

Application Report Bundle

iSCAAN**116-A357712-1** (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 16:15:52
Scaan Number	
Application	116-A357712-1
Application Name	UAT-4 Cummins ISL9E3 400 Retarder
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)	25.0	25.0
Alternator / Generator	3.1	3.1
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

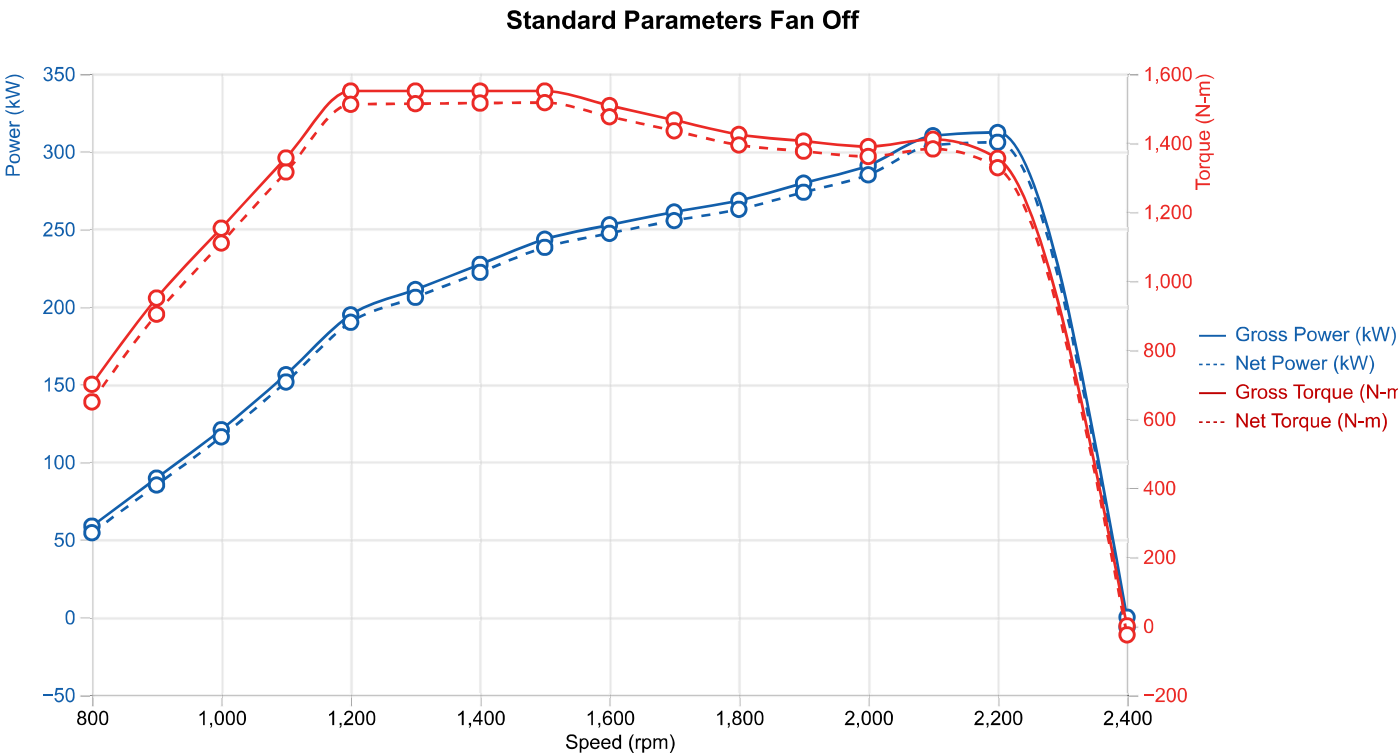
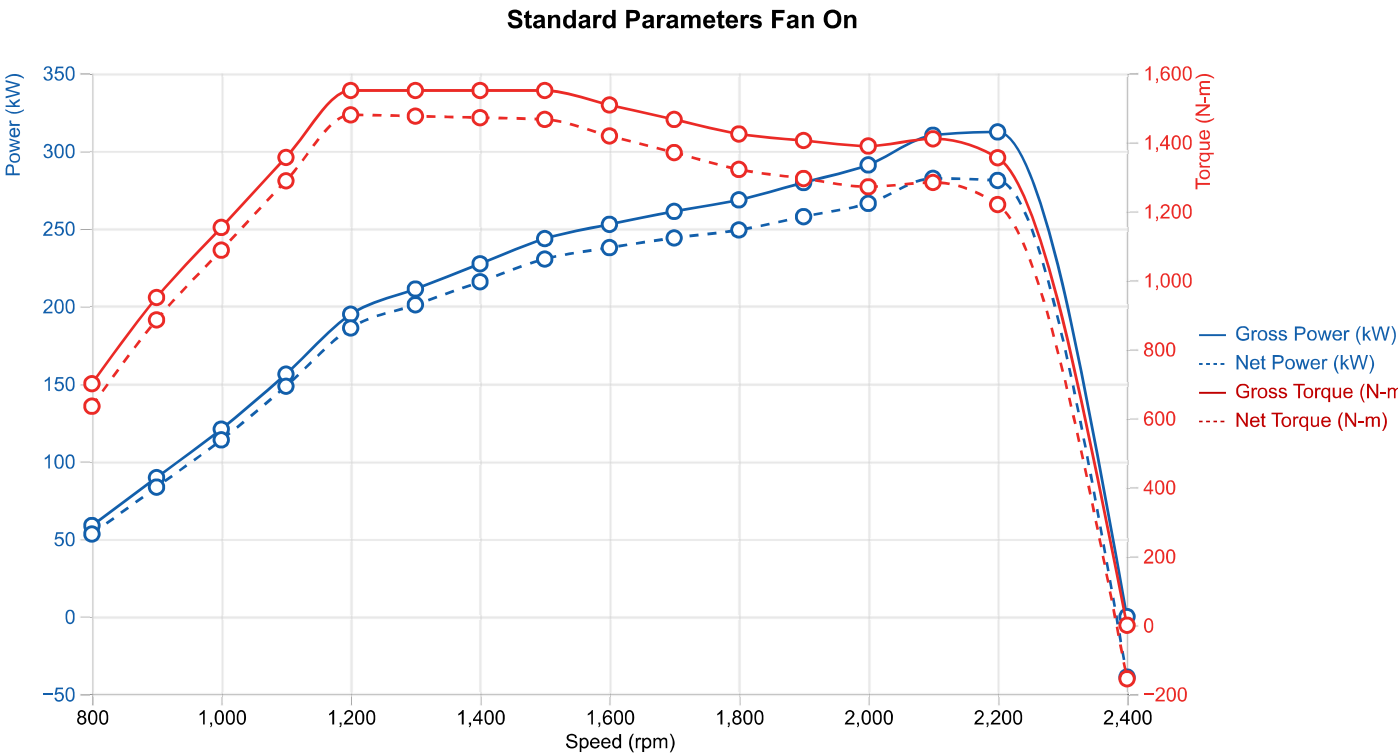
Number of Power Packs	1
Engine Rating	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Engine Controls Type	Electronic
Evaluate at Altitude	No
Certifications	
Displacement	8.85 l
Peak Torque	1550.0 N-m
Peak Torque Speed	1200 rpm
Peak Power	312.2 kW
Peak Power Speed	2200 rpm
Governed Power	312.2 kW
Governed Speed	2200 rpm
Number Of Curves	1
Engine Curve Reference	
Engine Idle Speed	700 rpm
Cruise Velocity @ Speed	0.0 km/h @ 0 rpm
Engine Retarder	
Engine Inertia (estimated)	0.9059 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
800	58.6	700.0	53.2	634.7	54.4	649.0	
900	89.5	950.0	83.4	885.0	85.1	903.2	
1000	120.7	1153.0	113.8	1087.1	116.2	1109.5	
1100	156.2	1356.0	148.4	1288.1	151.5	1315.2	
1200	194.8	1550.0	185.9	1479.2	189.9	1511.5	Peak Torque
1300	211.0	1550.0	200.9	1475.5	206.0	1513.4	
1400	227.2	1550.0	215.7	1471.1	222.1	1515.0	
1500	243.5	1550.0	230.3	1466.1	238.2	1516.5	
1600	252.7	1508.0	237.6	1418.4	247.3	1475.7	
1700	261.0	1466.0	243.9	1370.1	255.4	1434.8	
1800	268.4	1424.0	249.0	1321.2	262.7	1393.8	
1900	279.5	1405.0	257.6	1294.8	273.7	1375.7	
2000	290.9	1389.0	266.2	1270.8	284.9	1360.4	
2100	310.1	1410.0	282.2	1283.4	304.0	1382.2	
2200	312.2	1355.0	280.9	1219.4	305.9	1327.8	Peak Governed
2400	0.0	0.0	-39.0	-155.1	-6.5	-26.1	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)
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ENGINE CURVE - USER DEFINED LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)
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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
800	58.6	700.0	53.2	634.7	54.4	649.0	
900	89.5	950.0	83.4	885.0	85.1	903.2	
1000	120.7	1153.0	113.8	1087.1	116.2	1109.5	
1100	156.2	1356.0	148.4	1288.1	151.5	1315.2	

