

Application Report Bundle

iSCAAN**116-A357714-1** (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 16:33:03
Scaan Number	
Application	116-A357714-1
Application Name	UAT-4 Deutz BF6M1015CP
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)	26.4	26.4
Alternator / Generator	3.3	3.3
Air Compressor	1.6	1.6
Steering Pump	1.6	1.6
Air Conditioning	0.0	0.0
Implement Drive	0.0	0.0

ENGINE

Number of Power Packs	1
Engine Rating	Deutz BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Engine Controls Type	Electronic
Evaluate at Altitude	No
Certifications	
Displacement	11.90 l
Peak Torque	1990.0 N-m
Peak Torque Speed	1200 rpm
Peak Power	330.3 kW
Peak Power Speed	1900 rpm
Governed Power	330.3 kW
Governed Speed	1900 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)	1.5019 kg-m²

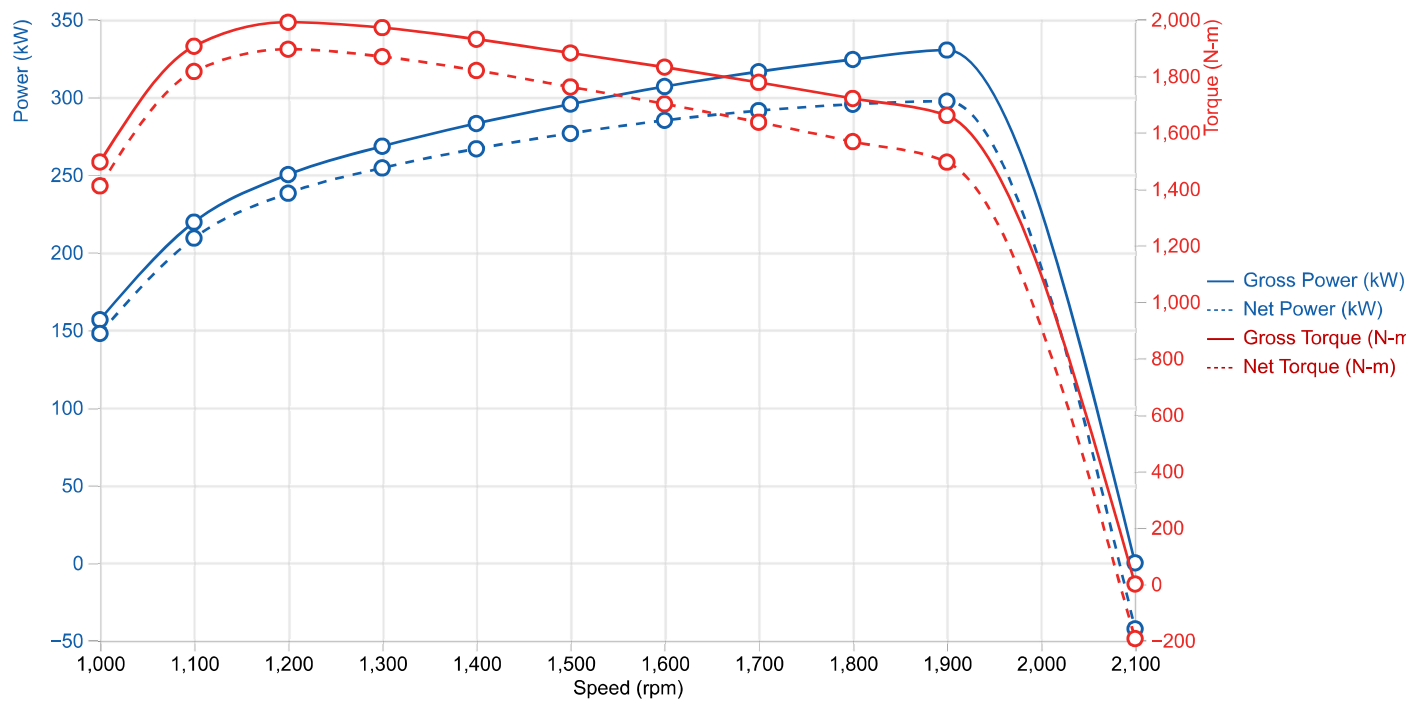
ENGINE CURVE - STANDARD LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)


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	156.6	1495.0	147.7	1410.4	151.5	1447.2	
1100	219.4	1905.0	209.1	1815.6	214.3	1860.0	
1200	250.1	1990.0	238.1	1894.5	244.7	1947.4	Peak Torque
1300	268.3	1971.0	254.3	1868.3	262.8	1930.4	
1400	283.0	1930.0	266.7	1819.1	277.3	1891.1	
1500	295.5	1881.0	276.6	1760.9	289.6	1843.6	
1600	306.8	1831.0	285.0	1700.8	300.7	1794.9	
1700	316.3	1777.0	291.2	1635.9	310.1	1742.1	
1800	324.2	1720.0	295.4	1567.0	317.8	1686.1	
1900	330.3	1660.0	297.3	1494.3	323.7	1627.0	Peak Governed
2100	0.0	0.0	-42.5	-193.5	-6.9	-31.4	No Load Governed

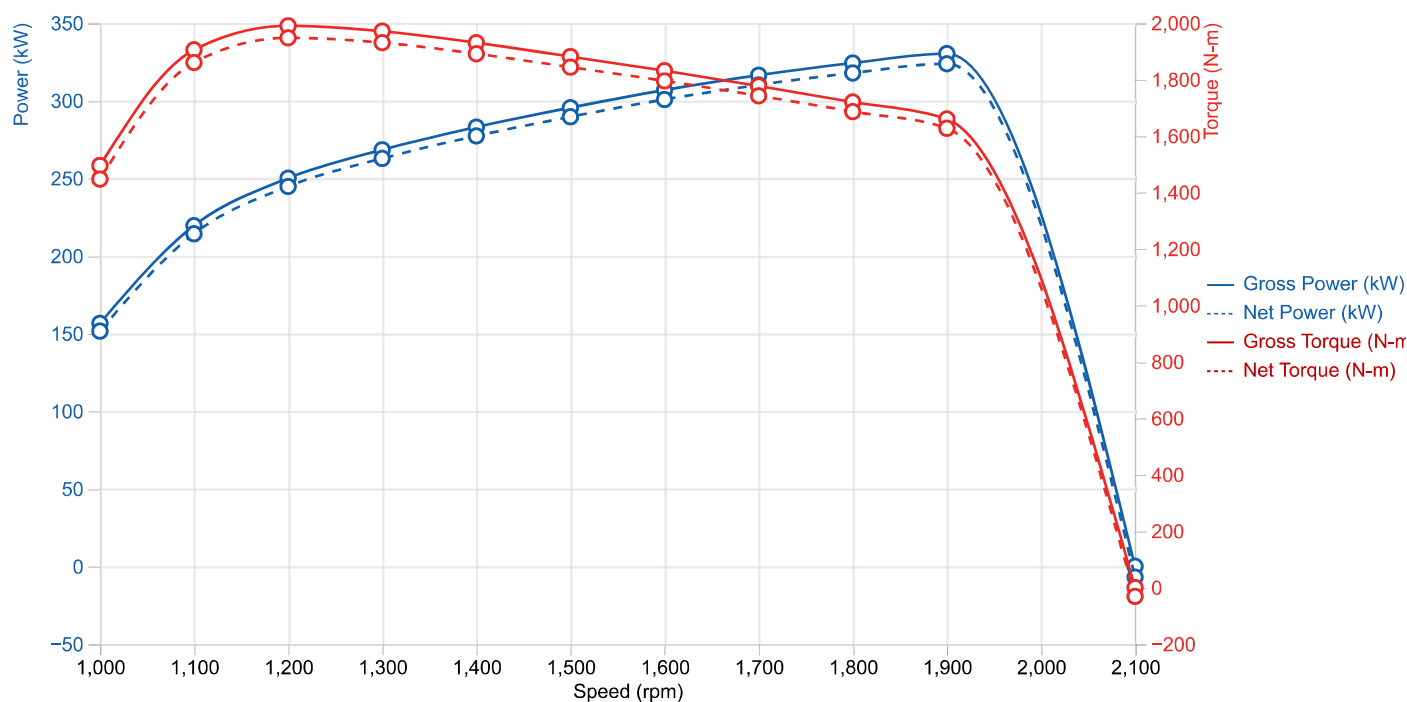
Peak Power point has been defined for the purposes of assessing Accessory Losses

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


Standard Parameters Fan On



Standard Parameters Fan Off



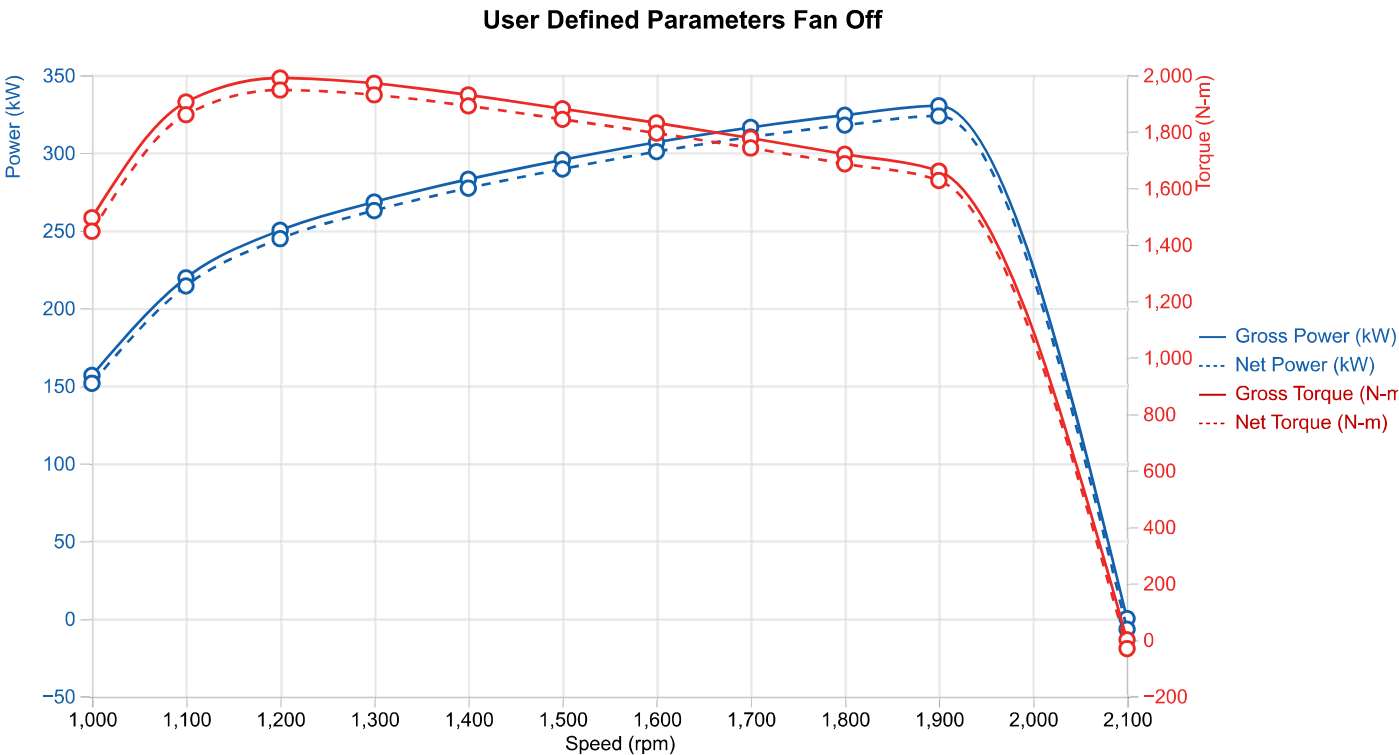
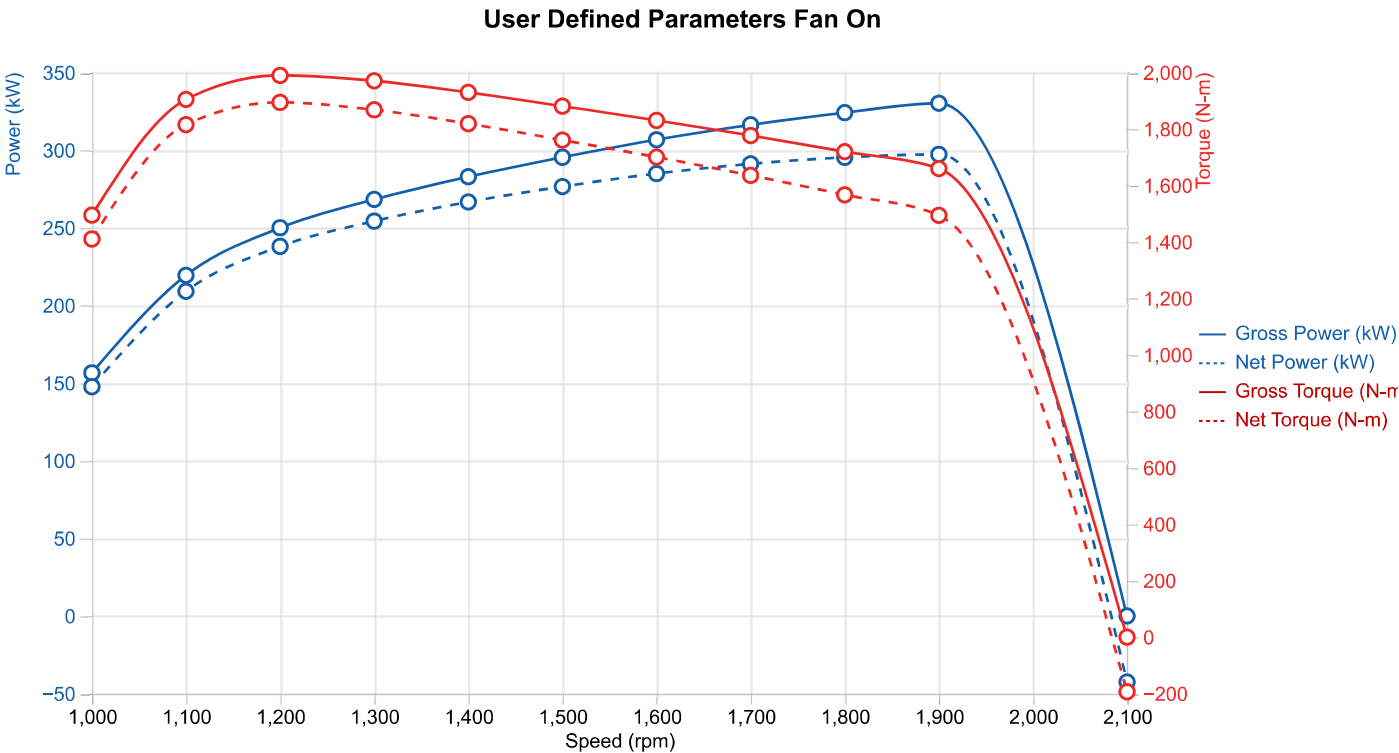
ENGINE CURVE - USER DEFINED LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)

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	156.6	1495.0	147.7	1410.4	151.5	1447.2	
1100	219.4	1905.0	209.1	1815.6	214.3	1860.0	
1200	250.1	1990.0	238.1	1894.5	244.7	1947.4	Peak Torque
1300	268.3	1971.0	254.3	1868.3	262.8	1930.4	
1400	283.0	1930.0	266.7	1819.1	277.3	1891.1	
1500	295.5	1881.0	276.6	1760.9	289.6	1843.6	

1600	306.8	1831.0	285.0	1700.8	300.7	1794.9	
1700	316.3	1777.0	291.2	1635.9	310.1	1742.1	
1800	324.2	1720.0	295.4	1567.0	317.8	1686.1	
1900	330.3	1660.0	297.3	1494.3	323.7	1627.0	Peak Governed
2100	0.0	0.0	-42.5	-193.5	-6.9	-31.4	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	4000 Series (1-L001323-TF, Rev U)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Torque Converter	TC561 (1-L001260-TC, Rev B) - Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)

CONTROLS	
Controls Release	Production Calibration (PC) for 4000 Series (1-L007292-CR, Rev E)
Shift Schedule	Primary
DynActive	No
Speed Profile	Performance
Shift Speed & Strategy	1900 rpm S1 Performance
Equivalent DynActive Bias	2
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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) - Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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			1479	rpm	🚩 Reference
C05 ▼?	Minimum Engine Speed	Min	1300	1479	rpm	✓ OK: Acceptable
C07 ▼?	Turbine Torque at Converter Stall	Max	3525.0	2747.9	N-m	✓ OK: Acceptable
C08 ▼?	Converter Speed Ratio at Engine Governed Speed	Min	0.800	0.839		✓ OK: Acceptable
C03 ▼?	Converter Stall Torque Ratio			1.578		🚩 Reference

Notes

Check	Comments
C05	Net peak torque speed (1200 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	451.0	330.3	kW	✓ OK: Acceptable
T14 ▾?	Transmission Input Torque (Gross)	Max	2400.0	1990.0	N-m	✓ OK: Acceptable
T03 ▾?	Transmission Input Speed		1700 / 2300	1900	rpm	✓ OK: Acceptable
T04 ▾?	Transmission Output Speed			2827	rpm	🚩 Reference

Notes

Check	Comments
T04	Check made in Range 6L at 1900 rpm Engine Governed Speed.

! 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	6.544	5.700		! XX: Questionable - may not be acceptable
V21 ▾?	1st Range Converter Stall Gradeability			81.80	%	📖 Reference
V13 ▾?	1st Range 70% Converter Efficiency Gradeability			53.91	%	📖 Reference
V23 ▾?	1st Range 80% Converter Efficiency Gradeability			46.65	%	📖 Reference
V17 ▾?	Maximum Geared Vehicle Speed at Engine Governed Speed			45.9	km/h	📖 Reference
V18 ▾?	Maximum Speed on 0.25% Grade	Min	88.5	108.3	km/h	✓ OK: Acceptable
V20 ▾?	Acceleration Rate Check	Min	2.01	1.76	kg/N-m	! XX: Questionable - may not be 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			202.87	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 1978 rpm Engine Speed, Range 6L.
V20	(Vehicle Weight / Driveline Reduction Ratio / Max Net Input Torque). If < Recomm/Rating indicates Vehicle Susceptible to Shift Stacking.
V46	Cannot attain conditions required at 0.7 Tractive Effort to Drive Wheel Weight Ratio
V49	1st Range Converter 2.3 km/h.

Vehicle Performance Summary

MISSION

End Userxxx

Selected VocationMilitary — 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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
LRTP Status	

NOTE

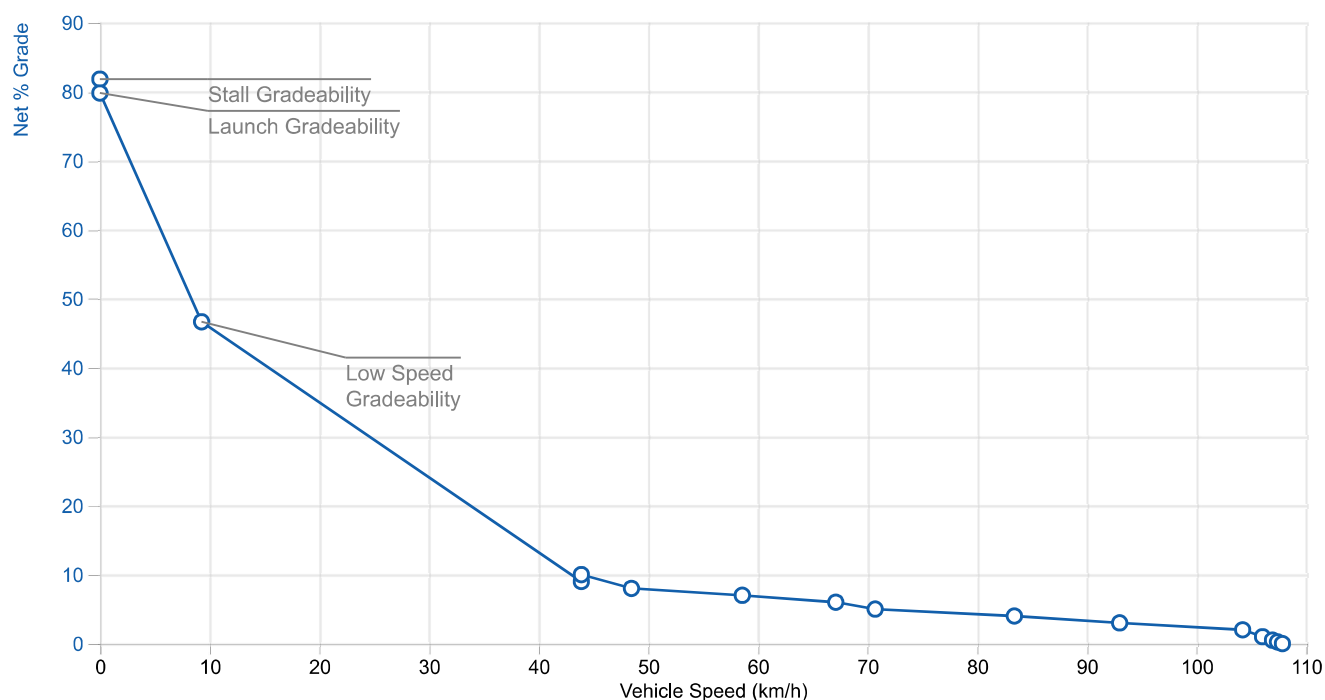
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.

