

Application Report Bundle

iSCAAN**116-A357713-1** (Iteration 1) *Preliminary*US Units | **SI Units**

DISCLAIMER STATEMENT

The vehicle performance calculated by iSCAAN is an estimate for the specified vehicle and power train operating at standard engine conditions per SAE J1995 at 91 m (300 feet) altitude of 100 kPa barometric pressure and 25°C (77°F) inlet air temperature. Engine performance is significantly affected as operating altitude increases, therefore, Allison Transmission, Inc. does not represent and hereby disclaims that, under all conditions, the actual vehicle will achieve the simulated performance.

APPLICATION PROFILE ▲

Date	May 26, 2025 16:24:23
Scaan Number	
Application	116-A357713-1
Application Name	UAT-4 Deutz TCD 2013 L06 4V
Owner	Gunter Pilger @ DGS Mainz
SCAAN Analysis Type	Standard Vehicle Run
Optional Analysis Type	
Classification	Standard
Review Status	Not Submitted

Input Summary ▲

MISSION ▲

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM ▲

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
User Expected Engine Load	0%

Area and Weight

Frontal Area	8.190 m ²
Height / Width	3.150 m / 2.600 m
Standard Wind Resistance Coefficient	0.750 (no Deflector)
User Defined Wind Resistance Coefficient	0.750 (no Deflector)
Gross Vehicle Weight	19000 kg (no Trailer)
Weight On Drive Wheels	19000 kg (100.00%)

Tires

Number Of Tires	4 (Standard Profile Radial)
Selected Tire	
Tire Revolutions	286 revs/km
Tire Rolling Radius	0.556 m
Standard Surface	Smooth Concrete (SC Factor = 1.00)
Selected Surface	Smooth Concrete (SC Factor = 1.00)
Standard On-Road Traction Limit Coefficient	0.700
Standard Off-Road Traction Limit Coefficient	0.550
User Defined On-Road Traction Limit Coefficient	0.700
User Defined Off-Road Traction Limit Coefficient	0.550
Tire/Wheel Inertia (estimated)	84.4565 kg-m²

ACCESSORY LOSSES (POWER @ GOVERNED SPEED)

Accessory	Standard Loss (kW)	User Defined Loss (kW)
Fan (Clutch Fan)	28.6	28.6
Alternator / Generator	2.7	2.7
Air Compressor	1.5	1.5
Steering Pump	1.5	1.5
Air Conditioning	0.0	0.0
Implement Drive	0.0	0.0

ENGINE

Number of Power Packs	1
Engine Rating	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Engine Controls Type	Electronic
Evaluate at Altitude	No
Certifications	
Displacement	7.20 l
Peak Torque	1498.0 N-m
Peak Torque Speed	1450 rpm
Peak Power	268.5 kW
Peak Power Speed	2000 rpm
Governed Power	262.2 kW
Governed Speed	2200 rpm
Number Of Curves	1
Engine Curve Reference	
Engine Idle Speed	600 rpm
Cruise Velocity @ Speed	0.0 km/h @ 0 rpm
Engine Retarder	
Engine Inertia (estimated)	0.6567 kg-m²

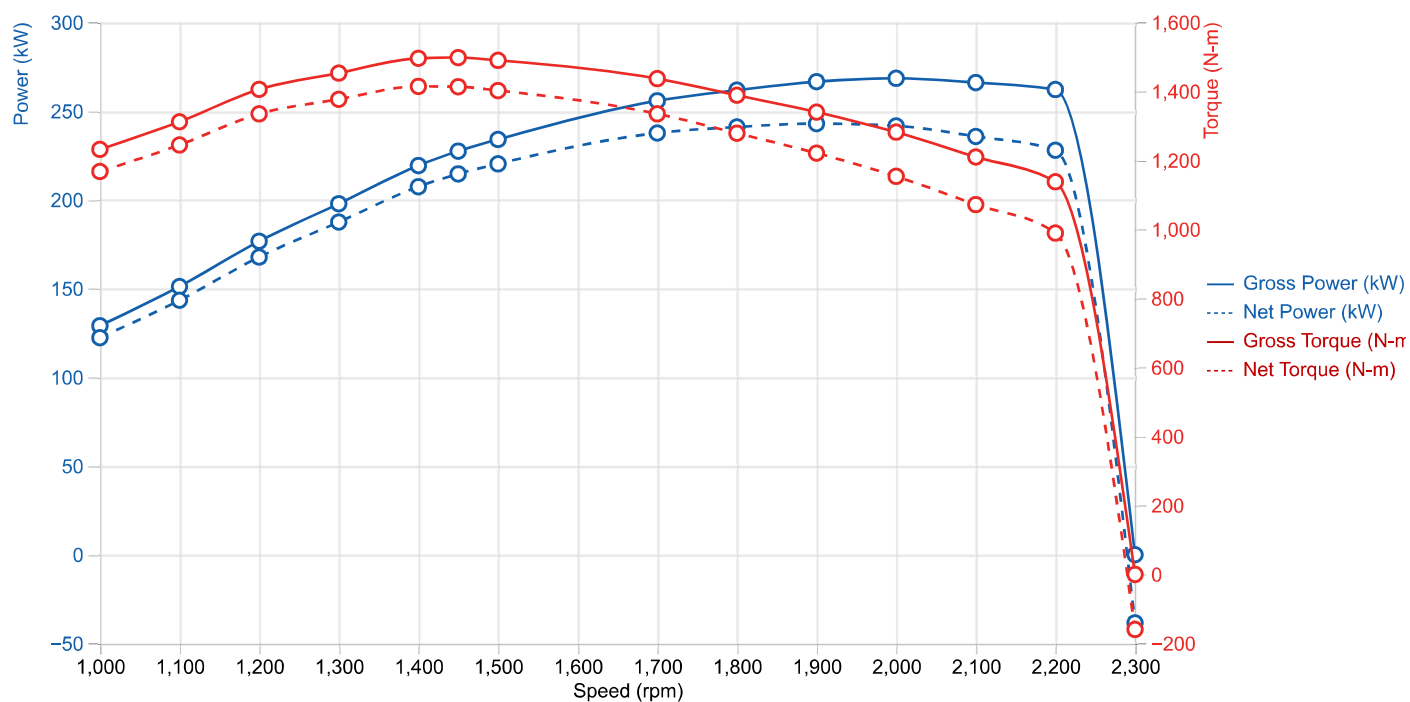
ENGINE CURVE - STANDARD LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)

Speed (rpm)	Gross Power (kW)	Gross Torque (N-m)	Net Power Fan On (kW)	Net Torque Fan On (N-m)	Net Power Fan Off (kW)	Net Torque Fan Off (N-m)	Point Identification
1000	129.0	1232.0	122.3	1167.9	125.0	1193.6	
1100	151.1	1312.0	143.4	1244.9	147.0	1275.9	
1200	176.7	1406.0	167.7	1334.9	172.4	1371.8	
1300	197.8	1453.0	187.5	1377.1	193.4	1420.5	
1400	219.3	1496.0	207.4	1414.6	214.8	1464.9	
1450	227.5	1498.0	214.6	1413.6	222.8	1467.5	Peak Torque
1500	234.0	1490.0	220.3	1402.4	229.4	1460.1	
1700	255.8	1437.0	237.7	1335.0	250.9	1409.1	
1800	261.8	1389.0	241.1	1278.9	256.7	1361.9	
1900	266.6	1340.0	243.0	1221.1	261.4	1313.7	
2000	268.5	1282.0	241.7	1153.8	263.1	1256.4	Peak Power
2100	266.1	1210.0	235.7	1071.9	260.6	1185.0	
2200	262.2	1138.0	228.0	989.5	256.5	1113.5	Governed
2300	0.0	0.0	-38.4	-159.6	-5.8	-24.0	No Load Governed

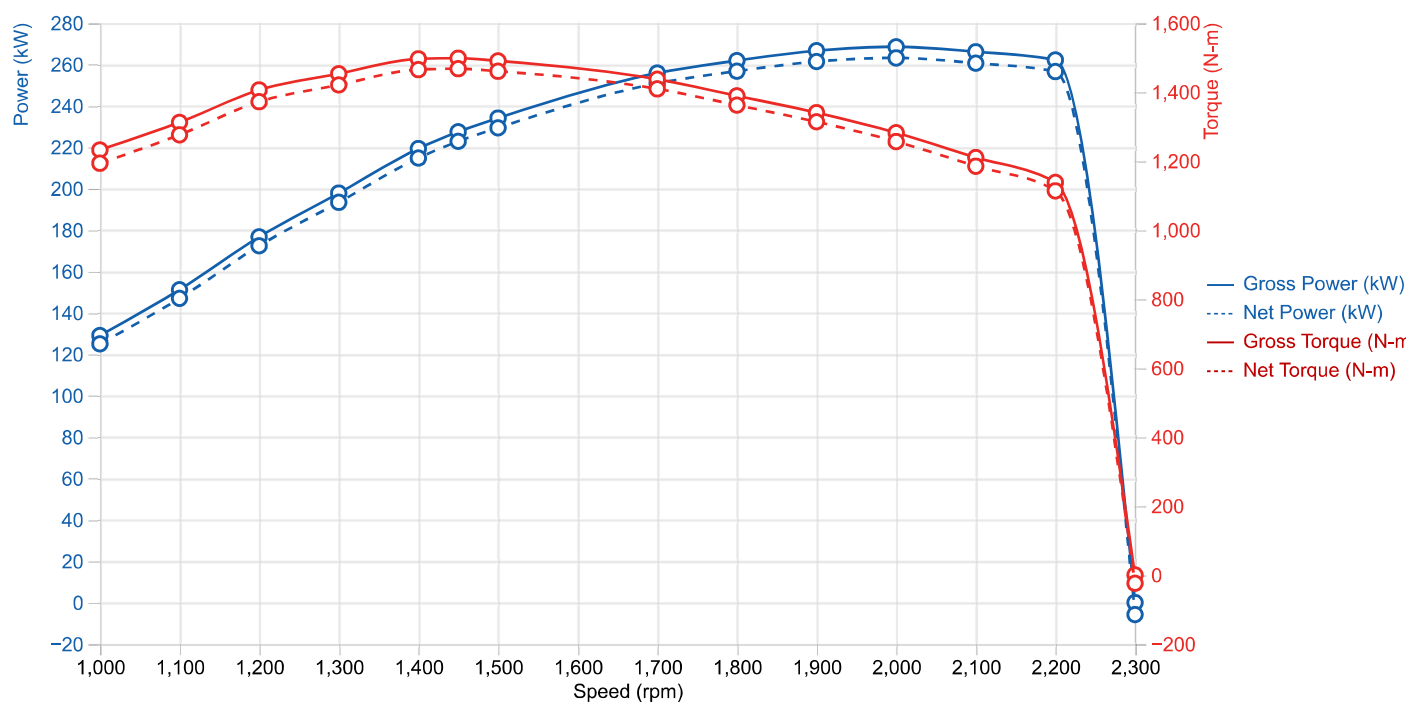
Peak Power point has been defined for the purposes of assessing Accessory Losses

PLOTS - ENGINE CURVE - STANDARD LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)

Standard Parameters Fan On



Standard Parameters Fan Off



ENGINE CURVE - USER DEFINED LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)

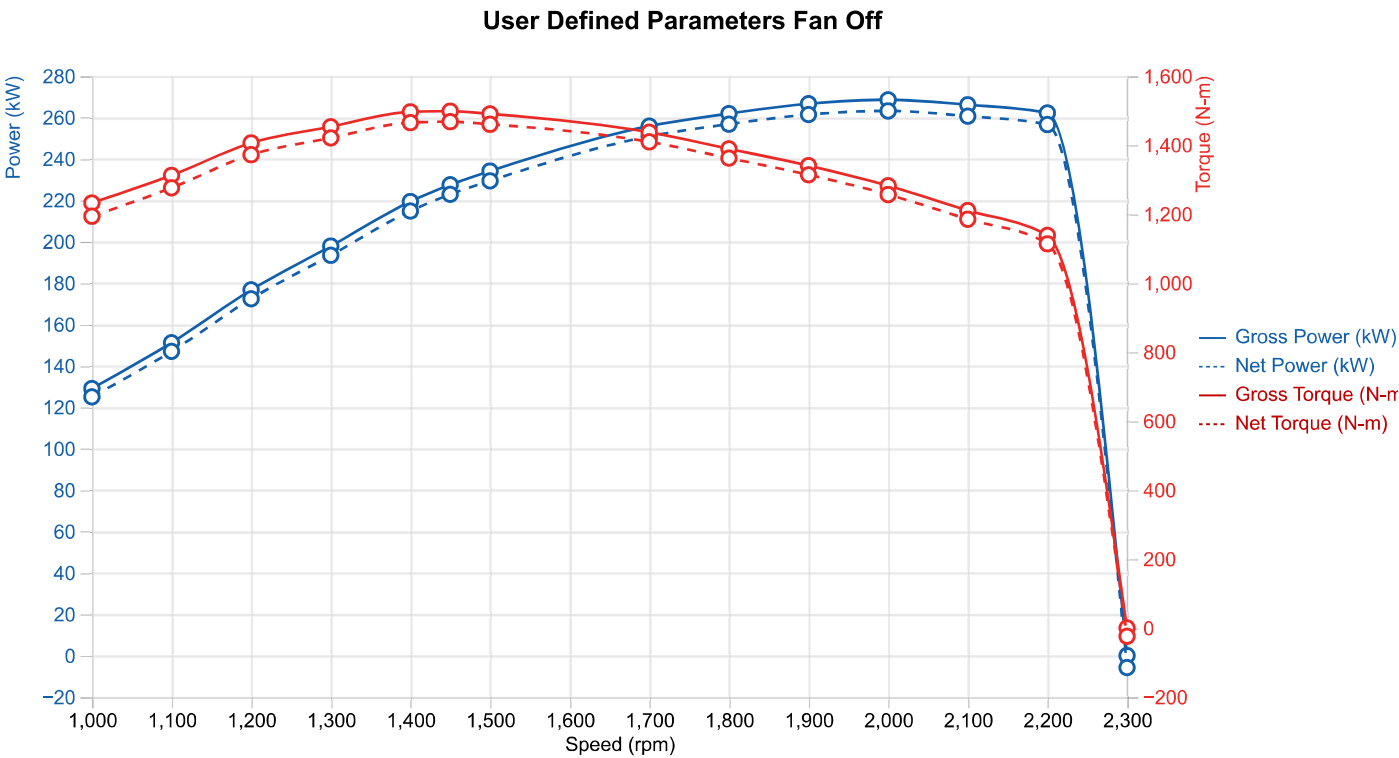
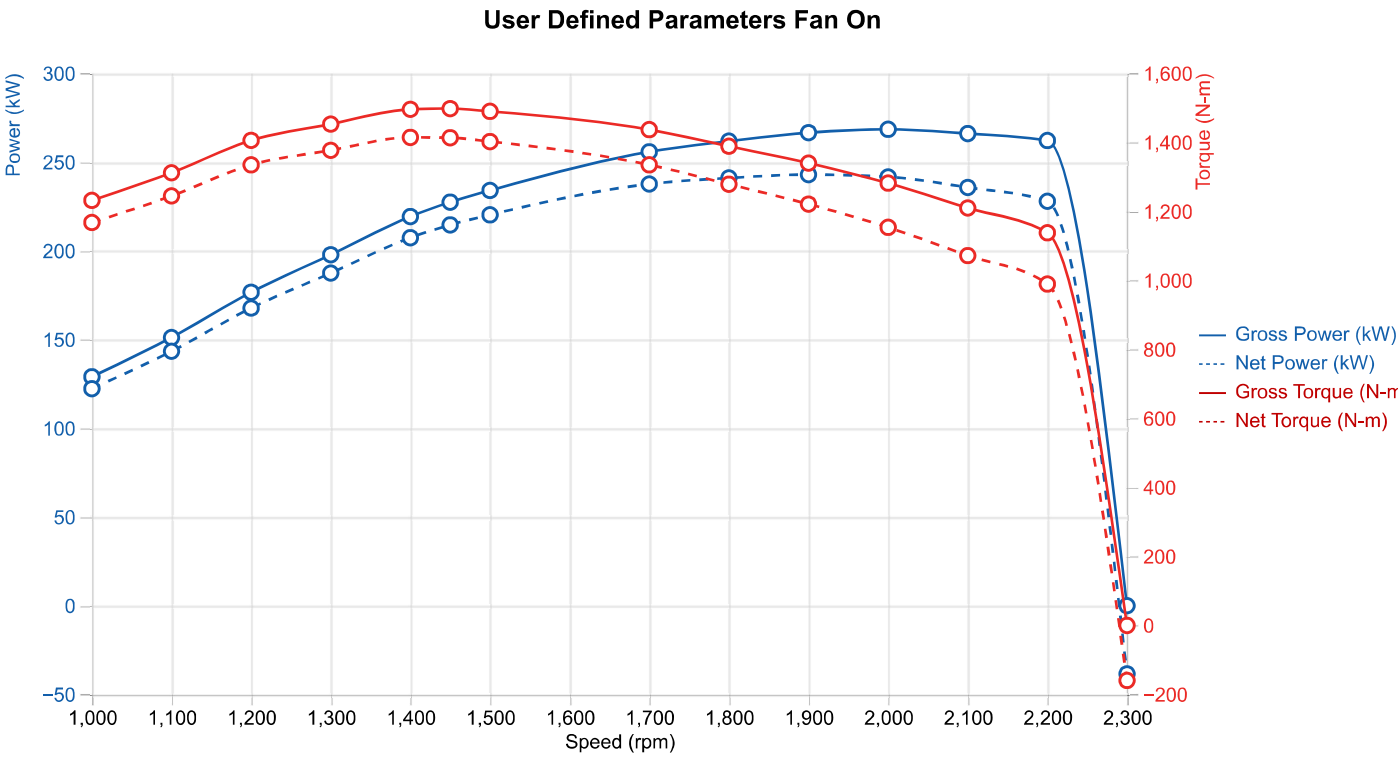
Speed (rpm)	Gross Power (kW)	Gross Torque (N-m)	Net Power Fan On (kW)	Net Torque Fan On (N-m)	Net Power Fan Off (kW)	Net Torque Fan Off (N-m)	Point Identification
1000	129.0	1232.0	122.3	1167.9	125.0	1193.6	
1100	151.1	1312.0	143.4	1244.9	147.0	1275.9	
1200	176.7	1406.0	167.7	1334.9	172.4	1371.8	
1300	197.8	1453.0	187.5	1377.1	193.4	1420.5	
1400	219.3	1496.0	207.4	1414.6	214.8	1464.9	
1450	227.5	1498.0	214.6	1413.6	222.8	1467.5	Peak Torque

1500	234.0	1490.0	220.3	1402.4	229.4	1460.1	
1700	255.8	1437.0	237.7	1335.0	250.9	1409.1	
1800	261.8	1389.0	241.1	1278.9	256.7	1361.9	
1900	266.6	1340.0	243.0	1221.1	261.4	1313.7	
2000	268.5	1282.0	241.7	1153.8	263.1	1256.4	Peak Power
2100	266.1	1210.0	235.7	1071.9	260.6	1185.0	
2200	262.2	1138.0	228.0	989.5	256.5	1113.5	Governed
2300	0.0	0.0	-38.4	-159.6	-5.8	-24.0	No Load Governed

Peak Power point has been defined for the purposes of assessing Accessory Losses

PLOTS - ENGINE CURVE - USER DEFINED LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)





TRANSMISSION

Transmission Manufacturer	Allison Transmission
Transmission Family	3000 Series (1-L001243-TF, Rev AJ)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Torque Converter	TC421 (1-L001255-TC, Rev C) - Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)

CONTROLS

Controls Release	Production Calibration (PC) for 3000 Series (1-L001194-CR, Rev F)
Shift Schedule	Primary
DynActive	No
Speed Profile	Performance
Shift Speed & Strategy	2200 rpm S2 Performance 2
Equivalent DynActive Bias	3
Primary Mode: Gears	Low = 1, Start = 1, High = 6 (1-1-6)

DRIVELINE

Driveline Protection		No			
Component		Description	Ratio	Standard Efficiency (%)	User Defined Efficiency (%)
Propshaft -- One Piece -- Two Joint (1-L003521-DL)		Single	1.000	98.60	98.60
Axle -- On Hwy Single Red -- 4x4 (1-L003532-DL)		Single	6.000	95.00	95.00
Aux Gearing -- Transfer Case -- Two Speed (1-L003523-DL)		Low	0.950	97.00	97.00
		High	2.150	97.00	97.00
Overall Driveline Ratio	Description	Ratio	Standard Efficiency (%)	User Defined Efficiency (%)	N over V Ratio rpm/kph
	High	12.900	90.86	90.86	61.531
	Low	5.700	90.86	90.86	27.188

Ratings and Guidelines Check

MISSION

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) - Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.

CONVERTER RATING AND GUIDELINE CHECKSSECTION SCORE - OK

Check	Check Name	Minimum or Maximum	Rating or Recommendation	Actual Value	Units	Overall Status
C01 ▼?	Transmission / Converter Compatibility					✓ OK: Acceptable
C02 ▼?	Engine / Converter Compatibility					✓ OK: Acceptable
C04 ▼?	Engine Speed at Converter Stall			1729	rpm	🚩 Reference
C05 ▼?	Minimum Engine Speed	Min	1500	1729	rpm	✓ OK: Acceptable
C10 ▼?	Torque Converter Input Torque	Max	1695.0	1498.0	N-m	✓ OK: Acceptable
C07 ▼?	Turbine Torque at Converter Stall	Max	2305.0	2304.5	N-m	✓ OK: Acceptable
C08 ▼?	Converter Speed Ratio at Engine Governed Speed	Min	0.800	0.854		✓ OK: Acceptable
C03 ▼?	Converter Stall Torque Ratio			1.770		🚩 Reference

Notes

Check	Comments
C05	Net peak torque speed (1400 rpm) + allowable variation (100 rpm).