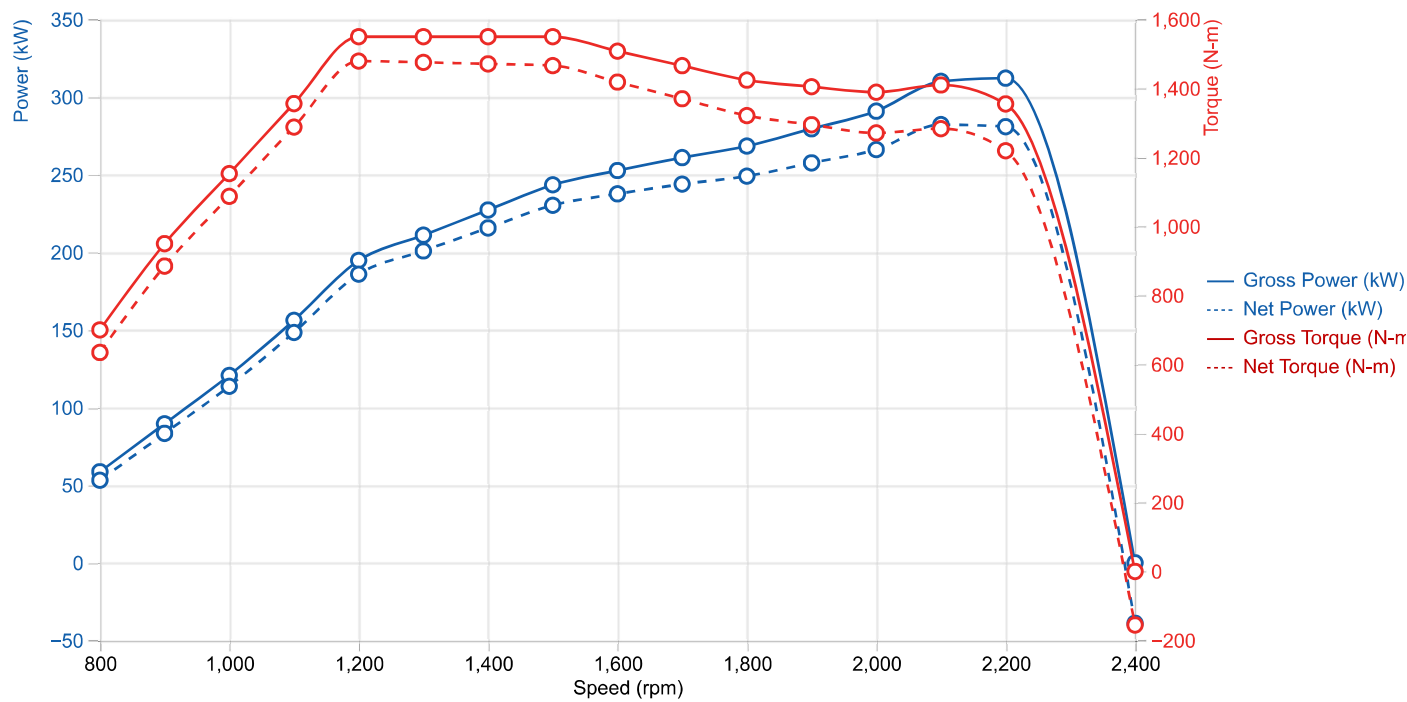
1200	194.8	1550.0	185.9	1479.2	189.9	1511.5	Peak Torque
1300	211.0	1550.0	200.9	1475.5	206.0	1513.4	
1400	227.2	1550.0	215.7	1471.1	222.1	1515.0	
1500	243.5	1550.0	230.3	1466.1	238.2	1516.5	
1600	252.7	1508.0	237.6	1418.4	247.3	1475.7	
1700	261.0	1466.0	243.9	1370.1	255.4	1434.8	
1800	268.4	1424.0	249.0	1321.2	262.7	1393.8	
1900	279.5	1405.0	257.6	1294.8	273.7	1375.7	
2000	290.9	1389.0	266.2	1270.8	284.9	1360.4	
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2400	0.0	0.0	-39.0	-155.1	-6.5	-26.1	No Load Governed

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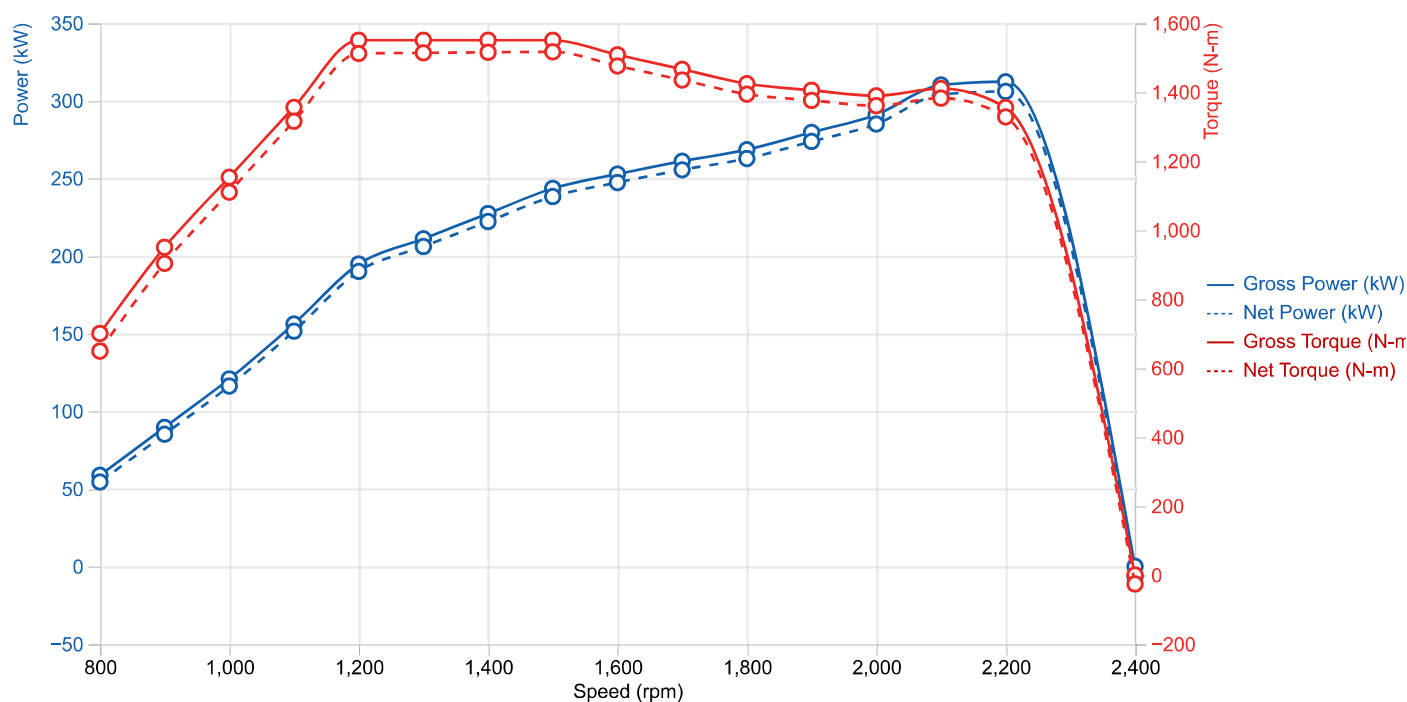
PLOTS - ENGINE CURVE - USER DEFINED LOSSES - COMBINED LOW & HIGH CURVES (AC ON WHERE APPLICABLE)