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	81.8		1C	Stall
Launch Gradeability	79.8		1C	
Low Speed Gradeability	46.6	9.3	1C	80 Percent
Maximum Speed on Grade	0.0	107.8	6L	Road Load
	0.3	107.4	6L	
	0.5	106.9	6L	
	1.0	106.0	6L	
	2.0	104.2	6L	
	3.0	93.0	6L	
	4.0	83.4	5L	
	5.0	70.7	5L	
	6.0	67.1	4L	
	7.0	58.6	4L	
	8.0	48.5	4L	
	9.0	43.9	3L	
	10.0	43.9	3L	

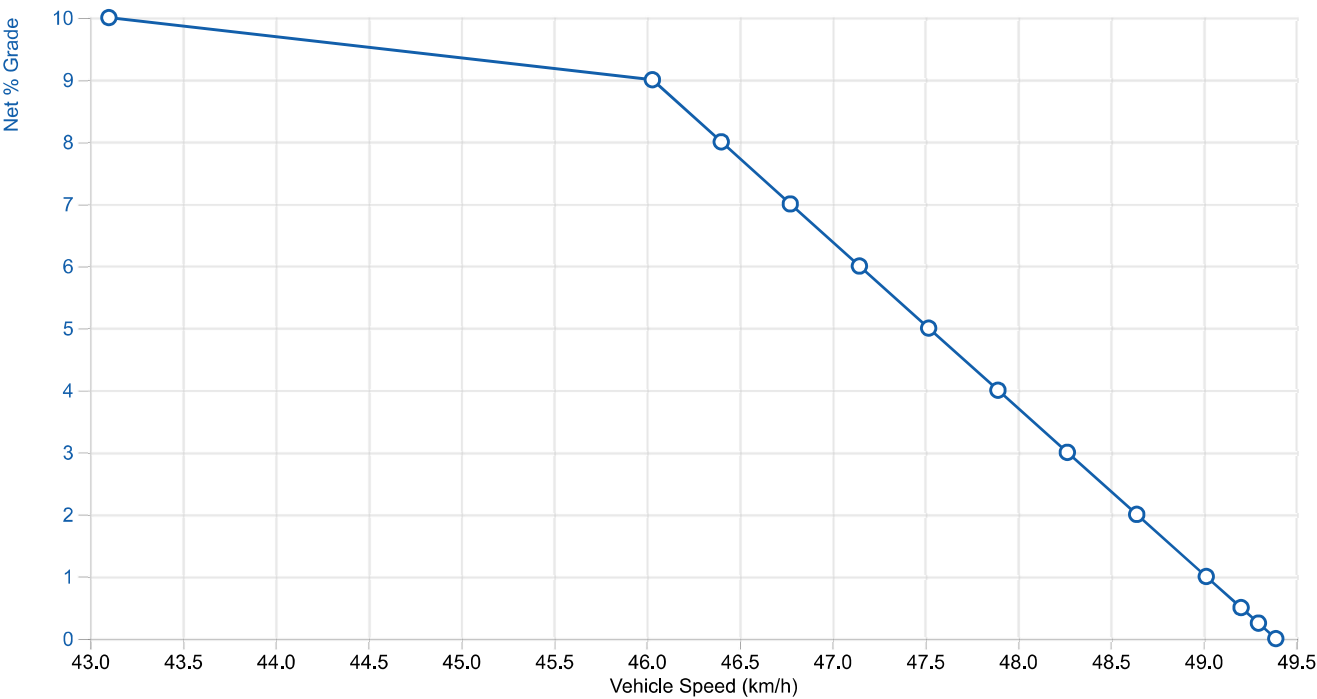
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.95▲


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	999.0		1C	Stall
Launch Gradeability	997.0		1C	
Low Speed Gradeability	356.5	4.1	1C	80 Percent
Maximum Speed on Grade	0.0	49.4	6L	Road Load
	0.3	49.3	6L	
	0.5	49.2	6L	
	1.0	49.0	6L	
	2.0	48.6	6L	
	3.0	48.3	6L	
	4.0	47.9	6L	
	5.0	47.5	6L	
	6.0	47.1	6L	
	7.0	46.8	6L	
	8.0	46.4	6L	
	9.0	46.0	6L	
	10.0	43.1	6L	

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

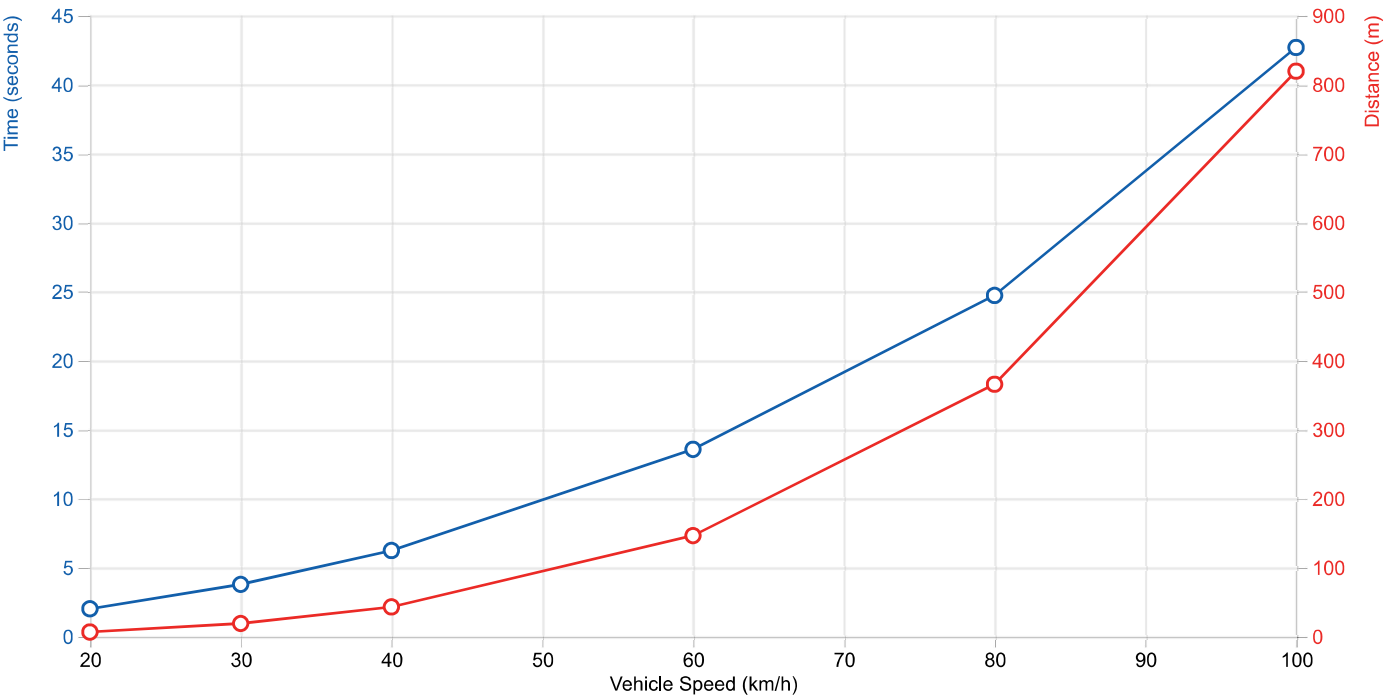


FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.9

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	2.0	7
0 - 30 km/h	3.8	19
0 - 40 km/h	6.2	43
0 - 60 km/h	13.6	146
0 - 80 km/h	24.7	366
0 - 100 km/h	42.7	819

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

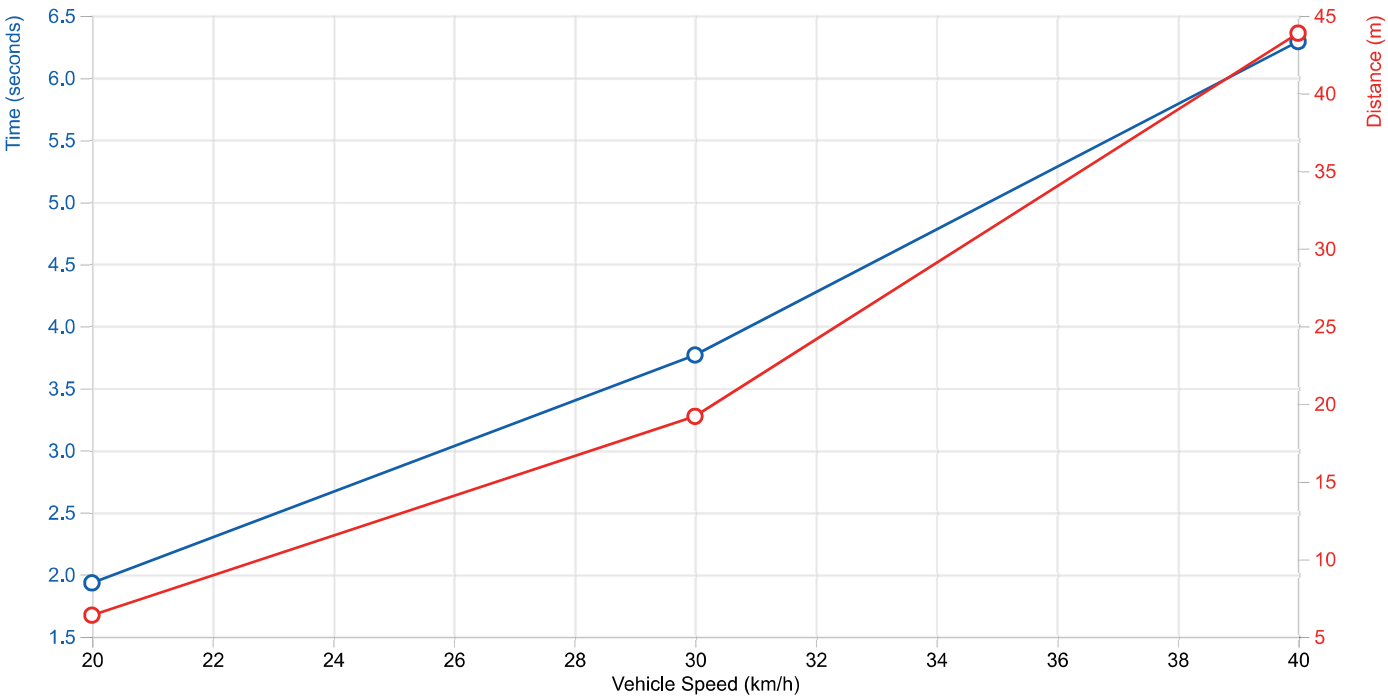


FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.1▲

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	1.9	6
0 - 30 km/h	3.8	19
0 - 40 km/h	6.3	44
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)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Deutz BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
LRTP Status	

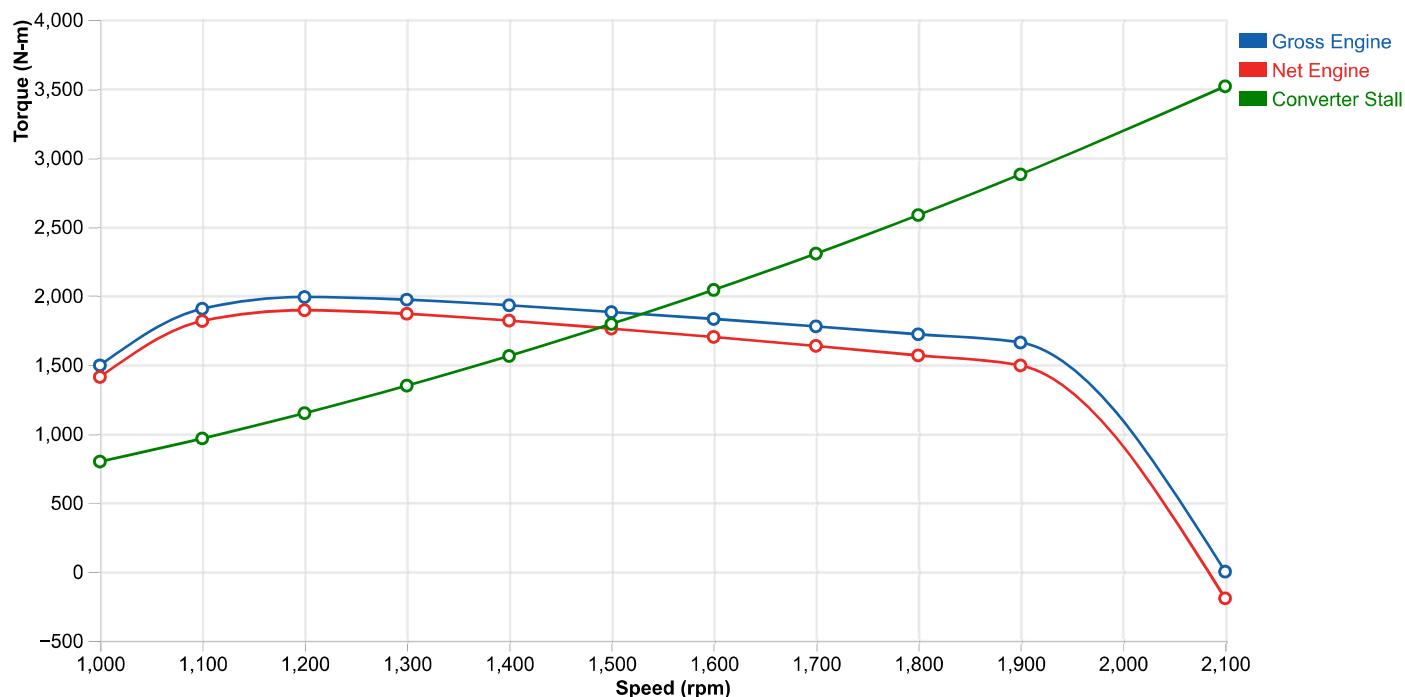
NOTE	
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.	

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	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	1.578	1479	1773.1	274.6	0	2747.9	0	274.73	Stall
0.100	1.540	1489	1767.4	275.6	149	2672.8	41.7	233.97	
0.200	1.496	1513	1753.1	277.8	303	2574.8	81.6	196.24	
0.300	1.442	1549	1731.6	280.9	465	2450.5	119.2	161.67	
0.400	1.385	1592	1705.6	284.4	637	2317.3	154.5	129.87	
0.500	1.314	1643	1673	287.8	821	2155.2	185.4	102.46	
0.547	1.281	1671	1655	289.5	913	2077.8	198.7	90.82	70 Percent
0.600	1.243	1705	1632.3	291.5	1023	1988.3	213	78.47	
0.673	1.189	1759	1595.6	293.8	1184	1857.2	230.3	63.54	80 Percent
0.700	1.169	1779	1581.8	294.6	1245	1809.3	235.9	58.74	
0.750	1.124	1820	1552.7	295.9	1365	1707.1	244	51.92	
0.766	1.110	1833	1542.8	296.2	1404	1674.7	246.2	49.98	85 Percent
0.800	1.080	1862	1521.8	296.8	1490	1606.4	250.6	46.18	
0.819	1.061	1880	1508.7	297.1	1540	1563.4	252.2	44.87	
0.839	1.040	1900	1494.3	297.3	1593	1517.9	253.2	44.1	Governed
0.844	1.034	1901	1483.7	295.4	1605	1497.5	251.7	43.7	
0.850	1.027	1903	1471.6	293.2	1617	1475.6	249.9	43.32	
0.875	0.998	1911	1398.1	279.9	1672	1360	238.2	41.68	Coupling
0.900	0.999	1933	1212.8	245.6	1740	1176.1	214.3	31.25	
0.925	0.999	1964	952.6	196	1817	915.8	174.2	21.72	
0.940	0.997	1985	773.3	160.8	1866	734.8	143.6	17.19	
0.950	0.997	2001	640	134.1	1901	601.6	119.8	14.36	
0.960	0.992	2018	498.1	105.3	1937	457.6	92.8	12.43	

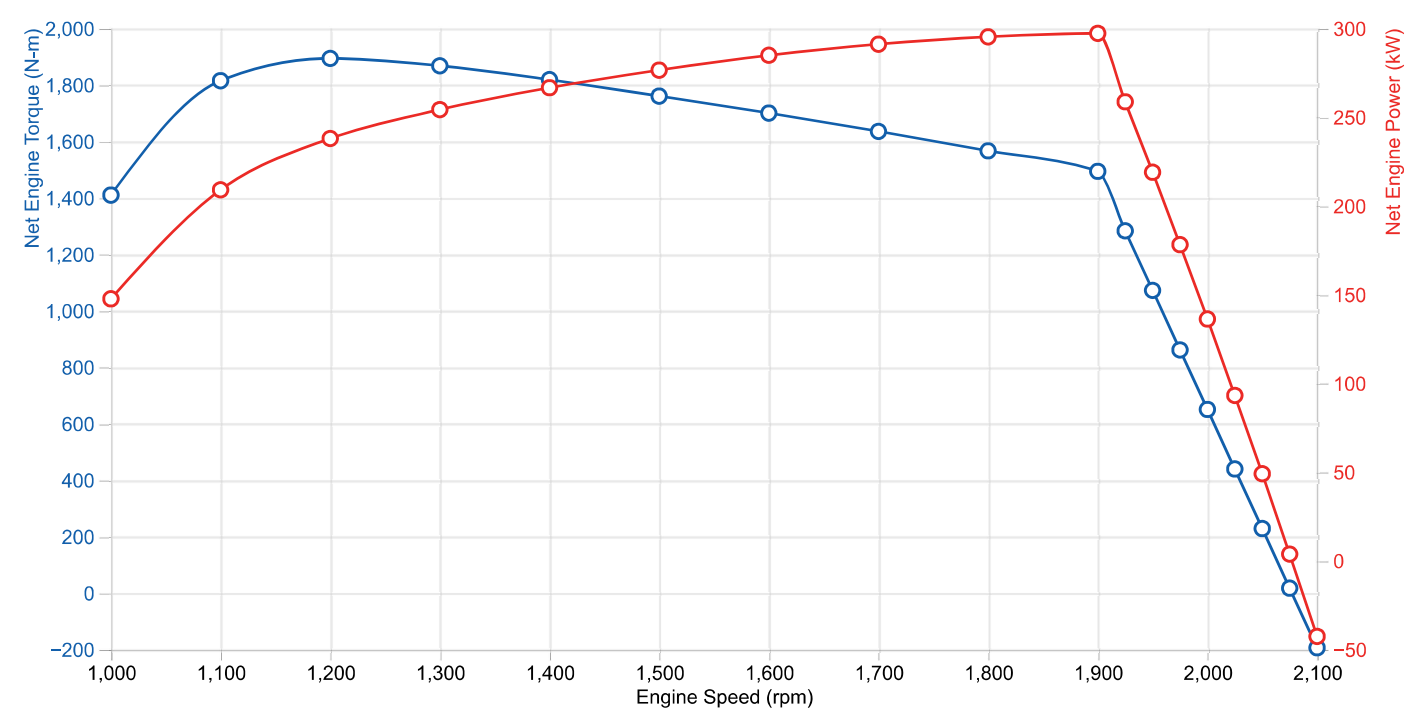
PLOTS - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE




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
1000	1410.4	147.7	1000	1383.4	144.9	2.83	
1100	1815.6	209.1	1100	1787.7	205.9	3.22	
1200	1894.5	238.1	1200	1865.6	234.4	3.62	
1300	1868.3	254.3	1300	1838.5	250.3	4.06	
1400	1819.1	266.7	1400	1788.3	262.2	4.52	
1500	1760.9	276.6	1500	1729	271.6	5.01	
1600	1700.8	285	1600	1668.3	279.5	5.46	
1700	1635.9	291.2	1700	1602.9	285.4	5.88	
1800	1567	295.4	1800	1533.4	289	6.35	
1900	1494.3	297.3	1900	1459.5	290.4	6.95	Governed
1925	1283.5	258.7	1925	1248.3	251.6	7.11	
1950	1072.7	219.1	1950	1037.1	211.8	7.28	
1975	861.8	178.2	1975	825.8	170.8	7.46	
2000	650.8	136.3	2000	614.4	128.7	7.64	
2025	439.8	93.3	2025	403.1	85.5	7.79	
2050	228.8	49.1	2050	191.8	41.2	7.94	
2075	17.7	3.8	2075	-19.6	-4.2	8.09	
2100	-193.5	-42.5	2100	-230.9	-50.8	8.24	

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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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 = 4.695) - 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	1479	1773.1	274.6	0	12750.5	0.0	274.73	Stall
0.100	1489	1767.4	275.6	32	12390.6	41.1	234.49	
0.200	1513	1753.1	277.8	64	11924.8	80.5	197.34	
0.300	1549	1731.6	280.9	99	11337.2	117.5	163.41	
0.400	1592	1705.6	284.4	136	10708.9	152.1	132.29	
0.500	1643	1673.0	287.8	175	9947.3	182.3	105.60	
0.547	1671	1655.0	289.5	195	9583.6	195.2	94.32	70 Percent
0.600	1705	1632.3	291.5	218	9163.6	209.1	82.39	
0.673	1759	1595.6	293.8	252	8549.1	225.8	68.05	80 Percent
0.700	1779	1581.8	294.6	265	8324.6	231.2	63.47	
0.750	1820	1552.7	295.9	291	7846.5	238.9	57.04	
0.766	1833	1542.8	296.2	299	7695.0	241.0	55.23	85 Percent
0.800	1862	1521.8	296.8	317	7375.8	245.1	51.70	
0.819	1880	1508.7	297.1	328	7173.5	246.5	50.60	
0.839	1900	1494.3	297.3	339	6958.2	247.3	50.08	Governed
0.844	1901	1483.7	295.4	342	6862.8	245.7	49.72	
0.850	1903	1471.6	293.2	344	6760.4	243.9	49.37	
0.875	1911	1398.1	279.9	356	6219.2	232.0	47.87	Coupling
0.900	1933	1212.8	245.6	371	5360.6	208.1	37.51	
0.925	1964	952.6	196.0	387	4145.6	168.0	27.96	
0.940	1985	773.3	160.8	398	3301.0	137.4	23.38	
0.950	2001	640.0	134.1	405	2679.8	113.6	20.50	
0.960	2018	498.1	105.3	413	2007.9	86.8	18.50	

GEAR F2 (RATIO = 2.213) - 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	1479	1773.1	274.6	0	6023.3	0.0	274.73	Stall
0.100	1489	1767.4	275.6	67	5855.3	41.3	234.39	
0.200	1513	1753.1	277.8	137	5637.1	80.7	197.11	
0.300	1549	1731.6	280.9	210	5360.9	117.9	163.03	
0.400	1592	1705.6	284.4	288	5065.1	152.6	131.77	
0.500	1643	1673.0	287.8	371	4705.8	182.9	104.94	
0.547	1671	1655.0	289.5	413	4534.1	196.0	93.59	70 Percent
0.600	1705	1632.3	291.5	462	4335.6	209.9	81.59	
0.673	1759	1595.6	293.8	535	4044.8	226.7	67.20	80 Percent

0.700	1779	1581.8	294.6	563	3938.5	232.0	62.60	
0.750	1820	1552.7	295.9	617	3711.9	239.7	56.18	
0.766	1833	1542.8	296.2	634	3640.1	241.8	54.37	85 Percent
0.800	1862	1521.8	296.8	673	3488.5	245.9	50.86	
0.819	1880	1508.7	297.1	696	3392.4	247.3	49.79	
0.839	1900	1494.3	297.3	720	3290.1	248.0	49.30	Governed
0.844	1901	1483.7	295.4	725	3244.9	246.5	48.95	
0.850	1903	1471.6	293.2	731	3196.3	244.6	48.62	
0.875	1911	1398.1	279.9	756	2940.0	232.7	47.20	Coupling
0.900	1933	1212.8	245.6	786	2533.4	208.6	36.96	
0.925	1964	952.6	196.0	821	1958.2	168.4	27.60	
0.940	1985	773.3	160.8	843	1558.4	137.6	23.16	
0.950	2001	640.0	134.1	859	1264.3	113.7	20.39	
0.960	2018	498.1	105.3	875	946.2	86.8	18.52	