! TRANSMISSION RATING AND GUIDELINE CHECKSSECTION SCORE - XX

Check	Check Name	Minimum or Maximum	Rating or Recommendation	Actual Value	Units	Overall Status
T01 ▾?	Transmission / Vocation Compatibility					! XX: Questionable - may not be acceptable
T02 ▾?	Transmission / Engine Compatibility					✓ OK: Acceptable
T17 ▾?	Transmission Permitted in End User/Chassis Mfg Locations					✓ OK: Acceptable
T15 ▾?	Transmission Input Power (Gross)	Max	336.0	268.5	kW	✓ OK: Acceptable
T14 ▾?	Transmission Input Torque (Gross)	Max	1695.0	1498.0	N-m	✓ OK: Acceptable
T03 ▾?	Transmission Input Speed		1900 / 2800	2200	rpm	✓ OK: Acceptable
T11 ▾?	Transmission Output Speed	Max	3600	3374	rpm	✓ OK: Acceptable

Notes

Check	Comments
T11	Check made in Range 6L at 54.9 km/h

! VEHICLE RATING AND GUIDELINE CHECKS - STANDARDSECTION SCORE - XX


Check	Check Name	Minimum or Maximum	Rating or Recommendation	Actual Value	Units	Overall Status
V06 ▾?	Minimum Required Driveline Ratio For Wheel Slip	Min	10.769	5.700		! XX: Questionable - may not be acceptable
V21 ▾?	1st Range Converter Stall Gradeability			42.76	%	📖 Reference
V13 ▾?	1st Range 70% Converter Efficiency Gradeability			29.90	%	📖 Reference
V23 ▾?	1st Range 80% Converter Efficiency Gradeability			25.21	%	📖 Reference
V17 ▾?	Maximum Geared Vehicle Speed at Engine Governed Speed			54.8	km/h	📖 Reference
V18 ▾?	Maximum Speed on 0.25% Grade	Min	88.5	124.8	km/h	✓ OK: Acceptable
V46 ▾?	Heat Generated at 0.7 Tractive Effort to Drive Wheel Weight Ratio			N/A	kW	📖 Reference
V49 ▾?	Heat Generated at 0.6 Tractive Effort to Drive Wheel Weight Ratio			N/A	kW	📖 Reference

Notes

Check	Comments
V06	1st range at 70% converter efficiency operation, 0.55 traction coefficient.
V17	Check is in 6L Lockup.
V18	At 2213 rpm Engine Speed, Range 6L.
V46	Cannot attain conditions required at 0.7 Tractive Effort to Drive Wheel Weight Ratio
V49	Cannot attain conditions required at 0.6 Tractive Effort to Drive Wheel Weight Ratio

Vehicle Performance Summary

MISSION

End User

xxx

Selected Vocation

Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

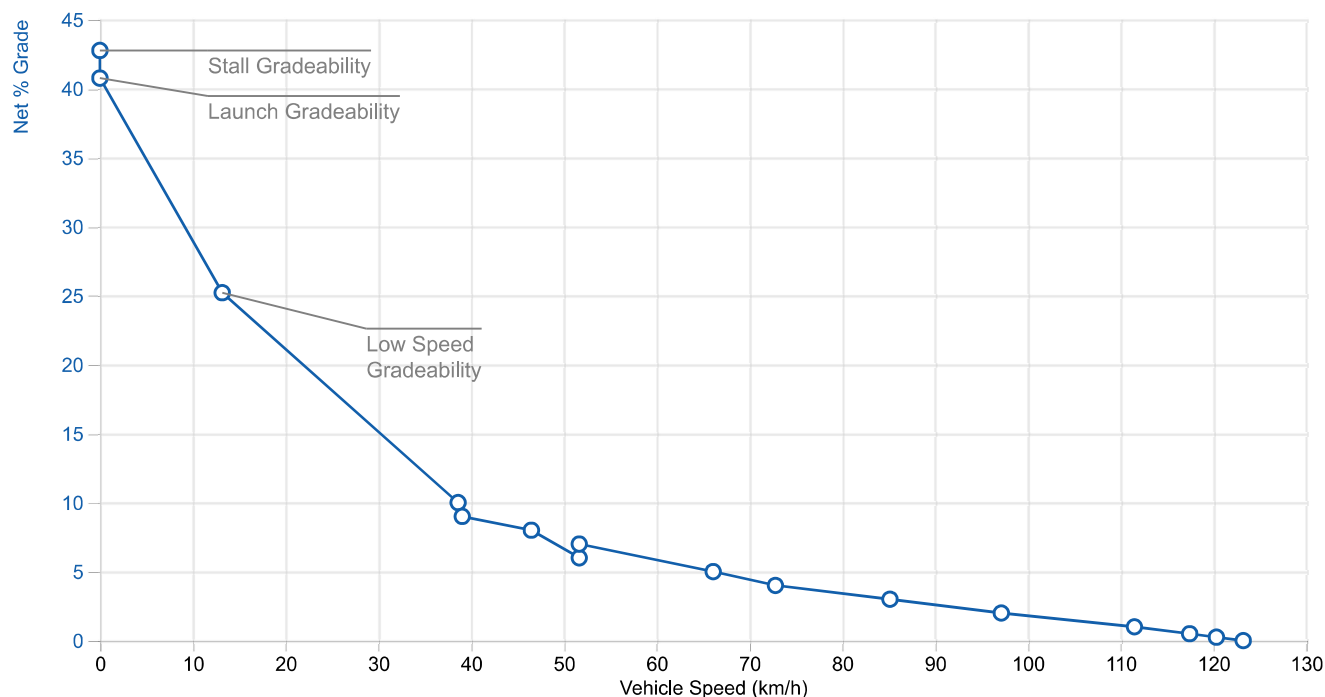
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FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.95▲

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	0.950

Gradeability	% Grade	Vehicle Speed (km/h)	Gear Range	Match Point
Stall Gradeability	42.8		1C	Stall
Launch Gradeability	40.8		1C	
Low Speed Gradeability	25.2	13.2	1C	80 Percent
Maximum Speed on Grade	0.0	123.2	6L	Road Load
	0.3	120.3	6L	
	0.5	117.5	6L	
	1.0	111.5	6L	
	2.0	97.2	6L	
	3.0	85.2	5L	
	4.0	72.8	4L	
	5.0	66.1	4L	
	6.0	51.7	3L	
	7.0	51.7	3L	
	8.0	46.5	3L	
	9.0	39.1	2L	
	10.0	38.6	2L	

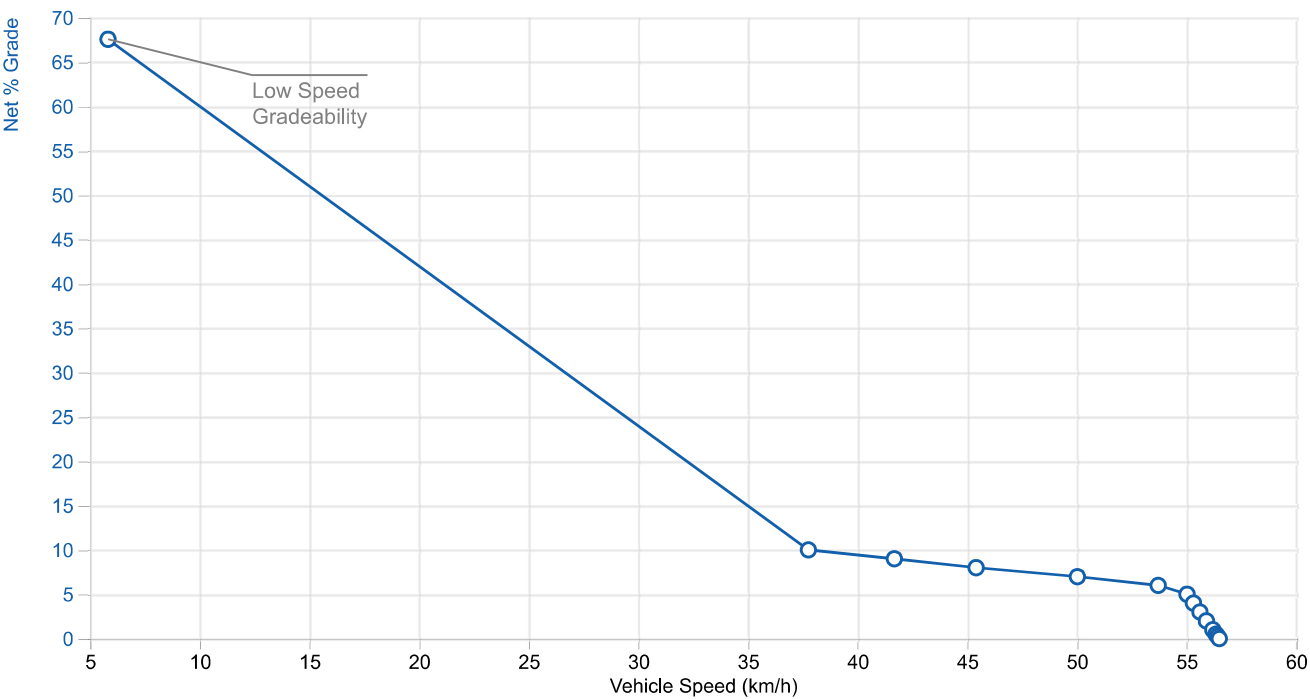
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT▲


FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.15▲

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	2.150

Gradeability	% Grade	Vehicle Speed (km/h)	Gear Range	Match Point
Stall Gradeability	200.9		1C	Stall
Launch Gradeability	198.9		1C	
Low Speed Gradeability	67.6	5.8	1C	80 Percent
Maximum Speed on Grade	0.0	56.5	6L	Road Load
	0.3	56.4	6L	
	0.5	56.4	6L	
	1.0	56.2	6L	
	2.0	55.9	6L	
	3.0	55.6	6L	
	4.0	55.3	6L	
	5.0	55.0	6L	
	6.0	53.7	6L	
	7.0	50.0	6L	
	8.0	45.4	6L	
	9.0	41.7	5L	
	10.0	37.8	5L	

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.15▲

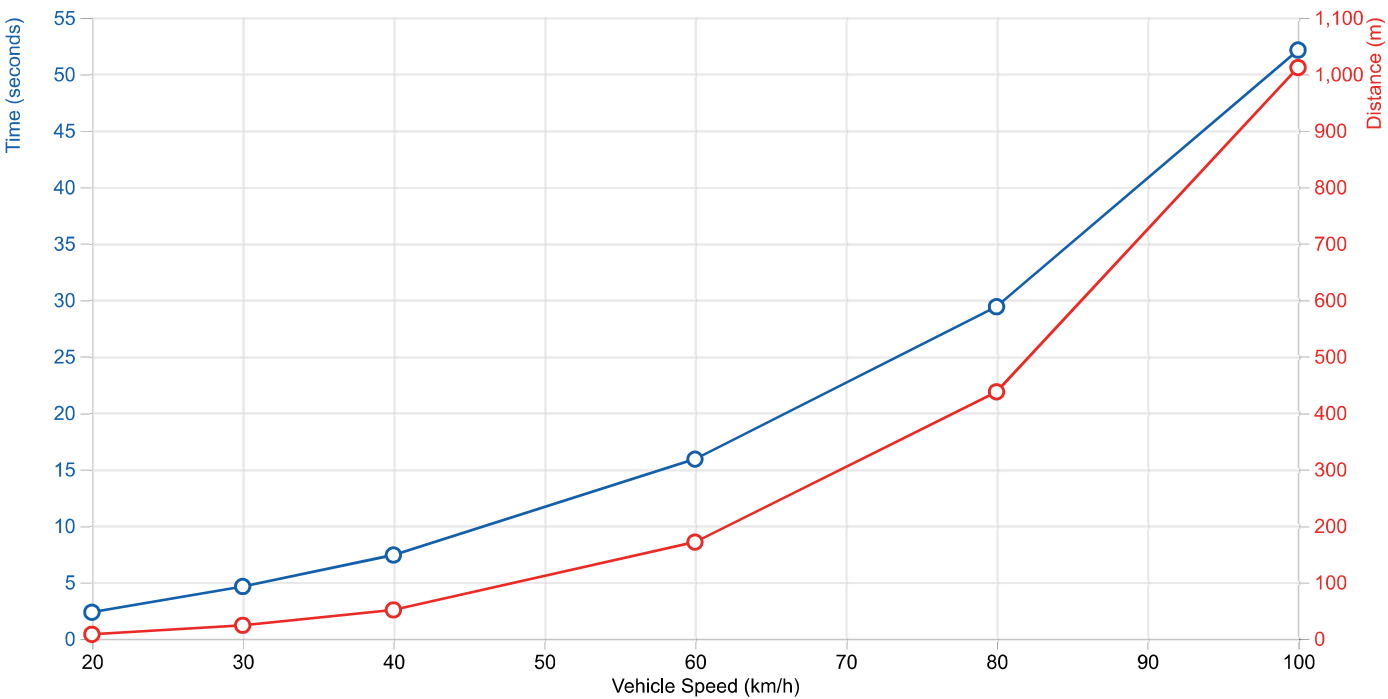


FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950▲

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	0.950

Speed	Time (seconds)	Distance (m)
0 - 20 km/h	2.3	8
0 - 30 km/h	4.6	24
0 - 40 km/h	7.4	51
0 - 60 km/h	15.9	171
0 - 80 km/h	29.4	437
0 - 100 km/h	52.1	1012

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RA▲

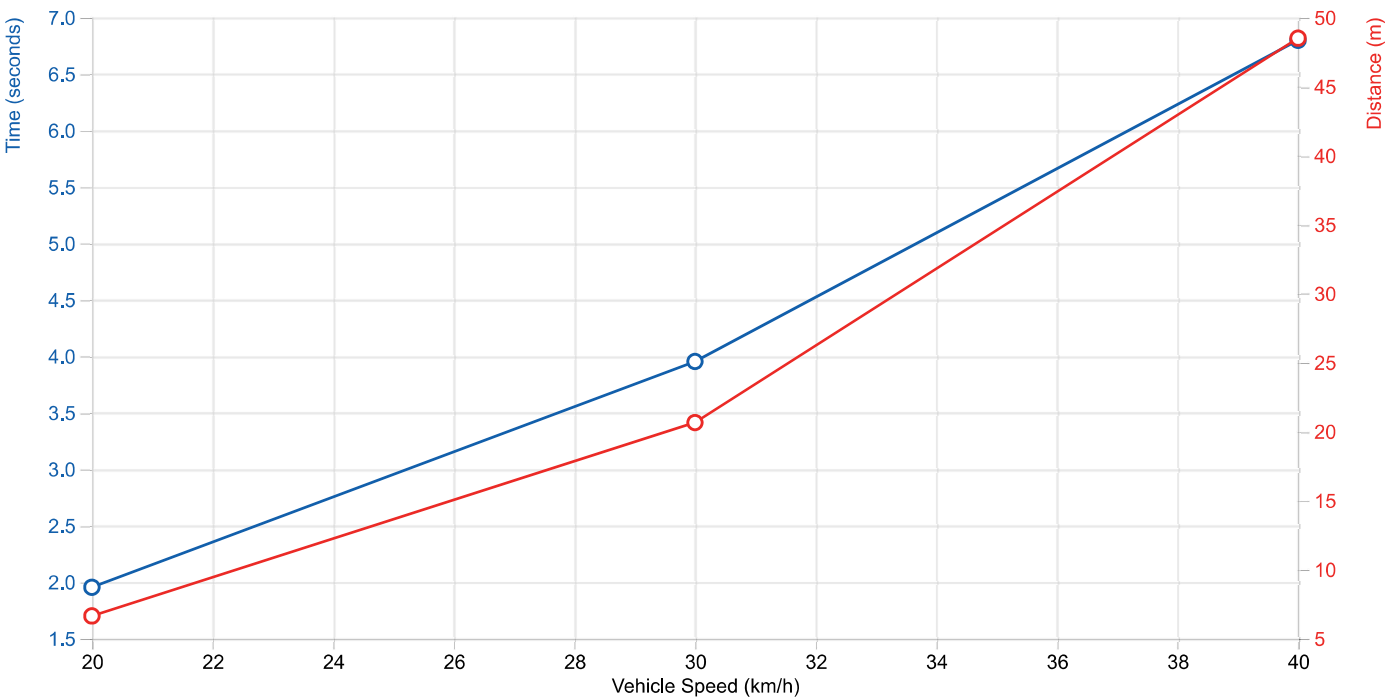


FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.1▲

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	2.150

Speed	Time (seconds)	Distance (m)
0 - 20 km/h	2.0	7
0 - 30 km/h	4.0	21
0 - 40 km/h	6.8	49
0 - 60 km/h	Speed not possible	Speed not possible
0 - 80 km/h	Speed not possible	Speed not possible
0 - 100 km/h	Speed not possible	Speed not possible

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RA▲



Engine-Converter Match

MISSION	
End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
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Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

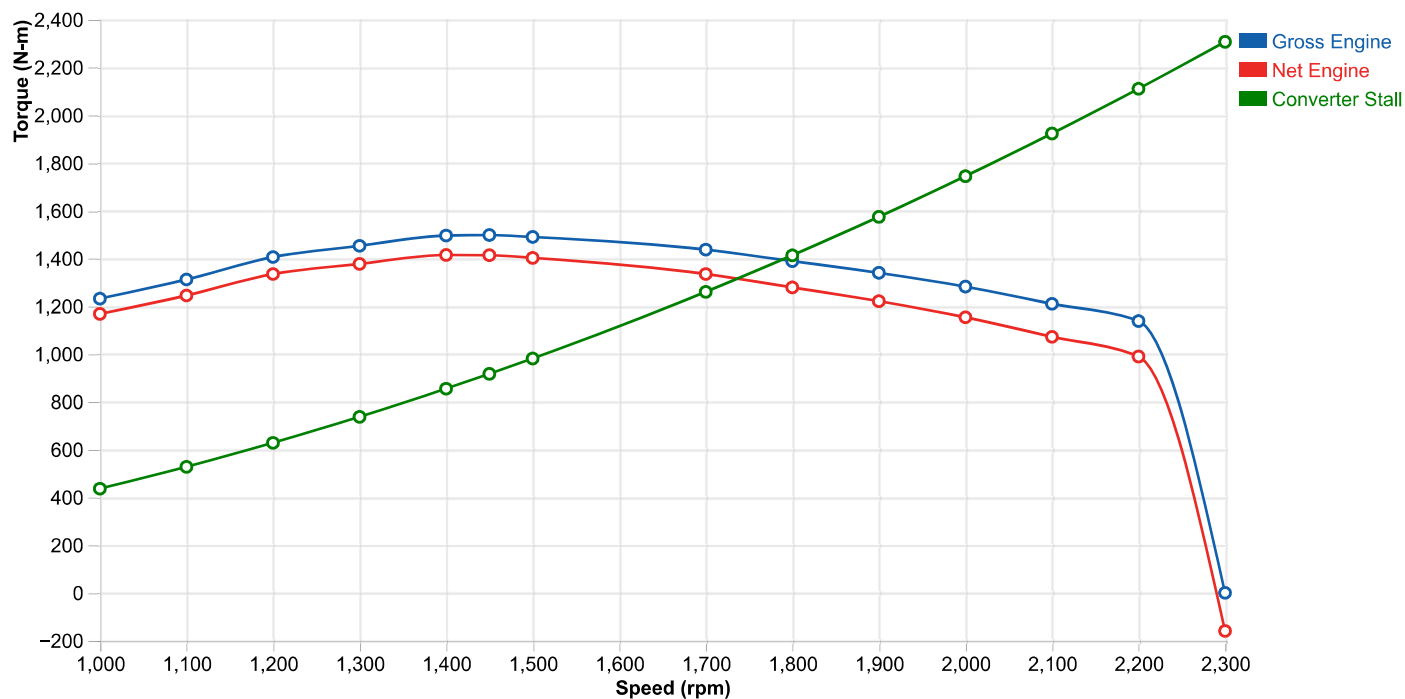
NOTE	
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CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE	
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Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Speed Ratio	Torque Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Turbine Speed (rpm)	Turbine Torque (N-m)	Turbine Power (kW)	Converter Heat Rejection (kW)	Match Point
0.000	1.770	1729	1318.5	238.8	0	2304.5	0	238.86	Stall
0.100	1.730	1736	1315	239	174	2246.3	40.8	198.25	
0.200	1.670	1756	1303.8	239.7	351	2149.5	79	160.71	
0.300	1.590	1786	1286.8	240.7	536	2019.5	113.3	127.39	
0.400	1.489	1823	1265.6	241.6	729	1859.1	142	99.67	
0.499	1.401	1884	1230.3	242.8	941	1700.3	167.6	75.2	70 Percent
0.500	1.401	1884	1230.1	242.8	942	1699.5	167.7	75.09	
0.600	1.298	1947	1189.5	242.5	1168	1521	186.1	56.48	
0.634	1.263	1973	1172.1	242.2	1251	1458.3	191	51.16	80 Percent
0.700	1.196	2030	1129.5	240.1	1421	1330.4	197.9	42.15	
0.727	1.170	2056	1108	238.6	1495	1275.3	199.6	38.97	85 Percent
0.750	1.147	2080	1088.6	237.1	1560	1228	200.6	36.51	
0.800	1.094	2133	1044.8	233.4	1706	1123.3	200.7	32.67	
0.825	1.067	2158	1024.4	231.5	1780	1073.6	200.1	31.35	
0.840	1.050	2175	1009.7	230	1827	1041	199.1	30.9	
0.854	1.032	2200	989.5	228	1880	1002.4	197.3	30.66	Governed
0.868	1.015	2202	963.6	222.2	1911	959.8	192.1	30.17	
0.881	0.998	2205	926.9	214.1	1943	906.7	184.5	29.59	Coupling
0.900	0.999	2215	818	189.7	1993	798.7	166.7	23	
0.925	0.995	2227	675.5	157.6	2060	653.8	141.1	16.51	
0.950	0.992	2246	463.3	109	2134	441.3	98.6	10.36	
0.975	0.988	2266	234	55.5	2209	213.1	49.3	6.24	
0.990	0.985	2278	98.2	23.4	2255	78.7	18.6	4.85	

PLOTS - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

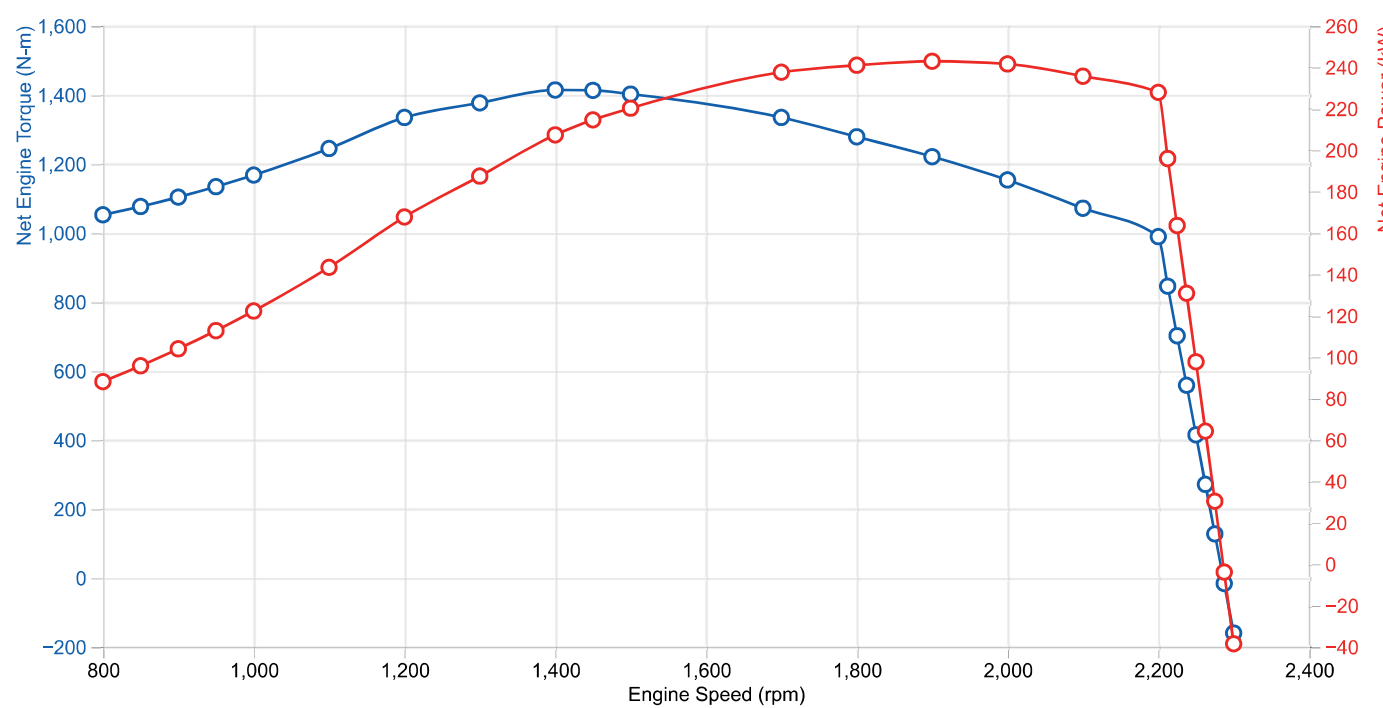



LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Turbine Speed (rpm)	Turbine Torque (N-m)	Turbine Power (kW)	Converter Heat Rejection (kW)	Match Point
800	1052.8	88.2	800	1040.3	87.2	1.04	
850	1076.8	95.8	850	1063.8	94.7	1.15	
900	1104	104	900	1090.6	102.8	1.26	
950	1134.3	112.8	950	1120.5	111.5	1.37	
1000	1167.9	122.3	1000	1153.7	120.8	1.49	
1100	1244.9	143.4	1100	1230	141.7	1.71	
1200	1334.9	167.8	1200	1319.6	165.8	1.93	
1300	1377.1	187.5	1300	1361.4	185.3	2.14	
1400	1414.6	207.4	1400	1398.7	205.1	2.34	
1450	1413.6	214.7	1450	1398.3	212.3	2.33	
1500	1402.4	220.3	1500	1386.8	217.8	2.45	
1700	1335	237.7	1700	1318.6	234.8	2.92	
1800	1278.9	241.1	1800	1262.1	237.9	3.16	
1900	1221.1	243	1900	1204	239.6	3.41	
2000	1153.8	241.7	2000	1136.4	238	3.66	
2100	1071.9	235.7	2100	1054.2	231.8	3.91	
2200	989.5	228	2200	971.4	223.8	4.17	Governed
2213	845.9	196	2213	827.7	191.8	4.2	
2225	702.2	163.6	2225	684.1	159.4	4.23	
2238	558.6	130.9	2238	540.4	126.6	4.27	
2250	415	97.8	2250	396.8	93.5	4.3	
2263	271.4	64.3	2263	253.1	60	4.33	

2275	127.7	30.4	2275	109.4	26.1	4.37	
2288	-15.9	-3.8	2288	-34.3	-8.2	4.4	
2300	-159.6	-38.4	2300	-178	-42.9	4.43	

PLOTS - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE



Transmission Output Performance Summary

MISSION	
End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)
PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.

