UNDERSTANDING AIR FUEL RATIO

HIP HIGH PERFORMANCE ACADEMY

Stoichiometric AFR of Common Fuels

Gasoline (Pump Fuel)	-	14.7 : 1
E85	-	9.8 : 1
Ethanol	-	9.0 : 1
Diesel	-	14.5 : 1
Methanol	-	6.4 : 1
Natural Gas	-	17.2 : 1
Propane	-	15.7 : 1

AFR - Lambda

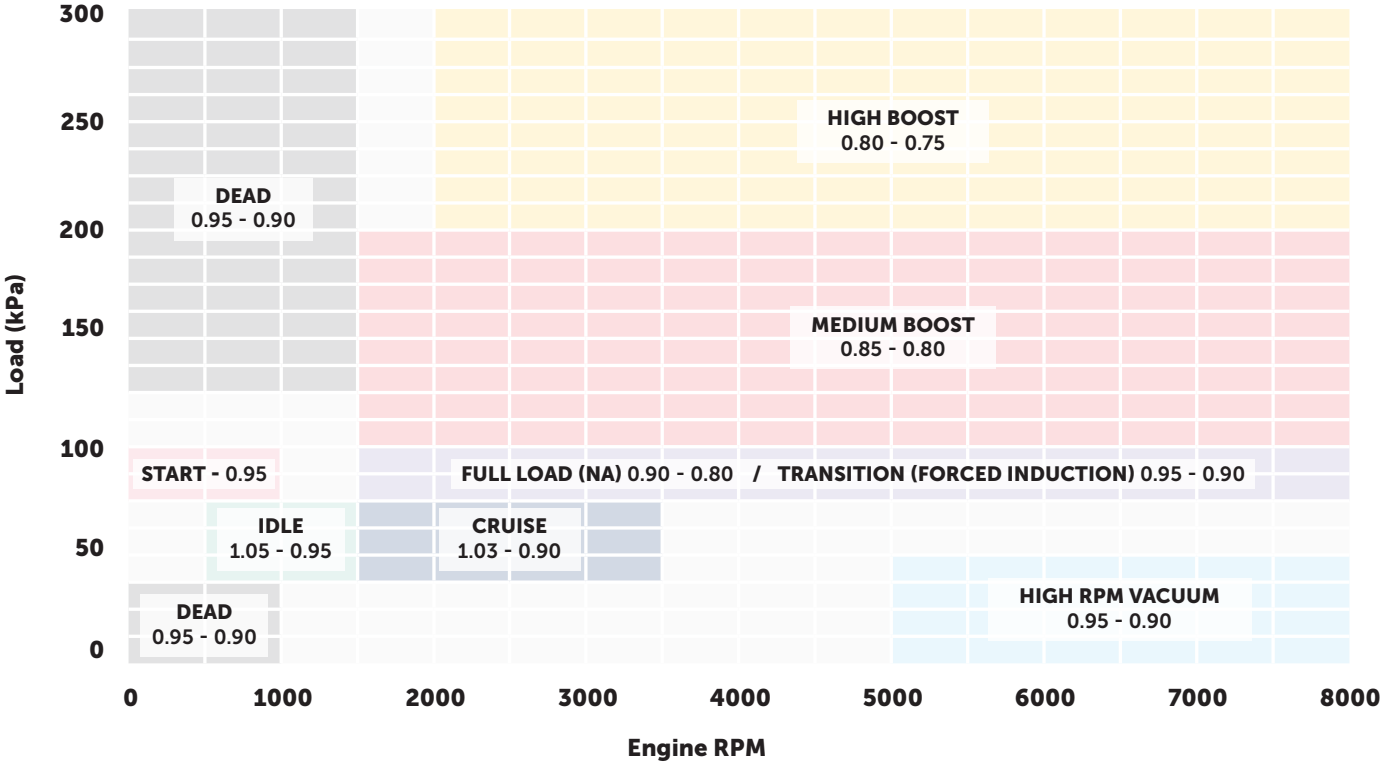
$$\frac{\text{Measured AFR}}{\text{Stoichiometric AFR}} = \text{Lambda} \qquad \frac{13.2}{14.7} = 0.90$$

Lambda - AFR

Stoichiometric AFR x Lambda = Measured AFR

14.7 x 0.85 = 12.5

AFR Target Table Guide



Inlet Air Temperature Compensation

TPS	-20	-10	0	10	20	30	40	50	60	70	80
100	5%	2.5%	0%	-2.5%	-5%	-7.5%	-10%	-12.5%	-15%	-17.5%	-20%
60	5%	2.5%	0%	-2.5%	-5%	-7.5%	-10%	-12.5%	-15%	-17.5%	-20%
40	5%	2.5%	0%	-2.5%	-5%	-7.5%	-10%	-12.5%	-15%	-17.5%	-20%
20	5%	2.5%	0%	-2.5%	-5%	-7%	-9%	-11%	-13.5%	-16%	-18%
10	5%	2.5%	0%	-2.5%	-4%	-6.5%	-8%	-10%	-12%	-14%	-16%
0	5%	2.5%	0%	-1.5%	-3%	-4.5%	-6%	-6%	-7%	-7%	-8%

Inlet Air Temperature °C