GEAR F3 (RATIO = 1.529) - 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	1479	1773.1	274.6	0	4172.6	0.0	274.73	Stall
0.100	1489	1767.4	275.6	97	4056.4	41.4	234.28	
0.200	1513	1753.1	277.8	198	3905.6	80.9	196.89	
0.300	1549	1731.6	280.9	304	3714.9	118.2	162.68	
0.400	1592	1705.6	284.4	416	3510.8	153.1	131.28	
0.500	1643	1673.0	287.8	537	3263.0	183.6	104.28	
0.547	1671	1655.0	289.5	597	3144.6	196.7	92.84	70 Percent
0.600	1705	1632.3	291.5	669	3007.9	210.8	80.73	
0.673	1759	1595.6	293.8	774	2807.7	227.7	66.14	80 Percent
0.700	1779	1581.8	294.6	814	2734.6	233.2	61.45	
0.750	1820	1552.7	295.9	893	2578.8	241.1	54.85	
0.766	1833	1542.8	296.2	918	2529.4	243.2	52.99	85 Percent
0.800	1862	1521.8	296.8	974	2425.3	247.5	49.33	
0.819	1880	1508.7	297.1	1007	2359.1	248.9	48.18	
0.839	1900	1494.3	297.3	1042	2288.7	249.7	47.61	Governed
0.844	1901	1483.7	295.4	1050	2257.5	248.2	47.24	
0.850	1903	1471.6	293.2	1058	2224.0	246.3	46.90	
0.875	1911	1398.1	279.9	1094	2046.9	234.5	45.41	Coupling
0.900	1933	1212.8	245.6	1138	1765.8	210.4	35.12	
0.925	1964	952.6	196.0	1188	1368.1	170.2	25.72	
0.940	1985	773.3	160.8	1221	1091.6	139.5	21.27	
0.950	2001	640.0	134.1	1243	888.2	115.7	18.49	
0.960	2018	498.1	105.3	1267	668.1	88.7	16.61	

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	1479	1773.1	274.6	0	2747.9	0.0	274.73	Stall
0.100	1489	1767.4	275.6	149	2664.8	41.6	234.09	
0.200	1513	1753.1	277.8	303	2559.2	81.1	196.73	
0.300	1549	1731.6	280.9	465	2427.4	118.1	162.79	
0.400	1592	1705.6	284.4	637	2287.1	152.5	131.88	
0.500	1643	1673.0	287.8	821	2118.2	182.2	105.64	
0.547	1671	1655.0	289.5	913	2037.7	194.9	94.65	70 Percent
0.600	1705	1632.3	291.5	1023	1944.8	208.4	83.13	
0.673	1759	1595.6	293.8	1184	1809.3	224.4	69.49	80 Percent
0.700	1779	1581.8	294.6	1245	1759.8	229.4	65.19	
0.750	1820	1552.7	295.9	1365	1654.9	236.5	59.38	
0.766	1833	1542.8	296.2	1404	1621.7	238.4	57.78	85 Percent
0.800	1862	1521.8	296.8	1490	1551.7	242.1	54.70	
0.819	1880	1508.7	297.1	1540	1508.7	243.4	53.70	
0.839	1900	1494.3	297.3	1593	1463.5	244.2	53.18	Governed
0.844	1901	1483.7	295.4	1605	1443.2	242.6	52.83	
0.850	1903	1471.6	293.2	1617	1421.5	240.7	52.50	
0.875	1911	1398.1	279.9	1672	1306.4	228.8	51.06	Coupling
0.900	1933	1212.8	245.6	1740	1123.7	204.8	40.80	
0.925	1964	952.6	196.0	1817	865.1	164.6	31.37	
0.940	1985	773.3	160.8	1866	685.4	134.0	26.84	
0.950	2001	640.0	134.1	1901	553.3	110.2	23.98	
0.960	2018	498.1	105.3	1937	410.4	83.3	22.00	

GEAR F5 (RATIO = 0.765) - 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	1479	1773.1	274.6	0	2084.9	0.0	274.73	Stall
0.100	1489	1767.4	275.6	195	2017.6	41.1	234.52	
0.200	1513	1753.1	277.8	396	1933.8	80.1	197.73	
0.300	1549	1731.6	280.9	607	1830.8	116.5	164.46	
0.400	1592	1705.6	284.4	832	1721.9	150.1	134.30	
0.500	1643	1673.0	287.8	1074	1592.3	179.1	108.81	
0.547	1671	1655.0	289.5	1194	1530.9	191.4	98.15	70 Percent

0.600	1705	1632.3	291.5	1337	1460.4	204.5	86.97	
0.673	1759	1595.6	293.8	1548	1358.2	220.2	73.70	80 Percent
0.700	1779	1581.8	294.6	1627	1321.1	225.2	69.48	
0.750	1820	1552.7	295.9	1784	1242.7	232.2	63.73	
0.766	1833	1542.8	296.2	1835	1219.6	234.4	61.81	85 Percent
0.800	1862	1521.8	296.8	1947	1166.4	237.9	58.93	
0.819	1880	1508.7	297.1	2014	1132.6	238.8	58.26	
0.839	1900	1494.3	297.3	2083	1096.5	239.1	58.20	Governed
0.844	1901	1483.7	295.4	2098	1080.7	237.5	57.96	
0.850	1903	1471.6	293.2	2114	1063.8	235.5	57.73	
0.875	1911	1398.1	279.9	2186	974.4	223.1	56.80	Coupling
0.900	1933	1212.8	245.6	2275	832.8	198.4	47.21	
0.925	1964	952.6	196.0	2375	632.7	157.4	38.61	
0.940	1985	773.3	160.8	2440	493.6	126.1	34.70	
0.950	2001	640.0	134.1	2485	391.3	101.8	32.30	
0.960	2018	498.1	105.3	2533	280.7	74.4	30.83	

GEAR F6 (RATIO = 0.672) - 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	1479	1773.1	274.6	0	1829.0	0.0	274.73	Stall
0.100	1489	1767.4	275.6	222	1767.5	41.0	234.63	
0.200	1513	1753.1	277.8	450	1691.4	79.8	198.07	
0.300	1549	1731.6	280.9	691	1598.5	115.7	165.16	
0.400	1592	1705.6	284.4	948	1500.5	148.9	135.49	
0.500	1643	1673.0	287.8	1222	1384.3	177.2	110.66	
0.547	1671	1655.0	289.5	1359	1329.2	189.2	100.36	70 Percent
0.600	1705	1632.3	291.5	1523	1266.0	201.9	89.65	
0.673	1759	1595.6	293.8	1762	1174.5	216.7	77.12	80 Percent
0.700	1779	1581.8	294.6	1853	1141.3	221.4	73.21	
0.750	1820	1552.7	295.9	2031	1071.3	227.8	68.06	
0.766	1833	1542.8	296.2	2089	1049.2	229.6	66.65	85 Percent
0.800	1862	1521.8	296.8	2217	1002.9	232.8	63.96	
0.819	1880	1508.7	297.1	2292	972.9	233.6	63.52	
0.839	1900	1494.3	297.3	2371	940.8	233.6	63.76	Governed
0.844	1901	1483.7	295.4	2389	926.9	231.9	63.58	
0.850	1903	1471.6	293.2	2407	911.9	229.8	63.42	
0.875	1911	1398.1	279.9	2489	833.0	217.1	62.78	Coupling
0.900	1933	1212.8	245.6	2589	708.2	192.0	53.54	
0.925	1964	952.6	196.0	2704	532.0	150.6	45.33	
0.940	1985	773.3	160.8	2777	409.6	119.1	41.67	

0.950	2001	640.0	134.1	2829	319.6	94.7	39.44	
0.960	2018	498.1	105.3	2883	222.3	67.1	38.15	

GEAR R1 (RATIO = 5.552) - 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	1479	1773.1	274.6	0	14710.2	0.0	274.73	Stall
0.100	1489	1767.4	275.6	27	14306.2	40.2	235.47	
0.200	1513	1753.1	277.8	55	13779.1	78.6	199.18	
0.300	1549	1731.6	280.9	84	13110.5	114.9	166.00	
0.400	1592	1705.6	284.4	115	12393.8	148.9	135.53	
0.500	1643	1673.0	287.8	148	11522.0	178.5	109.34	
0.547	1671	1655.0	289.5	165	11105.0	191.3	98.24	70 Percent
0.600	1705	1632.3	291.5	184	10623.0	205.0	86.50	
0.673	1759	1595.6	293.8	213	9916.5	221.5	72.36	80 Percent
0.700	1779	1581.8	294.6	224	9658.1	226.8	67.84	
0.750	1820	1552.7	295.9	246	9106.9	234.4	61.47	
0.766	1833	1542.8	296.2	253	8932.1	236.5	59.67	85 Percent
0.800	1862	1521.8	296.8	268	8563.4	240.6	56.16	
0.819	1880	1508.7	297.1	277	8332.1	242.1	54.99	
0.839	1900	1494.3	297.3	287	8086.8	243.0	54.33	Governed
0.844	1901	1483.7	295.4	289	7977.5	241.5	53.90	
0.850	1903	1471.6	293.2	291	7860.1	239.8	53.47	
0.875	1911	1398.1	279.9	301	7239.4	228.4	51.50	Coupling
0.900	1933	1212.8	245.6	313	6253.8	205.3	40.31	
0.925	1964	952.6	196.0	327	4858.3	166.5	29.47	
0.940	1985	773.3	160.8	336	3888.1	136.9	23.93	
0.950	2001	640.0	134.1	342	3174.6	113.8	20.30	
0.960	2018	498.1	105.3	349	2402.8	87.8	17.46	

GEAR F1 (RATIO = 4.695) - 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
1000	1410.4	147.7	213	6357.5	141.8	5.90	
1100	1815.6	209.1	234	8229.3	201.9	7.23	
1200	1894.5	238.1	256	8587.5	229.9	8.22	
1300	1868.3	254.3	277	8458.0	245.3	9.10	
1400	1819.1	266.7	298	8222.0	256.7	9.95	

1500	1760.9	276.6	319	7944.6	265.8	10.81	
1600	1700.8	285.0	341	7655.5	273.2	11.78	
1700	1635.9	291.2	362	7344.0	278.5	12.76	
1800	1567.0	295.4	383	7012.9	281.6	13.83	
1900	1494.3	297.3	405	6660.4	282.3	15.07	Governed
1925	1283.5	258.7	410	5678.1	243.8	14.95	
1950	1072.7	219.1	415	4695.4	204.2	14.83	
1975	861.8	178.2	421	3712.3	163.5	14.71	
2000	650.8	136.3	426	2728.9	121.7	14.58	
2025	439.8	93.3	431	1746.1	78.9	14.41	
2050	228.8	49.1	437	763.1	34.9	14.22	
2075	17.7	3.8	442	-220.1	-10.2	14.03	
2100	-193.5	-42.5	447	-1203.5	-56.4	13.83	

GEAR F2 (RATIO = 2.213) - 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
1000	1410.4	147.7	452	3010.1	142.4	5.26	
1100	1815.6	209.1	497	3894.1	202.7	6.44	
1200	1894.5	238.1	542	4062.9	230.7	7.36	
1300	1868.3	254.3	587	4001.2	246.1	8.20	
1400	1819.1	266.7	633	3889.0	257.6	9.05	
1500	1760.9	276.6	678	3757.1	266.7	9.93	
1600	1700.8	285.0	723	3619.4	274.0	10.95	
1700	1635.9	291.2	768	3471.0	279.2	12.01	
1800	1567.0	295.4	813	3313.0	282.2	13.19	
1900	1494.3	297.3	859	3144.8	282.7	14.59	Governed
1925	1283.5	258.7	870	2680.3	244.2	14.60	
1950	1072.7	219.1	881	2215.6	204.4	14.61	
1975	861.8	178.2	892	1750.7	163.6	14.62	
2000	650.8	136.3	904	1285.6	121.7	14.64	
2025	439.8	93.3	915	821.1	78.7	14.59	
2050	228.8	49.1	926	356.5	34.6	14.54	
2075	17.7	3.8	938	-108.3	-10.6	14.47	
2100	-193.5	-42.5	949	-573.1	-56.9	14.40	

GEAR F3 (RATIO = 1.529) - 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)	
1000	1410.4	147.7	654	2089.5	143.1	4.60	
1100	1815.6	209.1	719	2702.6	203.6	5.53	
1200	1894.5	238.1	785	2820.4	231.8	6.27	
1300	1868.3	254.3	850	2778.6	247.4	6.95	
1400	1819.1	266.7	916	2701.8	259.1	7.63	
1500	1760.9	276.6	981	2611.4	268.3	8.33	
1600	1700.8	285.0	1046	2516.9	275.8	9.17	
1700	1635.9	291.2	1112	2415.0	281.2	10.05	
1800	1567.0	295.4	1177	2306.4	284.3	11.04	
1900	1494.3	297.3	1243	2190.8	285.1	12.24	Governed
1925	1283.5	258.7	1259	1869.3	246.5	12.30	
1950	1072.7	219.1	1275	1547.6	206.7	12.37	
1975	861.8	178.2	1292	1225.8	165.8	12.44	
2000	650.8	136.3	1308	903.8	123.8	12.51	
2025	439.8	93.3	1324	582.2	80.7	12.53	
2050	228.8	49.1	1341	260.5	36.6	12.55	
2075	17.7	3.8	1357	-61.3	-8.7	12.56	
2100	-193.5	-42.5	1373	-383.1	-55.1	12.56	

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
1000	1410.4	147.7	1000	1340.5	140.4	7.32	
1100	1815.6	209.1	1100	1741.9	200.7	8.48	
1200	1894.5	238.1	1200	1817.3	228.4	9.71	
1300	1868.3	254.3	1300	1787.7	243.4	10.98	
1400	1819.1	266.7	1400	1735.3	254.4	12.29	
1500	1760.9	276.6	1500	1674.2	263.0	13.63	
1600	1700.8	285.0	1600	1613.9	270.4	14.57	
1700	1635.9	291.2	1700	1549.8	275.9	15.34	
1800	1567.0	295.4	1800	1482.3	279.4	15.98	
1900	1494.3	297.3	1900	1411.1	280.8	16.57	Governed
1925	1283.5	258.7	1925	1200.7	242.1	16.70	
1950	1072.7	219.1	1950	990.4	202.2	16.82	
1975	861.8	178.2	1975	779.9	161.3	16.93	
2000	650.8	136.3	2000	569.5	119.3	17.04	
2025	439.8	93.3	2025	358.5	76.0	17.26	
2050	228.8	49.1	2050	147.3	31.6	17.49	
2075	17.7	3.8	2075	-63.9	-13.9	17.73	
2100	-193.5	-42.5	2100	-275.6	-60.6	18.06	

GEAR F5 (RATIO = 0.765) - 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
1000	1410.4	147.7	1307	1001.9	137.1	10.56	
1100	1815.6	209.1	1438	1306.6	196.8	12.39	
1200	1894.5	238.1	1569	1364.3	224.1	13.96	
1300	1868.3	254.3	1699	1342.7	239.0	15.40	
1400	1819.1	266.7	1830	1305.8	250.3	16.45	
1500	1760.9	276.6	1961	1259.3	258.6	18.04	
1600	1700.8	285.0	2092	1210.4	265.1	19.87	
1700	1635.9	291.2	2222	1157.8	269.4	21.80	
1800	1567.0	295.4	2353	1101.8	271.5	23.90	
1900	1494.3	297.3	2484	1042.2	271.1	26.27	Governed
1925	1283.5	258.7	2516	881.1	232.2	26.58	
1950	1072.7	219.1	2549	719.9	192.2	26.90	
1975	861.8	178.2	2582	558.6	151.0	27.23	
2000	650.8	136.3	2614	397.2	108.8	27.57	
2025	439.8	93.3	2647	235.9	65.4	27.89	
2050	228.8	49.1	2680	74.5	20.9	28.22	
2075	17.7	3.8	2712	-87.0	-24.7	28.55	
2100	-193.5	-42.5	2745	-248.5	-71.4	28.89	

GEAR F6 (RATIO = 0.672) - 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
1000	1410.4	147.7	1488	864.1	134.7	13.05	
1100	1815.6	209.1	1637	1130.2	193.7	15.40	
1200	1894.5	238.1	1786	1179.7	220.6	17.47	
1300	1868.3	254.3	1935	1159.7	234.9	19.41	
1400	1819.1	266.7	2083	1124.8	245.4	21.30	
1500	1760.9	276.6	2232	1084.5	253.5	23.12	
1600	1700.8	285.0	2381	1040.7	259.5	25.50	
1700	1635.9	291.2	2530	993.7	263.2	27.99	
1800	1567.0	295.4	2679	943.7	264.7	30.67	
1900	1494.3	297.3	2827	890.7	263.7	33.62	Governed
1925	1283.5	258.7	2865	749.1	224.7	34.03	
1950	1072.7	219.1	2902	607.5	184.6	34.45	

1975	861.8	178.2	2939	465.9	143.4	34.87	
2000	650.8	136.3	2976	324.1	101.0	35.30	
2025	439.8	93.3	3013	182.6	57.6	35.67	
2050	228.8	49.1	3051	40.9	13.1	36.04	
2075	17.7	3.8	3088	-100.7	-32.6	36.41	
2100	-193.5	-42.5	3125	-242.4	-79.3	36.78	

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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
LRTP Status	

NOTE

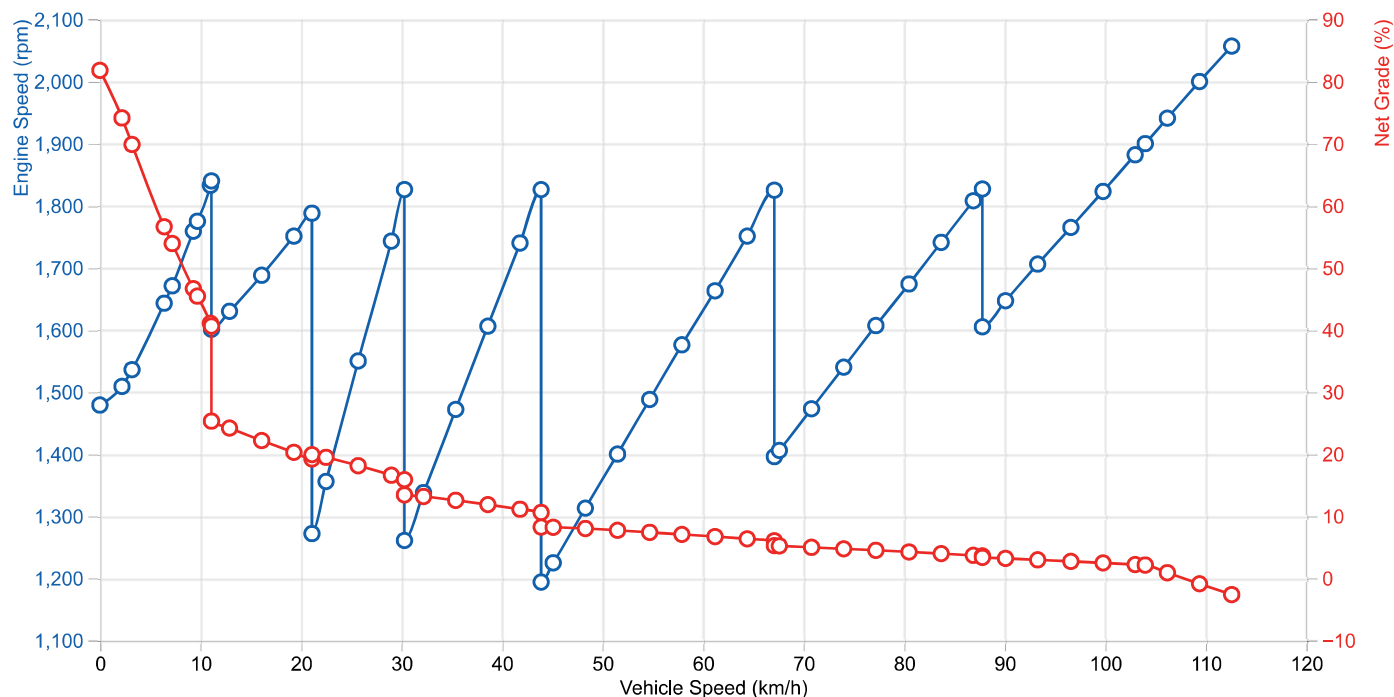
This SCAAN information is subject to the SCAAN Disclaimer set forth elsewhere.
Results indicate the vehicle operating conditions at steady state (acceleration = 0).
The ! symbol indicates that Wheel Slip may occur.

