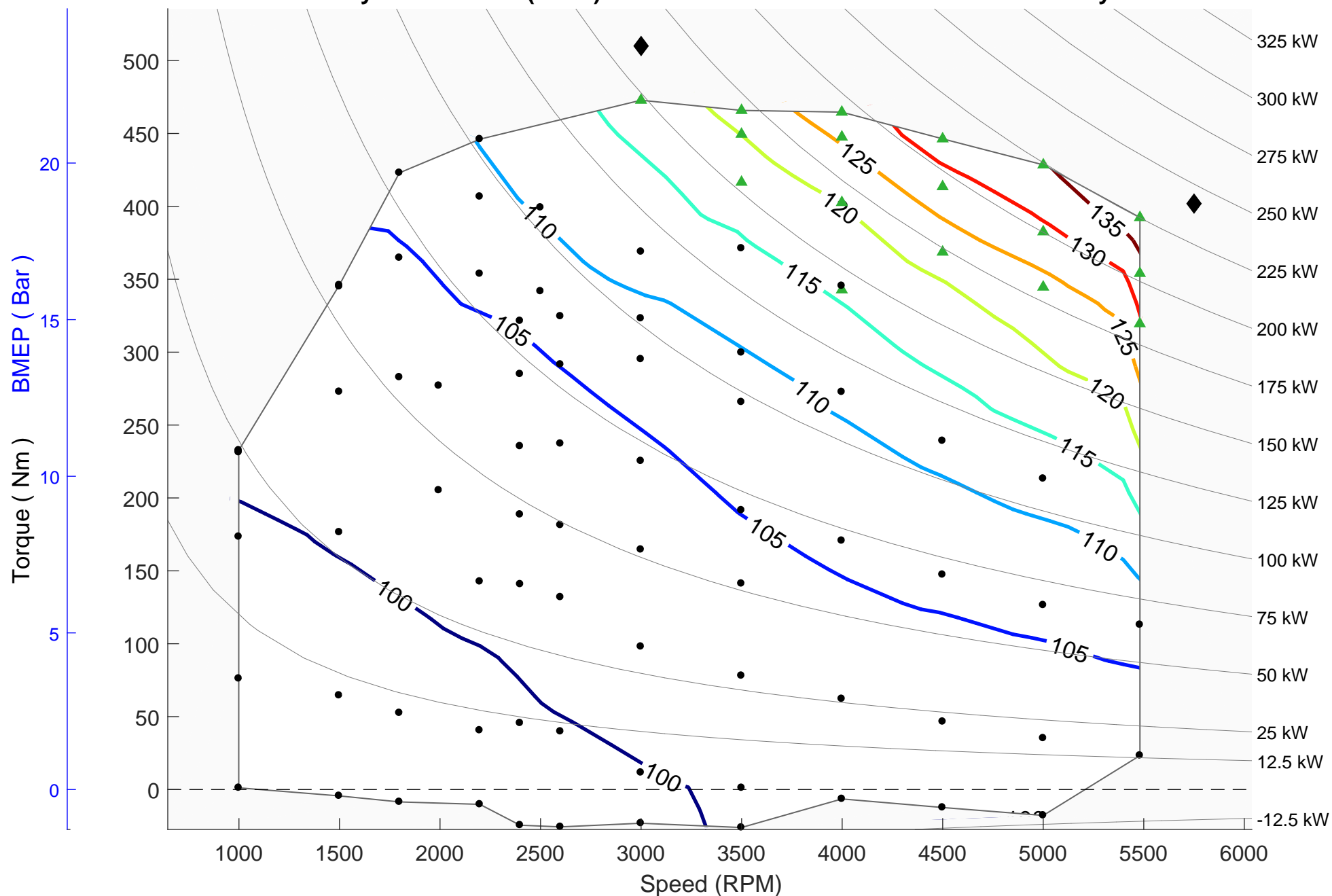
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Turbine Inlet Temp (degC) - Temperature Measured at Turbocharger Turbine Inlet**



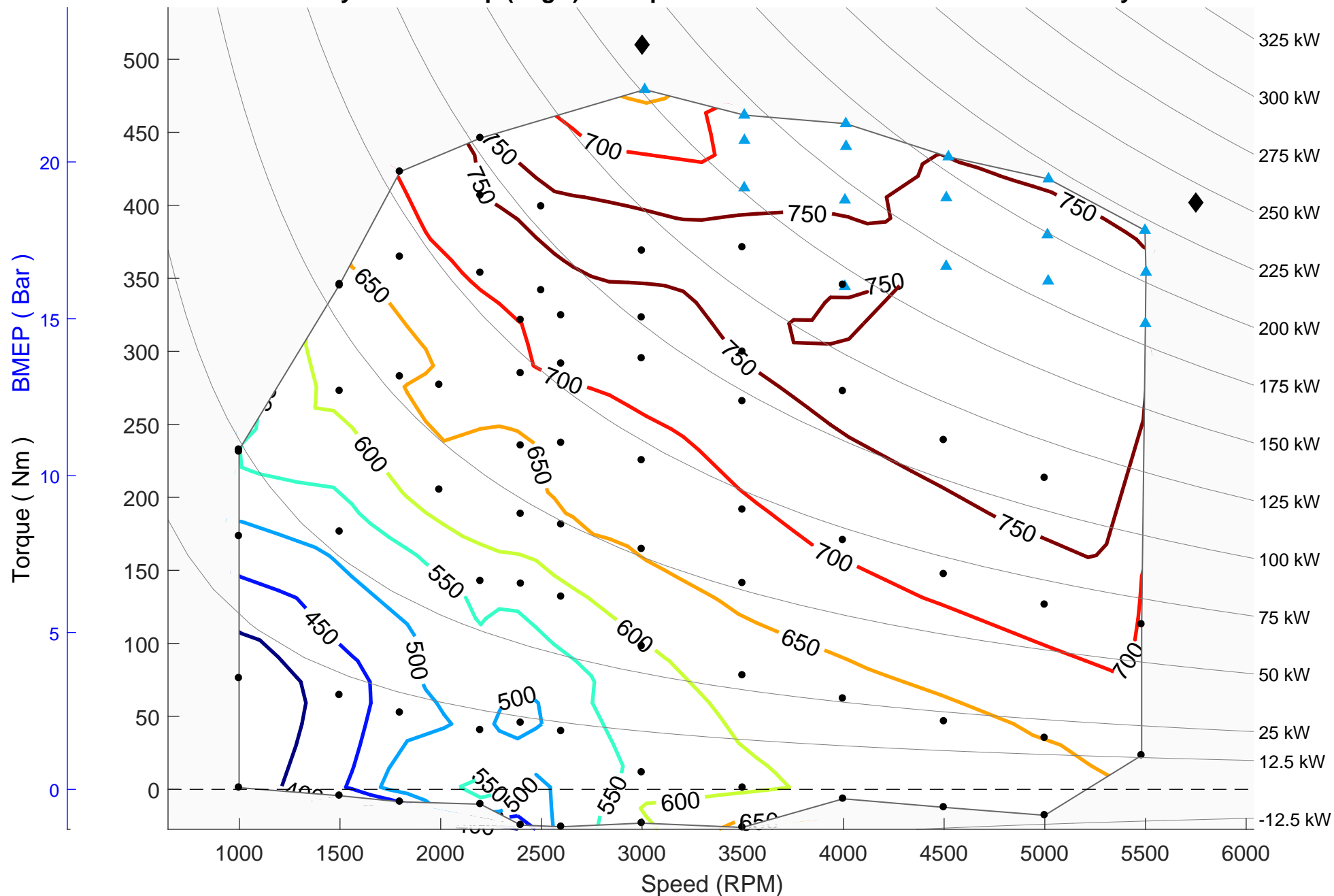