The data presented in this report is independent of the Shift Calibration, which defines the actual gear range and converter mode (converter, lockup) that the transmission operates in.

GEAR F1 (RATIO = 3.487) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	7949.9	0.0	238.86	Stall
0.100	1736	1315.0	239.0	50	7736.7	40.3	198.75	
0.200	1756	1303.8	239.7	101	7392.0	78.0	161.81	
0.300	1786	1286.8	240.7	154	6934.1	111.6	129.13	
0.400	1823	1265.6	241.6	209	6373.5	139.6	102.06	
0.499	1884	1230.3	242.8	270	5823.3	164.6	78.19	70 Percent
0.500	1884	1230.1	242.8	270	5820.5	164.7	78.08	
0.600	1947	1189.5	242.5	335	5204.3	182.6	59.97	
0.634	1973	1172.1	242.2	359	4987.6	187.4	54.82	80 Percent
0.700	2030	1129.5	240.1	407	4546.1	194.0	46.12	
0.727	2056	1108.0	238.6	429	4355.8	195.5	43.06	85 Percent
0.750	2080	1088.6	237.1	447	4192.7	196.4	40.71	
0.800	2133	1044.8	233.4	489	3830.7	196.3	37.08	
0.825	2158	1024.4	231.5	510	3658.9	195.6	35.88	
0.840	2175	1009.7	230.0	524	3546.4	194.5	35.49	
0.854	2200	989.5	228.0	539	3412.8	192.6	35.32	Governed
0.868	2202	963.6	222.2	548	3265.8	187.4	34.83	
0.881	2205	926.9	214.1	557	3082.4	179.9	34.23	Coupling
0.900	2215	818.0	189.7	572	2709.5	162.2	27.53	
0.925	2227	675.5	157.6	591	2209.1	136.7	20.88	
0.950	2246	463.3	109.0	612	1475.6	94.5	14.41	
0.975	2266	234.0	55.5	634	687.7	45.6	9.90	
0.990	2278	98.2	23.4	647	223.9	15.2	8.27	

GEAR F2 (RATIO = 1.864) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	4260.0	0.0	238.86	Stall
0.100	1736	1315.0	239.0	93	4148.2	40.5	198.63	
0.200	1756	1303.8	239.7	188	3965.8	78.2	161.52	

0.300	1786	1286.8	240.7	287	3722.5	112.0	128.65	
0.400	1823	1265.6	241.6	391	3423.9	140.3	101.37	
0.499	1884	1230.3	242.8	505	3129.0	165.4	77.34	70 Percent
0.500	1884	1230.1	242.8	505	3127.6	165.6	77.22	
0.600	1947	1189.5	242.5	627	2797.4	183.6	58.96	
0.634	1973	1172.1	242.2	671	2681.6	188.4	53.73	80 Percent
0.700	2030	1129.5	240.1	762	2446.3	195.3	44.83	
0.727	2056	1108.0	238.6	802	2345.0	196.9	41.67	85 Percent
0.750	2080	1088.6	237.1	837	2258.4	197.9	39.20	
0.800	2133	1044.8	233.4	915	2065.1	198.0	35.41	
0.825	2158	1024.4	231.5	955	1973.2	197.3	34.15	
0.840	2175	1009.7	230.0	980	1912.9	196.3	33.73	
0.854	2200	989.5	228.0	1008	1841.4	194.4	33.52	Governed
0.868	2202	963.6	222.2	1025	1762.6	189.2	33.02	
0.881	2205	926.9	214.1	1042	1664.4	181.7	32.41	Coupling
0.900	2215	818.0	189.7	1069	1464.5	164.0	25.72	
0.925	2227	675.5	157.6	1105	1196.4	138.5	19.09	
0.950	2246	463.3	109.0	1145	803.3	96.3	12.67	
0.975	2266	234.0	55.5	1185	381.1	47.3	8.23	
0.990	2278	98.2	23.4	1210	132.5	16.8	6.65	

GEAR F3 (RATIO = 1.409) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	3227.0	0.0	238.86	Stall
0.100	1736	1315.0	239.0	123	3142.5	40.5	198.54	
0.200	1756	1303.8	239.7	249	3004.3	78.4	161.35	
0.300	1786	1286.8	240.7	380	2820.0	112.3	128.41	
0.400	1823	1265.6	241.6	518	2593.7	140.6	101.07	
0.499	1884	1230.3	242.8	668	2370.8	165.8	76.95	70 Percent
0.500	1884	1230.1	242.8	669	2369.7	165.9	76.83	
0.600	1947	1189.5	242.5	829	2119.7	184.0	58.51	
0.634	1973	1172.1	242.2	888	2031.8	188.9	53.28	80 Percent
0.700	2030	1129.5	240.1	1008	1852.8	195.6	44.45	
0.727	2056	1108.0	238.6	1061	1775.6	197.2	41.34	85 Percent
0.750	2080	1088.6	237.1	1107	1709.4	198.2	38.93	
0.800	2133	1044.8	233.4	1211	1562.4	198.1	35.24	
0.825	2158	1024.4	231.5	1263	1492.6	197.5	34.01	
0.840	2175	1009.7	230.0	1296	1446.8	196.4	33.62	
0.854	2200	989.5	228.0	1334	1392.5	194.5	33.44	Governed
0.868	2202	963.6	222.2	1356	1332.8	189.3	32.96	

0.881	2205	926.9	214.1	1379	1258.2	181.7	32.39	Coupling
0.900	2215	818.0	189.7	1415	1106.7	164.0	25.76	
0.925	2227	675.5	157.6	1462	903.5	138.3	19.22	
0.950	2246	463.3	109.0	1514	605.5	96.0	12.94	
0.975	2266	234.0	55.5	1568	285.4	46.9	8.66	
0.990	2278	98.2	23.4	1600	97.0	16.3	7.18	

GEAR F4 (RATIO = 1.000) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	2304.5	0.0	238.86	Stall
0.100	1736	1315.0	239.0	174	2244.3	40.8	198.28	
0.200	1756	1303.8	239.7	351	2145.7	78.9	160.85	
0.300	1786	1286.8	240.7	536	2014.0	113.0	127.70	
0.400	1823	1265.6	241.6	729	1852.1	141.4	100.21	
0.499	1884	1230.3	242.8	941	1692.0	166.7	76.02	70 Percent
0.500	1884	1230.1	242.8	942	1691.2	166.9	75.91	
0.600	1947	1189.5	242.5	1168	1511.6	184.9	57.63	
0.634	1973	1172.1	242.2	1251	1448.5	189.7	52.43	80 Percent
0.700	2030	1129.5	240.1	1421	1320.2	196.4	43.67	
0.727	2056	1108.0	238.6	1495	1264.9	198.0	40.59	85 Percent
0.750	2080	1088.6	237.1	1560	1217.6	198.9	38.21	
0.800	2133	1044.8	233.4	1706	1112.1	198.7	34.66	
0.825	2158	1024.4	231.5	1780	1061.9	197.9	33.53	
0.840	2175	1009.7	230.0	1827	1029.0	196.8	33.21	
0.854	2200	989.5	228.0	1880	989.9	194.9	33.11	Governed
0.868	2202	963.6	222.2	1911	947.1	189.5	32.71	
0.881	2205	926.9	214.1	1943	893.7	181.9	32.24	Coupling
0.900	2215	818.0	189.7	1993	785.3	163.9	25.80	
0.925	2227	675.5	157.6	2060	639.8	138.0	19.53	
0.950	2246	463.3	109.0	2134	426.6	95.3	13.65	
0.975	2266	234.0	55.5	2209	197.6	45.7	9.81	
0.990	2278	98.2	23.4	2255	62.8	14.8	8.61	

GEAR F5 (RATIO = 0.750) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	1714.9	0.0	238.86	Stall

0.100	1736	1315.0	239.0	231	1669.8	40.5	198.61	
0.200	1756	1303.8	239.7	468	1595.9	78.2	161.51	
0.300	1786	1286.8	240.7	714	1497.3	112.0	128.69	
0.400	1823	1265.6	241.6	972	1376.0	140.1	101.54	
0.499	1884	1230.3	242.8	1255	1255.8	165.0	77.76	70 Percent
0.500	1884	1230.1	242.8	1256	1255.2	165.1	77.65	
0.600	1947	1189.5	242.5	1558	1120.2	182.7	59.84	
0.634	1973	1172.1	242.2	1668	1072.7	187.3	54.83	80 Percent
0.700	2030	1129.5	240.1	1894	976.0	193.6	46.49	
0.727	2056	1108.0	238.6	1993	934.3	195.0	43.61	85 Percent
0.750	2080	1088.6	237.1	2080	898.5	195.7	41.42	
0.800	2133	1044.8	233.4	2275	818.8	195.1	38.31	
0.825	2158	1024.4	231.5	2373	780.8	194.1	37.42	
0.840	2175	1009.7	230.0	2436	755.9	192.8	37.26	
0.854	2200	989.5	228.0	2506	726.3	190.6	37.35	Governed
0.868	2202	963.6	222.2	2548	694.2	185.2	37.03	
0.881	2205	926.9	214.1	2591	654.1	177.5	36.62	Coupling
0.900	2215	818.0	189.7	2658	573.0	159.5	30.26	
0.925	2227	675.5	157.6	2747	464.0	133.5	24.09	
0.950	2246	463.3	109.0	2845	304.6	90.8	18.21	
0.975	2266	234.0	55.5	2945	133.4	41.2	14.37	
0.990	2278	98.2	23.4	3006	32.6	10.3	13.16	

GEAR F6 (RATIO = 0.652) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	1489.2	0.0	238.86	Stall
0.100	1736	1315.0	239.0	266	1449.6	40.4	198.67	
0.200	1756	1303.8	239.7	539	1385.0	78.1	161.65	
0.300	1786	1286.8	240.7	822	1298.6	111.7	128.95	
0.400	1823	1265.6	241.6	1118	1192.5	139.7	101.98	
0.499	1884	1230.3	242.8	1443	1086.9	164.3	78.49	70 Percent
0.500	1884	1230.1	242.8	1445	1086.4	164.4	78.37	
0.600	1947	1189.5	242.5	1792	967.7	181.6	60.99	
0.634	1973	1172.1	242.2	1918	925.9	186.0	56.16	80 Percent
0.700	2030	1129.5	240.1	2179	840.6	191.8	48.28	
0.727	2056	1108.0	238.6	2292	803.8	192.9	45.63	85 Percent
0.750	2080	1088.6	237.1	2392	772.2	193.4	43.66	
0.800	2133	1044.8	233.4	2617	701.9	192.4	41.03	
0.825	2158	1024.4	231.5	2730	668.4	191.1	40.39	
0.840	2175	1009.7	230.0	2802	646.4	189.7	40.38	

0.854	2200	989.5	228.0	2883	620.4	187.3	40.66	Governed
0.868	2202	963.6	222.2	2931	592.3	181.8	40.45	
0.881	2205	926.9	214.1	2980	557.4	173.9	40.15	Coupling
0.900	2215	818.0	189.7	3057	486.6	155.8	33.96	
0.925	2227	675.5	157.6	3160	391.5	129.6	28.01	
0.950	2246	463.3	109.0	3272	252.7	86.6	22.38	
0.975	2266	234.0	55.5	3388	103.6	36.7	18.79	
0.990	2278	98.2	23.4	3458	15.7	5.7	17.74	

GEAR R1 (RATIO = 5.026) - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1729	1318.5	238.8	0	11176.1	0.0	238.86	Stall
0.100	1736	1315.0	239.0	35	10886.8	39.4	199.71	
0.200	1756	1303.8	239.7	70	10411.2	76.2	163.59	
0.300	1786	1286.8	240.7	107	9775.1	109.1	131.58	
0.400	1823	1265.6	241.6	145	8993.0	136.6	105.01	
0.499	1884	1230.3	242.8	187	8219.6	161.2	81.60	70 Percent
0.500	1884	1230.1	242.8	187	8215.7	161.3	81.49	
0.600	1947	1189.5	242.5	232	7350.9	178.9	63.63	
0.634	1973	1172.1	242.2	249	7046.3	183.6	58.53	80 Percent
0.700	2030	1129.5	240.1	283	6425.6	190.2	49.88	
0.727	2056	1108.0	238.6	297	6158.0	191.8	46.81	85 Percent
0.750	2080	1088.6	237.1	310	5928.7	192.7	44.42	
0.800	2133	1044.8	233.4	339	5419.7	192.7	40.70	
0.825	2158	1024.4	231.5	354	5178.2	192.1	39.42	
0.840	2175	1009.7	230.0	363	5019.9	191.1	38.98	
0.854	2200	989.5	228.0	374	4832.0	189.2	38.73	Governed
0.868	2202	963.6	222.2	380	4625.4	184.2	38.09	
0.881	2205	926.9	214.1	387	4367.5	176.8	37.28	Coupling
0.900	2215	818.0	189.7	397	3843.1	159.6	30.11	
0.925	2227	675.5	157.6	410	3139.5	134.8	22.79	
0.950	2246	463.3	109.0	424	2108.3	93.7	15.24	
0.975	2266	234.0	55.5	440	1000.4	46.0	9.48	
0.990	2278	98.2	23.4	449	348.3	16.4	7.07	

GEAR F1 (RATIO = 3.487) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Engine Speed (rpm)	Net Engine Torque	Net Engine Power	Transmission Output Speed	Transmission Output Torque	Transmission Output Power	Transmission Heat Rejection	Match Point	

	(N-m)	(kW)	(rpm)	(N-m)	(kW)	(kW)	
800	1052.8	88.2	229	3546.8	85.2	2.98	
850	1076.8	95.8	244	3626.7	92.6	3.27	
900	1104.0	104.0	258	3720.0	100.5	3.50	
950	1134.3	112.8	272	3823.2	109.1	3.77	
1000	1167.9	122.3	287	3937.7	118.3	4.05	
1100	1244.9	143.4	315	4200.6	138.8	4.63	
1200	1334.9	167.8	344	4509.2	162.5	5.25	
1300	1377.1	187.5	373	4653.4	181.7	5.81	
1400	1414.6	207.4	401	4781.6	201.0	6.36	
1450	1413.6	214.7	416	4780.1	208.2	6.50	
1500	1402.4	220.3	430	4740.6	213.6	6.74	
1700	1335.0	237.7	488	4504.6	230.0	7.69	
1800	1278.9	241.1	516	4309.2	232.9	8.13	
1900	1221.1	243.0	545	4108.3	234.4	8.55	
2000	1153.8	241.7	574	3874.3	232.7	8.96	
2100	1071.9	235.7	602	3590.0	226.4	9.32	
2200	989.5	228.0	631	3303.7	218.3	9.68	Governed
2213	845.9	196.0	634	2808.1	186.6	9.40	
2225	702.2	163.6	638	2312.5	154.5	9.11	
2238	558.6	130.9	642	1816.8	122.1	8.81	
2250	415.0	97.8	645	1321.2	89.3	8.52	
2263	271.4	64.3	649	825.4	56.1	8.21	
2275	127.7	30.4	652	329.7	22.5	7.91	
2288	-15.9	-3.8	656	-166.1	-11.4	7.60	
2300	-159.6	-38.4	660	-661.9	-45.7	7.29	

GEAR F2 (RATIO = 1.864) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE ▲

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	1052.8	88.2	429	1909.8	85.8	2.36	
850	1076.8	95.8	456	1952.9	93.3	2.59	
900	1104.0	104.0	483	2002.1	101.2	2.82	
950	1134.3	112.8	510	2057.3	109.8	3.05	
1000	1167.9	122.3	536	2118.5	119.0	3.29	
1100	1244.9	143.4	590	2259.4	139.6	3.77	
1200	1334.9	167.8	644	2425.1	163.5	4.26	
1300	1377.1	187.5	697	2502.8	182.8	4.69	
1400	1414.6	207.4	751	2572.3	202.3	5.08	
1450	1413.6	214.7	778	2572.0	209.5	5.13	
1500	1402.4	220.3	805	2551.3	215.0	5.29	

1700	1335.0	237.7	912	2426.2	231.7	5.95	
1800	1278.9	241.1	966	2321.6	234.8	6.29	
1900	1221.1	243.0	1019	2214.1	236.3	6.64	
2000	1153.8	241.7	1073	2088.7	234.7	6.97	
2100	1071.9	235.7	1127	1936.3	228.5	7.29	
2200	989.5	228.0	1180	1782.9	220.4	7.60	Governed
2213	845.9	196.0	1187	1517.3	188.6	7.38	
2225	702.2	163.6	1194	1251.7	156.5	7.16	
2238	558.6	130.9	1200	986.1	124.0	6.94	
2250	415.0	97.8	1207	720.5	91.1	6.72	
2263	271.4	64.3	1214	454.8	57.8	6.49	
2275	127.7	30.4	1220	189.2	24.2	6.26	
2288	-15.9	-3.8	1227	-76.5	-9.8	6.02	
2300	-159.6	-38.4	1234	-342.2	-44.2	5.79	

GEAR F3 (RATIO = 1.409) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE


Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	1052.8	88.2	568	1446.7	86.0	2.18	
850	1076.8	95.8	603	1479.6	93.5	2.37	
900	1104.0	104.0	639	1517.0	101.5	2.57	
950	1134.3	112.8	674	1559.0	110.1	2.78	
1000	1167.9	122.3	710	1605.5	119.3	2.98	
1100	1244.9	143.4	781	1712.3	140.0	3.41	
1200	1334.9	167.8	852	1837.6	163.9	3.86	
1300	1377.1	187.5	923	1896.2	183.2	4.27	
1400	1414.6	207.4	994	1948.4	202.7	4.67	
1450	1413.6	214.7	1029	1947.8	209.9	4.74	
1500	1402.4	220.3	1065	1931.8	215.4	4.93	
1700	1335.0	237.7	1207	1836.0	232.0	5.70	
1800	1278.9	241.1	1278	1756.5	235.0	6.08	
1900	1221.1	243.0	1348	1674.7	236.5	6.48	
2000	1153.8	241.7	1419	1579.5	234.8	6.87	
2100	1071.9	235.7	1490	1463.9	228.5	7.26	
2200	989.5	228.0	1561	1347.3	220.3	7.66	Governed
2213	845.9	196.0	1570	1146.1	188.5	7.52	
2225	702.2	163.6	1579	944.9	156.3	7.37	
2238	558.6	130.9	1588	743.7	123.7	7.23	
2250	415.0	97.8	1597	542.4	90.7	7.08	
2263	271.4	64.3	1606	341.2	57.4	6.93	
2275	127.7	30.4	1615	139.9	23.7	6.78	

2288	-15.9	-3.8	1623	-61.4	-10.4	6.63	
2300	-159.6	-38.4	1632	-262.7	-44.9	6.47	

GEAR F4 (RATIO = 1.000) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	1052.8	88.2	800	1032.8	86.5	1.67	
850	1076.8	95.8	850	1056.0	94.0	1.85	
900	1104.0	104.0	900	1082.5	102.0	2.03	
950	1134.3	112.8	950	1112.1	110.6	2.21	
1000	1167.9	122.3	1000	1145.1	119.9	2.39	
1100	1244.9	143.4	1100	1220.9	140.6	2.76	
1200	1334.9	167.8	1200	1310.0	164.6	3.13	
1300	1377.1	187.5	1300	1351.5	184.0	3.49	
1400	1414.6	207.4	1400	1388.5	203.6	3.83	
1450	1413.6	214.7	1450	1388.0	210.8	3.89	
1500	1402.4	220.3	1500	1376.5	216.2	4.07	
1700	1335.0	237.7	1700	1307.5	232.8	4.90	
1800	1278.9	241.1	1800	1250.3	235.7	5.39	
1900	1221.1	243.0	1900	1191.4	237.1	5.92	
2000	1153.8	241.7	2000	1122.9	235.2	6.48	
2100	1071.9	235.7	2100	1039.8	228.7	7.07	
2200	989.5	228.0	2200	956.0	220.3	7.71	Governed
2213	845.9	196.0	2213	812.2	188.2	7.79	
2225	702.2	163.6	2225	668.5	155.8	7.87	
2238	558.6	130.9	2238	524.7	122.9	7.96	
2250	415.0	97.8	2250	380.9	89.7	8.04	
2263	271.4	64.3	2263	237.1	56.2	8.13	
2275	127.7	30.4	2275	93.3	22.2	8.21	
2288	-15.9	-3.8	2288	-50.5	-12.1	8.30	
2300	-159.6	-38.4	2300	-194.4	-46.8	8.38	

GEAR F5 (RATIO = 0.750) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	1052.8	88.2	1067	766.0	85.6	2.63	
850	1076.8	95.8	1133	783.0	92.9	2.92	
900	1104.0	104.0	1200	802.4	100.8	3.21	

950	1134.3	112.8	1267	824.2	109.3	3.52	
1000	1167.9	122.3	1333	848.5	118.5	3.84	
1100	1244.9	143.4	1467	904.3	138.9	4.51	
1200	1334.9	167.8	1600	970.0	162.5	5.23	
1300	1377.1	187.5	1733	1000.2	181.5	5.94	
1400	1414.6	207.4	1867	1027.0	200.7	6.65	
1450	1413.6	214.7	1933	1026.2	207.8	6.89	
1500	1402.4	220.3	2000	1017.2	213.1	7.24	
1700	1335.0	237.7	2267	964.2	228.9	8.79	
1800	1278.9	241.1	2400	920.8	231.4	9.65	
1900	1221.1	243.0	2533	876.1	232.4	10.56	
2000	1153.8	241.7	2667	824.1	230.1	11.52	
2100	1071.9	235.7	2800	761.3	223.2	12.52	
2200	989.5	228.0	2933	697.9	214.4	13.58	Governed
2213	845.9	196.0	2950	590.8	182.5	13.47	
2225	702.2	163.6	2967	483.7	150.3	13.37	
2238	558.6	130.9	2983	376.5	117.6	13.26	
2250	415.0	97.8	3000	269.4	84.6	13.15	
2263	271.4	64.3	3017	162.3	51.3	13.04	
2275	127.7	30.4	3033	55.1	17.5	12.93	
2288	-15.9	-3.8	3050	-52.0	-16.6	12.82	
2300	-159.6	-38.4	3067	-159.2	-51.1	12.70	

GEAR F6 (RATIO = 0.652) - LOCKUP MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE



Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	1052.8	88.2	1227	662.4	85.1	3.09	
850	1076.8	95.8	1304	676.9	92.4	3.44	
900	1104.0	104.0	1380	693.5	100.2	3.81	
950	1134.3	112.8	1457	712.1	108.7	4.19	
1000	1167.9	122.3	1534	732.8	117.7	4.60	
1100	1244.9	143.4	1687	780.7	137.9	5.47	
1200	1334.9	167.8	1840	837.0	161.3	6.43	
1300	1377.1	187.5	1994	862.5	180.1	7.39	
1400	1414.6	207.4	2147	885.0	199.0	8.39	
1450	1413.6	214.7	2224	884.0	205.9	8.79	
1500	1402.4	220.3	2301	875.8	211.0	9.30	
1700	1335.0	237.7	2607	828.2	226.1	11.53	
1800	1278.9	241.1	2761	789.8	228.3	12.73	
1900	1221.1	243.0	2914	750.3	229.0	13.99	
2000	1153.8	241.7	3067	704.6	226.3	15.32	

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2100	1071.9	235.7	3221	649.4	219.0	16.70	Governed
2200	989.5	228.0	3374	593.8	209.8	18.15	
2213	845.9	196.0	3393	500.7	177.9	18.06	
2225	702.2	163.6	3413	407.6	145.7	17.98	
2238	558.6	130.9	3432	314.5	113.0	17.88	
2250	415.0	97.8	3451	221.4	80.0	17.79	
2263	271.4	64.3	3470	128.3	46.6	17.70	
2275	127.7	30.4	3489	35.1	12.8	17.60	
2288	-15.9	-3.8	3508	-58.0	-21.3	17.50	
2300	-159.6	-38.4	3528	-151.1	-55.8	17.40	

Vehicle Full Throttle Performance

MISSION

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.
Results indicate the vehicle operating conditions at steady state (acceleration = 0).
The ! symbol indicates that Wheel Slip may occur.