FULL THROTTLE AUTOMATIC UPSHIFTS (1C-2C-2L-3L-4L-5L-6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX 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	1479	0	118.77	117.98	0.0	81.80	274.63	
1C	2.2	1509	60	111.80	110.96	68.1	74.13	202.41	0.60 TE/Weight Ratio
1C	3.2	1536	88	107.52	106.71	96.1	69.86	173.86	
1C	6.4	1643	175	92.64	91.80	165.7	56.62	105.38	

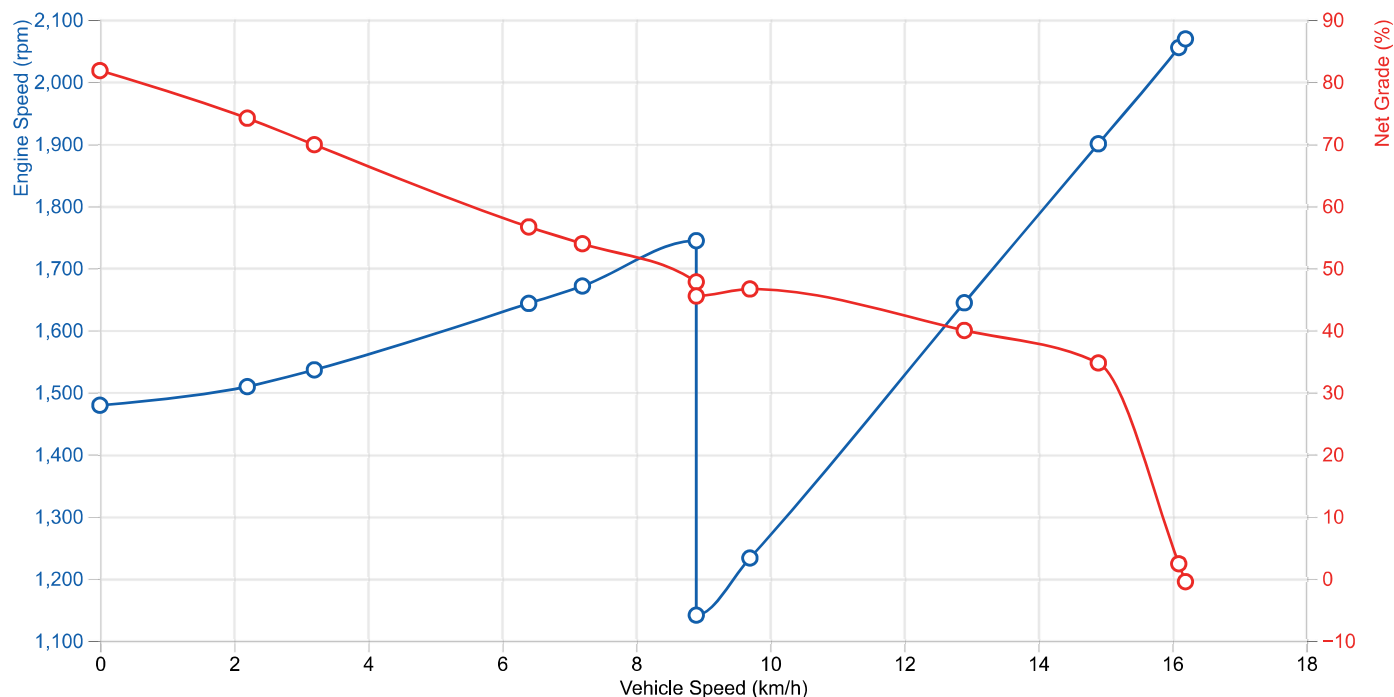
1C	7.2	1671	195	89.27	88.42	177.4	53.91	94.17	70 Percent
1C	9.3	1759	252	79.63	78.77	205.2	46.65	67.88	80 Percent
1C	9.7	1775	263	77.96	77.09	209.1	45.44	64.21	
1C	11.0	1833	299	71.68	70.79	219.0	41.07	55.06	85 Percent
1C	11.1	1840	303	71.02	70.13	219.8	40.63	54.24	
2C	11.1	1601	303	46.60	45.71	144.2	25.31	126.34	
2C	12.9	1630	350	44.72	43.81	159.9	24.19	110.85	
2C	16.1	1688	438	41.30	40.34	184.6	22.18	87.30	
2C	19.3	1751	525	38.05	37.04	204.1	20.29	68.74	
2C	21.1	1788	575	36.22	35.19	212.7	19.23	60.75	
2L	21.1	1272	575	37.43	36.40	219.8	19.92	7.91	
2L	22.5	1356	613	36.69	35.63	229.6	19.48	8.55	
2L	25.7	1550	700	34.36	33.24	245.8	18.13	10.27	
2L	29.0	1743	788	31.69	30.51	255.0	16.60	12.33	
2L	30.3	1826	825	30.46	29.24	256.7	15.89	13.40	
3L	30.3	1261	825	26.03	24.82	219.4	13.44	6.62	
3L	32.2	1338	875	25.61	24.35	229.0	13.18	7.09	
3L	35.4	1472	963	24.56	23.23	241.5	12.56	8.01	
3L	38.6	1606	1050	23.39	21.97	250.9	11.87	9.18	
3L	41.8	1740	1138	22.09	20.59	256.8	11.12	10.26	
3L	43.9	1826	1194	21.21	19.64	258.7	10.60	11.20	
4L	43.9	1194	1194	16.89	15.32	205.9	8.25	9.68	
4L	45.1	1225	1225	16.86	15.26	211.0	8.22	9.97	
4L	48.3	1313	1313	16.59	14.89	222.5	8.02	11.09	
4L	51.5	1400	1400	16.16	14.36	231.2	7.73	12.29	
4L	54.7	1488	1488	15.66	13.75	238.1	7.40	13.40	
4L	57.9	1576	1576	15.17	13.14	244.1	7.07	14.23	
4L	61.2	1663	1663	14.66	12.50	249.0	6.72	14.91	
4L	64.4	1751	1751	14.12	11.83	252.4	6.36	15.50	
4L	67.1	1825	1825	13.64	11.24	254.3	6.05	16.00	
5L	67.1	1396	1825	12.18	9.78	227.0	5.26	16.37	
5L	67.6	1406	1838	12.14	9.72	227.9	5.22	16.51	
5L	70.8	1473	1926	11.85	9.29	233.0	4.99	17.49	
5L	74.0	1540	2013	11.55	8.85	237.5	4.75	18.61	
5L	77.2	1607	2101	11.24	8.39	241.2	4.51	19.96	
5L	80.5	1674	2188	10.91	7.90	243.9	4.25	21.15	
5L	83.7	1741	2276	10.57	7.40	245.7	3.98	22.46	
5L	86.9	1808	2363	10.22	6.88	246.7	3.70	24.02	
5L	87.8	1827	2388	10.11	6.73	246.7	3.61	24.37	
6L	87.8	1605	2388	9.67	6.29	236.0	3.38	25.58	
6L	90.1	1647	2451	9.49	5.98	237.5	3.21	26.48	
6L	93.3	1706	2538	9.23	5.54	239.3	2.97	28.10	
6L	96.6	1765	2626	8.96	5.08	240.2	2.73	29.54	
6L	99.8	1823	2713	8.68	4.61	240.4	2.48	31.21	
6L	103.0	1882	2801	8.38	4.13	239.9	2.21	32.97	
6L	104.0	1900	2827	8.30	3.98	239.6	2.14	33.62	Governed
6L	106.2	1941	2888	6.13	1.67	180.9	0.90	34.30	
6L	109.4	2000	2976	3.03	-1.64	92.0	-0.88	35.29	
6L	112.6	2057	3061	0.00	-4.87	0.0	-2.62	36.15	

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

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	1479	0	118.77	117.98	0.0	81.80	274.63	
1C	2.2	1509	60	111.80	110.96	68.1	74.13	202.41	0.60 TE/Weight Ratio
1C	3.2	1536	88	107.52	106.71	96.1	69.86	173.86	
1C	6.4	1643	175	92.64	91.80	165.7	56.62	105.38	
1C	7.2	1671	195	89.27	88.42	177.4	53.91	94.17	70 Percent
1C	8.9	1744	243	81.17	80.31	201.5	47.76	71.33	
1L	8.9	1141	243	78.02	77.16	193.7	45.49	7.83	
1L	9.7	1233	263	79.59	78.72	213.5	46.62	8.45	
1L	12.9	1644	350	70.04	69.13	250.5	39.95	12.03	
1L	14.9	1900	405	62.04	61.10	256.5	34.71	15.07	Governed
1L	16.1	2055	438	5.38	4.43	24.0	2.38	14.19	
1L	16.2	2069	441	0.00	-0.95	0.0	-0.51	14.07	

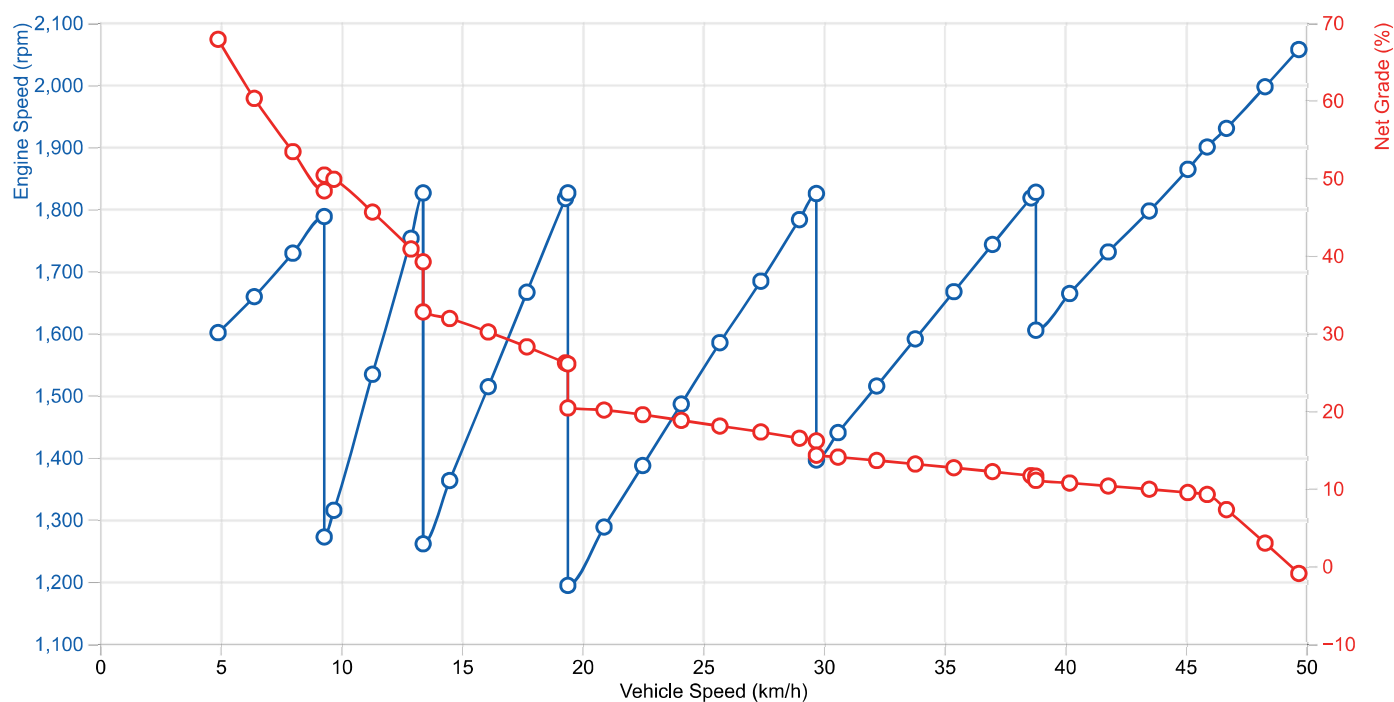
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C-1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX


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	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	1479	0	268.79	268.00	0.0	999.00	274.63	
1C !	1.6	1549	99	238.97	238.17	106.8	999.00	163.18	
1C !	3.2	1671	195	202.03	201.22	177.4	999.00	94.17	70 Percent
1C !	3.2	1676	198	200.66	199.85	179.4	999.00	92.28	
1C !	4.1	1759	252	180.22	179.40	205.2	356.53	67.88	80 Percent
1C !	4.8	1830	297	162.94	162.12	218.5	176.52	55.47	
1C !	4.9	1833	299	162.22	161.39	219.0	173.33	55.06	85 Percent
1C !	4.9	1840	303	160.73	159.91	219.8	167.19	54.24	
2C	4.9	1601	303	105.46	104.64	144.2	67.87	126.34	
2C	6.4	1659	396	97.01	96.17	173.5	60.26	97.79	
2C	8.0	1729	495	88.63	87.77	198.1	53.40	74.43	
2C	9.3	1788	575	81.97	81.11	212.7	48.35	60.75	
2L	9.3	1272	575	84.71	83.84	219.8	50.38	7.91	
2L	9.7	1315	594	83.99	83.12	225.3	49.84	8.26	
2L	11.3	1534	693	78.21	77.32	244.7	45.61	10.13	
2L	12.9	1753	792	71.39	70.48	255.3	40.86	12.45	
2L	13.4	1826	825	68.93	68.01	256.7	39.21	13.40	
3L	13.4	1261	825	58.91	58.00	219.4	32.75	6.62	
3L	14.5	1363	891	57.56	56.63	231.6	31.90	7.26	
3L	16.1	1514	990	54.76	53.81	244.8	30.17	8.37	
3L	17.7	1666	1089	51.64	50.67	254.0	28.26	9.59	
3L	19.3	1817	1189	48.20	47.20	258.6	26.19	11.14	

3L	19.4	1826	1194	48.00	46.99	258.7	26.06	11.20	
4L	19.4	1194	1194	38.21	37.21	205.9	20.38	9.68	
4L	20.9	1288	1288	37.76	36.73	219.5	20.11	10.79	
4L	22.5	1387	1387	36.73	35.67	229.9	19.51	12.05	
4L	24.1	1486	1486	35.48	34.39	237.9	18.78	13.36	
4L	25.7	1585	1585	34.22	33.10	244.7	18.05	14.35	
4L	27.4	1684	1684	32.89	31.74	249.9	17.29	15.13	
4L	29.0	1783	1783	31.49	30.31	253.4	16.48	15.78	
4L	29.7	1825	1825	30.87	29.67	254.3	16.13	16.00	
5L	29.7	1396	1825	27.56	26.36	227.0	14.29	16.37	
5L	30.6	1440	1882	27.14	25.92	230.5	14.05	16.93	
5L	32.2	1515	1981	26.39	25.13	235.9	13.61	18.23	
5L	33.8	1591	2080	25.61	24.31	240.4	13.16	19.65	
5L	35.4	1667	2179	24.78	23.44	243.7	12.68	20.99	
5L	37.0	1743	2278	23.90	22.53	245.8	12.18	22.50	
5L	38.6	1818	2377	23.00	21.58	246.7	11.66	24.21	
5L	38.8	1827	2388	22.89	21.47	246.7	11.60	24.37	
6L	38.8	1605	2388	21.89	20.47	236.0	11.05	25.58	
6L	40.2	1664	2476	21.31	19.85	238.1	10.71	26.92	
6L	41.8	1731	2575	20.63	19.12	239.7	10.32	28.64	
6L	43.5	1797	2674	19.93	18.37	240.5	9.91	30.57	
6L	45.1	1864	2773	19.18	17.58	240.1	9.48	32.35	
6L	45.9	1900	2827	18.78	17.15	239.6	9.24	33.62	Governed
6L	46.7	1930	2872	15.17	13.52	196.7	7.28	34.12	
6L	48.3	1997	2971	7.22	5.52	96.9	2.97	35.24	
6L	49.7	2057	3061	0.00	-1.75	0.0	-0.94	36.15	

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

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	1479	0	268.79	268.00	0.0	999.00	274.63	
1C !	1.6	1549	99	238.97	238.17	106.8	999.00	163.18	
1C !	3.2	1671	195	202.03	201.22	177.4	999.00	94.17	70 Percent
1C !	3.2	1676	198	200.66	199.85	179.4	999.00	92.28	
1C !	3.9	1744	243	183.70	182.88	201.5	512.83	71.33	
1L !	3.9	1141	243	176.57	175.75	193.7	284.01	7.83	
1L !	4.8	1395	297	173.57	172.75	232.8	247.40	9.89	
1L !	6.4	1860	396	143.38	142.54	256.4	118.78	14.38	
1L !	6.6	1900	405	140.41	139.57	256.5	113.06	15.07	Governed
1L	7.2	2069	441	0.00	-0.84	0.0	-0.45	14.07	

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



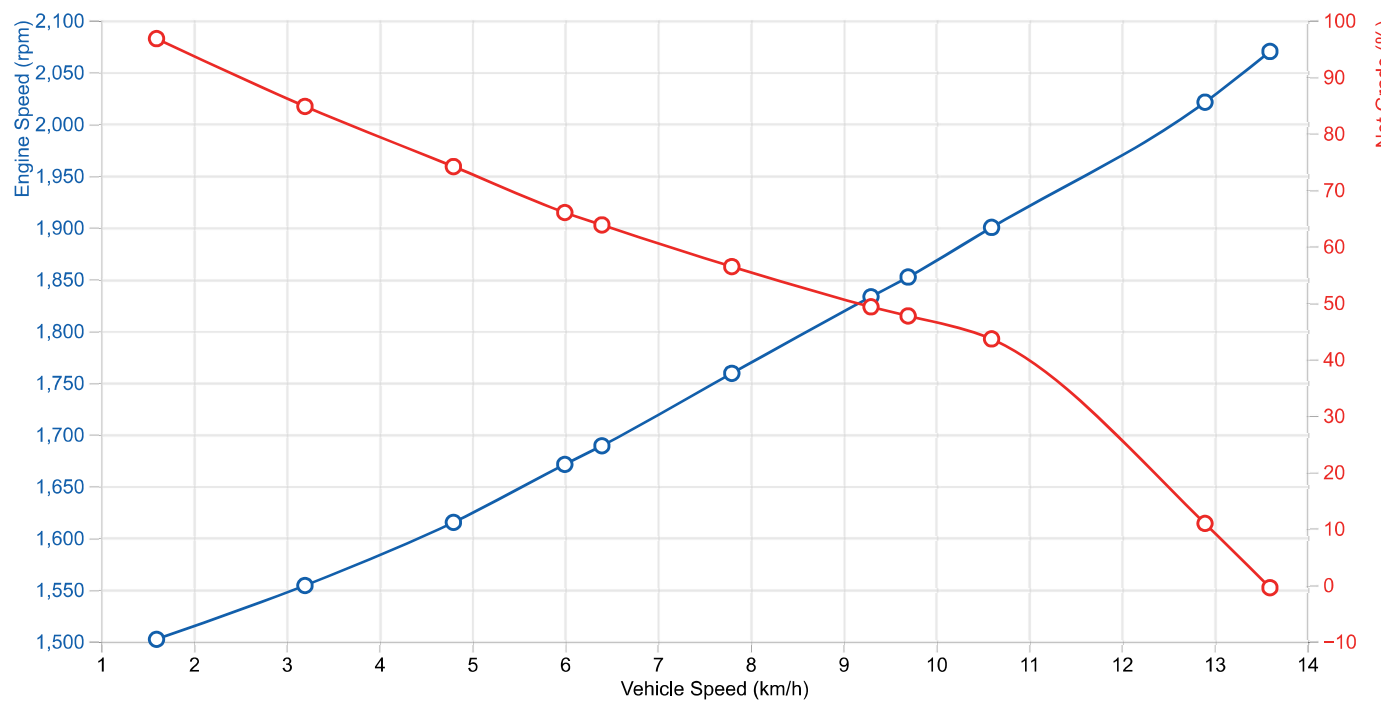
FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, ST▲

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	1479	0	137.02	136.23	0.0	107.17	274.63	
R1C	1.6	1502	44	130.43	129.57	58.3	96.77	212.66	0.70 TE/Weight Ratio

R1C	3.2	1554	88	121.30	120.49	108.5	84.77	161.81	
R1C	4.8	1615	130	111.80	110.95	148.7	74.12	122.30	0.60 TE/Weight Ratio
R1C	6.0	1671	165	103.44	102.61	173.8	65.97	98.10	70 Percent
R1C	6.4	1689	175	101.03	100.19	180.7	63.77	91.73	
R1C	7.8	1759	213	92.37	91.52	201.2	56.39	72.19	80 Percent
R1C	9.3	1833	253	83.20	82.33	214.9	49.26	59.50	85 Percent
R1C	9.7	1852	263	81.02	80.15	217.3	47.65	57.21	
R1C	10.6	1900	287	75.33	74.45	220.8	43.58	54.33	Governed
R1C	12.9	2021	350	21.10	20.19	75.5	10.90	17.02	
R1C	13.6	2070	369	0.00	-0.92	0.0	-0.49	12.24	

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0▲



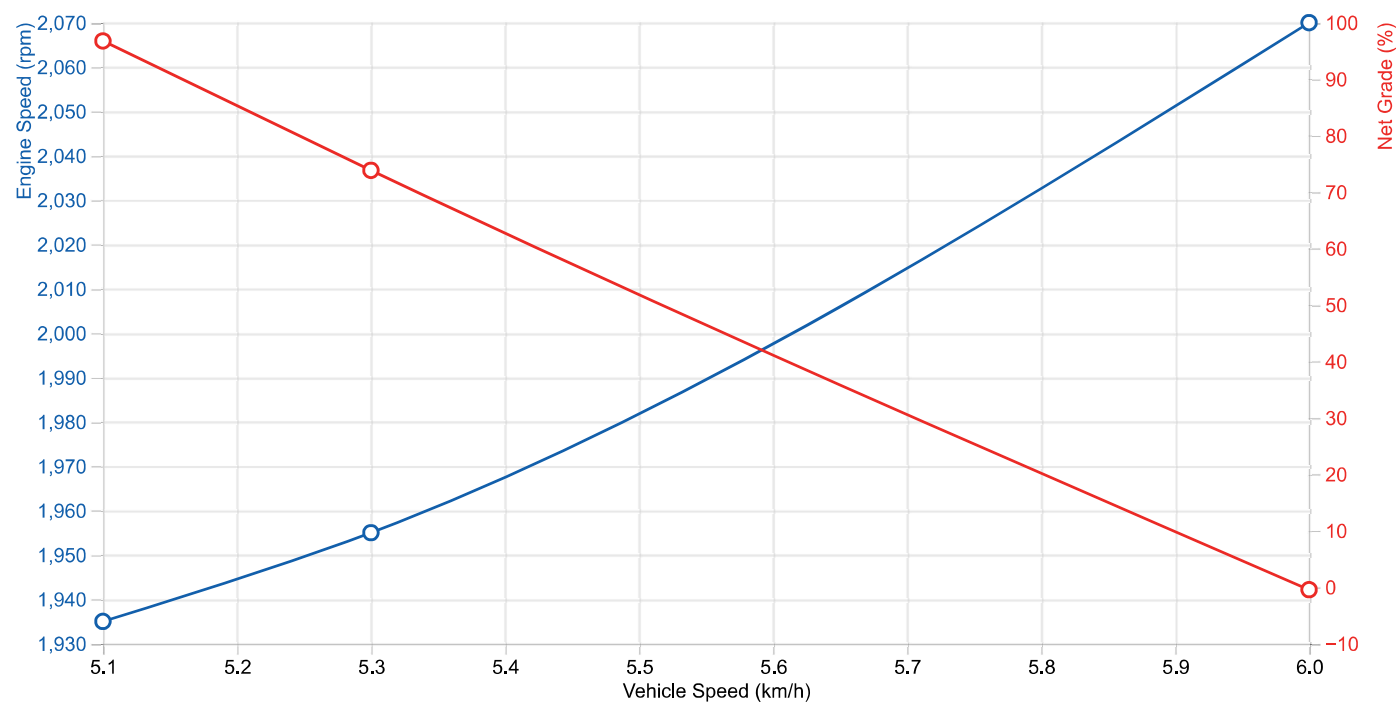
FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, ST▲

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	1479	0	310.10	309.31	0.0	999.00	274.63	
R1C I	1.6	1570	99	268.92	268.12	120.2	999.00	150.17	
R1C I	2.7	1671	165	234.10	233.29	173.8	999.00	98.10	70 Percent
R1C I	3.2	1730	198	216.85	216.04	193.9	999.00	79.12	
R1C I	3.5	1759	213	209.05	208.23	201.2	999.00	72.19	80 Percent
R1C I	4.1	1833	253	188.30	187.48	214.9	999.00	59.50	85 Percent
R1C I	4.7	1900	287	170.48	169.65	220.8	220.21	54.33	Governed
R1C I	4.8	1907	297	158.38	157.55	212.4	158.39	52.31	
R1C	5.1	1935	314	130.43	129.57	184.9	96.76	39.67	0.70 TE/Weight Ratio

R1C	5.3	1955	323	111.80	110.68	162.7	73.84	32.37	0.60 TE/Weight Ratio
R1C	6.0	2070	369	0.00	-0.83	0.0	-0.45	12.24	