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Catalyst Inlet Press (kPaA) - Pressure Measured at the Inlet to the Catalyst**



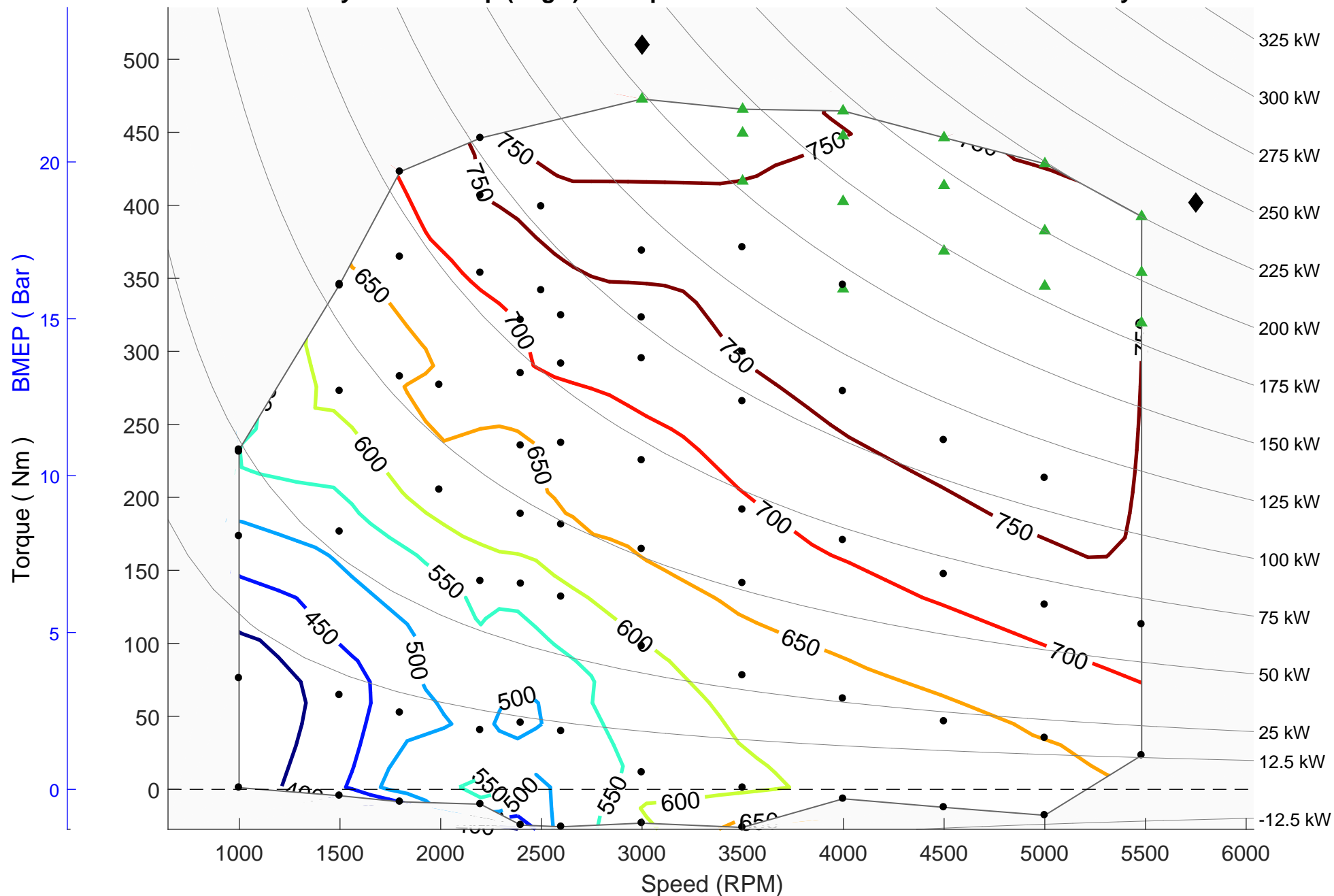
**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Catalyst