User Defined Parameters Fan On



User Defined Parameters Fan Off



TRANSMISSION

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

CONTROLS

Controls Release	Production Calibration (PC) for 3000 Series (1-L001194-CR, Rev F)
Shift Schedule	Primary
DynActive	No
Speed Profile	Performance
Shift Speed & Strategy	2200 rpm S2 Performance 2
Equivalent DynActive Bias	11
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	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) - Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

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

! CONVERTER RATING AND GUIDELINE CHECKSSECTION SCORE - XXX

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			1748	rpm	🚩 Reference
C05 ▼?	Minimum Engine Speed	Min	1300	1748	rpm	✓ OK: Acceptable
C10 ▼?	Torque Converter Input Torque	Max	1695.0	1550.0	N-m	✓ OK: Acceptable
C07 ▼?	Turbine Torque at Converter Stall	Max	2305.0	2354.0	N-m	! XXX: Not Acceptable - rating or usage violation
C08 ▼?	Converter Speed Ratio at Engine Governed Speed	Min	0.800	0.749		! XX: Questionable - may not be acceptable
C03 ▼?	Converter Stall Torque Ratio			1.770		🚩 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	336.0	312.2	kW	✓ OK: Acceptable
T14 ▼?	Transmission Input Torque (Gross)	Max	1695.0	1550.0	N-m	✓ OK: Acceptable
T03 ▼?	Transmission Input Speed		1900 / 2800	2200	rpm	✓ OK: Acceptable
T11 ▼?	Transmission Output Speed	Max	3600	3374	rpm	✓ OK: Acceptable

Notes

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

! VEHICLE RATING AND GUIDELINE CHECKS - STANDARDSECTION SCORE - XX


Check	Check Name	Minimum or Maximum	Rating or Recommendation	Actual Value	Units	Overall Status
V06 ▾?	Minimum Required Driveline Ratio For Wheel Slip	Min	10.278	5.700		! XX: Questionable - may not be acceptable
V21 ▾?	1st Range Converter Stall Gradeability			43.87	%	📖 Reference
V13 ▾?	1st Range 70% Converter Efficiency Gradeability			31.48	%	📖 Reference
V23 ▾?	1st Range 80% Converter Efficiency Gradeability			27.76	%	📖 Reference
V17 ▾?	Maximum Geared Vehicle Speed at Engine Governed Speed			54.8	km/h	📖 Reference
V18 ▾?	Maximum Speed on 0.25% Grade	Min	88.5	125.9	km/h	✓ OK: Acceptable
V46 ▾?	Heat Generated at 0.7 Tractive Effort to Drive Wheel Weight Ratio			N/A	kW	📖 Reference
V49 ▾?	Heat Generated at 0.6 Tractive Effort to Drive Wheel Weight Ratio			N/A	kW	📖 Reference

Notes

Check	Comments
V06	1st range at 70% converter efficiency operation, 0.55 traction coefficient.
V17	Check is in 6L Lockup.
V18	At 2232 rpm Engine Speed, Range 6L.
V46	Cannot attain conditions required at 0.7 Tractive Effort to Drive Wheel Weight Ratio
V49	Cannot attain conditions required at 0.6 Tractive Effort to Drive Wheel Weight Ratio

Vehicle Performance Summary

MISSION

End User

xxx

Selected Vocation

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

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

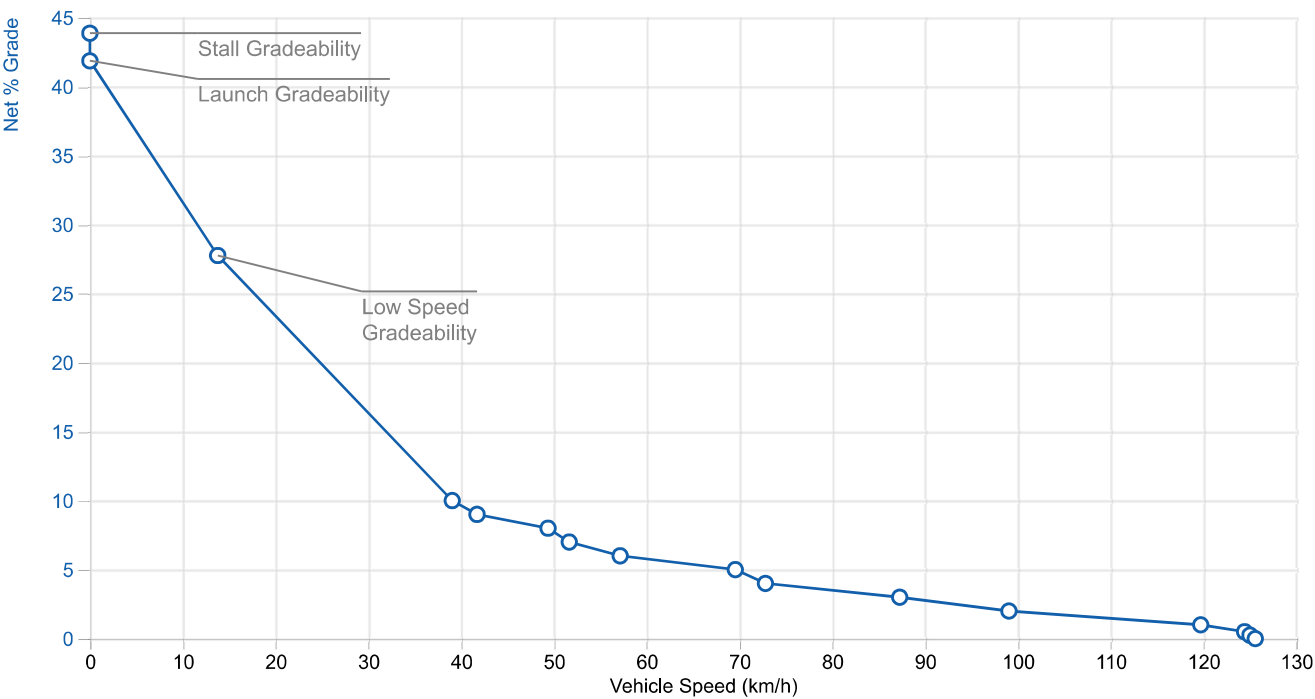
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FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.95▲

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

Gradeability	% Grade	Vehicle Speed (km/h)	Gear Range	Match Point
Stall Gradeability	43.9		1C	Stall
Launch Gradeability	41.9		1C	
Low Speed Gradeability	27.8	13.8	1C	80 Percent
Maximum Speed on Grade	0.0	125.6	6L	Road Load
	0.3	125.0	6L	
	0.5	124.5	6L	
	1.0	119.7	6L	
	2.0	99.1	6L	
	3.0	87.3	5L	
	4.0	72.8	4L	
	5.0	69.6	4L	
	6.0	57.2	4L	
	7.0	51.7	3L	
	8.0	49.4	3L	
	9.0	41.7	3L	
	10.0	39.1	2L	