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2▲



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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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 **x** 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	5.6	1613	153	96.80	95.97	150.9	60.00	119.81
1C	14.3	1967	389	37.50	36.57	148.8	20.00	27.21
1C	15.1	2016	412	19.49	18.55	82.0	10.00	18.69
1C	16.0	2066	434	0.95		4.2	0.00	16.00
2C x							60.00	
2C	19.8	1761	539	37.55	36.54	206.6	20.00	66.42
2C	29.8	1955	811	19.86	18.65	164.5	10.00	29.96
2C	33.7	2061	917	1.29		12.1	0.00	16.38
2L x							60.00	
2L	21.1	1271	574	37.44	36.40	219.6	20.00	7.90
2L	32.5	1955	883	19.80	18.54	178.7	10.00	14.61
2L	34.3	2062	932	1.30		12.4	0.00	14.51
3L x							60.00	
3L x							20.00	
3L	45.7	1902	1244	20.16	18.54	256.2	10.00	12.25
3L	49.4	2056	1345	1.74		23.9	0.00	12.55
4L x							60.00	
4L x							20.00	
4L x	0.1						10.00	
4L	74.7	2033	2033	2.73		56.8	0.00	17.33
5L x							60.00	
5L x							20.00	
5L x	0.1						10.00	
5L	96.0	1998	2611	3.84		102.5	0.00	27.53
6L x							60.00	
6L x							20.00	
6L x	0.1						10.00	
6L	107.8	1971	2933	4.56		136.7	0.00	34.80

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

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	5.6	1613	153	96.80	95.97	150.9	60.00	119.81
1C	14.3	1967	389	37.50	36.57	148.8	20.00	27.21
1C	15.1	2016	412	19.49	18.55	82.0	10.00	18.69
1C	16.0	2066	434	0.95		4.2	0.00	16.00
1L ✖							60.00	
1L	15.4	1967	419	37.48	36.54	160.4	20.00	14.75
1L	15.8	2016	429	19.49	18.54	85.5	10.00	14.47
1L	16.2	2067	440	0.95		4.3	0.00	14.10

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

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	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	6.2	1952	381	97.32	96.48	167.4	60.00	31.14
1C	6.7	2024	415	37.38	36.54	70.1	20.00	17.94
1C	6.9	2045	425	19.38	18.54	37.2	10.00	16.51
1C	7.1	2067	435	0.84		1.7	0.00	16.00
2C	6.5	1662	400	96.69	95.85	174.5	60.00	96.80
2C	13.5	1974	831	37.52	36.60	140.8	20.00	25.43
2C	14.2	2019	877	19.47	18.54	77.0	10.00	18.41
2C	15.0	2066	922	0.94		3.9	0.00	16.37
2L ✖							60.00	
2L	14.5	1974	892	37.47	36.54	150.8	20.00	14.62
2L	14.8	2019	913	19.47	18.54	80.2	10.00	14.61
2L	15.2	2067	934	0.94		4.0	0.00	14.50
3L ✖							60.00	
3L	20.5	1932	1263	37.56	36.54	214.2	20.00	12.32
3L	21.2	1998	1307	19.57	18.54	115.5	10.00	12.50
3L	22.0	2066	1351	1.05		6.4	0.00	12.55
4L ✖							60.00	
4L	21.3	1310	1310	37.58	36.54	222.2	20.00	11.06
4L	31.8	1956	1956	19.79	18.54	174.7	10.00	16.85
4L	33.5	2060	2060	1.29		12.0	0.00	17.59
5L ✖							60.00	
5L ✖							20.00	

5L	40.7	1914	2503	20.01	18.54	226.0	10.00	26.45
5L	43.5	2050	2680	1.55		18.8	0.00	28.22
6L ✖							60.00	
6L ✖							20.00	
6L	43.1	1782	2652	20.08	18.54	240.4	10.00	30.08
6L	49.4	2043	3040	1.74		23.8	0.00	35.94

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

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	6.2	1952	381	97.32	96.48	167.4	60.00	31.14
1C	6.7	2024	415	37.38	36.54	70.1	20.00	17.94
1C	6.9	2045	425	19.38	18.54	37.2	10.00	16.51
1C	7.1	2067	435	0.84		1.7	0.00	16.00
1L	6.8	1953	416	96.71	95.86	181.5	60.00	14.82
1L	7.0	2024	431	37.39	36.54	72.8	20.00	14.41
1L	7.1	2046	436	19.38	18.54	38.1	10.00	14.25
1L	7.2	2068	441	0.85		1.7	0.00	14.08

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

FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, ST▲

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	7.1	1723	194	96.71	95.86	191.8	60.00	81.11
R1C	12.3	1983	335	37.47	36.57	128.2	20.00	24.61
R1C	12.9	2025	352	19.45	18.54	69.9	10.00	16.47
R1C	13.5	2068	368	0.90	-0.02	3.4	0.00	12.34

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0▲

FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, ST▲

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	5.4	1970	330	96.81	95.98	144.1	60.00	27.80
R1C	5.8	2032	354	37.37	36.54	59.8	20.00	15.56
R1C	5.9	2050	361	19.37	18.54	31.6	10.00	13.57
R1C	6.0	2070	369	0.79	-0.04	1.3	0.00	12.28

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2▲

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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
LRTP Status	

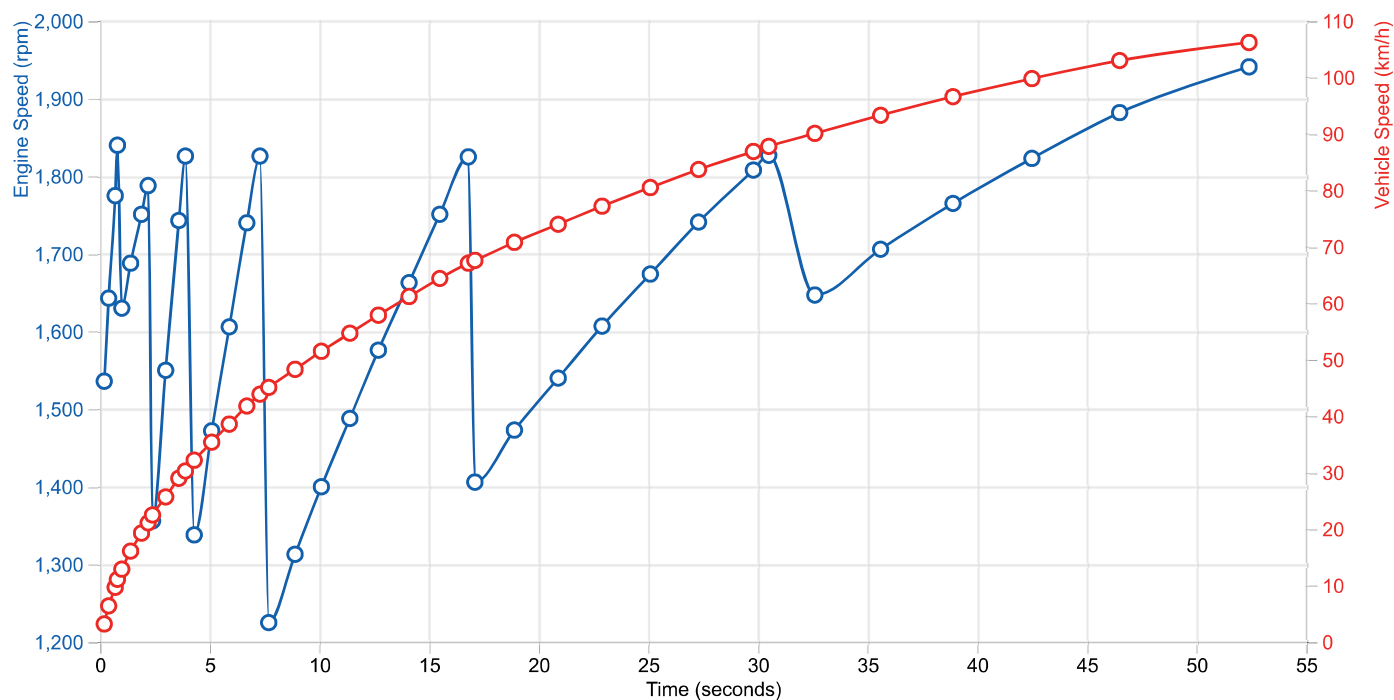
NOTE

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 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	0.2	0	4.516	1536	107.52	106.71	96.1	173.86
1C	6.4	0.4	0	3.821	1643	92.64	91.80	165.7	105.38
1C	9.7	0.7	1	3.171	1775	77.96	77.09	209.1	64.21
1C	11.1	0.8	1	2.866	1840	71.02	70.13	219.8	54.24
2C	12.9	1.0	2	2.165	1630	44.72	43.81	159.9	110.85
2C	16.1	1.4	4	1.988	1688	41.30	40.34	184.6	87.30
2C	19.3	1.9	6	1.822	1751	38.05	37.04	204.1	68.74
2C	21.1	2.2	8	1.727	1788	36.22	35.19	212.7	60.75
2L	22.5	2.4	9	1.661	1356	36.69	35.63	229.6	8.55
2L	25.7	3.0	13	1.551	1550	34.36	33.24	245.8	10.27
2L	29.0	3.6	17	1.424	1743	31.69	30.51	255.0	12.33
2L	30.3	3.9	20	1.365	1826	30.46	29.24	256.7	13.40
3L	32.2	4.3	23	1.197	1338	25.61	24.35	229.0	7.09
3L	35.4	5.1	31	1.142	1472	24.56	23.23	241.5	8.01
3L	38.6	5.9	39	1.081	1606	23.39	21.97	250.9	9.18
3L	41.8	6.7	48	1.013	1740	22.09	20.59	256.8	10.26
3L	43.9	7.3	55	0.965	1826	21.21	19.64	258.7	11.20
4L	45.1	7.7	60	0.770	1225	16.86	15.26	211.0	9.97
4L	48.3	8.9	76	0.752	1313	16.59	14.89	222.5	11.09
4L	51.5	10.1	93	0.725	1400	16.16	14.36	231.2	12.29
4L	54.7	11.4	111	0.695	1488	15.66	13.75	238.1	13.40
4L	57.9	12.7	132	0.664	1576	15.17	13.14	244.1	14.23
4L	61.2	14.1	155	0.632	1663	14.66	12.50	249.0	14.91
4L	64.4	15.5	180	0.598	1751	14.12	11.83	252.4	15.50
4L	67.1	16.8	204	0.568	1825	13.64	11.24	254.3	16.00
5L	67.6	17.1	209	0.497	1406	12.14	9.72	227.9	16.51
5L	70.8	18.9	244	0.475	1473	11.85	9.29	233.0	17.49
5L	74.0	20.9	283	0.452	1540	11.55	8.85	237.5	18.61
5L	77.2	22.9	326	0.429	1607	11.24	8.39	241.2	19.96
5L	80.5	25.1	373	0.404	1674	10.91	7.90	243.9	21.15
5L	83.7	27.3	425	0.378	1741	10.57	7.40	245.7	22.46
5L	86.9	29.8	483	0.352	1808	10.22	6.88	246.7	24.02
5L	87.8	30.5	501	0.344	1827	10.11	6.73	246.7	24.37
6L	90.1	32.6	552	0.307	1647	9.49	5.98	237.5	26.48
6L	93.3	35.6	629	0.284	1706	9.23	5.54	239.3	28.10
6L	96.6	38.9	716	0.261	1765	8.96	5.08	240.2	29.54
6L	99.8	42.5	814	0.237	1823	8.68	4.61	240.4	31.21
6L	103.0	46.5	927	0.212	1882	8.38	4.13	239.9	32.97
6L	106.2	52.4	1098	0.091	1941	6.13	1.67	180.9	34.30

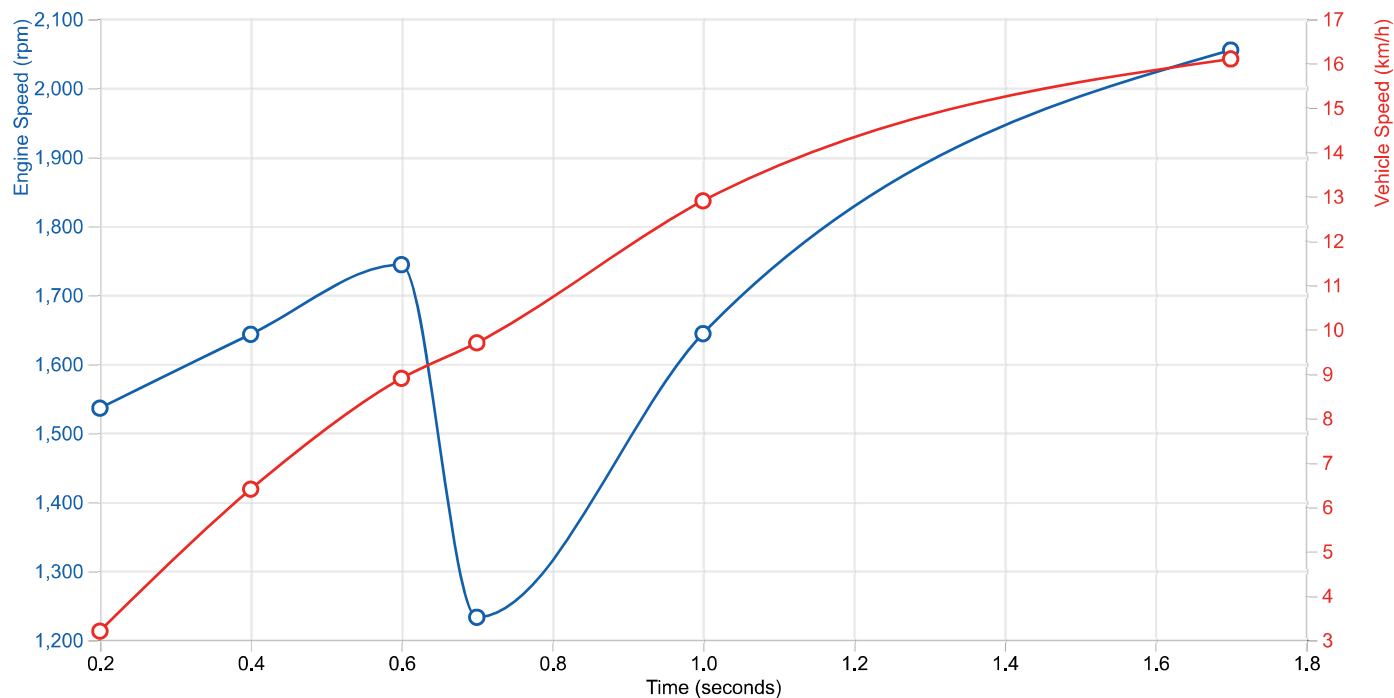
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C-2C-2L-3L-4L-5L-6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU▲


FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C-1L) - 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
Grade	0.00%		

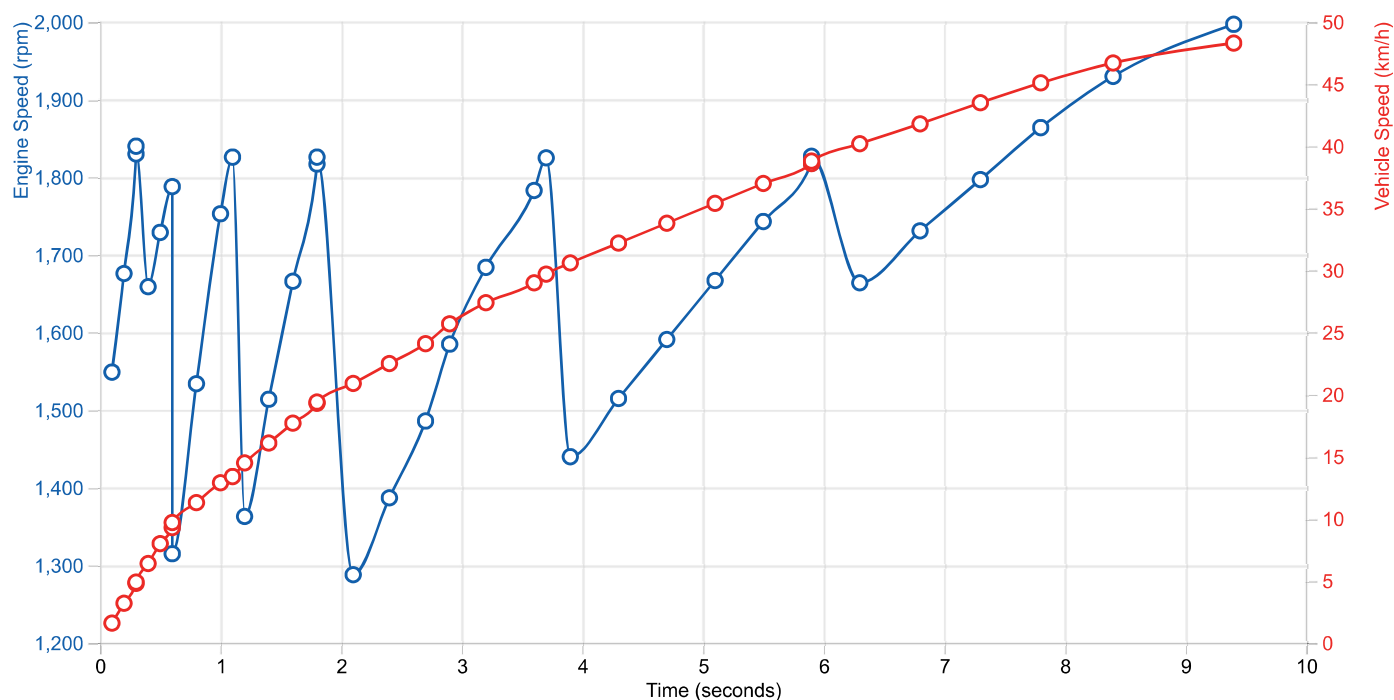
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec ²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C	3.2	0.2	0	4.516	1536	107.52	106.71	96.1	173.86
1C	6.4	0.4	0	3.821	1643	92.64	91.80	165.7	105.38
1C	8.9	0.6	1	3.286	1744	81.17	80.31	201.5	71.33
1L	9.7	0.7	1	2.680	1233	79.59	78.72	213.5	8.45
1L	12.9	1.0	2	2.358	1644	70.04	69.13	250.5	12.03
1L	16.1	1.7	5	0.310	2055	5.38	4.43	24.0	14.19

PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C-1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950


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

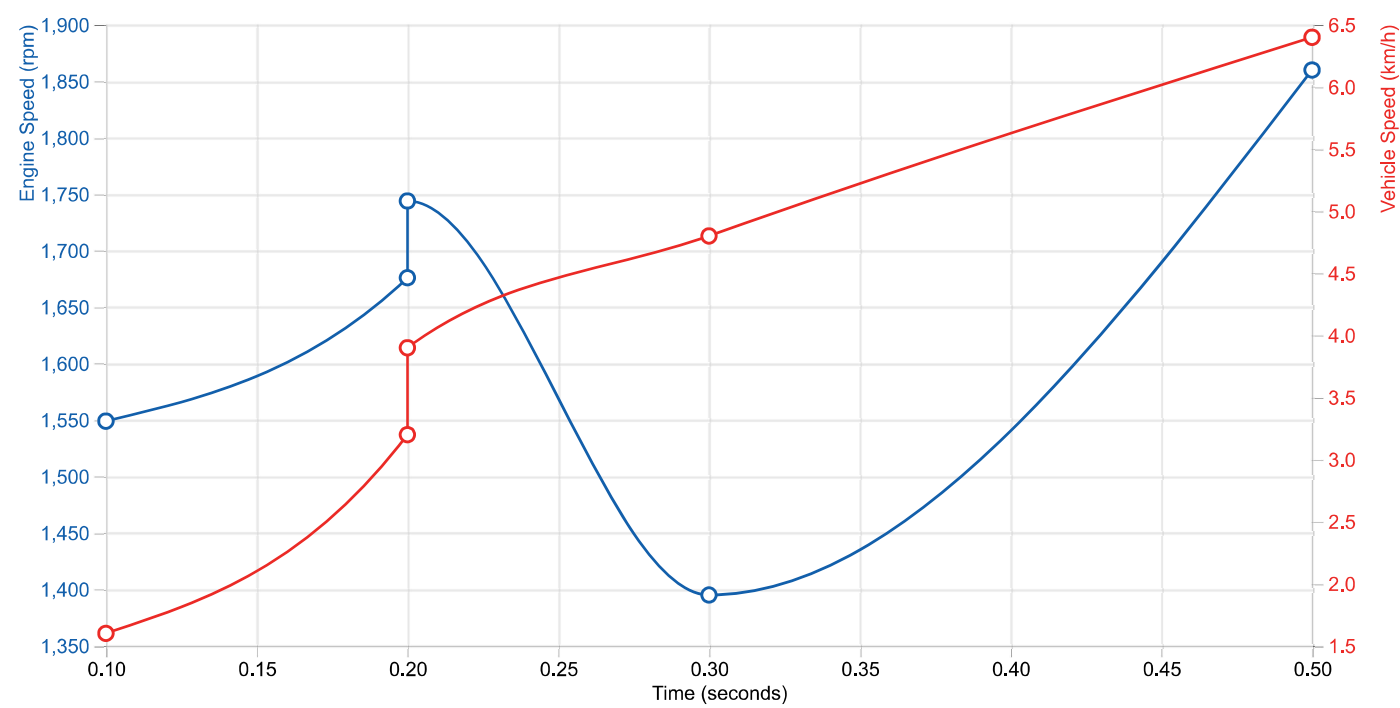
Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		2.150		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C Ⅰ	1.6	0.1	0	5.653	1549	238.97	238.17	106.8	163.18
1C Ⅰ	3.2	0.2	0	4.486	1676	200.66	199.85	179.4	92.28
1C Ⅰ	4.8	0.3	0	3.545	1830	162.94	162.12	218.5	55.47
1C Ⅰ	4.9	0.3	0	3.482	1840	160.73	159.91	219.8	54.24
2C	6.4	0.4	0	3.921	1659	97.01	96.17	173.5	97.79
2C	8.0	0.5	1	3.546	1729	88.63	87.77	198.1	74.43
2C	9.3	0.6	1	3.257	1788	81.97	81.11	212.7	60.75
2L	9.7	0.6	1	2.725	1315	83.99	83.12	225.3	8.26
2L	11.3	0.8	1	2.539	1534	78.21	77.32	244.7	10.13
2L	12.9	1.0	2	2.318	1753	71.39	70.48	255.3	12.45
2L	13.4	1.1	2	2.232	1826	68.93	68.01	256.7	13.40
3L	14.5	1.2	3	2.283	1363	57.56	56.63	231.6	7.26
3L	16.1	1.4	4	2.172	1514	54.76	53.81	244.8	8.37
3L	17.7	1.6	5	2.046	1666	51.64	50.67	254.0	9.59
3L	19.3	1.8	6	1.908	1817	48.20	47.20	258.6	11.14
3L	19.4	1.8	6	1.894	1826	48.00	46.99	258.7	11.20
4L	20.9	2.1	7	1.667	1288	37.76	36.73	219.5	10.79
4L	22.5	2.4	9	1.620	1387	36.73	35.67	229.9	12.05
4L	24.1	2.7	11	1.562	1486	35.48	34.39	237.9	13.36
4L	25.7	2.9	13	1.504	1585	34.22	33.10	244.7	14.35
4L	27.4	3.2	15	1.442	1684	32.89	31.74	249.9	15.13
4L	29.0	3.6	18	1.378	1783	31.49	30.31	253.4	15.78