Inlet Press (kPaA) - Pressure Measured at the Inlet to the Catalyst**



**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Catalyst Inlet Temp (degC) - Temperature Measured at the Inlet to the Catalyst**

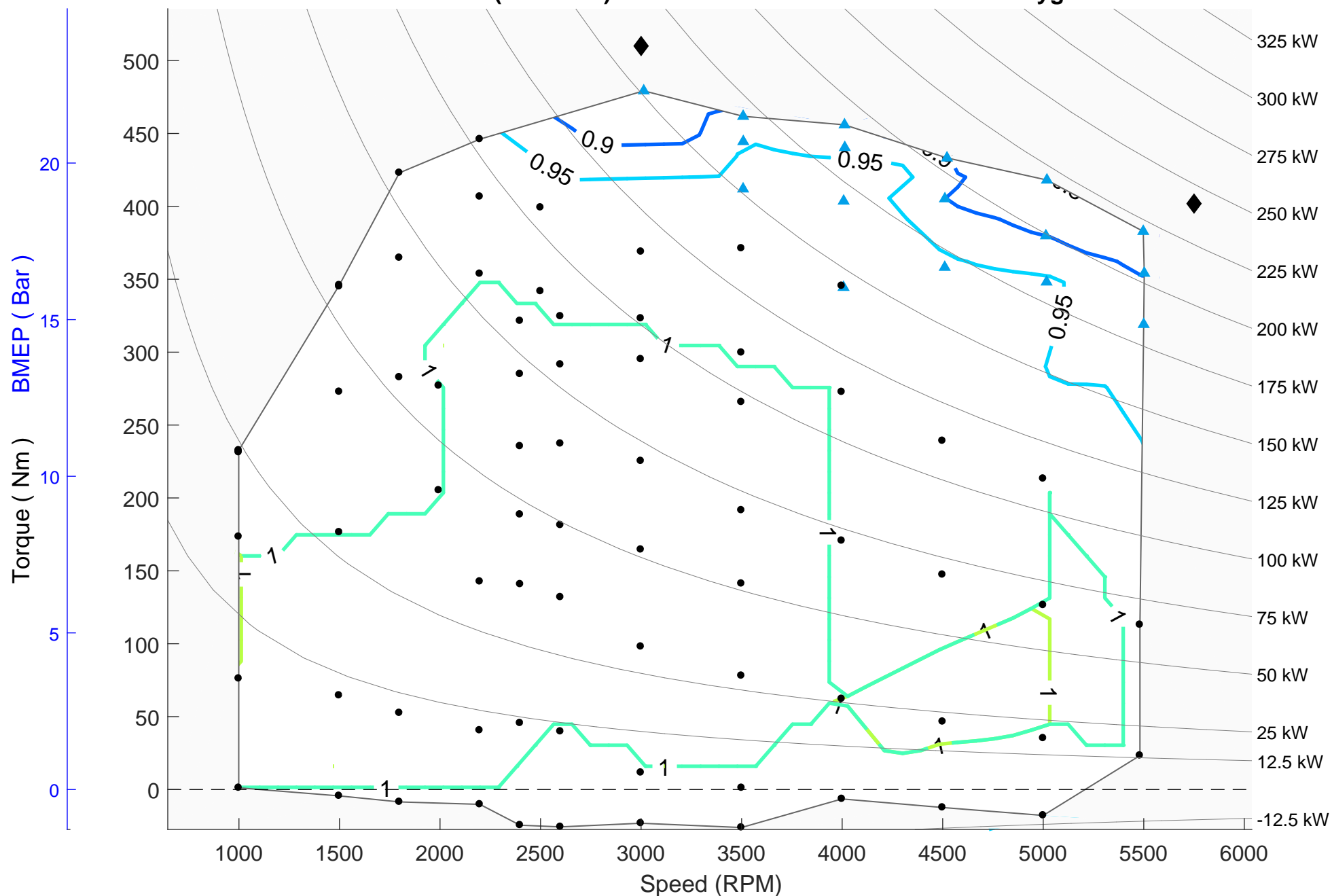


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Catalyst Inlet Temp (degC) - Temperature Measured at the Inlet to the Catalyst**