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

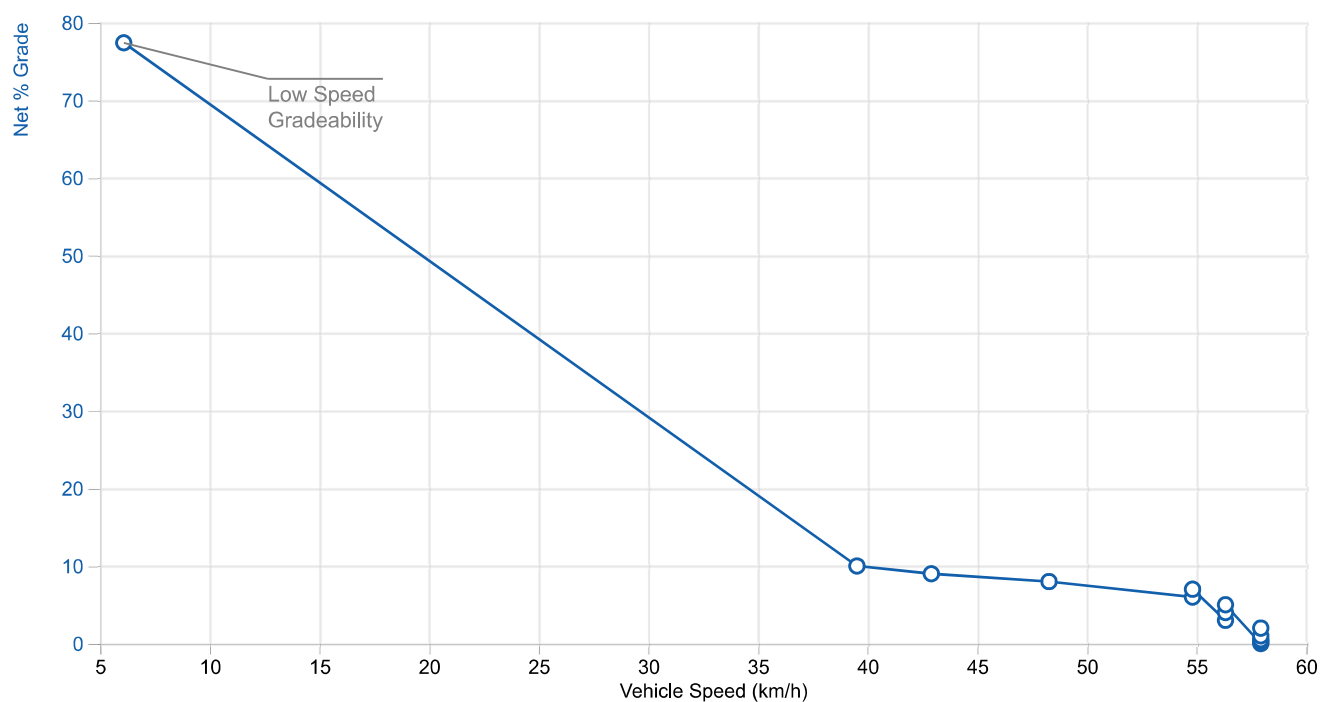


FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.15▲

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	226.1		1C	Stall
Launch Gradeability	224.1		1C	
Low Speed Gradeability	77.4	6.1	1C	80 Percent
Maximum Speed on Grade	0.0	57.9	6L	Road Load
	0.3	57.9	6L	
	0.5	57.9	6L	
	1.0	57.9	6L	
	2.0	57.9	6L	
	3.0	56.3	6L	
	4.0	56.3	6L	
	5.0	56.3	6L	
	6.0	54.8	6L	
	7.0	54.8	6L	
	8.0	48.3	6L	
	9.0	42.9	5L	
	10.0	39.5	5L	

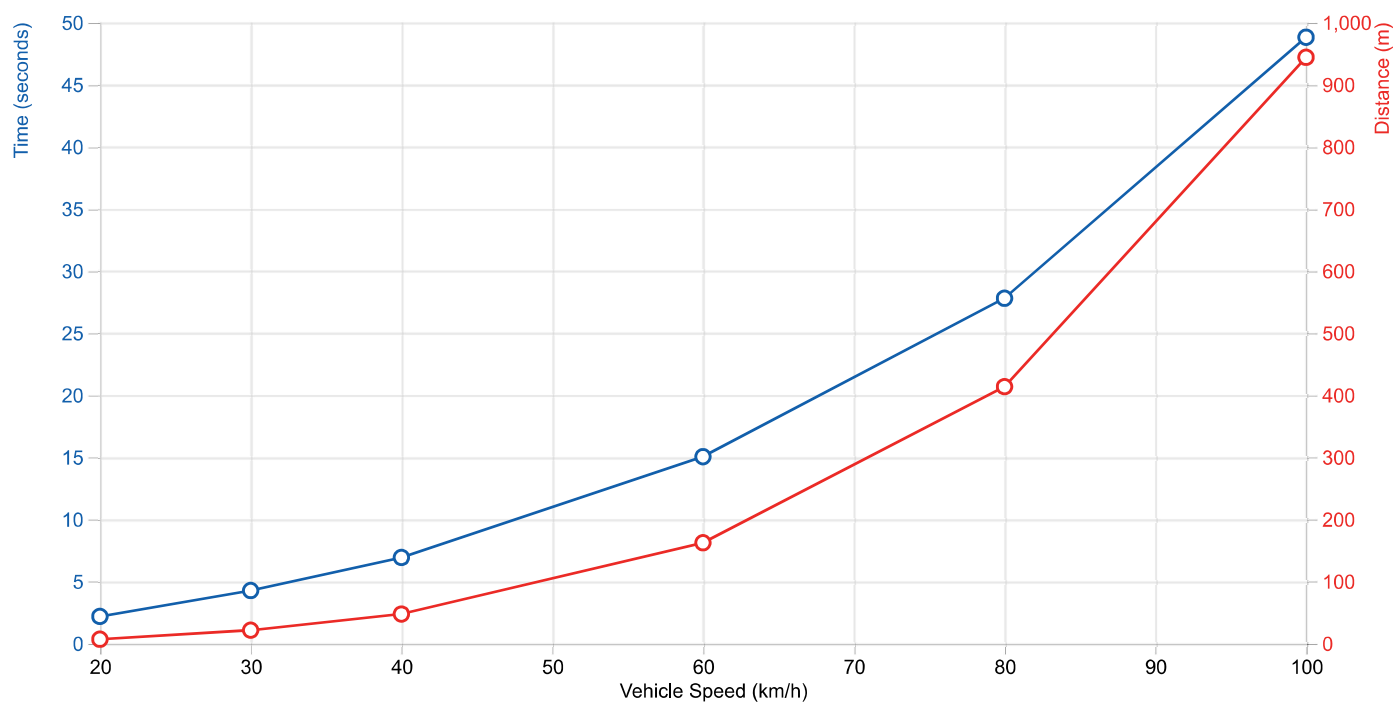
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (GRADEABILITY) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.15▲


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

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

Speed	Time (seconds)	Distance (m)
0 - 20 km/h	2.2	7
0 - 30 km/h	4.3	22
0 - 40 km/h	6.9	48
0 - 60 km/h	15.1	162
0 - 80 km/h	27.8	414
0 - 100 km/h	48.8	944