4L	29.7	3.7	19	1.346	1825	30.87	29.67	254.3	16.00
5L	30.6	3.9	20	1.239	1440	27.14	25.92	230.5	16.93
5L	32.2	4.3	24	1.202	1515	26.39	25.13	235.9	18.23
5L	33.8	4.7	27	1.163	1591	25.61	24.31	240.4	19.65
5L	35.4	5.1	31	1.121	1667	24.78	23.44	243.7	20.99
5L	37.0	5.5	35	1.078	1743	23.90	22.53	245.8	22.50
5L	38.6	5.9	39	1.033	1818	23.00	21.58	246.7	24.21
5L	38.8	5.9	40	1.027	1827	22.89	21.47	246.7	24.37
6L	40.2	6.3	44	0.963	1664	21.31	19.85	238.1	26.92
6L	41.8	6.8	50	0.928	1731	20.63	19.12	239.7	28.64
6L	43.5	7.3	56	0.892	1797	19.93	18.37	240.5	30.57
6L	45.1	7.8	62	0.853	1864	19.18	17.58	240.1	32.35
6L	46.7	8.4	69	0.679	1930	15.17	13.52	196.7	34.12
6L	48.3	9.4	83	0.292	1997	7.22	5.52	96.9	35.24

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

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	5.653	1549	238.97	238.17	106.8	163.18
1C 🚩	3.2	0.2	0	4.486	1676	200.66	199.85	179.4	92.28
1C 🚩	3.9	0.2	0	4.005	1744	183.70	182.88	201.5	71.33
1L 🚩	4.8	0.3	0	2.437	1395	173.57	172.75	232.8	9.89
1L 🚩	6.4	0.5	1	2.024	1860	143.38	142.54	256.4	14.38

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

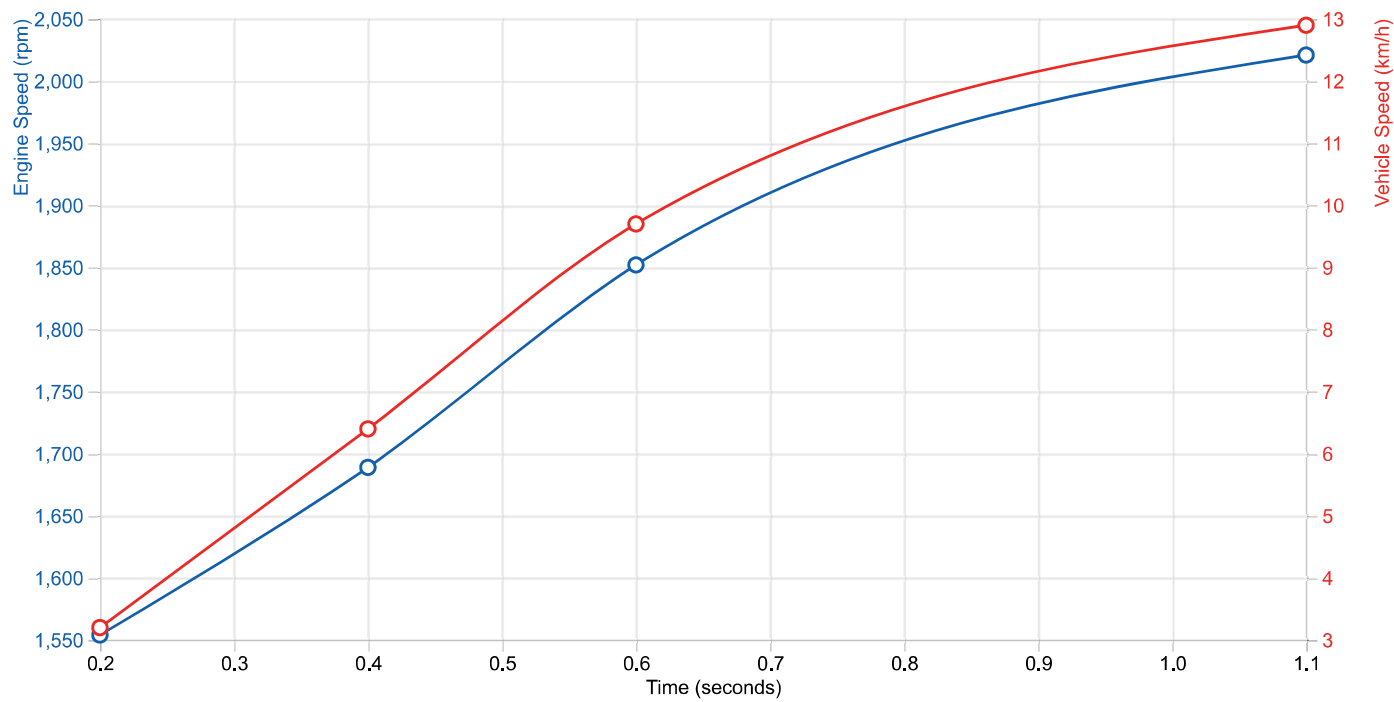


FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, ST

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	4.867	1554	121.30	120.49	108.5	161.81
R1C	6.4	0.4	0	3.925	1689	101.03	100.19	180.7	91.73
R1C	9.7	0.6	1	3.120	1852	81.02	80.15	217.3	57.21
R1C	12.9	1.1	2	0.853	2021	21.10	20.19	75.5	17.02

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0

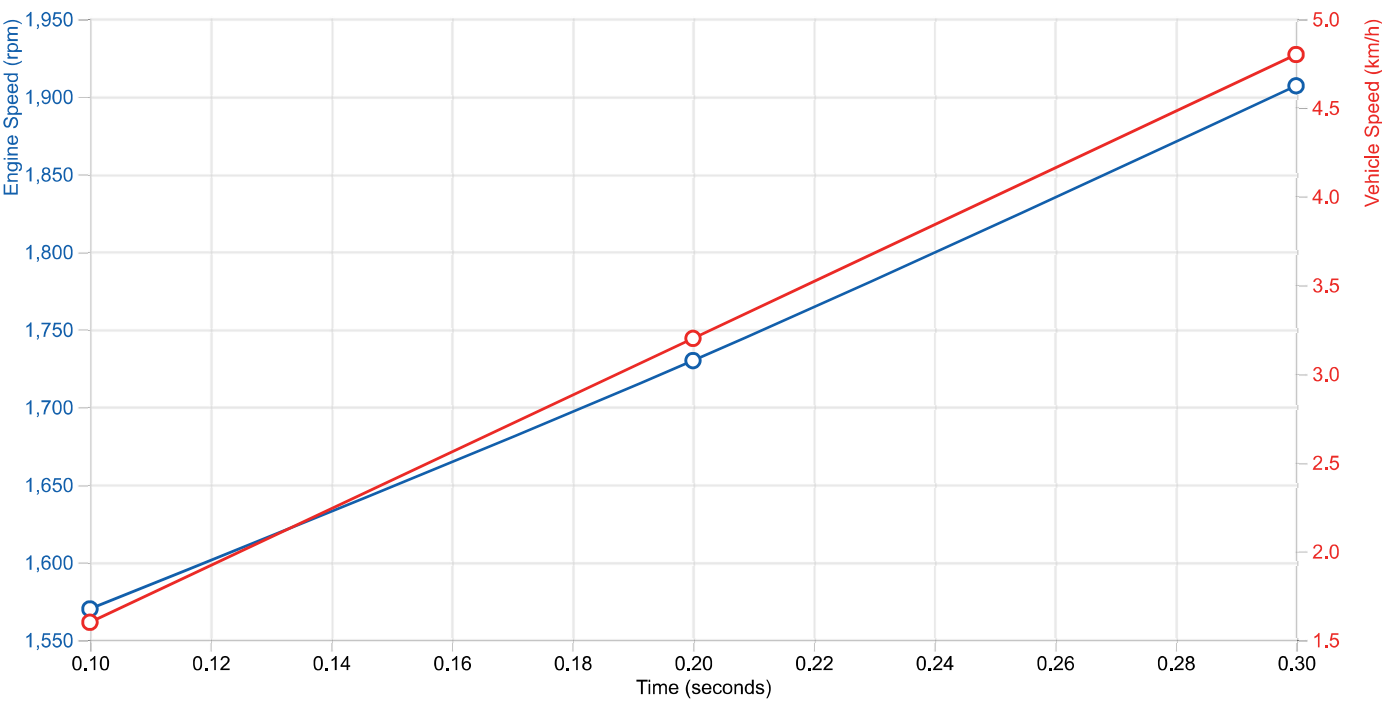


FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, ST▲

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	5.579	1570	268.92	268.12	120.2	150.17
R1C I	3.2	0.2	0	4.147	1730	216.85	216.04	193.9	79.12
R1C I	4.8	0.3	0	3.757	1907	158.38	157.55	212.4	52.31

PLOTS - FULL THROTTLE REVERSE PERFORMANCE (1C-1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2▲



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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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-1C) - 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	0.95

Engine Retarder Off

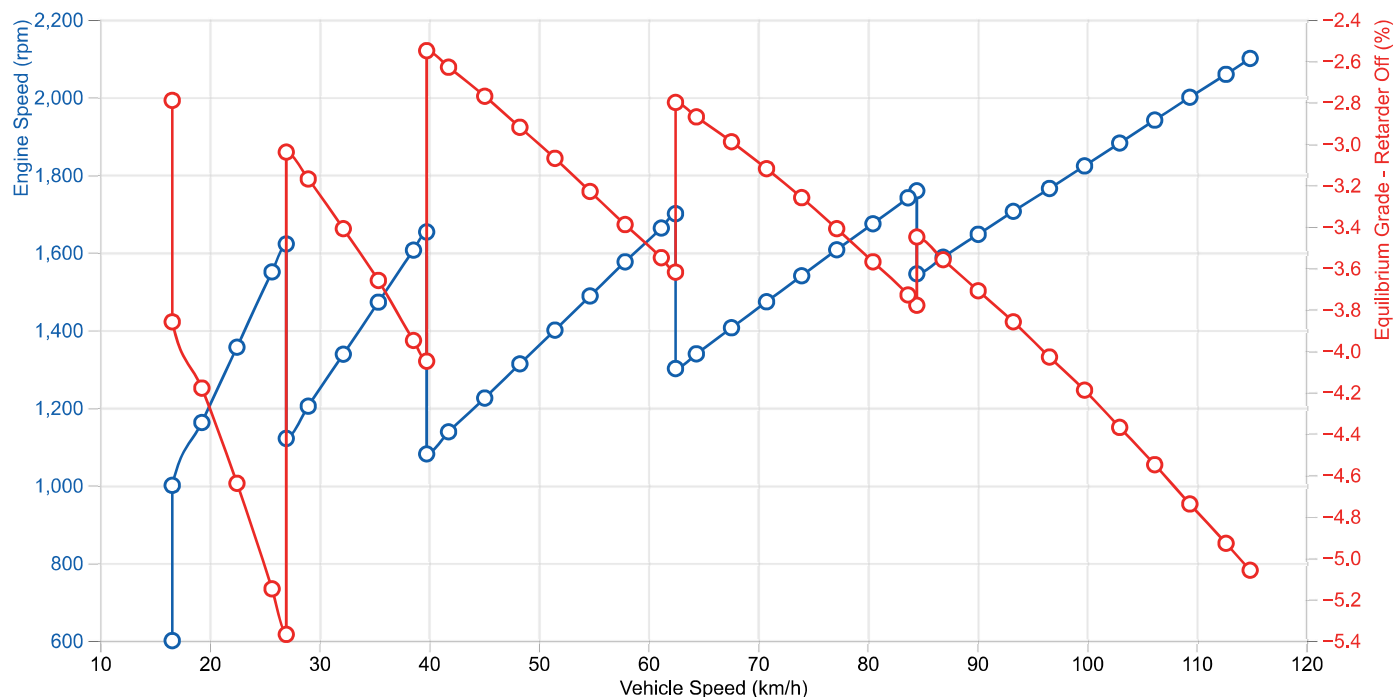
Transmission Retarder Off

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	114.9	2100	3125	-5.06	38.20	-0.482	140.1
6L	112.7	2059	3063	-4.93	36.82	-0.469	134.4
6L	109.4	2000	2976	-4.74	34.89	-0.451	126.3
6L	106.2	1941	2888	-4.55	32.91	-0.433	118.3
6L	103.0	1882	2801	-4.37	31.04	-0.416	110.8
6L	99.8	1823	2713	-4.19	29.28	-0.399	103.7
6L	96.6	1765	2626	-4.03	27.60	-0.383	97.1
6L	93.3	1706	2538	-3.86	26.02	-0.368	90.9
6L	90.1	1647	2451	-3.71	24.53	-0.353	85.0
6L	86.9	1588	2363	-3.56	23.08	-0.339	79.4
6L	84.5	1545	2299	-3.45	22.04	-0.329	75.4
5L	84.5	1759	2299	-3.78	21.20	-0.359	89.6
5L	83.7	1741	2276	-3.73	20.81	-0.354	87.8
5L	80.5	1674	2188	-3.57	19.45	-0.339	81.3
5L	77.2	1607	2101	-3.41	18.17	-0.324	75.2
5L	74.0	1540	2013	-3.26	16.92	-0.310	69.5
5L	70.8	1473	1926	-3.12	15.78	-0.297	64.1
5L	67.6	1406	1838	-2.99	14.74	-0.284	59.1
5L	64.4	1339	1751	-2.87	14.17	-0.273	54.8
5L	62.5	1301	1700	-2.80	13.67	-0.266	52.3
4L	62.5	1700	1700	-3.62	15.33	-0.340	78.7
4L	61.2	1663	1663	-3.55	15.07	-0.334	75.7
4L	57.9	1576	1576	-3.39	14.35	-0.319	68.9
4L	54.7	1488	1488	-3.23	13.45	-0.304	62.4
4L	51.5	1400	1400	-3.07	12.29	-0.289	56.1
4L	48.3	1313	1313	-2.92	11.14	-0.274	50.1
4L	45.1	1225	1225	-2.77	10.02	-0.260	44.6
4L	41.8	1138	1138	-2.63	8.94	-0.247	39.5
4L	39.8	1081	1081	-2.55	8.25	-0.239	36.4
3L	39.8	1653	1081	-4.05	8.08	-0.370	67.3
3L	38.6	1606	1050	-3.95	7.68	-0.361	63.6
3L	35.4	1472	963	-3.66	6.59	-0.335	53.9
3L	32.2	1338	875	-3.41	5.73	-0.312	45.5
3L	29.0	1204	788	-3.17	4.90	-0.290	38.0
3L	27.0	1121	733	-3.04	4.42	-0.278	33.8
2L	27.0	1622	733	-5.37	9.05	-0.465	66.2
2L	25.7	1550	700	-5.15	8.30	-0.446	60.6
2L	22.5	1356	613	-4.64	6.62	-0.402	47.4
2L	19.3	1162	525	-4.18	5.18	-0.362	36.4
2L	16.6	1000	452	-3.86	4.14	-0.335	28.8
2C	16.6	600	452	-2.79	8.40	-0.242	19.5

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)
6L	114.9	2100	3125	-13.46	485.76	-1.271	632.6
6L	112.7	2059	3063	-13.49	484.38	-1.275	626.8
6L	109.4	2000	2976	-13.55	482.46	-1.280	618.7
6L	106.2	1941	2888	-13.63	480.48	-1.287	610.8
6L	103.0	1882	2801	-13.73	478.60	-1.297	603.2
6L	99.8	1823	2713	-13.86	476.84	-1.309	596.1
6L	96.6	1765	2626	-14.01	475.17	-1.323	589.5
6L	93.3	1706	2538	-14.19	473.59	-1.340	583.3
6L	90.1	1647	2451	-14.41	472.09	-1.360	577.4
6L	86.9	1588	2363	-14.66	470.65	-1.383	571.8
6L	84.5	1545	2299	-14.86	469.61	-1.402	567.9
5L	84.5	1759	2299	-15.20	468.76	-1.429	582.0
5L	83.7	1741	2276	-15.27	468.38	-1.435	580.2
5L	80.5	1674	2188	-15.58	467.02	-1.463	573.8
5L	77.2	1607	2101	-15.93	465.73	-1.495	567.7
5L	74.0	1540	2013	-16.33	464.48	-1.532	561.9
5L	70.8	1473	1926	-16.47	453.24	-1.545	545.4
5L	67.6	1406	1838	-16.33	432.29	-1.532	518.5
5L	64.4	1339	1751	-16.21	411.80	-1.521	492.3
5L	62.5	1301	1700	-16.14	399.78	-1.515	477.1
4L	62.5	1700	1700	-16.99	401.45	-1.575	503.5
4L	61.2	1663	1663	-16.92	392.77	-1.568	491.3
4L	57.9	1576	1576	-16.75	372.13	-1.553	462.6
4L	54.7	1488	1488	-16.58	351.31	-1.538	434.2
4L	51.5	1400	1400	-16.41	330.23	-1.523	405.9
4L	48.3	1313	1313	-16.25	309.20	-1.508	378.1
4L	45.1	1225	1225	-16.10	288.25	-1.495	350.7
4L	41.8	1138	1138	-15.96	267.36	-1.482	323.8
4L	39.8	1081	1081	-15.87	253.79	-1.474	306.6
3L	39.8	1653	1081	-17.44	253.63	-1.572	337.5
3L	38.6	1606	1050	-17.33	246.28	-1.562	326.2
3L	35.4	1472	963	-17.04	225.38	-1.537	294.7
3L	32.2	1338	875	-16.78	204.70	-1.514	264.4
3L	29.0	1204	788	-16.54	184.05	-1.493	235.1
3L	27.0	1121	733	-16.40	171.17	-1.481	217.3
2L	27.0	1622	733	-18.84	175.81	-1.606	249.7
2L	25.7	1550	700	-18.07	161.35	-1.542	229.0
2L	22.5	1356	613	-14.93	113.99	-1.280	165.5
2L	19.3	1162	525	-11.99	75.34	-1.032	113.6
2L	16.6	1000	452	-9.73	49.70	-0.840	78.9
2C	16.6	600	452	-8.64	53.96	-0.747	69.6

PLOTS - CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L-5L-4L-3L-2L-2C-1C) - STANDARD, FAN ON, AC OFF, AXLE▲


CLOSED THROTTLE DOWNSHIFTS, PRESELECT RETARDER (6L-5L-4L-3L-2L-2C-1C) - 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	0.95

Engine Retarder Off
Transmission Retarder Off

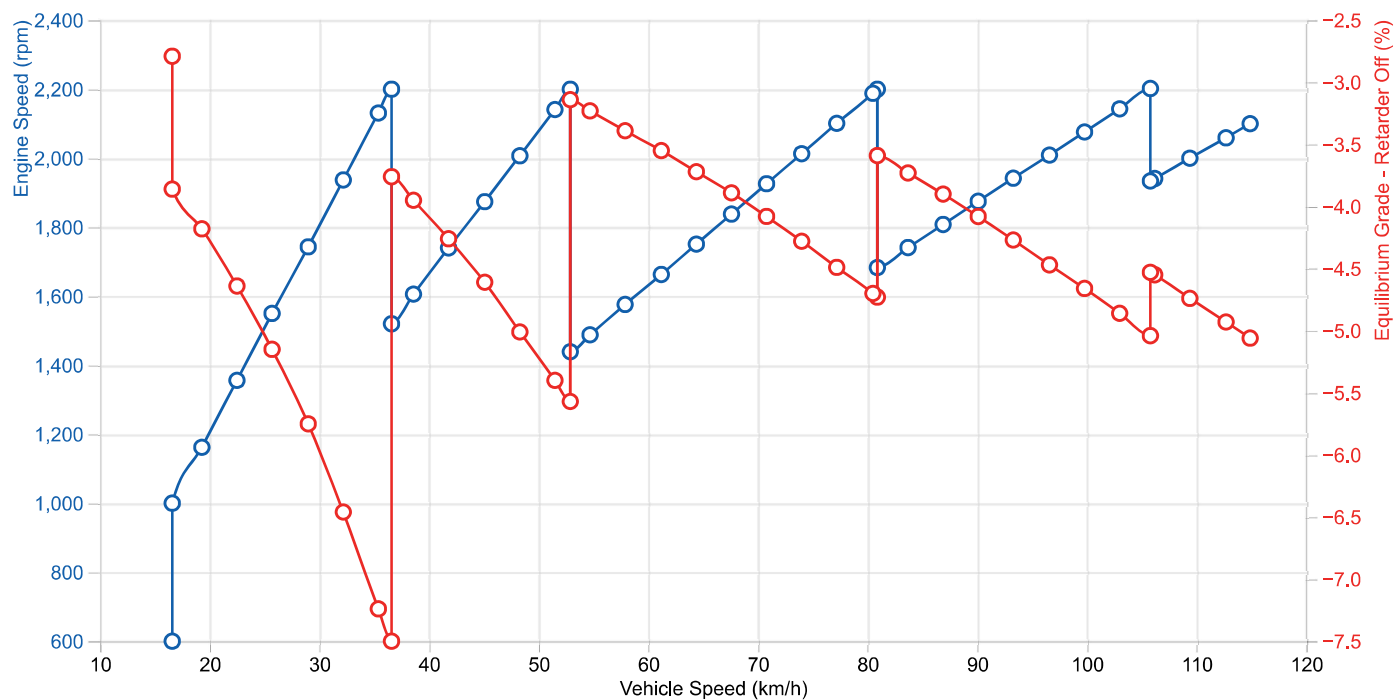
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	114.9	2100	3125	-5.06	38.20	-0.482	140.1
6L	112.7	2059	3063	-4.93	36.82	-0.469	134.4
6L	109.4	2000	2976	-4.74	34.89	-0.451	126.3
6L	106.2	1941	2888	-4.55	32.91	-0.433	118.3
6L	105.8	1934	2878	-4.53	32.68	-0.431	117.4
5L	105.8	2202	2878	-5.04	33.26	-0.479	145.4
5L	103.0	2143	2801	-4.86	31.41	-0.462	137.1
5L	99.8	2076	2713	-4.66	29.39	-0.443	127.9
5L	96.6	2009	2626	-4.47	27.47	-0.424	119.0
5L	93.3	1942	2538	-4.27	25.61	-0.405	110.4
5L	90.1	1875	2451	-4.08	23.88	-0.387	102.2
5L	86.9	1808	2363	-3.90	22.29	-0.371	94.8
5L	83.7	1741	2276	-3.73	20.81	-0.354	87.8
5L	80.9	1683	2200	-3.59	19.63	-0.341	82.2
4L	80.9	2200	2200	-4.73	19.07	-0.444	129.6
4L	80.5	2188	2188	-4.70	18.96	-0.441	128.2
4L	77.2	2101	2101	-4.49	18.07	-0.422	118.1
4L	74.0	2013	2013	-4.28	17.14	-0.402	108.1
4L	70.8	1926	1926	-4.08	16.68	-0.383	99.0
4L	67.6	1838	1838	-3.89	16.22	-0.365	90.6
4L	64.4	1751	1751	-3.72	15.68	-0.349	82.9