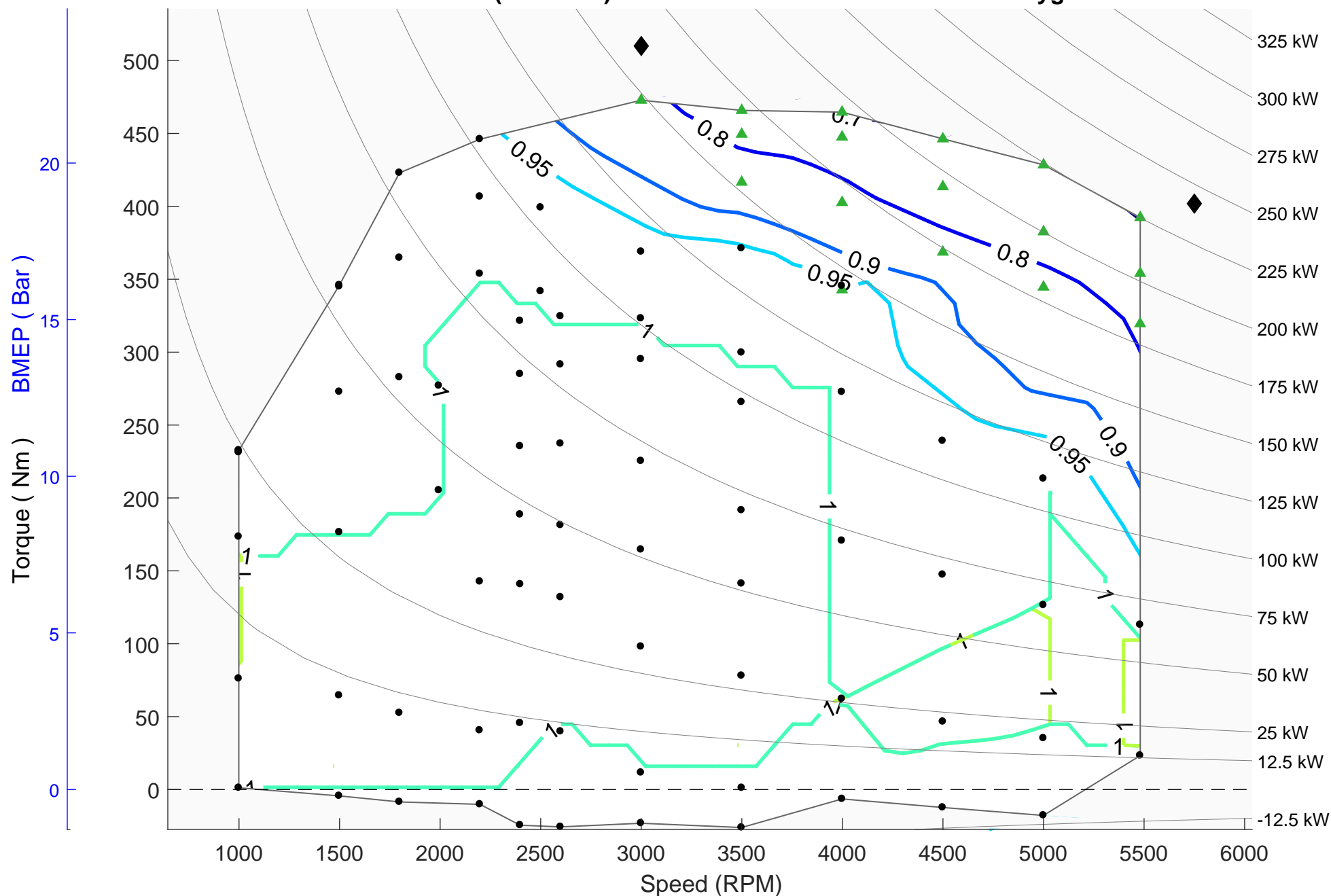


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Exhaust Lambda Left (LAMBDA) - Measured via Wideband Exhaust Oxygen Sensor\***

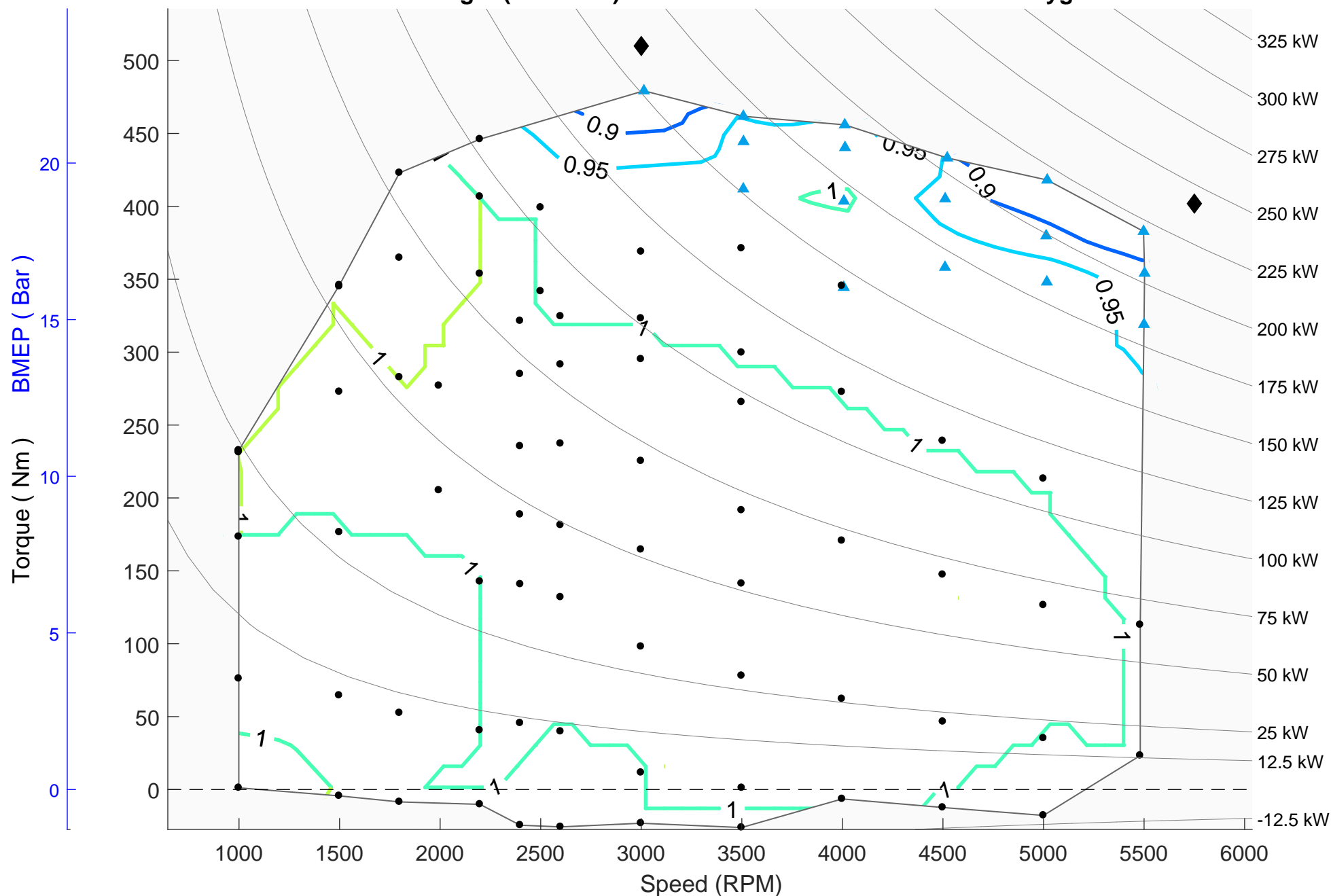