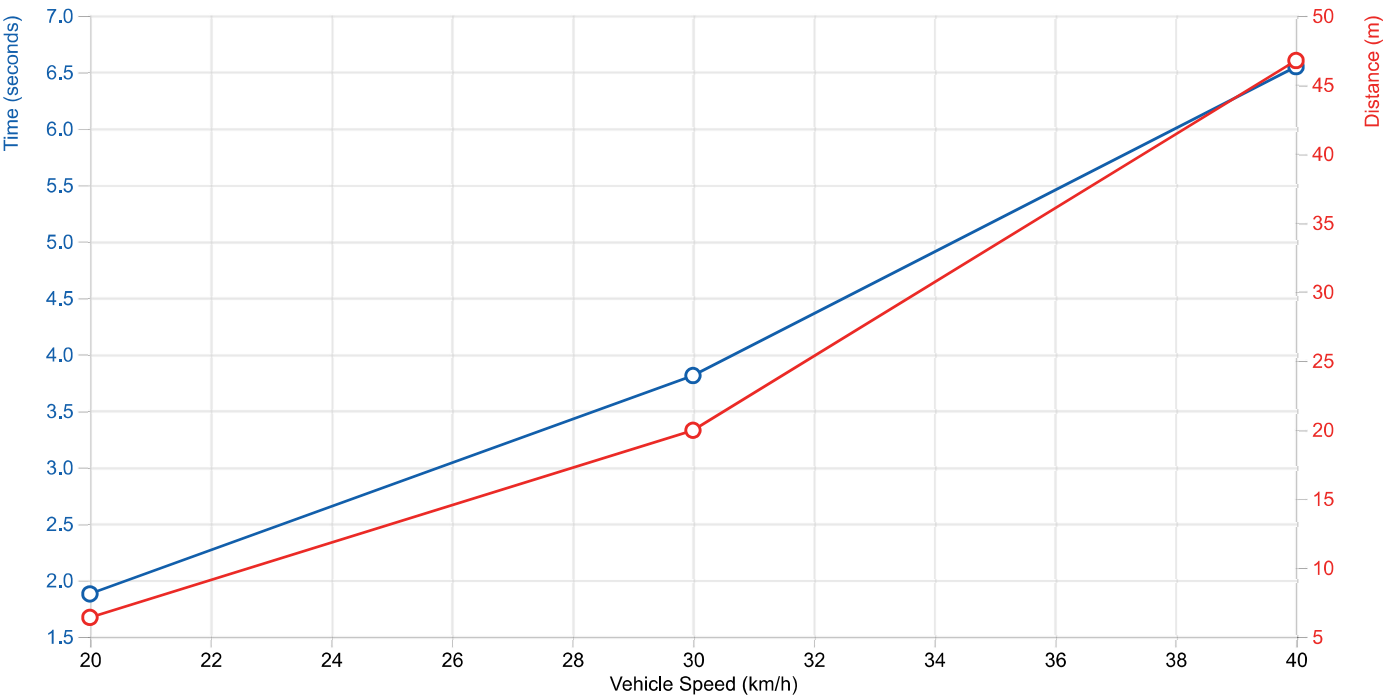
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (ACCELERATION) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RA▲


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	20
0 - 40 km/h	6.5	47
0 - 60 km/h	Speed not possible	Speed not possible
0 - 80 km/h	Speed not possible	Speed not possible
0 - 100 km/h	Speed not possible	Speed not possible

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



Engine-Converter Match

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

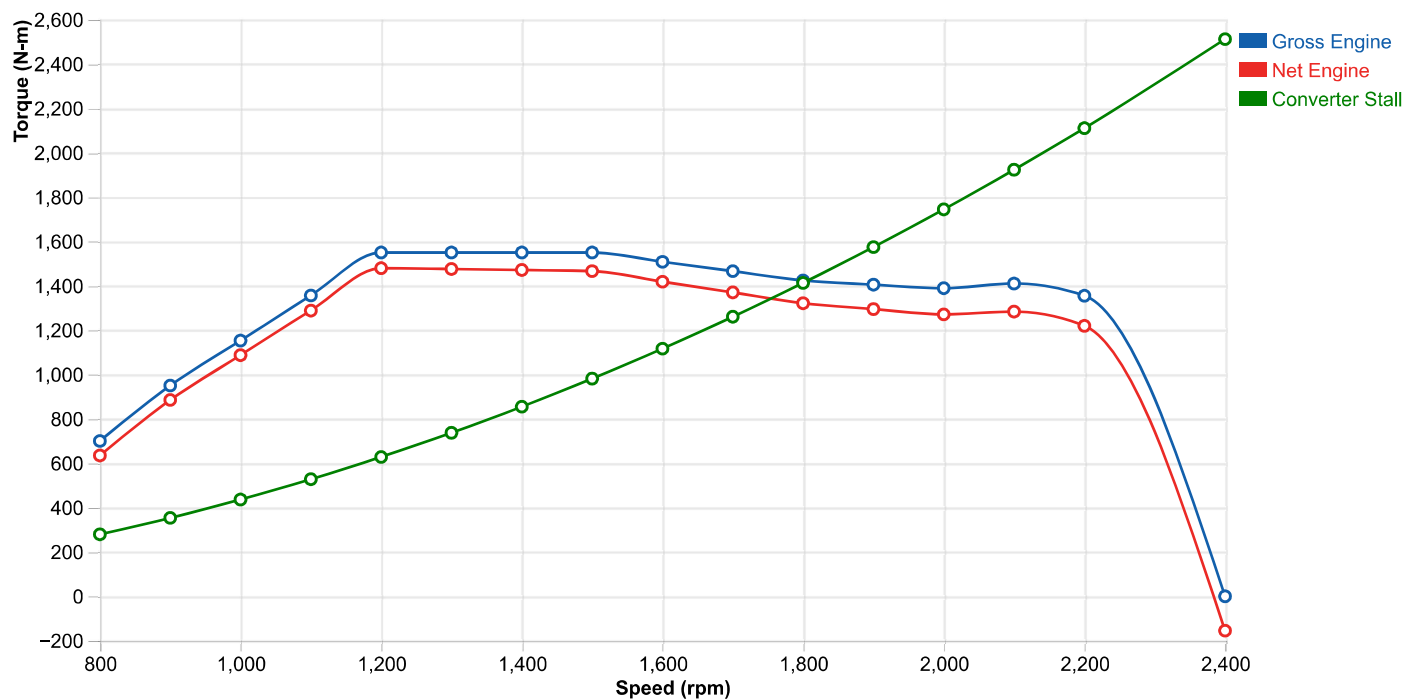
PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
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Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque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

NOTE	
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CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE	
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Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Speed Ratio	Torque Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Turbine Speed (rpm)	Turbine Torque (N-m)	Turbine Power (kW)	Converter Heat Rejection (kW)	Match Point
0.000	1.770	1748	1346.5	246.5	0	2354	0	246.59	Stall
0.100	1.730	1755	1343.4	246.8	175	2295.3	42.2	204.73	
0.200	1.670	1775	1333.3	247.9	355	2198.8	81.8	166.17	
0.300	1.590	1808	1319.1	249.7	542	2070.7	117.6	132.17	
0.400	1.489	1853	1307.1	253.7	741	1920.8	149.1	104.6	
0.499	1.401	1928	1288	260.1	963	1780.9	179.6	80.49	70 Percent
0.500	1.401	1929	1287.9	260.1	964	1780.2	179.8	80.37	
0.600	1.298	2013	1272.5	268.3	1208	1628.4	206	62.31	
0.634	1.263	2061	1278.5	275.9	1307	1592.2	217.9	58.07	80 Percent
0.700	1.196	2142	1256.4	281.8	1499	1481.8	232.7	49.19	
0.725	1.172	2170	1238.4	281.5	1573	1430.1	235.5	45.94	
0.727	1.170	2173	1236.7	281.4	1580	1425.3	235.8	45.65	85 Percent
0.749	1.147	2200	1219.4	280.9	1649	1378.3	238	42.99	Governed
0.750	1.147	2200	1219.4	280.9	1649	1377.9	238	42.96	
0.750	1.147	2200	1219.4	280.9	1650	1377.5	238	42.92	
0.800	1.094	2214	1125.9	261	1771	1211.7	224.7	36.3	
0.825	1.067	2220	1085	252.2	1831	1138	218.2	33.98	
0.881	0.998	2239	954.5	223.8	1972	934.1	192.9	30.84	Coupling
0.900	0.999	2254	846.7	199.9	2029	827.3	175.8	24.12	
0.925	0.995	2275	704.2	167.8	2104	682.2	150.3	17.44	
0.950	0.992	2306	487.8	117.8	2191	465.5	106.8	11.03	
0.975	0.988	2341	248.8	61	2283	227.5	54.4	6.63	
0.990	0.985	2362	104.5	25.9	2339	84.6	20.7	5.13	

