

# Experiment 7: Data Sheet

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Experiment Description Road Load and Rolling Resistance

Experiment Location Hwy 79 South of Hermosa, SD

Road Surface Composition and Condition asphalt, good

## Ambient Conditions

wind speed (km/hr)	0
wind direction(deg)	NA
barometric pressure (kPa)	100.5
air temperature (C)	10
road surface temperature (C)	10
air density (kg/m <sup>3</sup> )	

## Vehicle Description

Make	Jeep
Model	Wrangler TJ
Year	2000
Odometer	106500
Empty Weight (kN)	3460 lbm

### Tires

Manufacturer	<i>Bridgestone</i>
Description	<i>Dueler A/T</i>
Size	<i>30 x 9.5 R15LT</i>
Tread Depth	<i>moderate, 1/8 inch</i>

### Tire Pressure

	recommended (kPa)	actual (kPa)
LF	<i>190</i>	<i>197</i>
RF	<i>190</i>	<i>190</i>
LR	<i>204</i>	<i>197</i>
RR	<i>204</i>	<i>183</i>

### Vehicle Frontal Area (m<sup>2</sup>)

height (m)	<i>1.76 m</i>
width (m)	<i>1.69 m</i>
0.8h X w	<i>2.38 m<sup>2</sup></i>

### Inertial Mass

front wheels (kg)	
rear wheels (kg)	
drive train (kg)	
total (kg)	
$m_{rc}$ approximated = 0.03W	

Data (total time in seconds)

V(mph)	t(s)	1	2*	3	4*	5	6*
70		0	0	0	0		
60		6.9	6.8	7.7	6.6		
50		17	16.1	17.9	16		
40		29.7	25.4	29.5	27.6		
30		46.0	44.2	47.6	46.1		
20		61.6	66.1	71.1	70.5		
10		89.2	93.6	96.7	95.9		

\*opposite direction (returning)