4L	61.2	1663	1663	-3.55	15.07	-0.334	75.7
4L	57.9	1576	1576	-3.39	14.35	-0.319	68.9
4L	54.7	1488	1488	-3.23	13.45	-0.304	62.4
4L	52.9	1439	1439	-3.14	12.80	-0.295	58.8
3L	52.9	2200	1439	-5.57	15.01	-0.509	125.1
3L	51.5	2141	1400	-5.40	14.17	-0.494	118.0
3L	48.3	2007	1313	-5.01	12.32	-0.458	102.2
3L	45.1	1874	1225	-4.61	10.42	-0.421	87.3
3L	41.8	1740	1138	-4.26	8.90	-0.389	74.6
3L	38.6	1606	1050	-3.95	7.68	-0.361	63.6
3L	36.6	1520	994	-3.76	6.93	-0.344	57.2
2L	36.6	2200	994	-7.50	17.43	-0.649	127.7
2L	35.4	2131	963	-7.24	16.31	-0.627	119.3
2L	32.2	1937	875	-6.46	13.16	-0.559	96.2
2L	29.0	1743	788	-5.75	10.40	-0.498	76.5
2L	25.7	1550	700	-5.15	8.30	-0.446	60.6
2L	22.5	1356	613	-4.64	6.62	-0.402	47.4
2L	19.3	1162	525	-4.18	5.18	-0.362	36.4
2L	16.6	1000	452	-3.86	4.14	-0.335	28.8
2C	16.6	600	452	-2.79	8.40	-0.242	19.5

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)
6L	114.9	2100	3125	-13.46	485.76	-1.272	632.6
6L	112.7	2059	3063	-13.49	484.38	-1.275	626.8
6L	109.4	2000	2976	-13.55	482.46	-1.280	618.7
6L	106.2	1941	2888	-13.63	480.48	-1.287	610.8
6L	105.8	1934	2878	-13.64	480.25	-1.288	609.8
5L	105.8	2202	2878	-14.16	480.82	-1.333	637.8
5L	103.0	2143	2801	-14.24	478.97	-1.340	629.6
5L	99.8	2076	2713	-14.34	476.96	-1.349	620.4
5L	96.6	2009	2626	-14.46	475.03	-1.361	611.5
5L	93.3	1942	2538	-14.61	473.17	-1.374	602.8
5L	90.1	1875	2451	-14.79	471.45	-1.391	594.7
5L	86.9	1808	2363	-15.01	469.86	-1.411	587.2
5L	83.7	1741	2276	-15.27	468.38	-1.435	580.2
5L	80.9	1683	2200	-15.53	467.19	-1.459	574.6
4L	80.9	2200	2200	-16.71	466.64	-1.550	622.0
4L	80.5	2188	2188	-16.75	466.52	-1.553	620.6
4L	77.2	2101	2101	-17.04	465.63	-1.580	610.5
4L	74.0	2013	2013	-17.38	464.71	-1.610	600.5
4L	70.8	1926	1926	-17.47	454.15	-1.618	580.3
4L	67.6	1838	1838	-17.27	433.76	-1.600	550.0
4L	64.4	1751	1751	-17.09	413.30	-1.584	520.4
4L	61.2	1663	1663	-16.92	392.77	-1.568	491.3
4L	57.9	1576	1576	-16.75	372.13	-1.553	462.6
4L	54.7	1488	1488	-16.58	351.31	-1.538	434.2
4L	52.9	1439	1439	-16.49	339.51	-1.530	418.3

3L	52.9	2200	1439	-19.02	341.72	-1.710	484.6
3L	51.5	2141	1400	-18.85	332.10	-1.695	467.8
3L	48.3	2007	1313	-18.43	310.37	-1.659	430.2
3L	45.1	1874	1225	-18.01	288.66	-1.622	393.4
3L	41.8	1740	1138	-17.65	267.32	-1.591	358.9
3L	38.6	1606	1050	-17.33	246.28	-1.563	326.2
3L	36.6	1520	994	-17.14	232.78	-1.546	305.7
2L	36.6	2200	994	-21.07	243.28	-1.789	376.2
2L	35.4	2131	963	-20.80	235.10	-1.766	360.0
2L	32.2	1937	875	-19.98	212.13	-1.699	315.1
2L	29.0	1743	788	-19.23	189.55	-1.638	273.6
2L	25.7	1550	700	-18.07	161.35	-1.543	229.0
2L	22.5	1356	613	-14.93	113.99	-1.281	165.5
2L	19.3	1162	525	-11.99	75.34	-1.032	113.6
2L	16.6	1000	452	-9.73	49.70	-0.840	78.9
2C	16.6	600	452	-8.64	53.96	-0.747	69.6

PLOTS - CLOSED THROTTLE DOWNSHIFTS, PRESELECT RETARDER (6L-5L-4L-3L-2L-2C-1C) - STANDARD, FAN ON, AC OFF, AXL▲

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

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

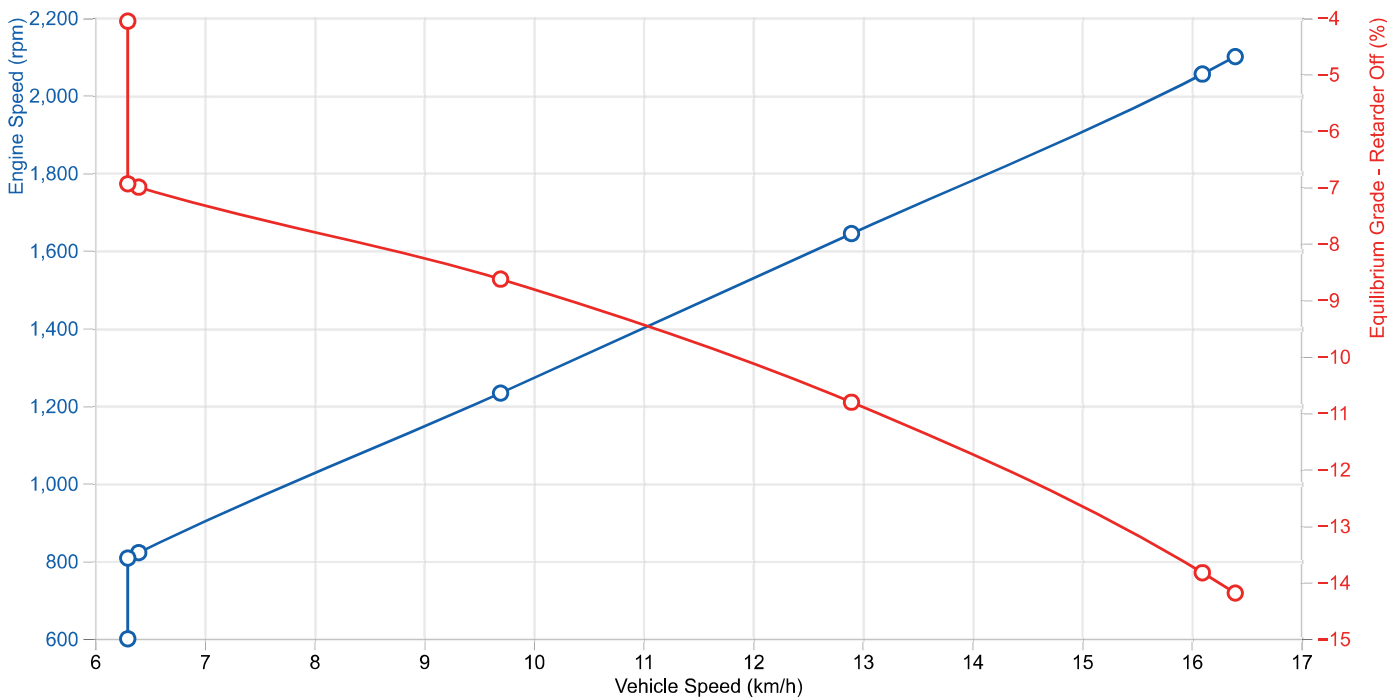
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
1L	16.4	2100	447	-14.19	15.57	-0.888	115.2
1L	16.1	2055	438	-13.83	14.90	-0.866	109.8

1L	12.9	1644	350	-10.81	9.59	-0.679	68.3
1L	9.7	1233	263	-8.63	6.10	-0.544	40.6
1L	6.4	822	175	-7.00	3.48	-0.441	21.8
1L	6.3	808	172	-6.94	3.39	-0.437	21.2
1C	6.3	600	172	-4.06	1.40	-0.257	11.8

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	16.4	2100	447	-20.16	59.75	-1.250	163.8
1L	16.1	2055	438	-19.53	56.33	-1.213	155.4
1L	12.9	1644	350	-14.33	30.45	-0.898	91.3
1L	9.7	1233	263	-10.13	12.84	-0.638	48.0
1L	6.4	822	175	-7.00	3.48	-0.442	21.8
1L	6.3	808	172	-6.94	3.39	-0.438	21.2
1C	6.3	600	172	-4.06	1.40	-0.257	11.8

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-1C) - 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/sec²s)	Wheel Power (kW)
6L	50.8	2100	3125	-6.30	38.20	-0.567	140.1
6L	49.9	2063	3070	-6.18	36.97	-0.556	135.0

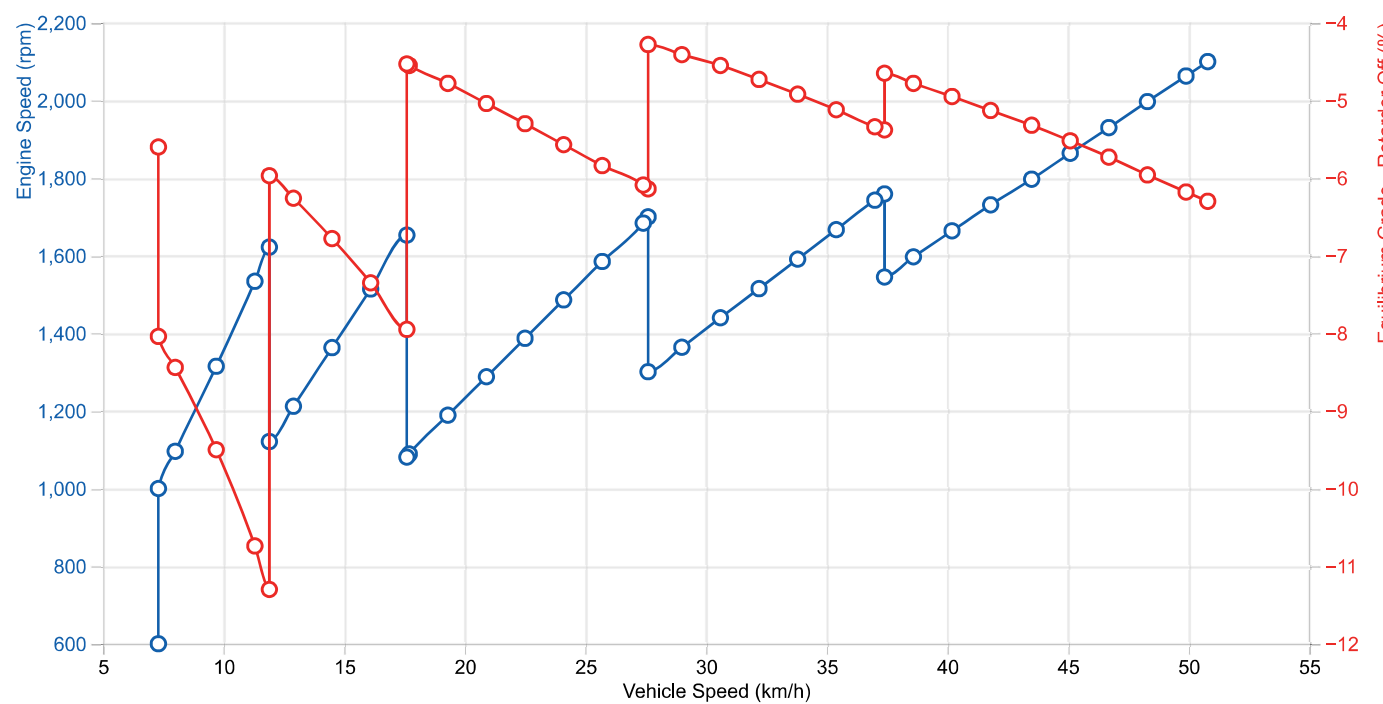
6L	48.3	1997	2971	-5.96	34.79	-0.537	125.9
6L	46.7	1930	2872	-5.73	32.56	-0.516	116.9
6L	45.1	1864	2773	-5.52	30.47	-0.497	108.5
6L	43.5	1797	2674	-5.32	28.52	-0.479	100.7
6L	41.8	1731	2575	-5.13	26.68	-0.462	93.5
6L	40.2	1664	2476	-4.95	24.96	-0.446	86.7
6L	38.6	1597	2377	-4.78	23.31	-0.431	80.3
6L	37.4	1545	2299	-4.65	22.04	-0.419	75.4
5L	37.4	1759	2299	-5.38	21.20	-0.478	89.6
5L	37.0	1743	2278	-5.34	20.85	-0.474	88.0
5L	35.4	1667	2179	-5.12	19.31	-0.455	80.7
5L	33.8	1591	2080	-4.92	17.87	-0.437	73.9
5L	32.2	1515	1981	-4.73	16.47	-0.420	67.4
5L	30.6	1440	1882	-4.55	15.26	-0.404	61.6
5L	29.0	1364	1783	-4.41	14.50	-0.392	56.5
5L	27.6	1301	1700	-4.28	13.67	-0.380	52.3
4L	27.6	1700	1700	-6.14	15.33	-0.517	78.7
4L	27.4	1684	1684	-6.09	15.22	-0.514	77.4
4L	25.7	1585	1585	-5.84	14.43	-0.492	69.6
4L	24.1	1486	1486	-5.57	13.42	-0.470	62.3
4L	22.5	1387	1387	-5.30	12.10	-0.447	55.1
4L	20.9	1288	1288	-5.04	10.82	-0.425	48.5
4L	19.3	1189	1189	-4.78	9.56	-0.404	42.4
4L	17.7	1089	1089	-4.55	8.35	-0.384	36.8
4L	17.6	1081	1081	-4.53	8.25	-0.382	36.4
3L	17.6	1653	1081	-7.95	8.08	-0.594	67.3
3L	16.1	1514	990	-7.35	6.89	-0.550	56.8
3L	14.5	1363	891	-6.78	5.88	-0.507	47.0
3L	12.9	1212	792	-6.26	4.94	-0.468	38.4
3L	11.9	1121	733	-5.97	4.42	-0.447	33.8
2L	11.9	1622	733	-11.30	9.05	-0.684	66.2
2L	11.3	1534	693	-10.74	8.14	-0.650	59.5
2L	9.7	1315	594	-9.50	6.30	-0.576	44.9
2L	8.0	1096	495	-8.44	4.72	-0.512	33.1
2L	7.3	1000	452	-8.04	4.14	-0.488	28.8
2C	7.3	600	452	-5.60	8.40	-0.341	19.5

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)
6L	50.8	2100	3125	-25.85	485.76	-2.257	632.6
6L	49.9	2063	3070	-26.08	484.54	-2.276	627.4
6L	48.3	1997	2971	-26.54	482.35	-2.314	618.3
6L	46.7	1930	2872	-27.05	480.12	-2.355	609.3
6L	45.1	1864	2773	-27.62	478.04	-2.401	600.9
6L	43.5	1797	2674	-28.27	476.08	-2.453	593.1
6L	41.8	1731	2575	-29.01	474.24	-2.512	585.9
6L	40.2	1664	2476	-29.84	472.52	-2.578	579.1
6L	38.6	1597	2377	-30.77	470.87	-2.652	572.7

6L	37.4	1545	2299	-31.58	469.61	-2.716	567.9
5L	37.4	1759	2299	-32.43	468.76	-2.743	582.0
5L	37.0	1743	2278	-32.65	468.42	-2.760	580.4
5L	35.4	1667	2179	-33.76	466.88	-2.845	573.1
5L	33.8	1591	2080	-35.04	465.43	-2.941	566.3
5L	32.2	1515	1981	-36.49	464.04	-3.049	559.9
5L	30.6	1440	1882	-36.47	442.76	-3.047	531.9
5L	29.0	1364	1783	-36.30	419.46	-3.034	502.1
5L	27.6	1301	1700	-36.14	399.78	-3.023	477.1
4L	27.6	1700	1700	-38.39	401.45	-3.026	503.5
4L	27.4	1684	1684	-38.34	397.64	-3.023	498.1
4L	25.7	1585	1585	-38.02	374.31	-3.001	465.6
4L	24.1	1486	1486	-37.69	350.75	-2.978	433.4
4L	22.5	1387	1387	-37.36	326.90	-2.955	401.5
4L	20.9	1288	1288	-37.04	303.13	-2.933	370.1
4L	19.3	1189	1189	-36.74	279.45	-2.912	339.3
4L	17.7	1089	1089	-36.47	255.82	-2.893	309.1
4L	17.6	1081	1081	-36.45	253.79	-2.891	306.6
3L	17.6	1653	1081	-40.63	253.63	-2.821	337.5
3L	16.1	1514	990	-39.90	231.93	-2.777	304.4
3L	14.5	1363	891	-39.21	208.50	-2.735	269.9
3L	12.9	1212	792	-38.58	185.14	-2.697	236.6
3L	11.9	1121	733	-38.25	171.17	-2.677	217.3
2L	11.9	1622	733	-44.94	175.81	-2.496	249.7
2L	11.3	1534	693	-42.12	157.27	-2.363	223.5
2L	9.7	1315	594	-32.86	105.13	-1.900	153.7
2L	8.0	1096	495	-24.83	64.10	-1.467	98.4
2L	7.3	1000	452	-21.70	49.70	-1.291	78.9
2C	7.3	600	452	-19.12	53.96	-1.144	69.6

PLOTS - CLOSED THROTTLE DOWNSHIFTS, STANDARD RETARDER (6L-5L-4L-3L-2L-2C-1C) - STANDARD, FAN ON, AC OFF, AXLE▲



CLOSED THROTTLE DOWNSHIFTS, PRESELECT RETARDER (6L-5L-4L-3L-2L-2C-1C) - 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

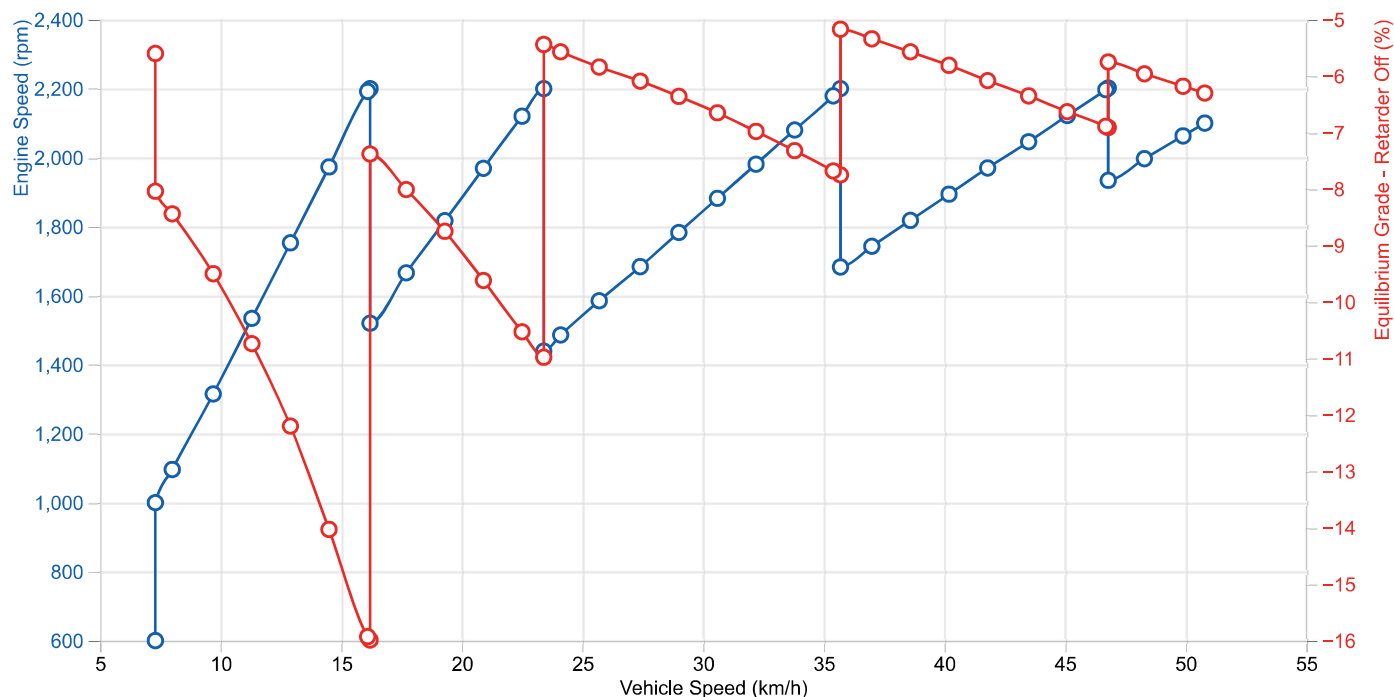
Engine Retarder Off
Transmission Retarder Off

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	50.8	2100	3125	-6.30	38.20	-0.567	140.1
6L	49.9	2063	3070	-6.18	36.97	-0.556	135.0
6L	48.3	1997	2971	-5.96	34.79	-0.537	125.9
6L	46.8	1934	2878	-5.75	32.68	-0.517	117.4
5L	46.8	2202	2878	-6.91	33.26	-0.613	145.4
5L	46.7	2197	2872	-6.89	33.12	-0.612	144.7
5L	45.1	2122	2773	-6.63	30.76	-0.588	134.2
5L	43.5	2046	2674	-6.35	28.52	-0.564	123.9
5L	41.8	1970	2575	-6.08	26.39	-0.540	114.0
5L	40.2	1894	2476	-5.81	24.37	-0.516	104.5
5L	38.6	1818	2377	-5.57	22.54	-0.494	95.9
5L	37.0	1743	2278	-5.34	20.85	-0.474	88.0
5L	35.7	1683	2200	-5.17	19.63	-0.459	82.2
4L	35.7	2200	2200	-7.75	19.07	-0.652	129.6
4L	35.4	2179	2179	-7.68	18.86	-0.646	127.1
4L	33.8	2080	2080	-7.32	17.77	-0.617	115.6
4L	32.2	1981	1981	-6.98	16.96	-0.588	104.7
4L	30.6	1882	1882	-6.65	16.46	-0.560	94.7
4L	29.0	1783	1783	-6.36	15.89	-0.536	85.7
4L	27.4	1684	1684	-6.09	15.22	-0.514	77.4
4L	25.7	1585	1585	-5.84	14.43	-0.492	69.6
4L	24.1	1486	1486	-5.57	13.42	-0.470	62.3
4L	23.4	1439	1439	-5.44	12.80	-0.459	58.8
3L	23.4	2200	1439	-10.98	15.01	-0.818	125.1
3L	22.5	2120	1387	-10.53	13.87	-0.785	115.5
3L	20.9	1969	1288	-9.62	11.75	-0.718	97.8
3L	19.3	1817	1189	-8.75	9.74	-0.653	81.7
3L	17.7	1666	1089	-8.01	8.20	-0.598	68.4
3L	16.2	1520	994	-7.38	6.93	-0.551	57.2
2L	16.2	2200	994	-15.99	17.43	-0.961	127.7
2L	16.1	2192	990	-15.93	17.30	-0.958	126.8
2L	14.5	1973	891	-14.03	13.77	-0.846	100.4
2L	12.9	1753	792	-12.20	10.53	-0.737	77.5
2L	11.3	1534	693	-10.74	8.14	-0.650	59.5
2L	9.7	1315	594	-9.50	6.30	-0.576	44.9
2L	8.0	1096	495	-8.44	4.72	-0.512	33.1
2L	7.3	1000	452	-8.04	4.14	-0.488	28.8
2C	7.3	600	452	-5.60	8.40	-0.341	19.5