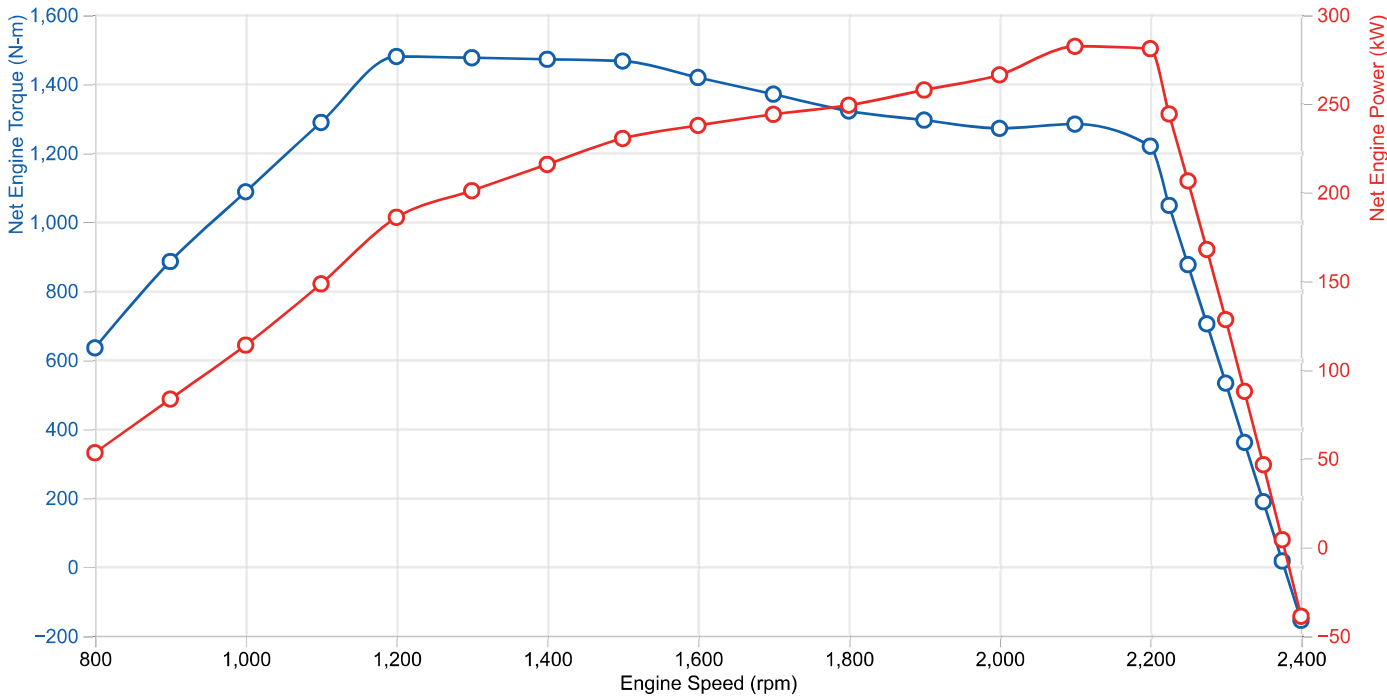
PLOTS - CONVERTER MODE - STANDARD, FAN ON, AC OFF, STANDARD POWER CURVE



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

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Turbine Speed (rpm)	Turbine Torque (N-m)	Turbine Power (kW)	Converter Heat Rejection (kW)	Match Point
800	634.7	53.2	800	622.2	52.1	1.04	
900	885	83.4	900	871.6	82.2	1.26	
1000	1087.1	113.8	1000	1072.9	112.4	1.49	
1100	1288.1	148.4	1100	1273.3	146.7	1.71	
1200	1479.2	185.9	1200	1463.9	184	1.93	
1300	1475.5	200.9	1300	1459.8	198.7	2.14	
1400	1471.1	215.7	1400	1455.2	213.3	2.34	
1500	1466.1	230.3	1500	1450.5	227.8	2.45	
1600	1418.4	237.7	1600	1402.3	235	2.69	
1700	1370.1	243.9	1700	1353.7	241	2.92	
1800	1321.2	249	1800	1304.4	245.9	3.16	
1900	1294.8	257.6	1900	1277.7	254.2	3.41	
2000	1270.8	266.2	2000	1253.4	262.5	3.66	
2100	1283.4	282.2	2100	1265.6	278.3	3.91	
2200	1219.4	280.9	2200	1201.3	276.8	4.17	Governed
2225	1047.7	244.1	2225	1029.5	239.9	4.23	
2250	876	206.4	2250	857.7	202.1	4.3	
2275	704.2	167.8	2275	685.9	163.4	4.37	
2300	532.4	128.2	2300	514	123.8	4.43	
2325	360.6	87.8	2325	342.1	83.3	4.5	
2350	188.7	46.4	2350	170.2	41.9	4.57	
2375	16.8	4.2	2375	-1.8	-0.4	4.63	

2400	-155.1	-39	2400	-173.8	-43.7	4.7	
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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	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	
NOTE	

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

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

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

Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1748	1346.5	246.5	0	8120.7	0.0	246.59	Stall
0.100	1755	1343.4	246.8	50	7905.6	41.7	205.24	
0.200	1775	1333.3	247.9	102	7561.7	80.6	167.29	
0.300	1808	1319.1	249.7	156	7110.6	115.8	133.96	
0.400	1853	1307.1	253.7	213	6586.0	146.6	107.10	
0.499	1928	1288.0	260.1	276	6101.2	176.5	83.63	70 Percent
0.500	1929	1287.9	260.1	277	6098.8	176.6	83.52	
0.600	2013	1272.5	268.3	346	5574.5	202.2	66.07	
0.634	2061	1278.5	275.9	375	5449.6	213.9	62.09	80 Percent
0.700	2142	1256.4	281.8	430	5068.2	228.2	53.64	
0.725	2170	1238.4	281.5	451	4889.8	231.0	50.52	
0.727	2173	1236.7	281.4	453	4873.2	231.2	50.25	85 Percent
0.749	2200	1219.4	280.9	473	4710.8	233.2	47.72	Governed
0.750	2200	1219.4	280.9	473	4709.4	233.3	47.68	
0.750	2200	1219.4	280.9	473	4708.1	233.3	47.65	
0.800	2214	1125.9	261.0	508	4135.4	219.9	41.08	
0.825	2220	1085.0	252.2	525	3880.7	213.4	38.78	
0.881	2239	954.5	223.8	566	3176.7	188.2	35.61	Coupling
0.900	2254	846.7	199.9	582	2807.9	171.1	28.81	
0.925	2275	704.2	167.8	603	2306.7	145.8	21.99	
0.950	2306	487.8	117.8	628	1558.6	102.6	15.27	
0.975	2341	248.8	61.0	655	736.9	50.5	10.49	
0.990	2362	104.5	25.9	671	243.7	17.1	8.74	

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

Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1748	1346.5	246.5	0	4351.5	0.0	246.59	Stall
0.100	1755	1343.4	246.8	94	4238.8	41.8	205.12	
0.200	1775	1333.3	247.9	190	4056.8	80.9	167.00	

0.300	1808	1319.1	249.7	291	3817.1	116.3	133.47	
0.400	1853	1307.1	253.7	398	3537.8	147.3	106.38	
0.499	1928	1288.0	260.1	517	3277.9	177.4	82.74	70 Percent
0.500	1929	1287.9	260.1	517	3276.6	177.5	82.63	
0.600	2013	1272.5	268.3	648	2995.9	203.3	64.98	
0.634	2061	1278.5	275.9	701	2929.5	215.1	60.89	80 Percent
0.700	2142	1256.4	281.8	804	2726.8	229.7	52.15	
0.725	2170	1238.4	281.5	844	2632.1	232.6	48.91	
0.727	2173	1236.7	281.4	847	2623.3	232.8	48.63	85 Percent
0.749	2200	1219.4	280.9	884	2536.6	234.9	46.01	Governed
0.750	2200	1219.4	280.9	885	2535.9	235.0	45.97	
0.750	2200	1219.4	280.9	885	2535.2	235.0	45.94	
0.800	2214	1125.9	261.0	950	2228.5	221.7	39.30	
0.825	2220	1085.0	252.2	982	2092.1	215.2	36.97	
0.881	2239	954.5	223.8	1058	1714.9	190.0	33.76	Coupling
0.900	2254	846.7	199.9	1088	1517.3	172.9	26.95	
0.925	2275	704.2	167.8	1129	1248.7	147.6	20.15	
0.950	2306	487.8	117.8	1176	847.7	104.4	13.47	
0.975	2341	248.8	61.0	1225	407.3	52.2	8.77	
0.990	2362	104.5	25.9	1255	143.0	18.8	7.07	