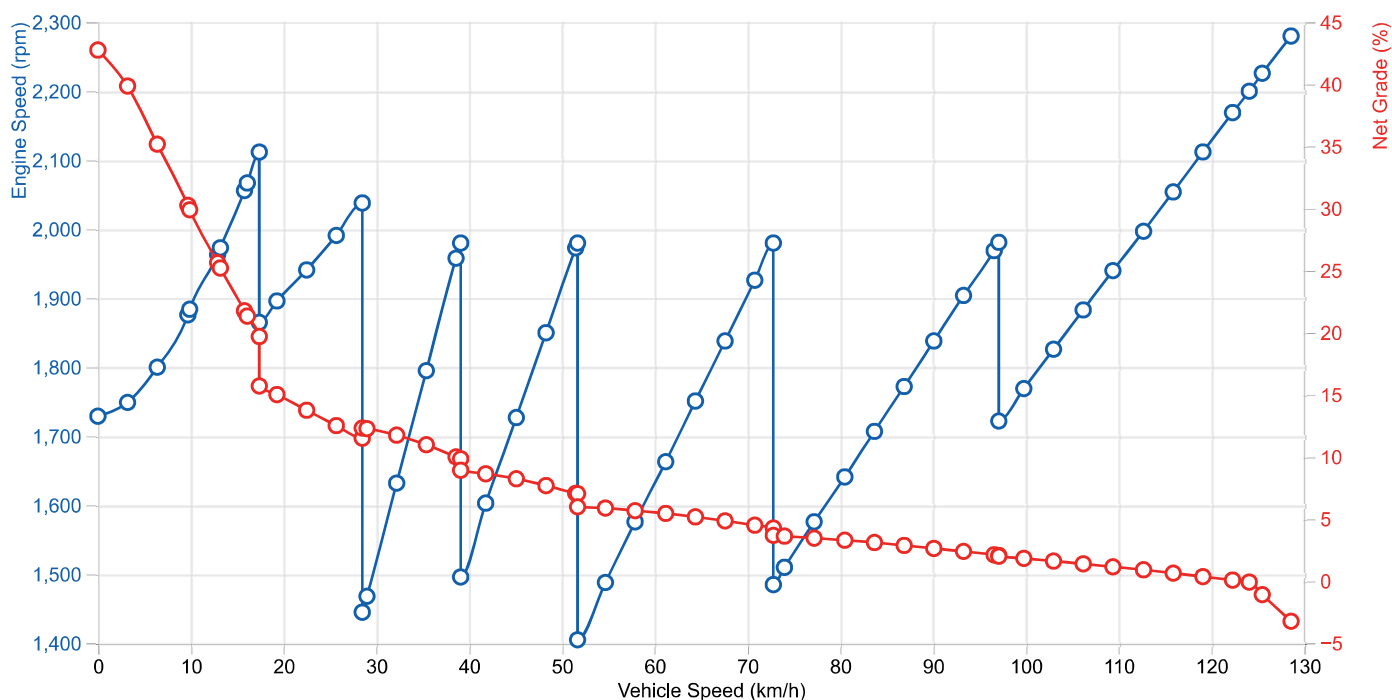
FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATA

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
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1C	0.0	1729	0	74.05	73.26	0.0	42.76	238.74	
1C	3.2	1749	88	69.80	68.99	62.4	39.86	170.71	
1C	6.4	1800	175	62.67	61.83	112.1	35.18	117.76	
1C	9.7	1876	263	54.83	53.96	147.1	30.25	80.68	
1C	9.9	1884	270	54.24	53.37	149.5	29.90	78.11	70 Percent
1C	12.9	1963	350	47.19	46.28	168.7	25.64	56.43	
1C	13.2	1973	359	46.46	45.55	170.2	25.21	54.68	80 Percent
1C	15.8	2056	429	40.57	39.63	177.6	21.76	42.85	85 Percent
1C	16.1	2067	438	39.83	38.88	178.1	21.34	41.70	
1C	17.4	2112	473	36.98	36.01	178.7	19.70	38.13	
2C	17.4	1865	473	29.88	28.91	144.4	15.71	83.41	
2C	19.3	1896	525	28.68	27.68	153.8	15.02	73.59	
2C	22.5	1941	613	26.45	25.39	165.5	13.76	60.28	
2C	25.7	1991	700	24.27	23.16	173.6	12.52	50.71	
2C	28.5	2038	775	22.48	21.31	178.0	11.51	43.54	
2L	28.5	1445	775	23.96	22.78	189.7	12.32	5.13	
2L	29.0	1468	788	23.89	22.70	192.2	12.28	5.18	
2L	32.2	1632	875	23.00	21.75	205.7	11.75	5.37	
2L	35.4	1795	963	21.68	20.34	213.2	10.98	6.24	
2L	38.6	1958	1050	19.95	18.53	214.0	10.00	6.66	
2L	39.1	1980	1062	19.69	18.27	213.6	9.85	6.79	
3L	39.1	1496	1062	18.01	16.58	195.3	8.93	4.91	
3L	41.8	1603	1138	17.53	16.03	203.8	8.64	4.95	
3L	45.1	1727	1225	16.90	15.31	211.6	8.24	5.68	
3L	48.3	1850	1313	15.98	14.28	214.3	7.69	6.13	
3L	51.5	1973	1400	14.95	13.15	213.9	7.07	6.63	
3L	51.7	1980	1405	14.89	13.08	213.7	7.04	6.67	
4L	51.7	1405	1405	12.93	11.12	185.6	5.98	3.83	
4L	54.7	1488	1488	12.85	10.93	195.3	5.88	4.02	
4L	57.9	1576	1576	12.58	10.55	202.5	5.67	4.01	
4L	61.2	1663	1663	12.30	10.14	208.9	5.45	4.51	
4L	64.4	1751	1751	11.91	9.63	213.0	5.17	5.00	
4L	67.6	1838	1838	11.44	9.02	214.7	4.85	5.45	
4L	70.8	1926	1926	10.93	8.38	215.1	4.50	5.92	
4L	72.8	1980	1980	10.59	7.94	214.1	4.27	6.25	
5L	72.8	1485	1980	9.50	6.85	192.1	3.68	7.12	
5L	74.0	1510	2013	9.45	6.75	194.4	3.62	7.25	
5L	77.2	1576	2101	9.29	6.44	199.4	3.46	7.45	
5L	80.5	1641	2188	9.13	6.12	204.0	3.29	8.00	
5L	83.7	1707	2276	8.95	5.78	208.1	3.11	8.81	
5L	86.9	1772	2363	8.69	5.35	209.7	2.87	9.29	
5L	90.1	1838	2451	8.42	4.91	210.7	2.63	9.85	
5L	93.3	1904	2538	8.14	4.45	211.1	2.39	10.57	
5L	96.6	1969	2626	7.82	3.95	209.9	2.12	11.07	
5L	97.1	1981	2641	7.77	3.86	209.6	2.07	11.22	
6L	97.1	1722	2641	7.64	3.73	206.0	2.00	11.68	
6L	99.8	1769	2713	7.47	3.40	207.0	1.83	12.22	
6L	103.0	1826	2801	7.26	3.00	207.7	1.61	12.93	
6L	106.2	1883	2888	7.05	2.59	208.0	1.39	13.69	
6L	109.4	1940	2976	6.82	2.15	207.2	1.15	14.35	

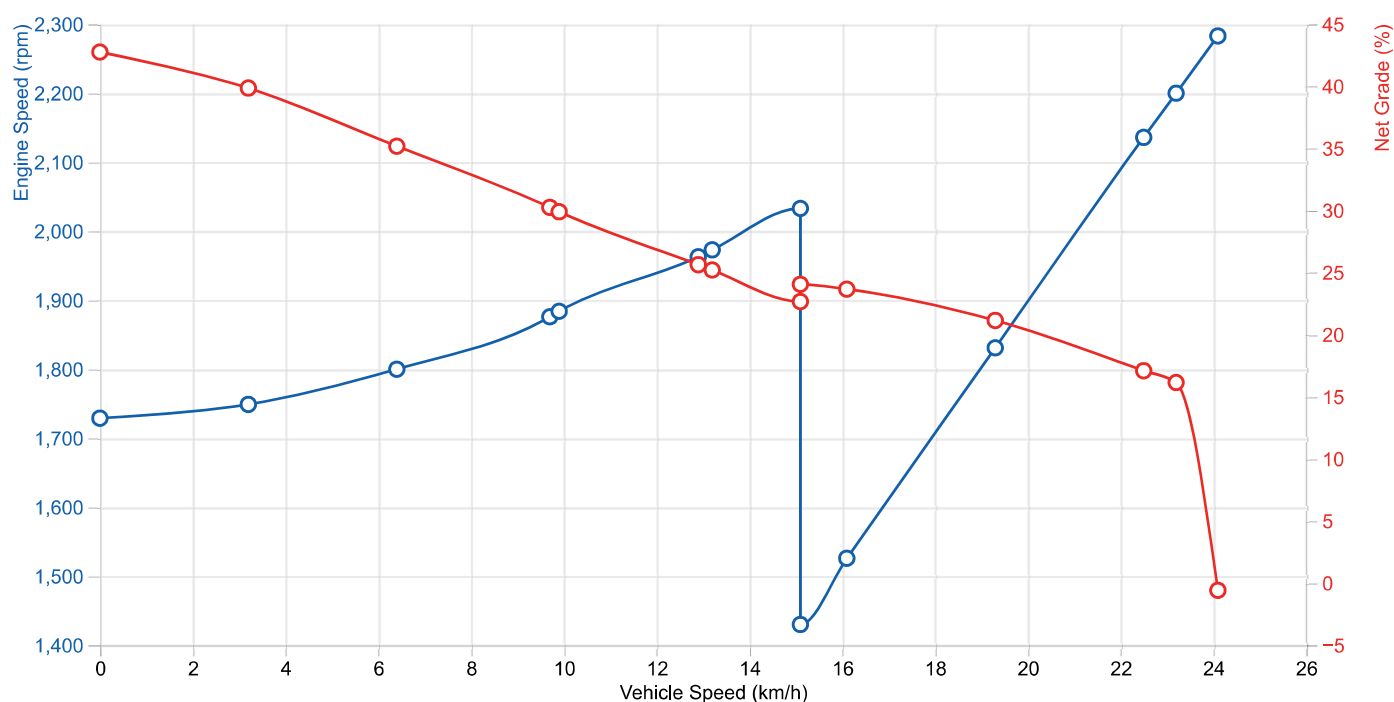
6L	112.7	1997	3063	6.57	1.70	205.7	0.91	15.27	
6L	115.9	2054	3151	6.28	1.19	202.2	0.64	15.85	
6L	119.1	2112	3239	5.99	0.67	198.1	0.36	16.77	
6L	122.3	2169	3326	5.69	0.14	193.4	0.08	17.50	
6L	124.1	2200	3374	5.53	-0.15	190.6	-0.08	18.15	Governed
6L	125.5	2226	3414	3.75	-2.03	130.8	-1.09	17.97	
6L	128.6	2280	3496	0.00	-6.01	0.0	-3.23	17.56	

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲

FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C	0.0	1729	0	74.05	73.26	0.0	42.76	238.74	
1C	3.2	1749	88	69.80	68.99	62.4	39.86	170.71	
1C	6.4	1800	175	62.67	61.83	112.1	35.18	117.76	
1C	9.7	1876	263	54.83	53.96	147.1	30.25	80.68	
1C	9.9	1884	270	54.24	53.37	149.5	29.90	78.11	70 Percent
1C	12.9	1963	350	47.19	46.28	168.7	25.64	56.43	
1C	13.2	1973	359	46.46	45.55	170.2	25.21	54.68	80 Percent
1C	15.1	2033	410	42.13	41.19	176.4	22.67	45.53	
1L	15.1	1430	410	44.53	43.59	186.5	24.06	6.44	
1L	16.1	1526	438	43.87	42.92	196.1	23.67	6.70	
1L	19.3	1831	525	39.55	38.55	212.2	21.15	8.13	
1L	22.5	2136	613	32.47	31.41	203.2	17.10	9.26	
1L	23.2	2200	631	30.77	29.70	198.3	16.15	9.68	Governed

1L	24.1	2283	655	0.00	-1.09	0.0	-0.58	7.70	
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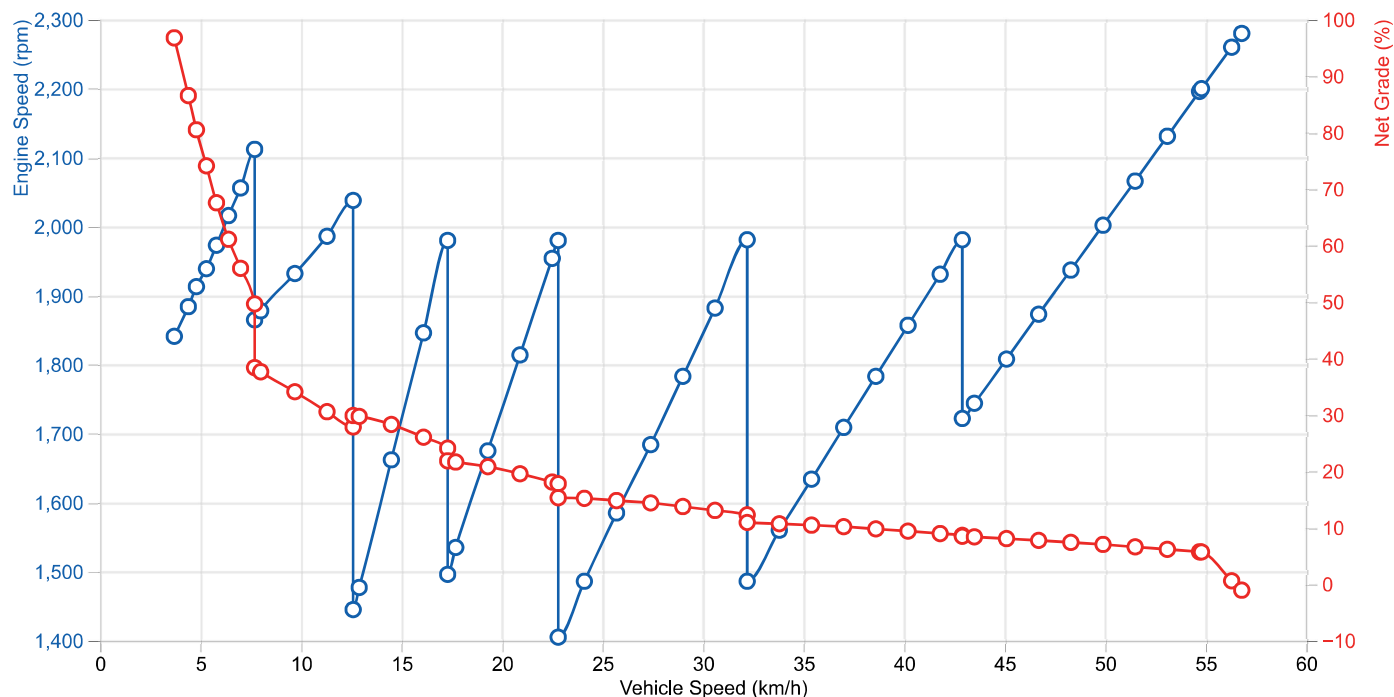
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU▶

FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT▶

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C !	0.0	1729	0	167.59	166.80	0.0	200.88	238.74	
1C !	1.6	1755	99	156.11	155.31	69.8	150.87	162.77	
1C !	3.2	1815	198	136.85	136.04	122.4	106.84	106.73	
1C	3.7	1841	229	130.43	129.58	134.8	96.78	93.53	0.70 TE/Weight Ratio
1C	4.4	1884	270	122.76	121.94	149.5	86.55	78.11	70 Percent
1C	4.8	1913	297	117.66	116.83	157.8	80.49	69.16	
1C	5.3	1939	326	111.80	110.93	164.3	74.09	61.66	0.60 TE/Weight Ratio
1C	5.8	1973	359	105.14	104.31	170.2	67.56	54.68	80 Percent
1C	6.4	2016	396	97.98	97.14	175.2	61.09	47.90	
1C	7.0	2056	429	91.82	90.98	177.6	55.95	42.85	85 Percent
1C	7.7	2112	473	83.70	82.85	178.7	49.64	38.13	
2C	7.7	1865	473	67.63	66.78	144.4	38.39	83.41	
2C	8.0	1878	495	66.46	65.61	148.6	37.62	79.07	
2C	9.7	1932	594	60.98	60.11	163.6	34.08	62.54	
2C	11.3	1986	693	55.31	54.42	173.1	30.54	51.35	
2C	12.6	2038	775	50.88	49.97	178.0	27.84	43.54	
2L	12.6	1445	775	54.22	53.31	189.7	29.86	5.13	
2L	12.9	1477	792	53.98	53.08	193.1	29.72	5.21	

2L	14.5	1662	891	51.66	50.73	207.8	28.29	5.58	
2L	16.1	1846	990	47.89	46.94	214.1	26.03	6.30	
2L	17.3	1980	1062	44.57	43.60	213.6	24.07	6.79	
3L	17.3	1496	1062	40.75	39.78	195.3	21.85	4.91	
3L	17.7	1535	1089	40.37	39.39	198.5	21.63	4.85	
3L	19.3	1675	1189	38.96	37.96	209.0	20.81	5.44	
3L	20.9	1814	1288	36.78	35.75	213.8	19.55	6.06	
3L	22.5	1954	1387	34.23	33.17	214.2	18.09	6.51	
3L	22.8	1980	1405	33.71	32.64	213.7	17.80	6.67	
4L	22.8	1405	1405	29.27	28.21	185.6	15.32	3.83	
4L	24.1	1486	1486	29.09	28.00	195.0	15.20	4.01	
4L	25.7	1585	1585	28.41	27.29	203.2	14.81	4.03	
4L	27.4	1684	1684	27.68	26.53	210.4	14.39	4.72	
4L	29.0	1783	1783	26.56	25.38	213.8	13.75	5.22	
4L	30.6	1882	1882	25.34	24.12	215.2	13.06	5.73	
4L	32.2	1981	1981	23.95	22.69	214.1	12.27	6.26	
5L	32.2	1486	1981	21.50	20.24	192.2	10.93	7.13	
5L	33.8	1560	2080	21.11	19.82	198.2	10.70	7.37	
5L	35.4	1634	2179	20.70	19.36	203.6	10.45	7.92	
5L	37.0	1709	2278	20.25	18.87	208.2	10.18	8.82	
5L	38.6	1783	2377	19.57	18.15	209.9	9.79	9.41	
5L	40.2	1857	2476	18.87	17.41	210.9	9.39	10.02	
5L	41.8	1931	2575	18.12	16.62	210.7	8.96	10.71	
5L	42.9	1981	2641	17.58	16.05	209.6	8.65	11.22	
6L	42.9	1722	2641	17.28	15.75	206.0	8.48	11.68	
6L	43.5	1744	2674	17.11	15.56	206.5	8.38	11.90	
6L	45.1	1808	2773	16.58	14.98	207.6	8.07	12.78	
6L	46.7	1873	2872	16.04	14.40	208.0	7.75	13.52	
6L	48.3	1937	2971	15.46	13.76	207.3	7.40	14.31	
6L	49.9	2002	3070	14.83	13.08	205.5	7.04	15.33	
6L	51.5	2066	3169	14.08	12.28	201.4	6.60	16.04	
6L	53.1	2131	3268	13.33	11.47	196.6	6.17	16.96	
6L	54.7	2196	3368	12.57	10.65	191.0	5.73	18.05	
6L	54.8	2200	3374	12.52	10.60	190.6	5.70	18.15	Governed
6L	56.3	2260	3467	3.06	1.09	47.9	0.59	17.71	
6L	56.8	2280	3496	0.00	-1.99	0.0	-1.07	17.56	