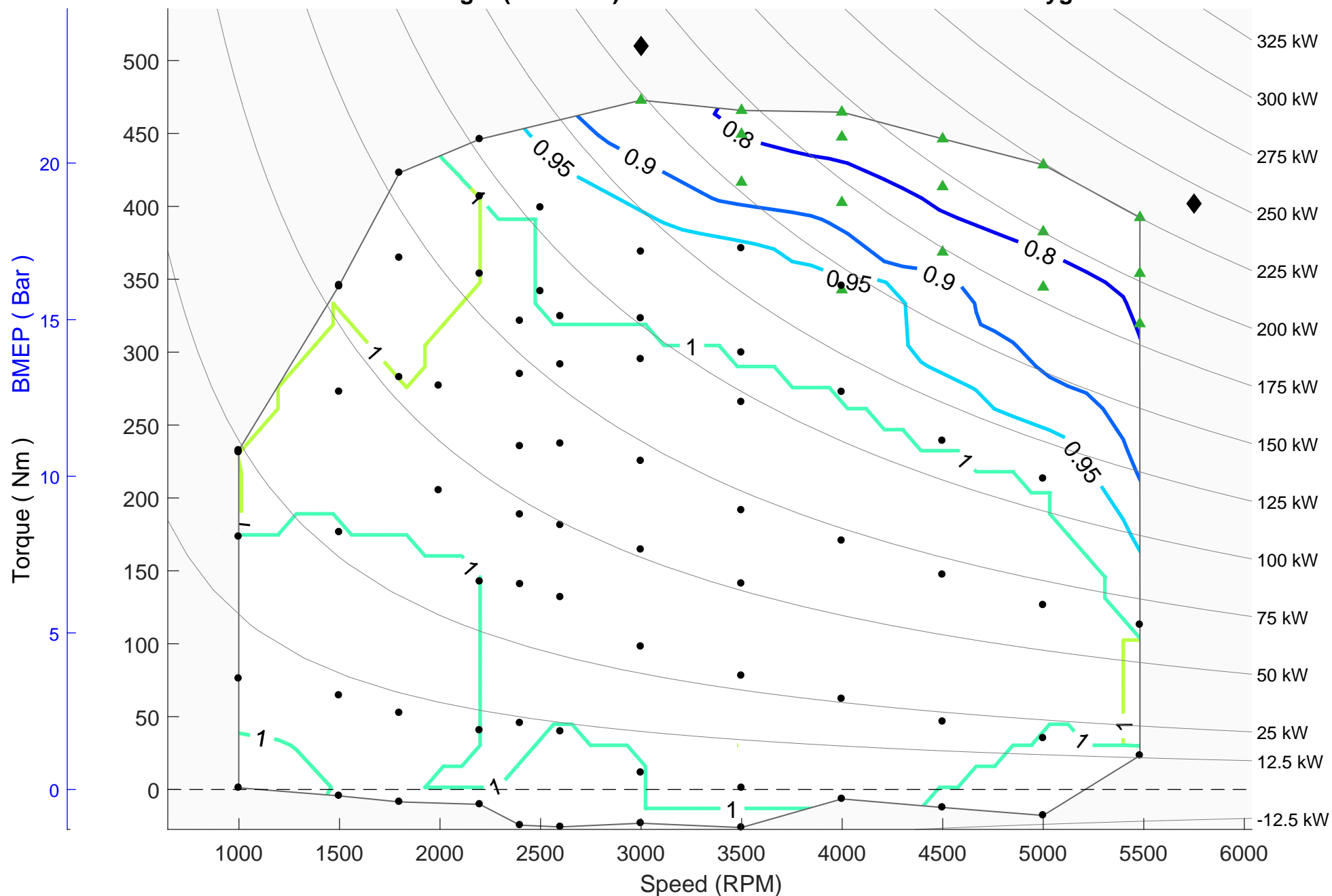


**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Final**  
**Exhaust Lambda Left (LAMBDA) - Measured via Wideband Exhaust Oxygen Sensor\***



**2015 Ford 2.7L EcoBoost V6 Engine Tier 3 Fuel HD1 - Test Data Plots**  
**Steady State and High Load Initial**  
**Exhaust Lambda Right (LAMBDA) - Measured via Wideband Exhaust Oxygen Sensor\***





\* Reference Only- Uncalibrated Sensor