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


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1748	1346.5	246.5	0	3296.3	0.0	246.59	Stall
0.100	1755	1343.4	246.8	125	3211.0	41.9	205.03	
0.200	1775	1333.3	247.9	252	3073.2	81.1	166.82	
0.300	1808	1319.1	249.7	385	2891.7	116.6	133.22	
0.400	1853	1307.1	253.7	526	2680.0	147.7	106.06	
0.499	1928	1288.0	260.1	684	2483.6	177.8	82.32	70 Percent
0.500	1929	1287.9	260.1	684	2482.7	178.0	82.21	
0.600	2013	1272.5	268.3	857	2270.0	203.8	64.49	
0.634	2061	1278.5	275.9	927	2219.4	215.6	60.40	80 Percent
0.700	2142	1256.4	281.8	1064	2064.8	230.1	51.76	
0.725	2170	1238.4	281.5	1116	1992.4	232.9	48.59	
0.727	2173	1236.7	281.4	1121	1985.7	233.1	48.31	85 Percent
0.749	2200	1219.4	280.9	1170	1919.7	235.2	45.73	Governed
0.750	2200	1219.4	280.9	1171	1919.2	235.3	45.70	
0.750	2200	1219.4	280.9	1171	1918.6	235.3	45.66	
0.800	2214	1125.9	261.0	1257	1686.0	221.9	39.11	
0.825	2220	1085.0	252.2	1300	1582.5	215.4	36.82	

0.881	2239	954.5	223.8	1400	1296.5	190.0	33.73	Coupling
0.900	2254	846.7	199.9	1440	1146.6	172.9	27.00	
0.925	2275	704.2	167.8	1494	943.0	147.5	20.29	
0.950	2306	487.8	117.8	1555	639.0	104.1	13.77	
0.975	2341	248.8	61.0	1620	305.1	51.8	9.24	
0.990	2362	104.5	25.9	1660	104.7	18.2	7.65	

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	1748	1346.5	246.5	0	2354.0	0.0	246.59	Stall
0.100	1755	1343.4	246.8	175	2293.3	42.1	204.76	
0.200	1775	1333.3	247.9	355	2194.9	81.6	166.31	
0.300	1808	1319.1	249.7	542	2065.2	117.3	132.49	
0.400	1853	1307.1	253.7	741	1913.7	148.6	105.15	
0.499	1928	1288.0	260.1	963	1772.4	178.8	81.34	70 Percent
0.500	1929	1287.9	260.1	964	1771.7	178.9	81.23	
0.600	2013	1272.5	268.3	1208	1618.8	204.8	63.52	
0.634	2061	1278.5	275.9	1307	1582.3	216.5	59.42	80 Percent
0.700	2142	1256.4	281.8	1499	1471.5	231.1	50.81	
0.725	2170	1238.4	281.5	1573	1419.7	233.8	47.66	
0.727	2173	1236.7	281.4	1580	1414.9	234.1	47.38	85 Percent
0.749	2200	1219.4	280.9	1649	1367.5	236.1	44.85	Governed
0.750	2200	1219.4	280.9	1649	1367.1	236.1	44.82	
0.750	2200	1219.4	280.9	1650	1366.7	236.2	44.78	
0.800	2214	1125.9	261.0	1771	1200.1	222.6	38.46	
0.825	2220	1085.0	252.2	1831	1125.9	215.9	36.30	
0.881	2239	954.5	223.8	1972	920.9	190.2	33.58	Coupling
0.900	2254	846.7	199.9	2029	813.6	172.9	27.04	
0.925	2275	704.2	167.8	2104	667.7	147.2	20.62	
0.950	2306	487.8	117.8	2191	450.2	103.3	14.53	
0.975	2341	248.8	61.0	2283	211.2	50.5	10.51	
0.990	2362	104.5	25.9	2339	67.8	16.6	9.25	

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


Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1748	1346.5	246.5	0	1751.8	0.0	246.59	Stall

0.100	1755	1343.4	246.8	234	1706.2	41.8	205.10	
0.200	1775	1333.3	247.9	473	1632.6	80.9	166.99	
0.300	1808	1319.1	249.7	723	1535.3	116.3	133.51	
0.400	1853	1307.1	253.7	988	1421.8	147.2	106.55	
0.499	1928	1288.0	260.1	1284	1315.5	176.9	83.20	70 Percent
0.500	1929	1287.9	260.1	1286	1315.0	177.1	83.09	
0.600	2013	1272.5	268.3	1610	1199.7	202.3	65.95	
0.634	2061	1278.5	275.9	1742	1171.9	213.8	62.14	80 Percent
0.700	2142	1256.4	281.8	1999	1087.9	227.8	54.09	
0.725	2170	1238.4	281.5	2097	1048.8	230.3	51.17	
0.727	2173	1236.7	281.4	2106	1045.1	230.5	50.91	85 Percent
0.749	2200	1219.4	280.9	2198	1009.3	232.3	48.61	Governed
0.750	2200	1219.4	280.9	2199	1009.0	232.4	48.58	
0.750	2200	1219.4	280.9	2200	1008.7	232.4	48.54	
0.800	2214	1125.9	261.0	2361	883.7	218.5	42.51	
0.825	2220	1085.0	252.2	2442	827.9	211.7	40.51	
0.881	2239	954.5	223.8	2630	674.1	185.6	38.15	Coupling
0.900	2254	846.7	199.9	2705	593.7	168.2	31.72	
0.925	2275	704.2	167.8	2806	484.4	142.3	25.45	
0.950	2306	487.8	117.8	2922	321.6	98.4	19.44	
0.975	2341	248.8	61.0	3044	142.8	45.5	15.49	
0.990	2362	104.5	25.9	3118	35.5	11.6	14.28	

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


Engine Fan		On		Engine Power			Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters			Standard	
Speed Ratio	Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
0.000	1748	1346.5	246.5	0	1521.2	0.0	246.59	Stall
0.100	1755	1343.4	246.8	269	1481.3	41.7	205.16	
0.200	1775	1333.3	247.9	545	1416.8	80.8	167.13	
0.300	1808	1319.1	249.7	832	1331.7	116.0	133.78	
0.400	1853	1307.1	253.7	1137	1232.1	146.7	107.01	
0.499	1928	1288.0	260.1	1477	1138.6	176.2	83.97	70 Percent
0.500	1929	1287.9	260.1	1479	1138.2	176.3	83.86	
0.600	2013	1272.5	268.3	1853	1036.4	201.1	67.21	
0.634	2061	1278.5	275.9	2004	1011.6	212.3	63.65	80 Percent
0.700	2142	1256.4	281.8	2300	937.1	225.7	56.17	
0.725	2170	1238.4	281.5	2412	902.5	228.0	53.49	
0.727	2173	1236.7	281.4	2423	899.3	228.2	53.26	85 Percent
0.749	2200	1219.4	280.9	2528	867.7	229.8	51.19	Governed
0.750	2200	1219.4	280.9	2530	867.5	229.8	51.16	
0.750	2200	1219.4	280.9	2531	867.2	229.8	51.12	

0.800	2214	1125.9	261.0	2716	757.8	215.5	45.47	
0.825	2220	1085.0	252.2	2809	709.0	208.5	43.67	
0.881	2239	954.5	223.8	3025	574.5	182.0	41.79	Coupling
0.900	2254	846.7	199.9	3112	504.3	164.3	35.56	
0.925	2275	704.2	167.8	3228	408.9	138.2	29.56	
0.950	2306	487.8	117.8	3361	267.0	94.0	23.85	
0.975	2341	248.8	61.0	3501	111.2	40.8	20.22	
0.990	2362	104.5	25.9	3587	17.7	6.6	19.22	