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)
6L	50.8	2100	3125	-25.85	485.76	-2.257	632.6
6L	49.9	2063	3070	-26.08	484.54	-2.276	627.4
6L	48.3	1997	2971	-26.54	482.35	-2.314	618.3
6L	46.8	1934	2878	-27.02	480.25	-2.352	609.8
5L	46.8	2202	2878	-28.31	480.82	-2.423	637.8
5L	46.7	2197	2872	-28.34	480.69	-2.425	637.2
5L	45.1	2122	2773	-28.86	478.32	-2.466	626.6
5L	43.5	2046	2674	-29.44	476.08	-2.512	616.3
5L	41.8	1970	2575	-30.08	473.95	-2.562	606.4
5L	40.2	1894	2476	-30.82	471.93	-2.620	596.9
5L	38.6	1818	2377	-31.67	470.10	-2.685	588.3
5L	37.0	1743	2278	-32.65	468.42	-2.760	580.4
5L	35.7	1683	2200	-33.51	467.19	-2.826	574.6
4L	35.7	2200	2200	-36.56	466.64	-2.900	622.0
4L	35.4	2179	2179	-36.79	466.43	-2.916	619.6
4L	33.8	2080	2080	-37.92	465.34	-2.994	608.0
4L	32.2	1981	1981	-39.23	464.52	-3.084	597.1
4L	30.6	1882	1882	-39.03	443.96	-3.071	565.0
4L	29.0	1783	1783	-38.67	420.85	-3.046	531.2
4L	27.4	1684	1684	-38.34	397.64	-3.023	498.1
4L	25.7	1585	1585	-38.02	374.31	-3.001	465.6
4L	24.1	1486	1486	-37.69	350.75	-2.979	433.4
4L	23.4	1439	1439	-37.53	339.51	-2.968	418.3
3L	23.4	2200	1439	-44.45	341.72	-3.045	484.6
3L	22.5	2120	1387	-43.87	328.66	-3.012	461.8
3L	20.9	1969	1288	-42.72	304.06	-2.945	419.4
3L	19.3	1817	1189	-41.62	279.63	-2.881	378.7
3L	17.7	1666	1089	-40.71	255.67	-2.827	340.6
3L	16.2	1520	994	-39.93	232.78	-2.780	305.7
2L	16.2	2200	994	-51.12	243.28	-2.774	376.2
2L	16.1	2192	990	-51.03	242.34	-2.770	374.4
2L	14.5	1973	891	-48.48	216.39	-2.659	323.3
2L	12.9	1753	792	-46.10	190.72	-2.551	275.7
2L	11.3	1534	693	-42.12	157.27	-2.365	223.5
2L	9.7	1315	594	-32.86	105.13	-1.902	153.7
2L	8.0	1096	495	-24.83	64.10	-1.468	98.4
2L	7.3	1000	452	-21.70	49.70	-1.292	78.9
2C	7.3	600	452	-19.12	53.96	-1.144	69.6

PLOTS - CLOSED THROTTLE DOWNSHIFTS, PRESELECT RETARDER (6L-5L-4L-3L-2L-2C-1C) - STANDARD, FAN ON, AC OFF, AXLA


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

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

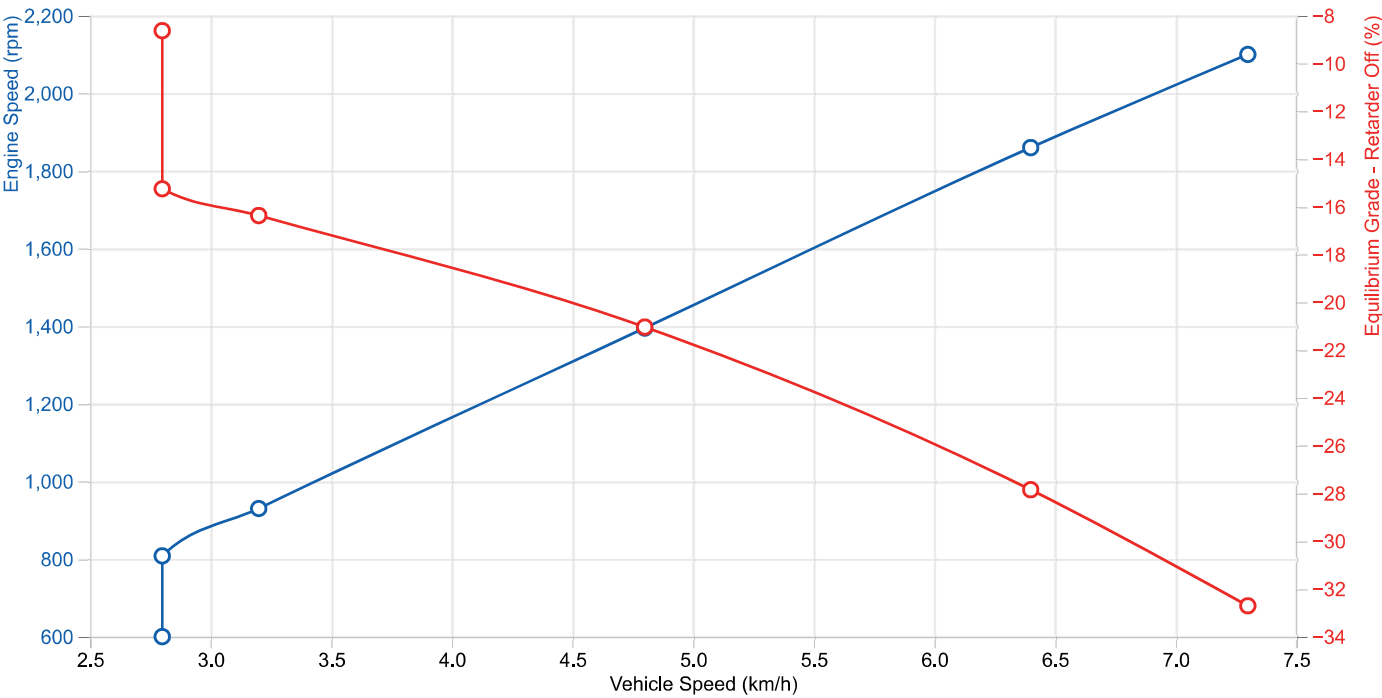
Engine Retarder Off
Transmission Retarder Off

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)
1L	7.3	2100	447	-32.71	15.57	-0.810	115.2
1L	6.4	1860	396	-27.85	12.04	-0.699	87.9
1L	4.8	1395	297	-21.04	7.35	-0.536	50.3
1L	3.2	930	198	-16.37	4.11	-0.421	26.2
1L	2.8	808	172	-15.25	3.39	-0.393	21.2
1C	2.8	600	172	-8.63	1.40	-0.225	11.8

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	7.3	2100	447	-49.01	59.75	-1.149	163.8
1L	6.4	1860	396	-39.81	42.81	-0.965	121.7
1L	4.8	1395	297	-26.53	18.82	-0.669	63.0
1L	3.2	930	198	-16.37	4.11	-0.422	26.2
1L	2.8	808	172	-15.25	3.39	-0.394	21.2
1C	2.8	600	172	-8.63	1.40	-0.225	11.8

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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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.

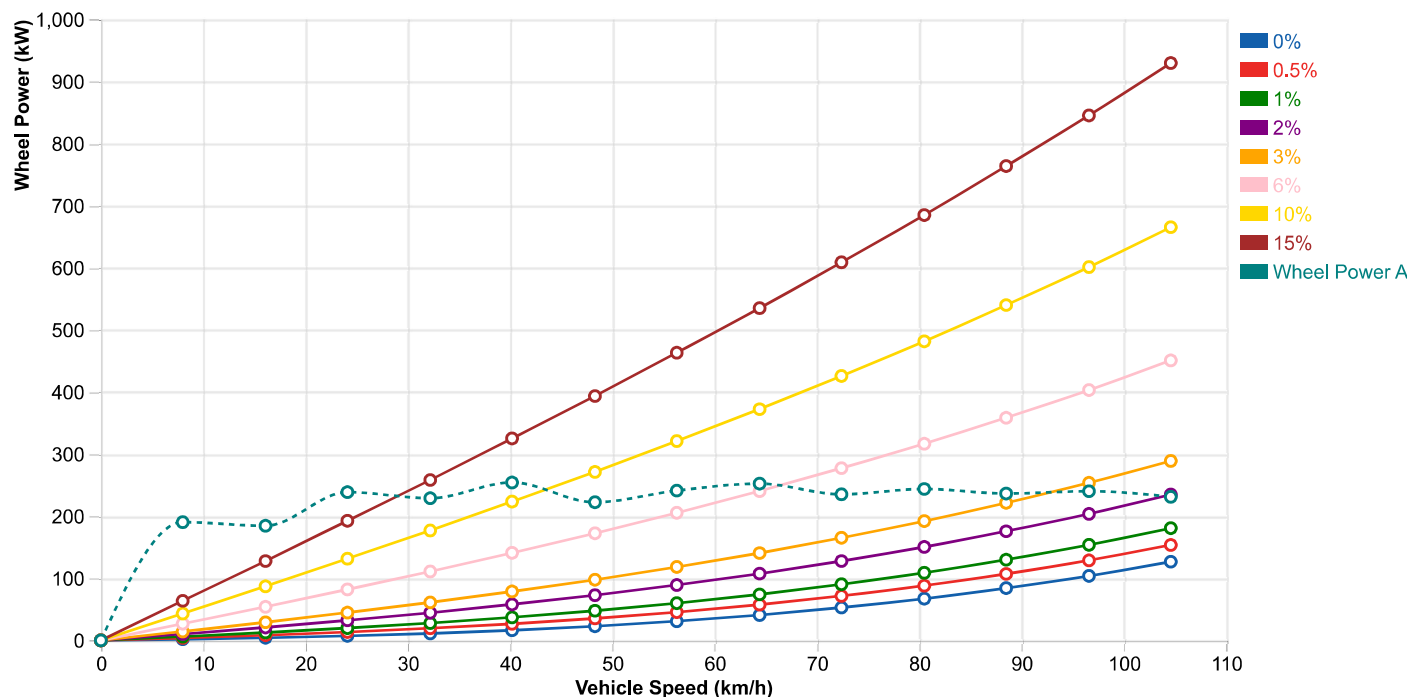
Positive grades indicate uphill operation and negative grades indicate downhill operation.

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	190.4	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	184.6	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	238.8	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	229.0	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	254.3	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	222.5	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
56.3	241.2	30.9	45.5	60.0	89.2	118.3	205.5	321.0	463.3
64.4	252.4	40.8	57.5	74.1	107.5	140.7	240.4	372.4	535.1
72.4	235.3	52.9	71.6	90.4	127.8	165.3	277.4	425.8	608.9
80.5	243.9	67.2	88.1	108.9	150.5	192.1	316.7	481.6	685.0
88.5	236.5	84.2	107.1	130.0	175.8	221.5	358.5	540.0	763.8
96.6	240.2	103.9	128.9	153.9	203.8	253.8	403.2	601.2	845.3
104.6	231.2	126.7	153.7	180.8	234.9	289.0	450.9	665.4	929.8

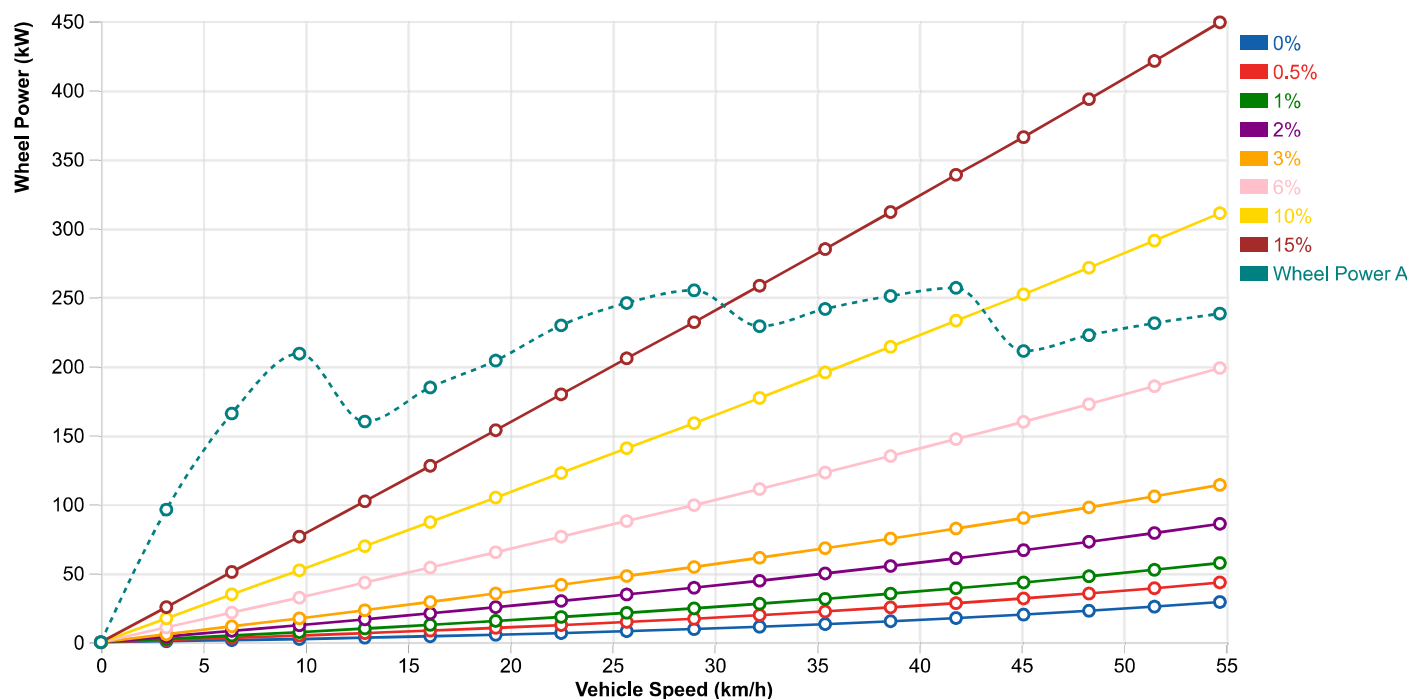
PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAND▲



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

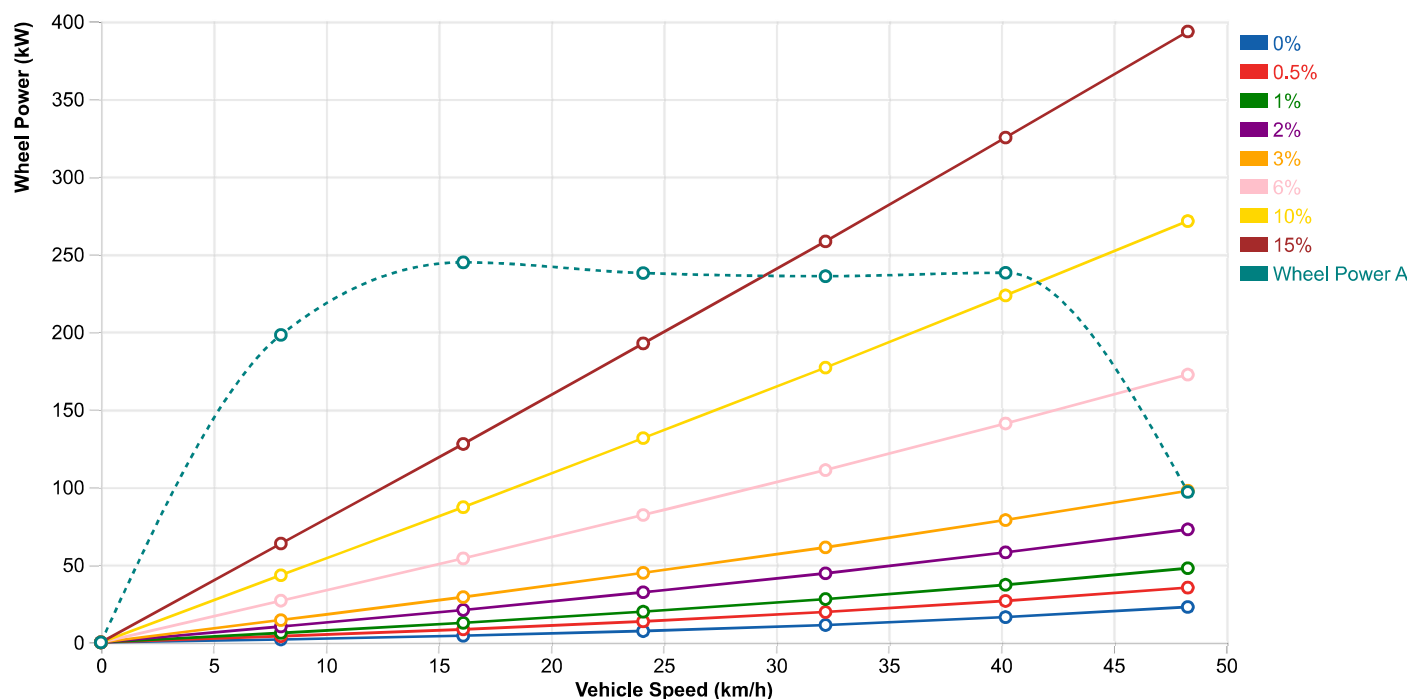
Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.2	96.1	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	165.7	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	209.1	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	159.9	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	184.6	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	204.1	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	229.6	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	245.8	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	255.0	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	229.0	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	241.5	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	250.9	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	256.8	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	211.0	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	222.5	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
51.5	231.2	25.8	39.1	52.5	79.1	105.7	185.5	291.0	421.2
54.7	238.1	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	198.1	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	244.8	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	237.9	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	235.9	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	238.1	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	96.9	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5

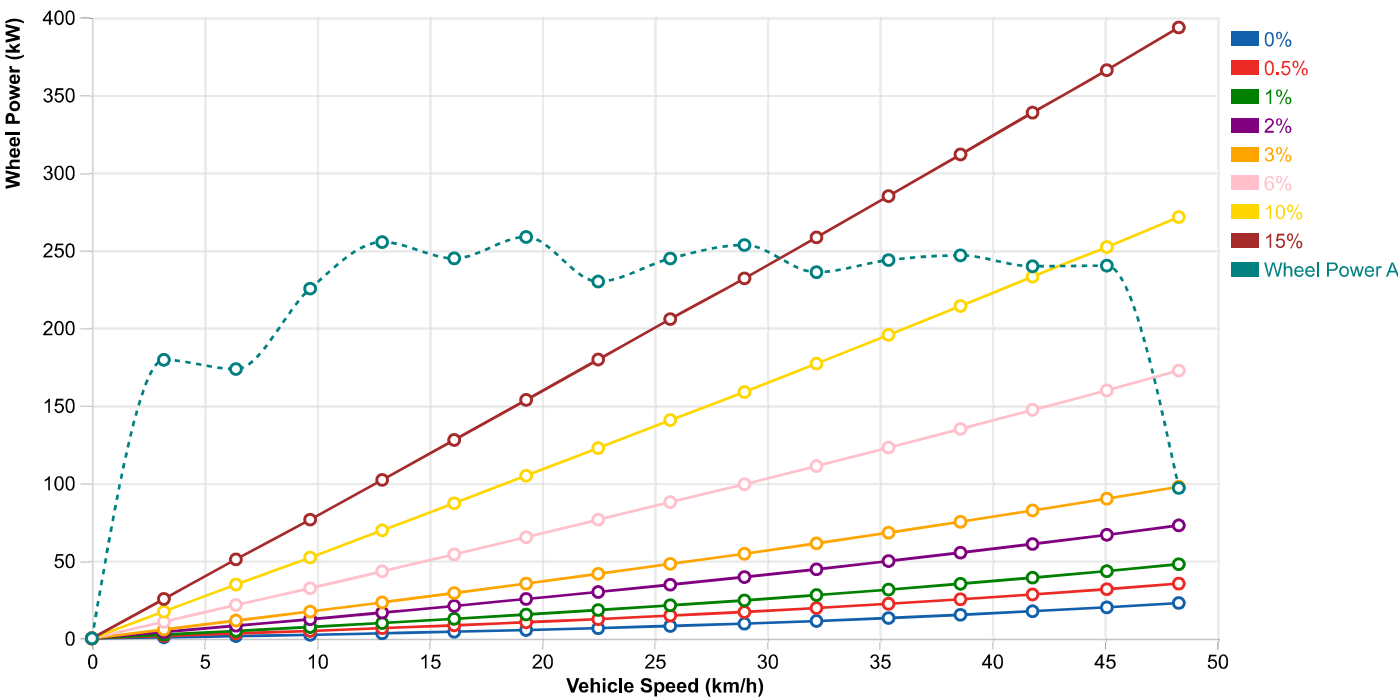
PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAND▲


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
3.2	179.4	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	173.5	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	225.3	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	255.3	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	244.8	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	258.6	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	229.9	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	244.7	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	253.4	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	235.9	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	243.7	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	246.7	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	239.7	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	240.1	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	96.9	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5

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 BF6M1015CP -- 330kW@1900rpm, 1990Nm@1200rpm -- without SEM/LRTP (116-L021888-E, Rev A)
Transmission	4500 SP Retarder (1-L007380-T, Rev D)
Transmission Rating	4500 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L024276-R, Rev A)
Vehicle Parameters	Standard
Torque Converter	TC561 (1-L001260-TC, Rev B) Recommended
Transmission Retarder	4000 Series Medium Capacity (1-L004744-TR, Rev D)
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	43.5	1759	0.673	1184	1184	16.85	15.30	203.9	8.24	69.49	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	19.2	1759	0.673	1184	1184	38.14	37.14	203.9	20.34	69.49	80% Converter Efficiency