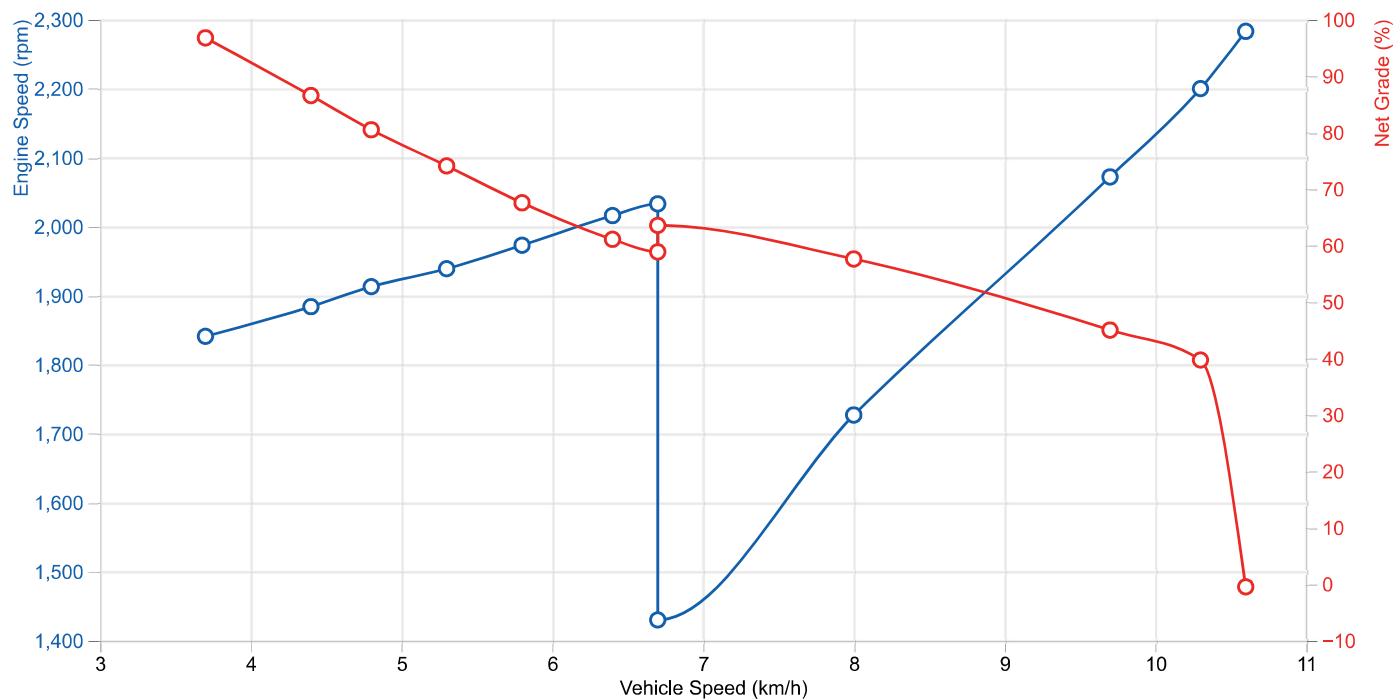
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲


FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ➤

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C !	0.0	1729	0	167.59	166.80	0.0	200.88	238.74	
1C !	1.6	1755	99	156.11	155.31	69.8	150.87	162.77	
1C !	3.2	1815	198	136.85	136.04	122.4	106.84	106.73	
1C	3.7	1841	229	130.43	129.58	134.8	96.78	93.53	0.70 TE/Weight Ratio
1C	4.4	1884	270	122.76	121.94	149.5	86.55	78.11	70 Percent
1C	4.8	1913	297	117.66	116.83	157.8	80.49	69.16	
1C	5.3	1939	326	111.80	110.93	164.3	74.09	61.66	0.60 TE/Weight Ratio
1C	5.8	1973	359	105.14	104.31	170.2	67.56	54.68	80 Percent
1C	6.4	2016	396	97.98	97.14	175.2	61.09	47.90	
1C	6.7	2033	410	95.35	94.51	176.4	58.86	45.53	
1L	6.7	1430	410	100.78	99.94	186.5	63.55	6.44	
1L	8.0	1727	495	93.86	93.00	209.8	57.60	7.69	
1L	9.7	2072	594	77.34	76.47	207.5	45.01	9.05	
1L	10.3	2200	631	69.64	68.77	198.3	39.71	9.68	Governed
1L	10.6	2283	655	0.00	-0.88	0.0	-0.47	7.70	

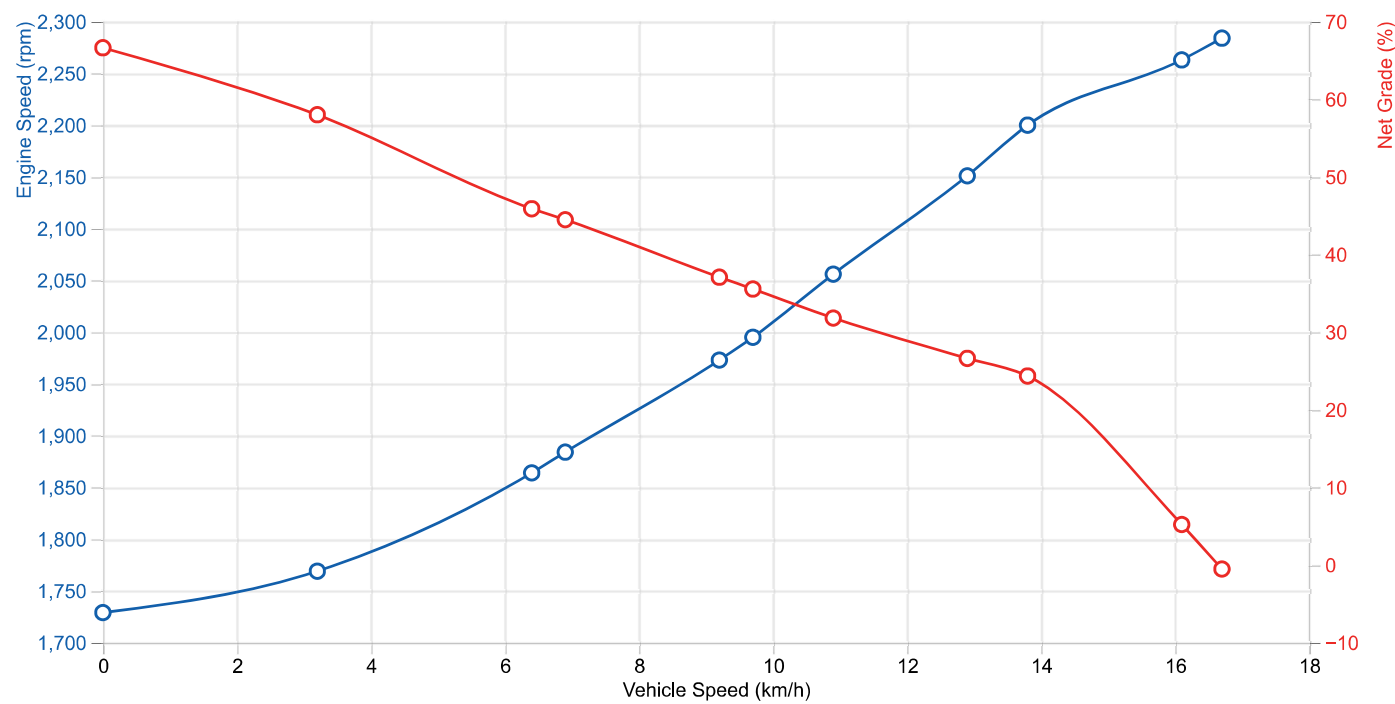
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ➤


FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAN

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
R1C	0.0	1729	0	104.10	103.31	0.0	66.63	238.74	
R1C	3.2	1769	88	94.30	93.49	84.3	58.00	147.27	
R1C	6.4	1864	175	78.56	77.73	140.5	45.90	87.70	
R1C	6.9	1884	187	76.56	75.72	146.4	44.48	81.52	70 Percent
R1C	9.2	1973	249	65.63	64.77	166.9	37.07	58.39	80 Percent
R1C	9.7	1995	263	63.28	62.41	169.7	35.55	54.93	
R1C	10.9	2056	297	57.36	56.48	174.2	31.81	46.60	85 Percent
R1C	12.9	2151	350	48.85	47.94	174.7	26.62	39.52	
R1C	13.8	2200	374	45.01	44.09	171.9	24.35	38.73	Governed
R1C	16.1	2263	438	10.64	9.69	47.6	5.21	10.09	
R1C	16.7	2284	453	0.00	-0.96	0.0	-0.52	6.16	

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.9

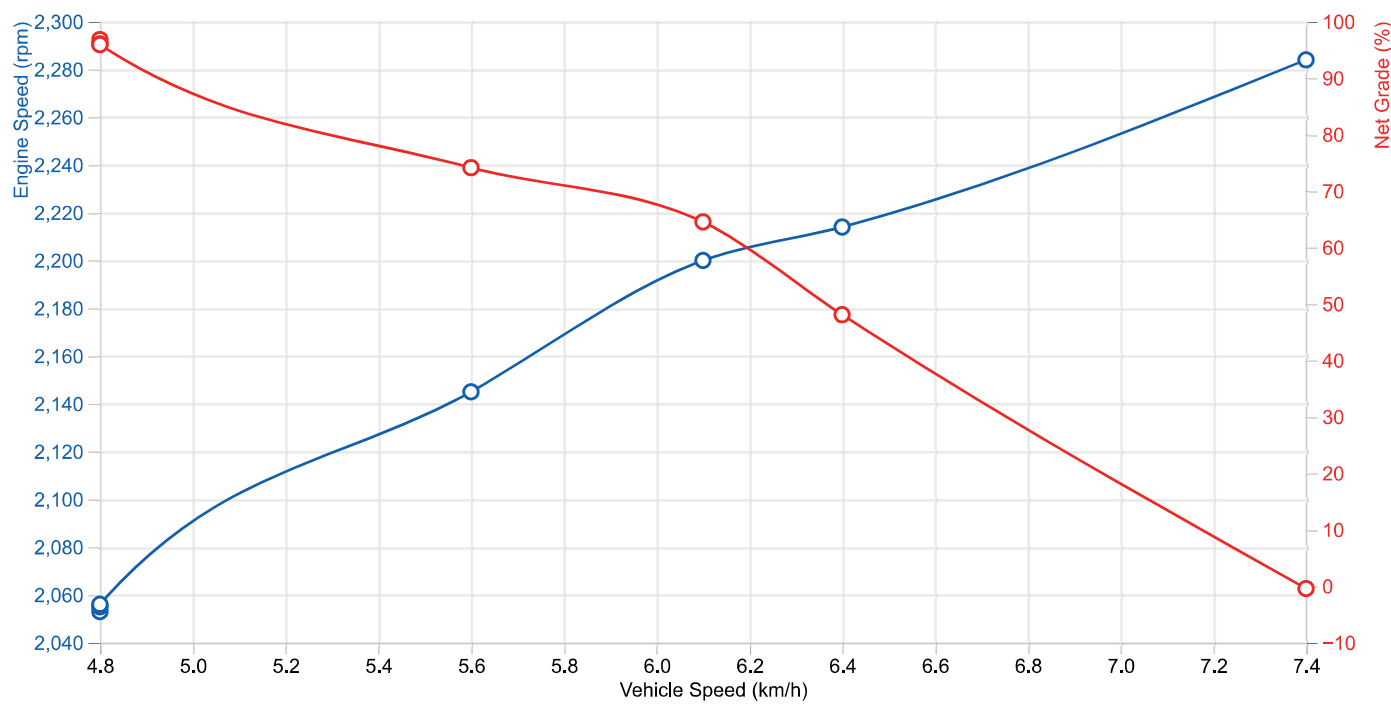


FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAN▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
R1C I	0.0	1729	0	235.60	234.81	0.0	999.00	238.74	
R1C I	1.6	1779	99	209.07	208.27	93.5	999.00	137.52	
R1C I	3.0	1884	187	173.27	172.46	146.4	244.55	81.52	70 Percent
R1C I	3.2	1901	198	169.24	168.43	151.3	211.36	76.44	
R1C I	4.0	1973	249	148.54	147.72	166.9	130.09	58.39	80 Percent
R1C	4.8	2053	296	130.43	129.60	174.1	96.82	46.90	0.70 TE/Weight Ratio
R1C	4.8	2055	297	129.90	129.08	174.2	96.06	46.64	
R1C	4.8	2056	297	129.82	128.99	174.2	95.94	46.60	85 Percent
R1C	5.6	2145	347	111.80	110.96	174.8	74.13	39.83	0.60 TE/Weight Ratio
R1C	6.1	2200	374	101.86	101.03	171.9	64.53	38.73	Governed
R1C	6.4	2214	396	81.57	80.73	145.9	48.08	30.58	
R1C	7.4	2284	453	0.06	-0.79	0.1	-0.42	6.16	

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.1▲



Vehicle Full Throttle Performance - Defense Wheeled

MISSION	
End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE	
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.	
Results indicate the vehicle operating conditions at steady state (acceleration = 0).	
The ! symbol indicates that Wheel Slip may occur.	
The ✖ symbol indicates that the required grade cannot be negotiated.	

FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C ✖							60.00	
1C	17.2	2104	467	37.50	36.53	178.7	20.00	38.73
1C	21.8	2230	594	19.70	18.65	119.5	10.00	19.87
1C	23.9	2280	650	1.08		7.2	0.00	8.03
2C ✖							60.00	
2C	6.0	1749	164	37.44	36.60	62.7	20.00	170.40
2C	32.7	2116	890	19.81	18.54	180.1	10.00	36.24
2C	44.3	2276	1206	1.58		19.4	0.00	6.84
2L ✖							60.00	
2L ✖							20.00	
2L	38.6	1957	1050	19.96	18.54	214.0	10.00	6.65
2L	44.9	2276	1221	1.59		19.9	0.00	6.24
3L ✖							60.00	
3L ✖							20.00	
3L ✖	0.1						10.00	
3L	59.2	2270	1611	2.08		34.3	0.00	6.84
4L ✖							60.00	
4L ✖							20.00	
4L ✖	0.1						10.00	
4L	82.9	2254	2254	3.13		72.0	0.00	8.07
5L ✖							60.00	
5L ✖							20.00	
5L ✖	0.1						10.00	
5L	109.0	2223	2964	4.64		140.5	0.00	13.38
6L ✖							60.00	
6L ✖							20.00	
6L ✖	0.1						10.00	
6L	123.2	2184	3350	5.61		192.1	0.00	17.80

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲**FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ▲**

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C ✖							60.00	

1C	17.2	2104	467	37.50	36.53	178.7	20.00	38.73
1C	21.8	2230	594	19.70	18.65	119.5	10.00	19.87
1C	23.9	2280	650	1.08		7.2	0.00	8.03
1L ✖							60.00	
1L	20.4	1932	554	37.56	36.54	212.6	20.00	8.53
1L	23.5	2230	640	19.62	18.54	128.1	10.00	8.99
1L	24.0	2280	654	1.08		7.2	0.00	7.78

PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU▲

FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C	6.5	2024	403	96.70	95.86	175.8	60.00	46.71
1C	9.8	2238	603	37.91	37.03	103.2	20.00	16.91
1C	10.2	2260	627	19.49	18.61	55.2	10.00	11.00
1C	10.6	2282	652	0.88		2.6	0.00	7.89
2C ✖							60.00	
2C	16.6	2202	1022	37.55	36.59	173.1	20.00	32.86
2C	18.4	2239	1132	19.76	18.78	101.0	10.00	14.54
2C	19.8	2282	1218	1.01		5.6	0.00	6.33
2L ✖							60.00	
2L	19.2	2200	1180	37.54	36.54	200.0	20.00	7.60
2L	19.5	2240	1202	19.55	18.54	106.0	10.00	6.89
2L	19.9	2282	1224	1.01		5.6	0.00	6.13
3L ✖							60.00	
3L	20.4	1768	1255	37.56	36.54	212.8	20.00	5.83
3L	25.7	2226	1580	19.66	18.54	140.1	10.00	7.36
3L	26.3	2280	1618	1.13		8.2	0.00	6.72
4L ✖							60.00	
4L ✖							20.00	
4L	35.8	2201	2201	19.88	18.54	197.5	10.00	7.72
4L	37.0	2277	2277	1.37		14.1	0.00	8.23
5L ✖							60.00	
5L ✖							20.00	
5L	37.8	1743	2324	19.93	18.54	209.1	10.00	9.01
5L	49.2	2272	3029	1.73		23.6	0.00	12.96
6L ✖							60.00	
6L ✖							20.00	
6L ✖	0.1						10.00	
6L	56.5	2267	3477	1.98		31.1	0.00	17.66

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲

FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ➤▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C	6.5	2024	403	96.70	95.86	175.8	60.00	46.71
1C	9.8	2238	603	37.91	37.03	103.2	20.00	16.91
1C	10.2	2260	627	19.49	18.61	55.2	10.00	11.00
1C	10.6	2282	652	0.88		2.6	0.00	7.89
1L	7.6	1630	467	96.72	95.87	204.0	60.00	7.03
1L	10.4	2239	642	37.42	36.54	108.4	20.00	8.79
1L	10.5	2260	648	19.42	18.54	56.8	10.00	8.27
1L	10.6	2282	655	0.88		2.6	0.00	7.73

PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX ➤▲**FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAN ➤▲**

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
R1C	2.6	1757	72	96.70	95.90	70.9	60.00	161.63
R1C	14.5	2211	393	37.62	36.70	151.1	20.00	33.37
R1C	15.6	2246	425	19.49	18.54	84.6	10.00	15.14
R1C	16.6	2282	452	0.96		4.4	0.00	6.40

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.9 ➤▲**FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAN ➤▲**

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
R1C	6.2	2203	381	96.76	95.93	166.5	60.00	37.97
R1C	7.0	2252	429	37.48	36.64	72.6	20.00	13.27
R1C	7.2	2267	441	19.37	18.53	38.5	10.00	9.13
R1C	7.4	2283	453	0.85		1.7	0.00	6.25

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.1

Vehicle Acceleration Performance

MISSION

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

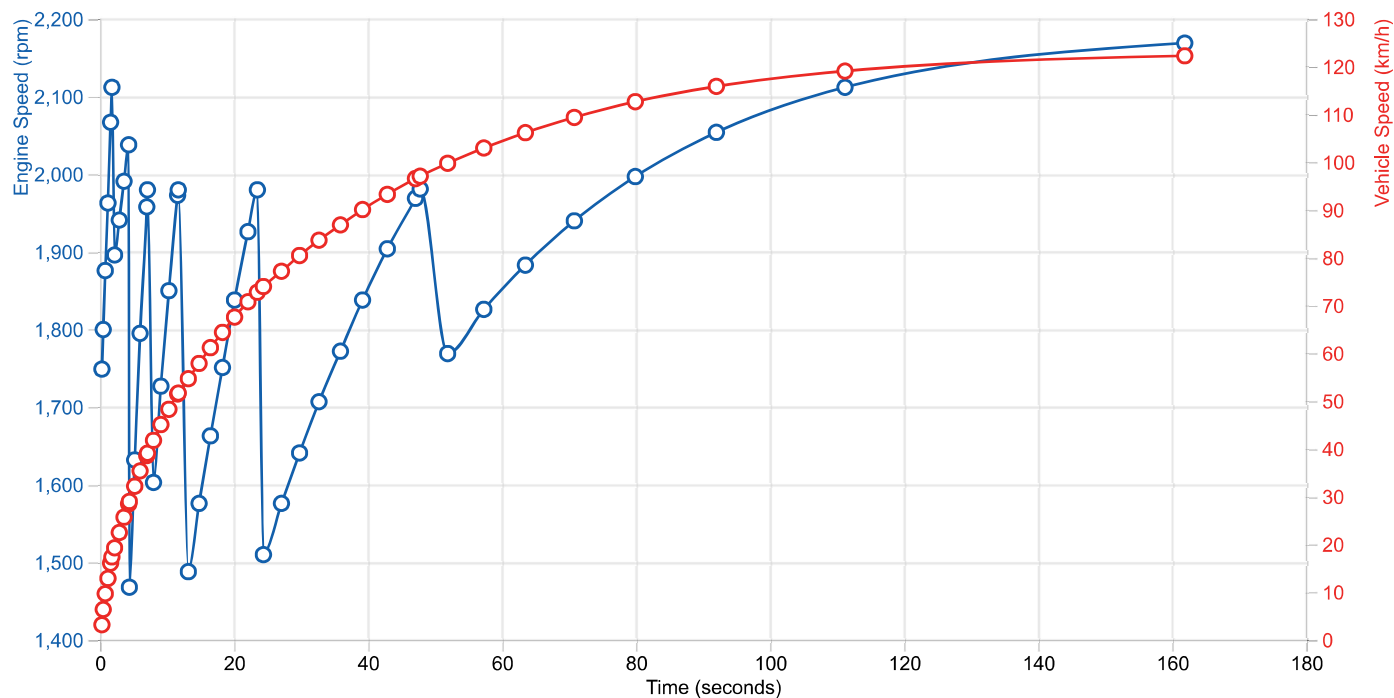
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.
The ! symbol indicates that Wheel Slip may occur.
Initial conditions for this report are Service Brakes locked and Engine at Full Throttle.

FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		0.950		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C	3.2	0.3	0	3.440	1749	69.80	68.99	62.4	170.71
1C	6.4	0.5	0	3.070	1800	62.67	61.83	112.1	117.76
1C	9.7	0.8	1	2.645	1876	54.83	53.96	147.1	80.68
1C	12.9	1.2	2	2.273	1963	47.19	46.28	168.7	56.43
1C	16.1	1.6	4	1.902	2067	39.83	38.88	178.1	41.70
1C	17.4	1.8	5	1.757	2112	36.98	36.01	178.7	38.13
2C	19.3	2.2	7	1.413	1896	28.68	27.68	153.8	73.59
2C	22.5	2.9	11	1.300	1941	26.45	25.39	165.5	60.28

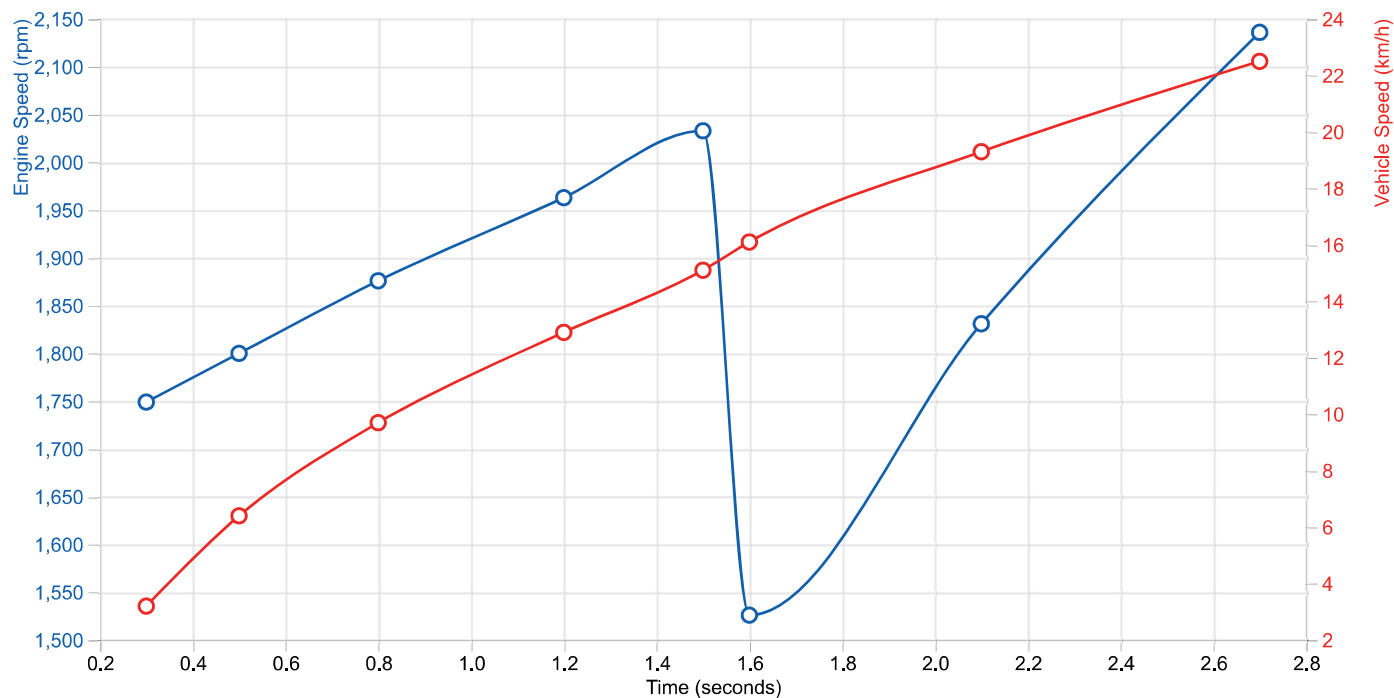
2C	25.7	3.6	16	1.182	1991	24.27	23.16	173.6	50.71
2C	28.5	4.3	21	1.086	2038	22.48	21.31	178.0	43.54
2L	29.0	4.4	22	1.136	1468	23.89	22.70	192.2	5.18
2L	32.2	5.2	28	1.088	1632	23.00	21.75	205.7	5.37
2L	35.4	6.0	36	1.019	1795	21.68	20.34	213.2	6.24
2L	38.6	7.0	46	0.929	1958	19.95	18.53	214.0	6.66
2L	39.1	7.1	47	0.913	1980	19.69	18.27	213.6	6.79
3L	41.8	8.0	58	0.815	1603	17.53	16.03	203.8	4.95
3L	45.1	9.1	71	0.778	1727	16.90	15.31	211.6	5.68
3L	48.3	10.3	87	0.726	1850	15.98	14.28	214.3	6.13
3L	51.5	11.6	105	0.669	1973	14.95	13.15	213.9	6.63
3L	51.7	11.7	106	0.666	1980	14.89	13.08	213.7	6.67
4L	54.7	13.2	128	0.561	1488	12.85	10.93	195.3	4.02
4L	57.9	14.8	153	0.541	1576	12.58	10.55	202.5	4.01
4L	61.2	16.5	181	0.521	1663	12.30	10.14	208.9	4.51
4L	64.4	18.3	212	0.494	1751	11.91	9.63	213.0	5.00
4L	67.6	20.1	246	0.463	1838	11.44	9.02	214.7	5.45
4L	70.8	22.1	285	0.431	1926	10.93	8.38	215.1	5.92
4L	72.8	23.5	311	0.408	1980	10.59	7.94	214.1	6.25
5L	74.0	24.4	331	0.348	1510	9.45	6.75	194.4	7.25
5L	77.2	27.1	386	0.332	1576	9.29	6.44	199.4	7.45
5L	80.5	29.8	447	0.316	1641	9.13	6.12	204.0	8.00
5L	83.7	32.7	513	0.299	1707	8.95	5.78	208.1	8.81
5L	86.9	35.9	587	0.276	1772	8.69	5.35	209.7	9.29
5L	90.1	39.2	670	0.254	1838	8.42	4.91	210.7	9.85
5L	93.3	42.9	765	0.230	1904	8.14	4.45	211.1	10.57
5L	96.6	47.1	874	0.204	1969	7.82	3.95	209.9	11.07
5L	97.1	47.8	895	0.200	1981	7.77	3.86	209.6	11.22
6L	99.8	51.9	1004	0.176	1769	7.47	3.40	207.0	12.22
6L	103.0	57.3	1157	0.156	1826	7.26	3.00	207.7	12.93
6L	106.2	63.5	1338	0.134	1883	7.05	2.59	208.0	13.69
6L	109.4	70.8	1557	0.112	1940	6.82	2.15	207.2	14.35
6L	112.7	79.9	1836	0.088	1997	6.57	1.70	205.7	15.27
6L	115.9	92.0	2222	0.062	2054	6.28	1.19	202.2	15.85
6L	119.1	111.2	2849	0.035	2112	5.99	0.67	198.1	16.77
6L	122.3	161.9	4554	0.008	2169	5.69	0.14	193.4	17.50

PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲


FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ➤

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		0.950		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C	3.2	0.3	0	3.440	1749	69.80	68.99	62.4	170.71
1C	6.4	0.5	0	3.070	1800	62.67	61.83	112.1	117.76
1C	9.7	0.8	1	2.645	1876	54.83	53.96	147.1	80.68
1C	12.9	1.2	2	2.273	1963	47.19	46.28	168.7	56.43
1C	15.1	1.5	3	2.016	2033	42.11	41.17	176.5	45.48
1L	16.1	1.6	4	1.976	1526	43.87	42.92	196.1	6.70
1L	19.3	2.1	6	1.779	1831	39.55	38.55	212.2	8.13
1L	22.5	2.7	10	1.454	2136	32.47	31.41	203.2	9.26

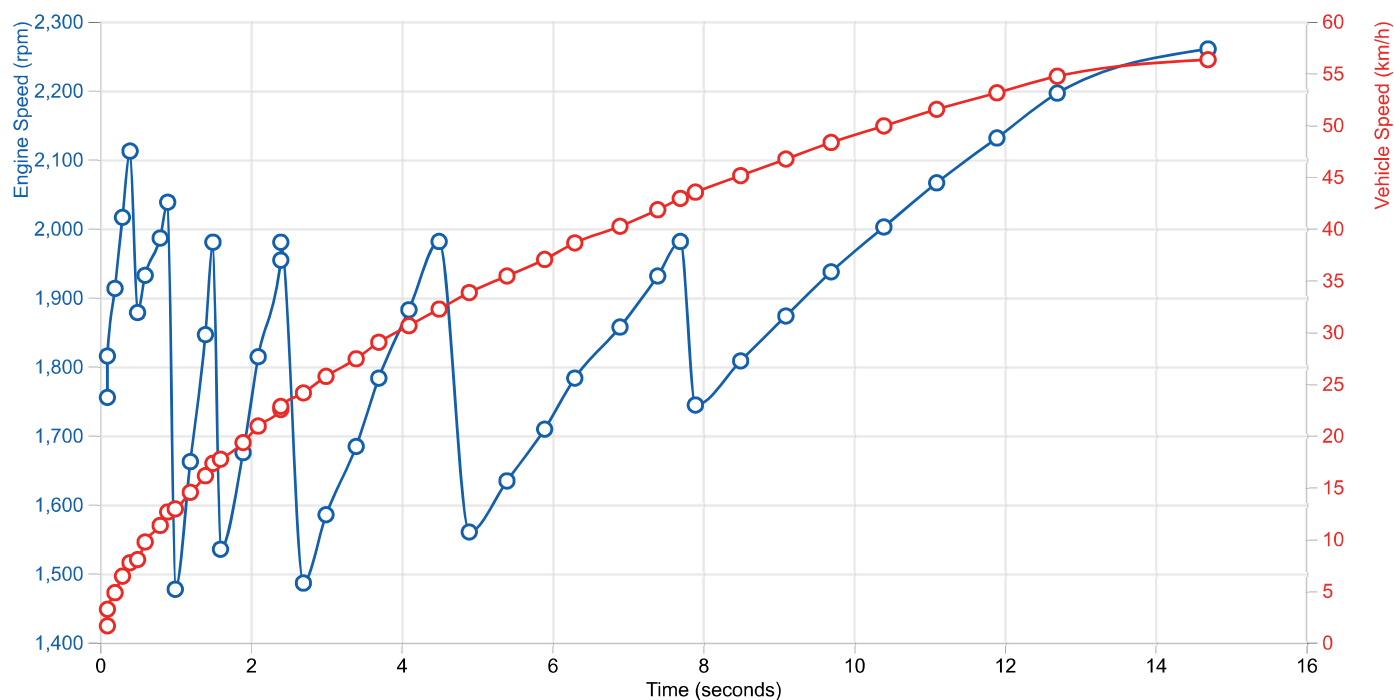
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU ➤


FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		2.150		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C Ⅰ	1.6	0.1	0	6.595	1755	156.11	155.31	69.8	162.77
1C Ⅰ	3.2	0.1	0	5.666	1815	136.85	136.04	122.4	106.73
1C	4.8	0.2	0	4.709	1913	117.66	116.83	157.8	69.16
1C	6.4	0.3	0	3.835	2016	97.98	97.14	175.2	47.90
1C	7.7	0.4	1	3.215	2112	83.70	82.85	178.7	38.13
2C	8.0	0.5	1	3.114	1878	66.46	65.61	148.6	79.07
2C	9.7	0.6	1	2.885	1932	60.98	60.11	163.6	62.54
2C	11.3	0.8	1	2.587	1986	55.31	54.42	173.1	51.35
2C	12.6	0.9	2	2.362	2038	50.88	49.97	178.0	43.54
2L	12.9	1.0	2	2.307	1477	53.98	53.08	193.1	5.21
2L	14.5	1.2	3	2.207	1662	51.66	50.73	207.8	5.58
2L	16.1	1.4	4	2.047	1846	47.89	46.94	214.1	6.30
2L	17.3	1.5	4	1.901	1980	44.57	43.60	213.6	6.79
3L	17.7	1.6	5	1.837	1535	40.37	39.39	198.5	4.85
3L	19.3	1.9	6	1.771	1675	38.96	37.96	209.0	5.44
3L	20.9	2.1	8	1.671	1814	36.78	35.75	213.8	6.06
3L	22.5	2.4	9	1.552	1954	34.23	33.17	214.2	6.51
3L	22.8	2.4	10	1.523	1980	33.71	32.64	213.7	6.67
4L	24.1	2.7	11	1.368	1486	29.09	28.00	195.0	4.01
4L	25.7	3.0	14	1.334	1585	28.41	27.29	203.2	4.03
4L	27.4	3.4	16	1.297	1684	27.68	26.53	210.4	4.72
4L	29.0	3.7	19	1.242	1783	26.56	25.38	213.8	5.22

4L	30.6	4.1	22	1.181	1882	25.34	24.12	215.2	5.73
4L	32.2	4.5	25	1.112	1981	23.95	22.69	214.1	6.26
5L	33.8	4.9	29	0.993	1560	21.11	19.82	198.2	7.37
5L	35.4	5.4	34	0.970	1634	20.70	19.36	203.6	7.92
5L	37.0	5.9	39	0.946	1709	20.25	18.87	208.2	8.82
5L	38.6	6.3	44	0.910	1783	19.57	18.15	209.9	9.41
5L	40.2	6.9	49	0.873	1857	18.87	17.41	210.9	10.02
5L	41.8	7.4	55	0.834	1931	18.12	16.62	210.7	10.71
5L	42.9	7.7	59	0.804	1981	17.58	16.05	209.6	11.22
6L	43.5	7.9	62	0.785	1744	17.11	15.56	206.5	11.90
6L	45.1	8.5	69	0.757	1808	16.58	14.98	207.6	12.78
6L	46.7	9.1	76	0.727	1873	16.04	14.40	208.0	13.52
6L	48.3	9.7	85	0.695	1937	15.46	13.76	207.3	14.31
6L	49.9	10.4	94	0.661	2002	14.83	13.08	205.5	15.33
6L	51.5	11.1	104	0.621	2066	14.08	12.28	201.4	16.04
6L	53.1	11.9	115	0.580	2131	13.33	11.47	196.6	16.96
6L	54.7	12.7	127	0.539	2196	12.57	10.65	191.0	18.05
6L	56.3	14.7	157	0.087	2260	3.06	1.09	47.9	17.71

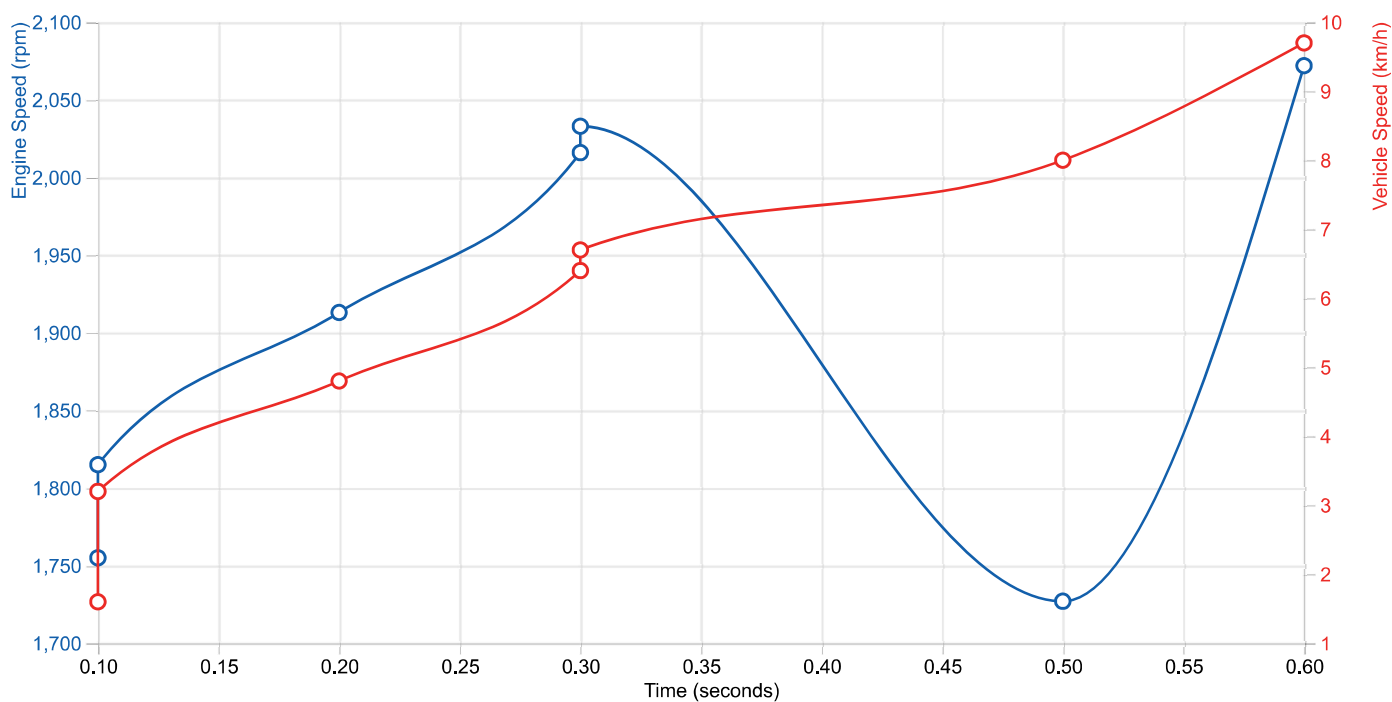
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲



FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO ▲

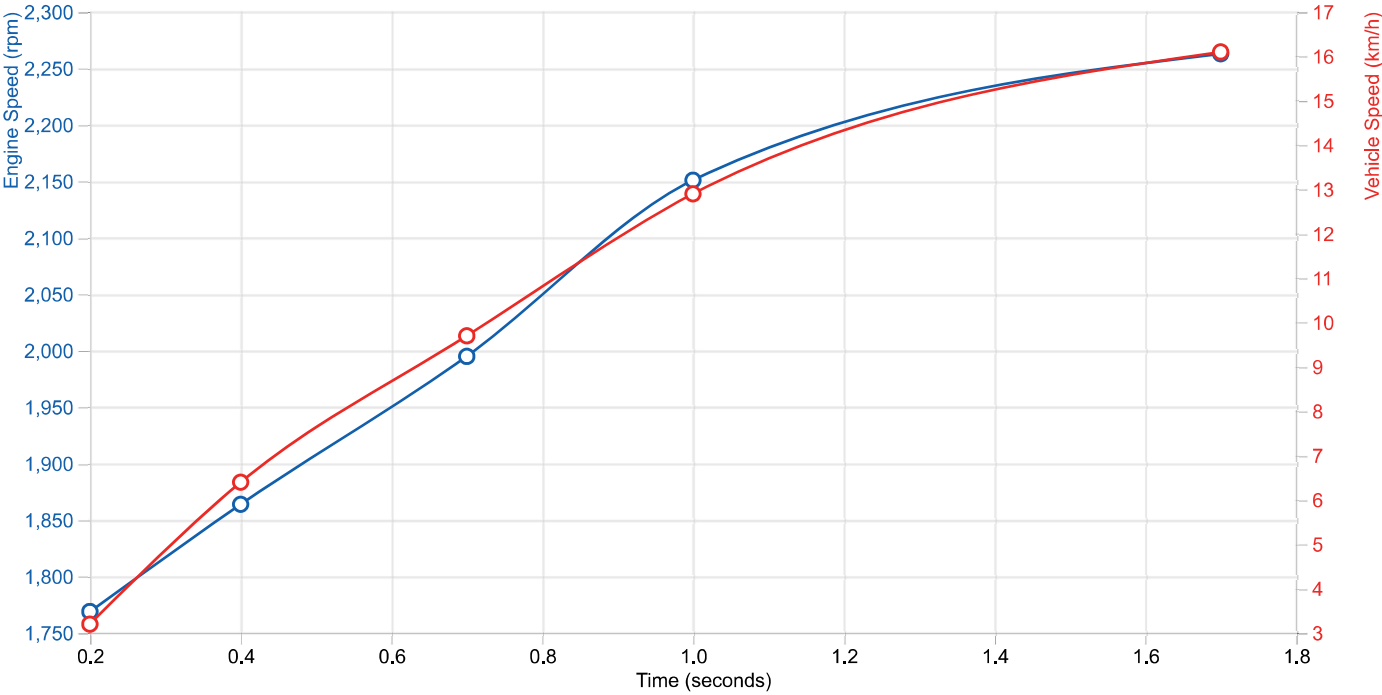
Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		2.150		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C !	1.6	0.1	0	6.595	1755	156.11	155.31	69.8	162.77

1C I	3.2	0.1	0	5.666	1815	136.85	136.04	122.4	106.73
1C	4.8	0.2	0	4.709	1913	117.66	116.83	157.8	69.16
1C	6.4	0.3	0	3.835	2016	97.98	97.14	175.2	47.90
1C	6.7	0.3	0	3.680	2033	95.35	94.51	176.4	45.53
1L	8.0	0.5	1	2.922	1727	93.86	93.00	209.8	7.69
1L	9.7	0.6	1	2.422	2072	77.34	76.47	207.5	9.05

PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU▶

FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAN▶

Engine Fan	On				Engine Power		Standard Power Curve		
Air Conditioning	Off				Vehicle Parameters		Standard		
Axle Ratio	6.000				Auxiliary Gearing Ratio		0.950		
Grade	0.00%								
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
R1C	3.2	0.2	0	4.441	1769	94.30	93.49	84.3	147.27
R1C	6.4	0.4	0	3.597	1864	78.56	77.73	140.5	87.70
R1C	9.7	0.7	1	2.881	1995	63.28	62.41	169.7	54.93
R1C	12.9	1.0	2	2.216	2151	48.85	47.94	174.7	39.52
R1C	16.1	1.7	5	0.537	2263	10.64	9.69	47.6	10.09

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.9▶

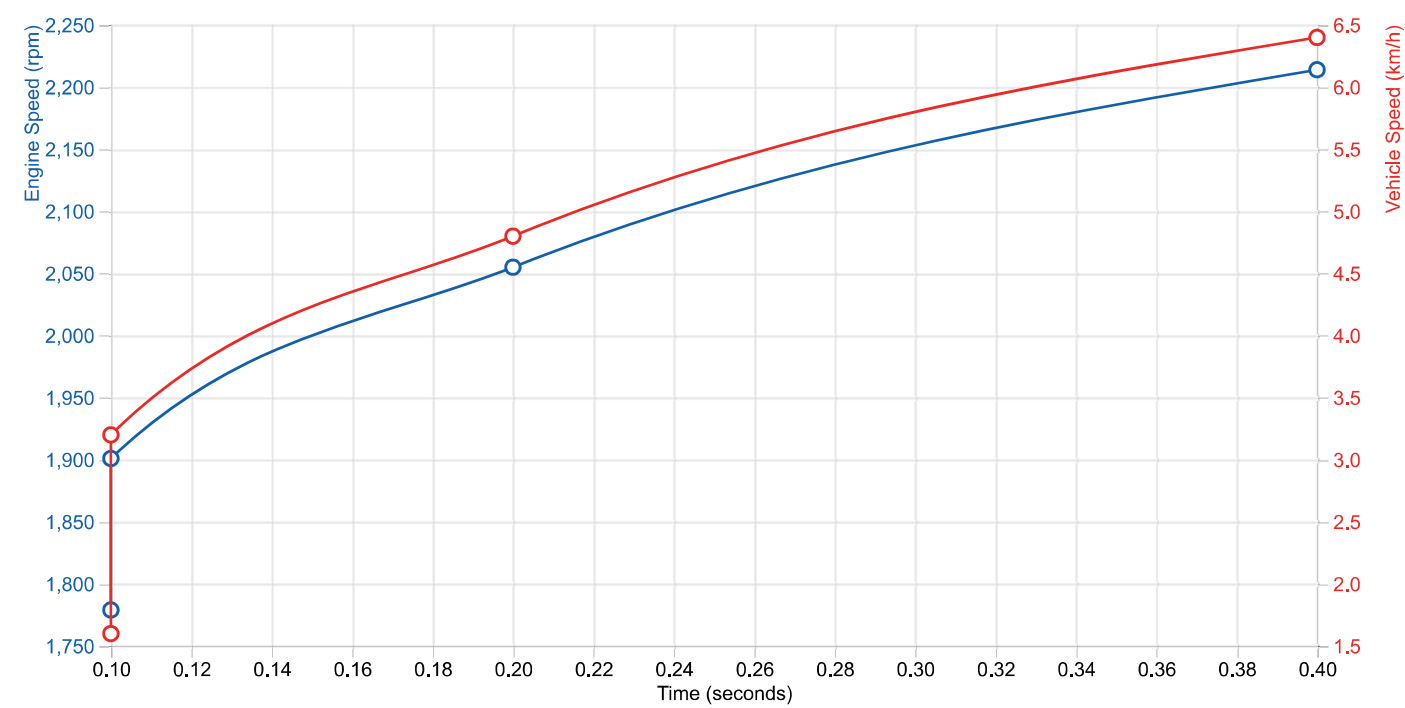


FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAN▲

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	2.150
Grade	0.00%		

Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
R1C I	1.6	0.1	0	7.207	1779	209.07	208.27	93.5	137.52
R1C II	3.2	0.1	0	5.379	1901	169.24	168.43	151.3	76.44
R1C	4.8	0.2	0	3.989	2055	129.90	129.08	174.2	46.64
R1C	6.4	0.4	0	2.934	2214	81.57	80.73	145.9	30.58

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.1▲



Vehicle Closed Throttle Braking Performance

MISSION	
End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE	
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.	
Results indicate the vehicle operating conditions at steady state (acceleration = 0).	
The ! symbol indicates that Wheel Slip may occur.	

CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L, 5L, 4L, 3L, 2L, 2C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = ▲	
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Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Engine Retarder Off

Transmission Retarder Off

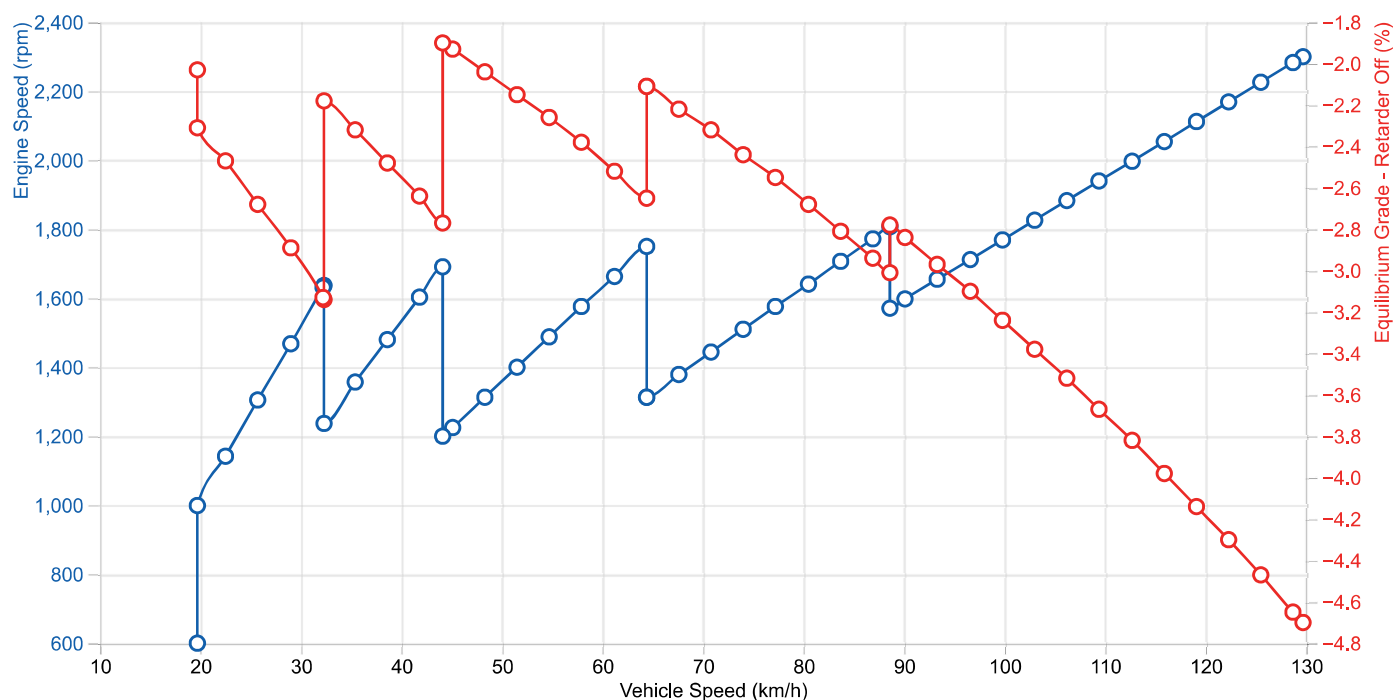
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	129.7	2300	3528	-4.70	18.44	-0.451	95.3
6L	128.7	2283	3501	-4.65	18.14	-0.446	93.7
6L	125.5	2226	3414	-4.47	17.17	-0.430	88.6
6L	122.3	2169	3326	-4.30	16.24	-0.413	83.7
6L	119.1	2112	3239	-4.14	15.34	-0.398	78.9
6L	115.9	2054	3151	-3.98	14.48	-0.382	74.4
6L	112.7	1997	3063	-3.82	13.64	-0.367	70.0
6L	109.4	1940	2976	-3.67	12.84	-0.353	65.9
6L	106.2	1883	2888	-3.52	12.07	-0.338	61.9
6L	103.0	1826	2801	-3.38	11.32	-0.324	58.1
6L	99.8	1769	2713	-3.24	10.61	-0.311	54.5
6L	96.6	1712	2626	-3.10	9.93	-0.298	51.0
6L	93.3	1655	2538	-2.97	9.25	-0.285	47.6
6L	90.1	1598	2451	-2.84	8.61	-0.273	44.4
6L	88.6	1571	2409	-2.78	8.33	-0.267	43.0
5L	88.6	1807	2409	-3.01	8.19	-0.289	53.7
5L	86.9	1772	2363	-2.94	7.89	-0.282	51.6
5L	83.7	1707	2276	-2.81	7.32	-0.269	47.9
5L	80.5	1641	2188	-2.68	6.76	-0.257	44.3
5L	77.2	1576	2101	-2.55	6.27	-0.245	40.9
5L	74.0	1510	2013	-2.44	5.86	-0.234	37.8
5L	70.8	1444	1926	-2.32	5.49	-0.223	34.9
5L	67.6	1379	1838	-2.22	5.13	-0.213	32.1
5L	64.4	1313	1751	-2.11	4.74	-0.202	29.4
5L	64.4	1313	1750	-2.11	4.74	-0.202	29.4
4L	64.4	1750	1750	-2.65	5.14	-0.253	47.5
4L	61.2	1663	1663	-2.52	4.70	-0.240	43.0
4L	57.9	1576	1576	-2.38	4.32	-0.228	38.7
4L	54.7	1488	1488	-2.26	4.06	-0.216	34.9
4L	51.5	1400	1400	-2.15	3.81	-0.205	31.4
4L	48.3	1313	1313	-2.04	3.52	-0.194	28.1
4L	45.1	1225	1225	-1.93	3.21	-0.184	25.0
4L	44.1	1200	1200	-1.90	3.12	-0.181	24.1
3L	44.1	1691	1200	-2.77	4.44	-0.262	43.9
3L	41.8	1603	1138	-2.64	4.09	-0.250	39.7
3L	38.6	1480	1050	-2.48	3.74	-0.234	34.3
3L	35.4	1357	963	-2.32	3.43	-0.220	29.5
3L	32.3	1237	878	-2.18	3.06	-0.206	25.2
2L	32.3	1637	878	-3.14	4.07	-0.292	41.1
2L	32.2	1632	875	-3.13	4.06	-0.291	40.9
2L	29.0	1468	788	-2.89	3.71	-0.269	33.8

2L	25.7	1305	700	-2.68	3.35	-0.249	27.6
2L	22.5	1142	613	-2.47	2.87	-0.230	22.2
2L	19.7	999	536	-2.31	2.40	-0.215	18.0
2C	19.7	600	536	-2.03	6.09	-0.185	15.2

Engine Retarder Off
Transmission Retarder On

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	129.7	2300	3528	-10.87	391.41	-1.039	505.6
6L	128.7	2283	3501	-10.86	391.11	-1.038	504.1
6L	125.5	2226	3414	-10.85	390.14	-1.037	499.0
6L	122.3	2169	3326	-10.85	389.21	-1.037	494.1
6L	119.1	2112	3239	-10.86	388.31	-1.038	489.3
6L	115.9	2054	3151	-10.88	387.45	-1.040	484.7
6L	112.7	1997	3063	-10.92	386.61	-1.044	480.4
6L	109.4	1940	2976	-10.98	385.81	-1.049	476.2
6L	106.2	1883	2888	-11.05	385.04	-1.056	472.2
6L	103.0	1826	2801	-11.14	384.29	-1.064	468.4
6L	99.8	1769	2713	-11.25	383.58	-1.075	464.8
6L	96.6	1712	2626	-11.38	382.90	-1.087	461.3
6L	93.3	1655	2538	-11.54	382.22	-1.102	458.0
6L	90.1	1598	2451	-11.71	381.58	-1.118	454.8
6L	88.6	1571	2409	-11.81	381.30	-1.127	453.3
5L	88.6	1807	2409	-12.05	381.16	-1.148	464.0
5L	86.9	1772	2363	-12.15	380.86	-1.158	462.0
5L	83.7	1707	2276	-12.37	380.29	-1.179	458.2
5L	80.5	1641	2188	-12.63	379.73	-1.203	454.6
5L	77.2	1576	2101	-12.92	379.24	-1.230	451.2
5L	74.0	1510	2013	-13.22	377.57	-1.258	446.7
5L	70.8	1444	1926	-13.11	361.03	-1.247	426.0
5L	67.6	1379	1838	-13.00	344.49	-1.237	405.5
5L	64.4	1313	1751	-12.89	327.93	-1.227	385.0
5L	64.4	1313	1750	-12.89	327.83	-1.227	384.9
4L	64.4	1750	1750	-13.44	328.23	-1.272	403.0
4L	61.2	1663	1663	-13.30	311.72	-1.259	380.8
4L	57.9	1576	1576	-13.17	295.17	-1.247	358.7
4L	54.7	1488	1488	-13.04	278.73	-1.235	337.1
4L	51.5	1400	1400	-12.92	262.29	-1.224	315.8
4L	48.3	1313	1313	-12.81	245.80	-1.213	294.6
4L	45.1	1225	1225	-12.69	229.28	-1.203	273.7
4L	44.1	1200	1200	-12.66	224.49	-1.200	267.7
3L	44.1	1691	1200	-13.55	225.81	-1.270	287.5
3L	41.8	1603	1138	-13.42	213.96	-1.258	270.6
3L	38.6	1480	1050	-13.25	197.41	-1.242	247.4
3L	35.4	1357	963	-13.09	180.90	-1.227	224.7
3L	32.3	1237	878	-11.86	148.84	-1.114	185.6
2L	32.3	1637	878	-12.84	149.85	-1.186	201.5
2L	32.2	1632	875	-12.78	148.68	-1.180	200.0
2L	29.0	1468	788	-11.03	113.72	-1.021	154.8

2L	25.7	1305	700	-9.36	83.89	-0.868	116.3
2L	22.5	1142	613	-7.80	59.08	-0.724	84.0
2L	19.7	999	536	-6.54	41.53	-0.608	61.1
2C	19.7	600	536	-6.26	45.23	-0.572	58.2

PLOTS - CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L, 5L, 4L, 3L, 2L, 2C) - STANDARD, FAN ON, AC OFF, AXLE ▲

CLOSED THROTTLE MANUAL 1ST HOLD - LOCKUP RELEASE, WITHOUT RETARDER (1L, 1C) - STANDARD, FAN ON, AC OFF, AXLE ▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

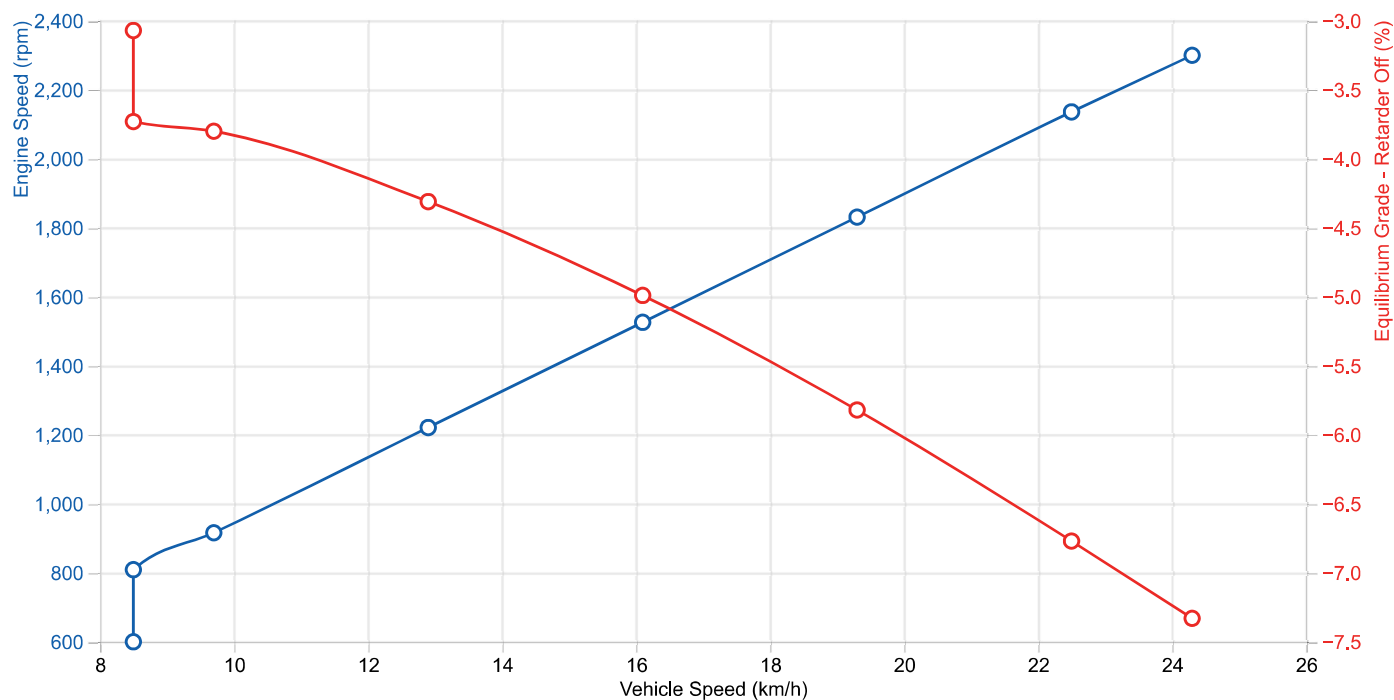
Engine Retarder Off
Transmission Retarder Off

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
1L	24.3	2300	660	-7.33	8.53	-0.625	84.4
1L	22.5	2136	613	-6.77	7.67	-0.578	72.1
1L	19.3	1831	525	-5.82	6.19	-0.497	52.7
1L	16.1	1526	438	-4.99	4.85	-0.427	37.3
1L	12.9	1221	350	-4.31	3.77	-0.368	25.4
1L	9.7	916	263	-3.80	2.61	-0.325	16.7
1L	8.5	809	232	-3.73	2.22	-0.318	14.4
1C	8.5	600	232	-3.07	2.78	-0.249	11.5

Engine Retarder Off
Transmission Retarder On

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
1L	24.3	2300	660	-13.44	77.14	-1.079	159.9
1L	22.5	2136	613	-12.15	63.88	-0.976	134.0

1L	19.3	1831	525	-9.94	43.23	-0.801	93.4
1L	16.1	1526	438	-8.00	27.46	-0.646	62.2
1L	12.9	1221	350	-6.21	15.26	-0.502	38.1
1L	9.7	916	263	-4.78	7.03	-0.387	21.5
1L	8.5	809	232	-4.45	5.12	-0.360	17.6
1C	8.5	600	232	-3.79	5.68	-0.307	14.7

PLOTS - CLOSED THROTTLE MANUAL 1ST HOLD - LOCKUP RELEASE, WITHOUT RETARDER (1L, 1C) - STANDARD, FAN ON, AC ▲

CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L, 5L, 4L, 3L, 2L, 2C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = ▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Engine Retarder Off
Transmission Retarder Off

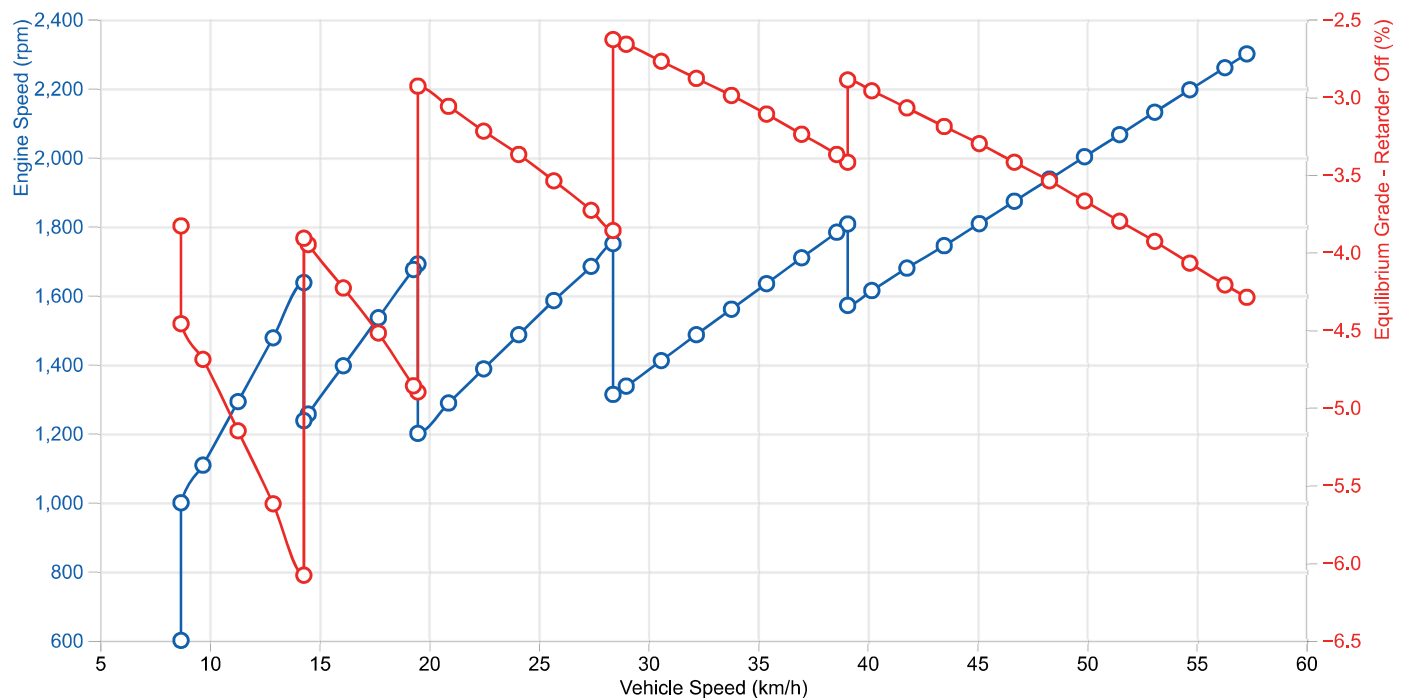
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	57.3	2300	3528	-4.29	18.44	-0.403	95.3
6L	56.3	2260	3467	-4.21	17.75	-0.395	91.7
6L	54.7	2196	3368	-4.07	16.67	-0.382	86.0
6L	53.1	2131	3268	-3.93	15.64	-0.369	80.5
6L	51.5	2066	3169	-3.80	14.66	-0.356	75.3
6L	49.9	2002	3070	-3.67	13.70	-0.344	70.4
6L	48.3	1937	2971	-3.54	12.80	-0.332	65.6
6L	46.7	1873	2872	-3.42	11.93	-0.321	61.2
6L	45.1	1808	2773	-3.30	11.10	-0.310	56.9
6L	43.5	1744	2674	-3.19	10.30	-0.299	52.9
6L	41.8	1679	2575	-3.07	9.53	-0.288	49.0
6L	40.2	1614	2476	-2.96	8.79	-0.278	45.3

6L	39.1	1571	2409	-2.89	8.33	-0.271	43.0
5L	39.1	1807	2409	-3.42	8.19	-0.318	53.7
5L	38.6	1783	2377	-3.37	7.98	-0.314	52.2
5L	37.0	1709	2278	-3.24	7.34	-0.302	48.0
5L	35.4	1634	2179	-3.11	6.70	-0.290	43.9
5L	33.8	1560	2080	-2.99	6.17	-0.279	40.1
5L	32.2	1486	1981	-2.88	5.73	-0.268	36.7
5L	30.6	1411	1882	-2.77	5.31	-0.258	33.5
5L	29.0	1337	1783	-2.66	4.89	-0.248	30.4
5L	28.4	1313	1750	-2.63	4.74	-0.245	29.4
4L	28.4	1750	1750	-3.86	5.14	-0.351	47.5
4L	27.4	1684	1684	-3.73	4.81	-0.339	44.0
4L	25.7	1585	1585	-3.54	4.36	-0.322	39.2
4L	24.1	1486	1486	-3.37	4.05	-0.307	34.8
4L	22.5	1387	1387	-3.22	3.77	-0.292	30.9
4L	20.9	1288	1288	-3.06	3.43	-0.278	27.2
4L	19.5	1200	1200	-2.93	3.12	-0.266	24.1
3L	19.5	1691	1200	-4.90	4.44	-0.424	43.9
3L	19.3	1675	1189	-4.86	4.37	-0.421	43.1
3L	17.7	1535	1089	-4.52	3.88	-0.392	36.6
3L	16.1	1396	990	-4.23	3.53	-0.366	30.9
3L	14.5	1256	891	-3.95	3.12	-0.342	25.8
3L	14.3	1237	878	-3.91	3.06	-0.339	25.2
2L	14.3	1637	878	-6.08	4.07	-0.490	41.1
2L	12.9	1477	792	-5.62	3.73	-0.454	34.2
2L	11.3	1292	693	-5.15	3.32	-0.415	27.2
2L	9.7	1108	594	-4.69	2.74	-0.378	21.1
2L	8.7	999	536	-4.46	2.40	-0.360	18.0
2C	8.7	600	536	-3.83	6.09	-0.287	15.2

Engine Retarder Off
Transmission Retarder On

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	57.3	2300	3528	-18.43	391.41	-1.701	505.6
6L	56.3	2260	3467	-18.60	390.72	-1.716	502.1
6L	54.7	2196	3368	-18.88	389.64	-1.742	496.4
6L	53.1	2131	3268	-19.20	388.61	-1.770	490.9
6L	51.5	2066	3169	-19.55	387.63	-1.801	485.7
6L	49.9	2002	3070	-19.94	386.67	-1.836	480.7
6L	48.3	1937	2971	-20.37	385.77	-1.874	476.0
6L	46.7	1873	2872	-20.84	384.90	-1.915	471.5
6L	45.1	1808	2773	-21.37	384.07	-1.961	467.3
6L	43.5	1744	2674	-21.94	383.27	-2.012	463.2
6L	41.8	1679	2575	-22.57	382.50	-2.067	459.4
6L	40.2	1614	2476	-23.27	381.76	-2.128	455.7
6L	39.1	1571	2409	-23.79	381.30	-2.172	453.3
5L	39.1	1807	2409	-24.36	381.16	-2.206	464.0
5L	38.6	1783	2377	-24.61	380.95	-2.227	462.6
5L	37.0	1709	2278	-25.45	380.31	-2.298	458.3

5L	35.4	1634	2179	-26.38	379.67	-2.377	454.2
5L	33.8	1560	2080	-27.42	379.14	-2.465	450.5
5L	32.2	1486	1981	-28.08	371.47	-2.519	439.1
5L	30.6	1411	1882	-27.96	352.76	-2.509	415.7
5L	29.0	1337	1783	-27.84	334.04	-2.499	392.5
5L	28.4	1313	1750	-27.80	327.83	-2.496	384.9
4L	28.4	1750	1750	-29.18	328.23	-2.546	403.0
4L	27.4	1684	1684	-29.03	315.66	-2.534	386.0
4L	25.7	1585	1585	-28.82	296.90	-2.517	361.0
4L	24.1	1486	1486	-28.63	278.30	-2.502	336.6
4L	22.5	1387	1387	-28.45	259.69	-2.487	312.5
4L	20.9	1288	1288	-28.27	241.01	-2.472	288.6
4L	19.5	1200	1200	-28.11	224.49	-2.460	267.7
3L	19.5	1691	1200	-30.33	225.81	-2.517	287.5
3L	19.3	1675	1189	-30.29	223.62	-2.513	284.4
3L	17.7	1535	1089	-29.90	204.80	-2.484	257.7
3L	16.1	1396	990	-29.55	186.12	-2.457	231.8
3L	14.5	1256	891	-27.13	154.68	-2.270	192.6
3L	14.3	1237	878	-26.51	148.84	-2.222	185.6
2L	14.3	1637	878	-28.92	149.85	-2.245	201.5
2L	12.9	1477	792	-24.78	115.43	-1.944	157.0
2L	11.3	1292	693	-20.35	81.75	-1.611	113.5
2L	9.7	1108	594	-16.29	54.49	-1.299	78.0
2L	8.7	999	536	-14.15	41.53	-1.132	61.1
2C	8.7	600	536	-13.50	45.23	-1.003	58.2

PLOTS - CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L, 5L, 4L, 3L, 2L, 2C) - STANDARD, FAN ON, AC OFF, AXLE ▲

CLOSED THROTTLE MANUAL 1ST HOLD - LOCKUP RELEASE, WITHOUT RETARDER (1L, 1C) - STANDARD, FAN ON, AC OFF, AXLE ▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

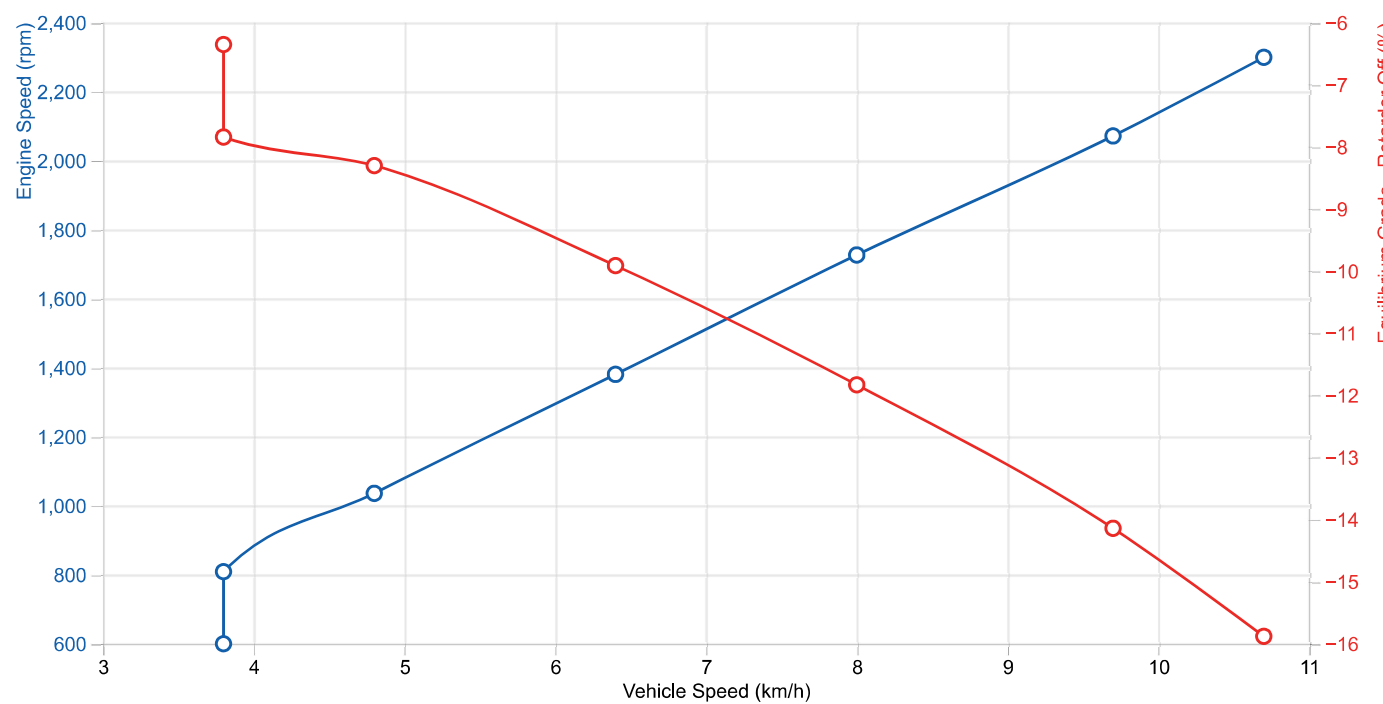
Engine Retarder Off
Transmission Retarder Off

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec²s)	Wheel Power (kW)
1L	10.7	2300	660	-15.88	8.53	-0.910	84.4
1L	9.7	2072	594	-14.14	7.35	-0.813	67.7
1L	8.0	1727	495	-11.83	5.72	-0.682	47.0
1L	6.4	1381	396	-9.91	4.37	-0.572	31.4
1L	4.8	1036	297	-8.30	3.04	-0.480	19.6
1L	3.8	809	232	-7.84	2.22	-0.454	14.4
1C	3.8	600	232	-6.35	2.78	-0.308	11.5

Engine Retarder Off
Transmission Retarder On

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec²s)	Wheel Power (kW)
1L	10.7	2300	660	-30.64	77.14	-1.421	159.9
1L	9.7	2072	594	-26.26	59.10	-1.232	124.6
1L	8.0	1727	495	-20.54	37.38	-0.976	81.9
1L	6.4	1381	396	-15.61	21.21	-0.748	49.9
1L	4.8	1036	297	-11.31	9.76	-0.545	27.0
1L	3.8	809	232	-9.50	5.12	-0.459	17.6
1C	3.8	600	232	-8.00	5.68	-0.387	14.7

PLOTS - CLOSED THROTTLE MANUAL 1ST HOLD - LOCKUP RELEASE, WITHOUT RETARDER (1L, 1C) - STANDARD, FAN ON, AC ▲



Vehicle Wheel Power Requirements

MISSION

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

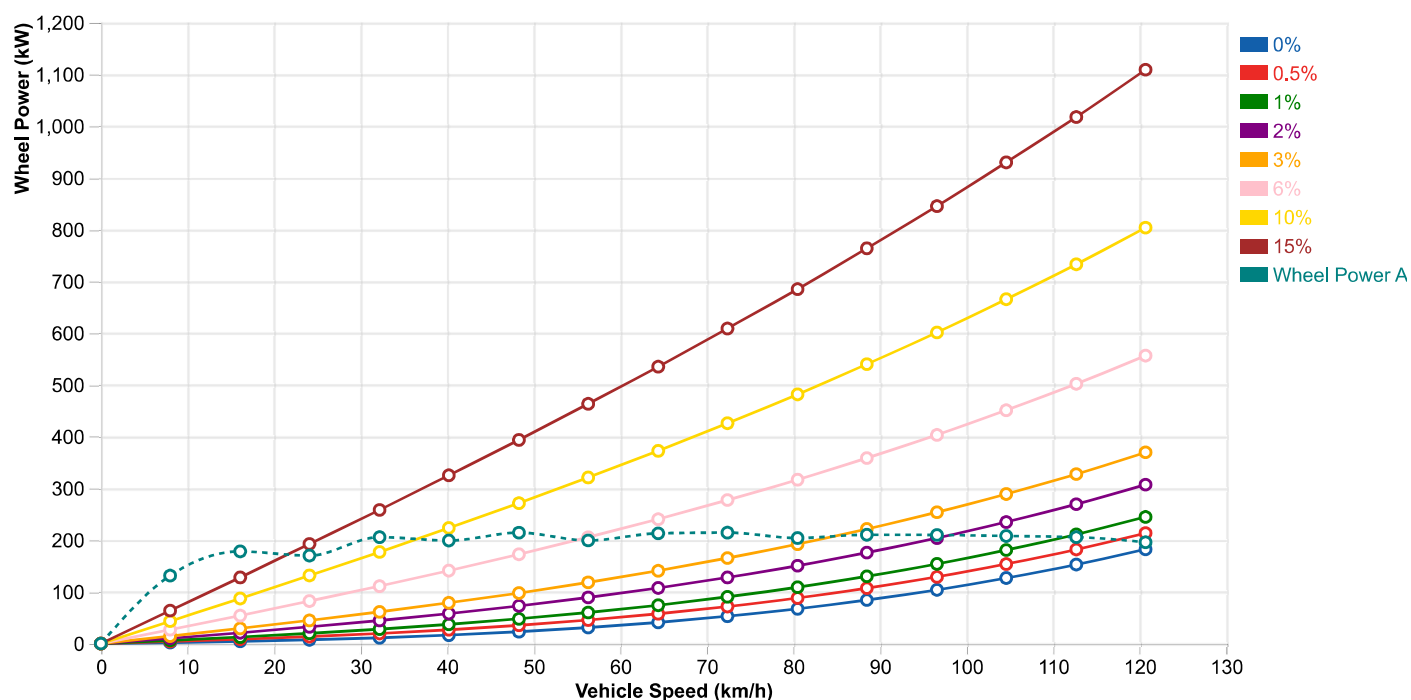
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.
The data presented in this report defines the actual wheel power required to maintain a specified vehicle speed on various grades. The results are based on the physical characteristics of the vehicle – weight, aerodynamics, and rolling resistance – and are independent of engine rating, transmission model, and shift schedule.
Positive grades indicate uphill operation and negative grades indicate downhill operation.
Positive wheel power values indicate propulsion power required, and negative wheel power values indicate braking power required. Wheel power values that exceed the available propulsion or braking wheel power indicate operating conditions that are not possible with the specified vehicle configuration.

WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STANDARD POW

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.0	131.4	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	178.1	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	170.0	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	205.7	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	199.1	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	214.3	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
56.3	199.3	30.9	45.5	60.0	89.2	118.3	205.5	321.0	463.3
64.4	213.0	40.8	57.5	74.1	107.5	140.7	240.4	372.4	535.1
72.4	214.4	52.9	71.6	90.4	127.8	165.3	277.4	425.8	608.9
80.5	204.0	67.2	88.1	108.9	150.5	192.1	316.7	481.6	685.0
88.5	210.3	84.2	107.1	130.0	175.8	221.5	358.5	540.0	763.8
96.6	209.9	103.9	128.9	153.9	203.8	253.8	403.2	601.2	845.3
104.6	207.9	126.7	153.7	180.8	234.9	289.0	450.9	665.4	929.8
112.7	205.7	152.7	181.8	211.0	269.3	327.5	501.9	732.9	1017.6
120.7	195.9	182.2	213.5	244.7	307.1	369.6	556.4	803.8	1108.9

PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAND▲

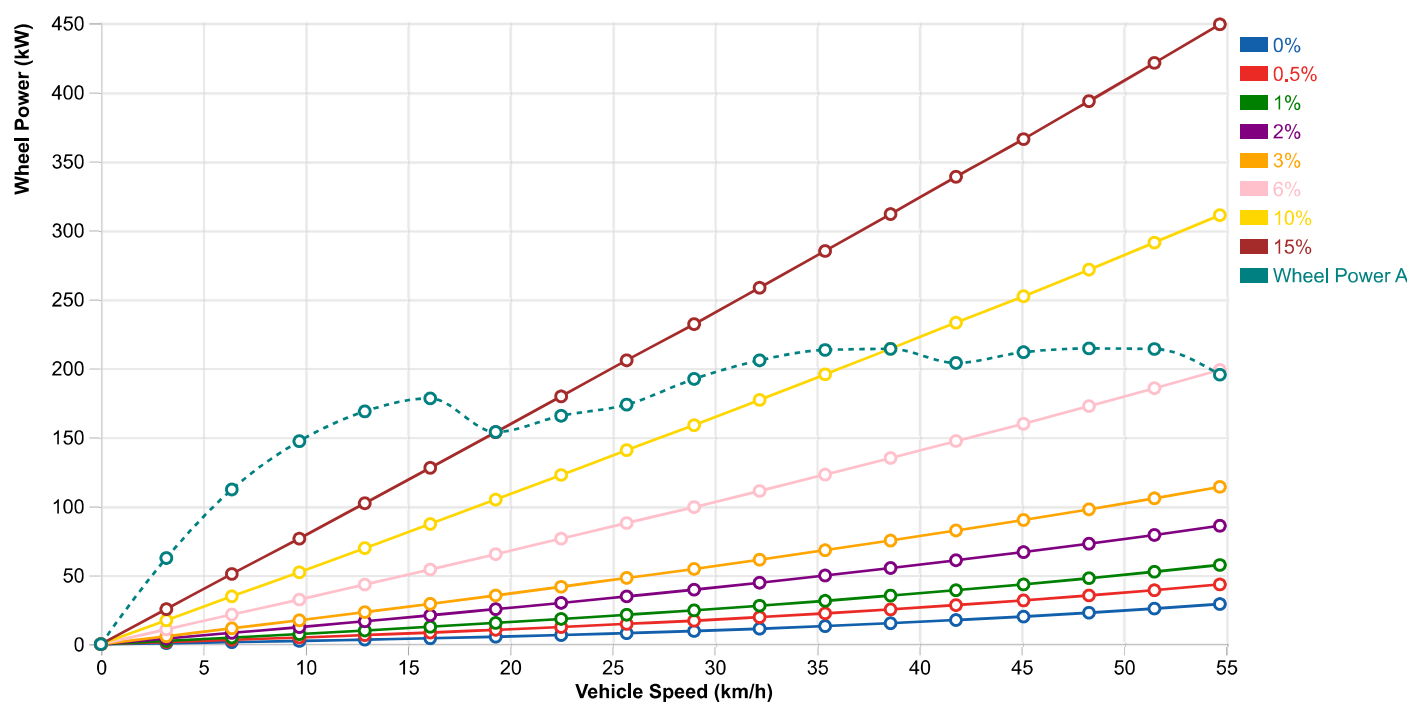


WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STANDARD POW▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	0.95

Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.2	62.4	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	112.1	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	147.1	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	168.7	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	178.1	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	153.8	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	165.5	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	173.6	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	192.2	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	205.7	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	213.2	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	214.0	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	203.8	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	211.6	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	214.3	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
51.5	213.9	25.8	39.1	52.5	79.1	105.7	185.5	291.0	421.2
54.7	195.3	29.1	43.3	57.4	85.8	114.0	198.7	310.9	449.2

PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAND▲

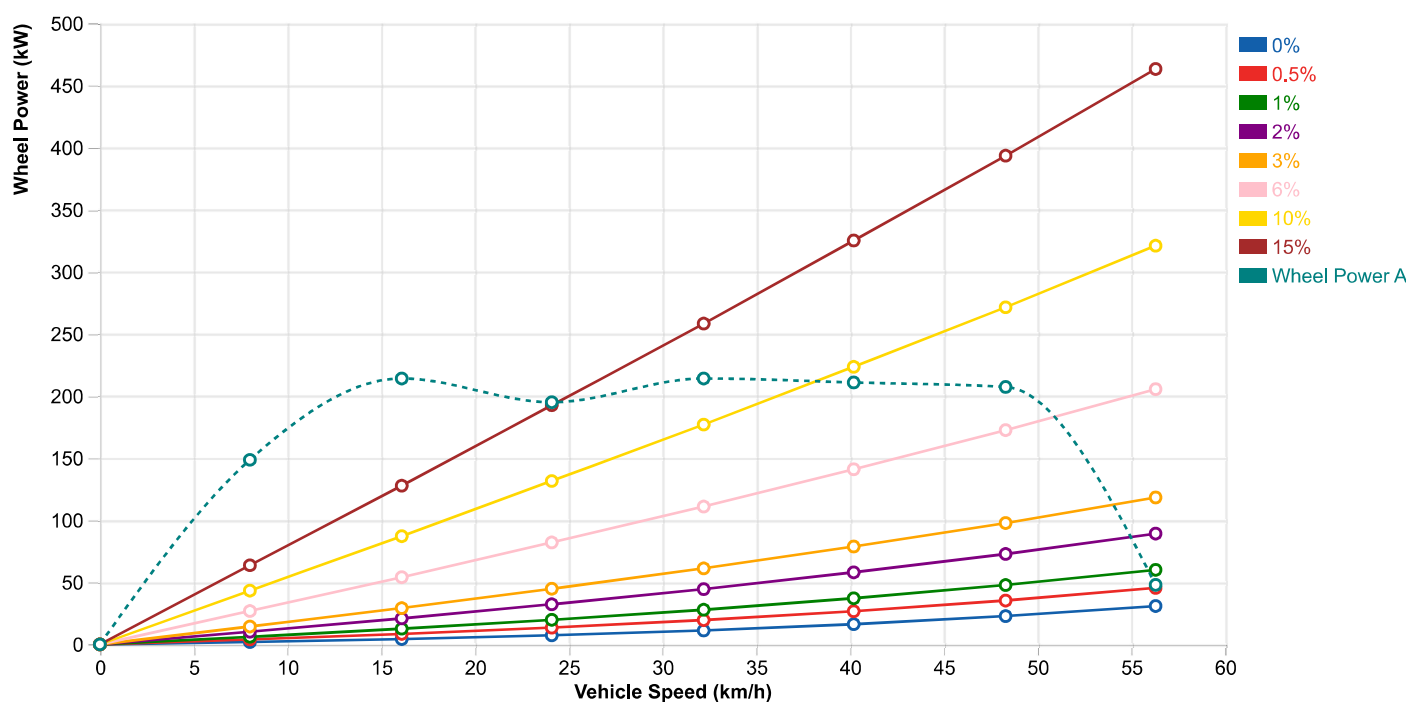


WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STANDARD POW▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.0	148.6	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	214.1	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	195.0	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	214.1	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	210.9	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	207.3	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
56.3	47.9	30.9	45.5	60.0	89.2	118.3	205.5	321.0	463.3

PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STANDARD POW▲

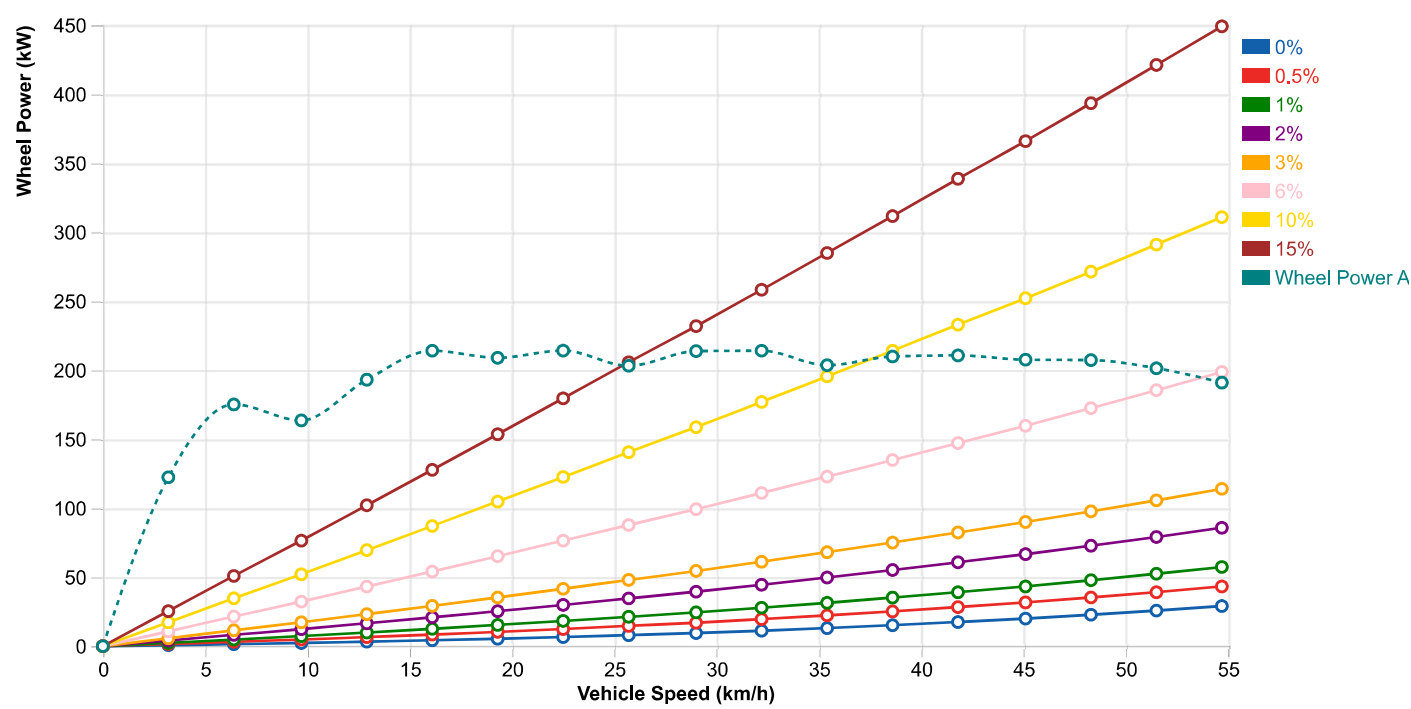


WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STANDARD POW▲

Engine Fan	On	Air Conditioning	Off
Engine Power	Standard Power Curve	Vehicle Parameters	Standard
Axle Ratio	6	Auxiliary Gearing Ratio	2.15

Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.2	122.4	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	175.2	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	163.6	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	193.1	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	214.1	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	209.0	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	214.2	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	203.2	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	213.8	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	214.1	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	203.6	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	209.9	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	210.7	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	207.6	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	207.3	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
51.5	201.4	25.8	39.1	52.5	79.1	105.7	185.5	291.0	421.2
54.7	191.0	29.1	43.3	57.4	85.8	114.0	198.7	310.9	449.2

PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAND▲



Transmission Converter Cooling Test Point Summary

MISSION

End User	xxx
Selected Vocation	Military — Wheeled - Tactical — Straight Truck (52-25-10)
PLATFORM ▲	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz TCD 2013 L06 4V -- 1498Nm@1450rpm, 268,5kW@2000prm -- without SEM/LRTP (116-L021742-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Recommended
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.

The information presented in this report is intended to aid with the performance of Transmission Cooling Tests as described in TD-157 for On-Highway and On/Off-Highway Commercial transmissions and TD-165 for Off-Highway transmissions.

Cooling test should be conducted at 38°C (100°F) ambient temperature. If the vehicle will be operated in an area with an average ambient temperature greater than 38°C (100°F), then conduct the test at the LAT (Limiting Ambient Temperature) as defined in TD157 or TD165.

If Air Conditioning losses have been defined in the iSCAAN Application, the results below should be used with Fan ON if the air conditioning condenser is located in front of the engine radiator. If the air conditioning condenser is located elsewhere, use the Fan OFF results.

COOLING TEST (GEAR F4)-STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STANDARD POWER CURVE ▲

Engine Fan			On			Air Conditioning			Off		
Engine Power			Standard Power Curve			Vehicle Parameters			Standard		
Axle Ratio			6.000			Auxiliary Gearing Ratio			0.950		
Limiting Ambient Temp			37.778 °C			End User Sub Region					
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Speed Ratio	Turbine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Heat Rejection (kW)	Match Point
F4	46.0	1973	0.634	1251	1251	13.49	11.87	172.4	6.38	52.43	80% Converter Efficiency

COOLING TEST (GEAR F4)-STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STANDARD POWER CURVE ▲

Engine Fan		On		Air Conditioning		Off	
Engine Power		Standard Power Curve		Vehicle Parameters		Standard	
Axle Ratio		6.000		Auxiliary Gearing Ratio		2.150	
Limiting Ambient Temp		37.778 °C		End User Sub Region			

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Speed Ratio	Turbine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Heat Rejection (kW)	Match Point
F4	20.3	1973	0.634	1251	1251	30.54	29.52	172.4	16.04	52.43	80% Converter Efficiency