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

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Engine Fan		On		Engine Power		Standard Power Curve		
Air Conditioning		Off		Vehicle Parameters		Standard		
Speed Ratio	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	1748	1346.5	246.5	0	11416.1	0.0	246.59	Stall
0.100	1755	1343.4	246.8	35	11124.3	40.7	206.23	
0.200	1775	1333.3	247.9	71	10649.9	78.8	169.13	
0.300	1808	1319.1	249.7	108	10023.5	113.3	136.51	
0.400	1853	1307.1	253.7	148	9292.0	143.5	110.20	
0.499	1928	1288.0	260.1	192	8610.1	172.8	87.33	70 Percent
0.500	1929	1287.9	260.1	192	8606.8	173.0	87.22	
0.600	2013	1272.5	268.3	240	7871.3	198.1	70.18	
0.634	2061	1278.5	275.9	260	7695.8	209.5	66.43	80 Percent
0.700	2142	1256.4	281.8	298	7159.6	223.7	58.18	
0.725	2170	1238.4	281.5	313	6908.8	226.4	55.09	
0.727	2173	1236.7	281.4	314	6885.4	226.6	54.81	85 Percent
0.749	2200	1219.4	280.9	328	6657.0	228.7	52.28	Governed
0.750	2200	1219.4	280.9	328	6655.1	228.7	52.25	
0.750	2200	1219.4	280.9	328	6653.2	228.7	52.21	
0.800	2214	1125.9	261.0	352	5848.0	215.8	45.23	
0.825	2220	1085.0	252.2	364	5489.9	209.5	42.74	
0.881	2239	954.5	223.8	392	4500.0	184.9	38.85	Coupling
0.900	2254	846.7	199.9	404	3981.4	168.3	31.59	
0.925	2275	704.2	167.8	419	3276.7	143.7	24.10	
0.950	2306	487.8	117.8	436	2224.7	101.6	16.26	
0.975	2341	248.8	61.0	454	1069.4	50.9	10.15	
0.990	2362	104.5	25.9	465	376.0	18.3	7.54	

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

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

	(N-m)	(kW)	(rpm)	(N-m)	(kW)	(kW)	
800	634.7	53.2	229	2104.6	50.6	2.61	
900	885.0	83.4	258	2964.7	80.1	3.28	
1000	1087.1	113.8	287	3658.8	109.9	3.96	
1100	1288.1	148.4	315	4349.8	143.7	4.69	
1200	1479.2	185.9	344	5007.1	180.4	5.44	
1300	1475.5	200.9	373	4992.8	194.9	5.95	
1400	1471.1	215.7	401	4976.6	209.2	6.45	
1500	1466.1	230.3	430	4960.2	223.4	6.85	
1600	1418.4	237.7	459	4793.9	230.4	7.30	
1700	1370.1	243.9	488	4625.5	236.2	7.76	
1800	1321.2	249.0	516	4455.2	240.8	8.21	
1900	1294.8	257.6	545	4362.3	248.9	8.71	
2000	1270.8	266.2	574	4278.0	257.0	9.22	
2100	1283.4	282.2	602	4319.4	272.4	9.82	
2200	1219.4	280.9	631	4096.9	270.7	10.25	Governed
2225	1047.7	244.1	638	3504.1	234.2	9.97	
2250	876.0	206.4	645	2911.3	196.7	9.68	
2275	704.2	167.8	652	2318.3	158.4	9.38	
2300	532.4	128.2	660	1725.2	119.2	9.07	
2325	360.6	87.8	667	1132.0	79.0	8.75	
2350	188.7	46.4	674	538.7	38.0	8.43	
2375	16.8	4.2	681	-54.7	-3.9	8.09	
2400	-155.1	-39.0	688	-648.2	-46.7	7.75	

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



Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	634.7	53.2	429	1136.9	51.1	2.07	
900	885.0	83.4	483	1597.4	80.8	2.65	
1000	1087.1	113.8	536	1969.1	110.6	3.22	
1100	1288.1	148.4	590	2339.4	144.6	3.81	
1200	1479.2	185.9	644	2691.9	181.5	4.41	
1300	1475.5	200.9	697	2684.7	196.1	4.80	
1400	1471.1	215.7	751	2676.8	210.5	5.15	
1500	1466.1	230.3	805	2669.0	224.9	5.38	
1600	1418.4	237.7	858	2581.1	232.0	5.64	
1700	1370.1	243.9	912	2491.0	237.9	6.00	
1800	1321.2	249.0	966	2399.9	242.7	6.36	
1900	1294.8	257.6	1019	2350.2	250.9	6.76	
2000	1270.8	266.2	1073	2305.0	259.0	7.17	

2100	1283.4	282.2	1127	2327.2	274.6	7.67	
2200	1219.4	280.9	1180	2207.9	272.9	8.04	Governed
2225	1047.7	244.1	1194	1890.2	236.3	7.83	
2250	876.0	206.4	1207	1572.5	198.8	7.62	
2275	704.2	167.8	1220	1254.7	160.4	7.40	
2300	532.4	128.2	1234	936.9	121.1	7.17	
2325	360.6	87.8	1247	619.0	80.9	6.94	
2350	188.7	46.4	1261	301.0	39.7	6.70	
2375	16.8	4.2	1274	-17.0	-2.3	6.45	
2400	-155.1	-39.0	1288	-335.1	-45.2	6.20	

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


Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	634.7	53.2	568	861.2	51.2	1.96	
900	885.0	83.4	639	1210.5	81.0	2.44	
1000	1087.1	113.8	710	1492.3	110.9	2.93	
1100	1288.1	148.4	781	1772.8	144.9	3.44	
1200	1479.2	185.9	852	2039.7	181.9	3.97	
1300	1475.5	200.9	923	2034.0	196.5	4.35	
1400	1471.1	215.7	994	2027.5	211.0	4.72	
1500	1466.1	230.3	1065	2020.9	225.3	4.99	
1600	1418.4	237.7	1136	1953.5	232.3	5.35	
1700	1370.1	243.9	1207	1885.0	238.2	5.74	
1800	1321.2	249.0	1278	1815.8	242.9	6.13	
1900	1294.8	257.6	1348	1777.9	251.1	6.57	
2000	1270.8	266.2	1419	1743.4	259.1	7.02	
2100	1283.4	282.2	1490	1759.9	274.7	7.55	
2200	1219.4	280.9	1561	1669.3	273.0	7.98	Governed
2225	1047.7	244.1	1579	1428.6	236.2	7.87	
2250	876.0	206.4	1597	1187.9	198.6	7.75	
2275	704.2	167.8	1615	947.1	160.1	7.63	
2300	532.4	128.2	1632	706.2	120.7	7.51	
2325	360.6	87.8	1650	465.4	80.4	7.38	
2350	188.7	46.4	1668	224.4	39.2	7.24	
2375	16.8	4.2	1686	-16.5	-2.9	7.11	
2400	-155.1	-39.0	1703	-257.6	-45.9	6.96	

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


Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	

Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	634.7	53.2	800	614.7	51.5	1.67	
900	885.0	83.4	900	863.5	81.4	2.03	
1000	1087.1	113.8	1000	1064.3	111.5	2.39	
1100	1288.1	148.4	1100	1264.1	145.6	2.76	
1200	1479.2	185.9	1200	1454.3	182.8	3.13	
1300	1475.5	200.9	1300	1449.9	197.4	3.49	
1400	1471.1	215.7	1400	1445.0	211.9	3.83	
1500	1466.1	230.3	1500	1440.2	226.2	4.07	
1600	1418.4	237.7	1600	1391.9	233.2	4.44	
1700	1370.1	243.9	1700	1342.5	239.0	4.90	
1800	1321.2	249.0	1800	1292.6	243.7	5.39	
1900	1294.8	257.6	1900	1265.0	251.7	5.92	
2000	1270.8	266.2	2000	1239.9	259.7	6.48	
2100	1283.4	282.2	2100	1251.2	275.2	7.07	
2200	1219.4	280.9	2200	1185.9	273.2	7.71	Governed
2225	1047.7	244.1	2225	1013.9	236.2	7.87	
2250	876.0	206.4	2250	841.8	198.4	8.04	
2275	704.2	167.8	2275	669.7	159.6	8.21	
2300	532.4	128.2	2300	497.6	119.9	8.38	
2325	360.6	87.8	2325	325.4	79.2	8.56	
2350	188.7	46.4	2350	153.2	37.7	8.74	
2375	16.8	4.2	2375	-19.0	-4.7	8.92	
2400	-155.1	-39.0	2400	-191.3	-48.1	9.10	

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

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	634.7	53.2	1067	454.9	50.8	2.36	
900	885.0	83.4	1200	639.5	80.4	3.05	
1000	1087.1	113.8	1333	788.3	110.1	3.77	
1100	1288.1	148.4	1467	936.5	143.8	4.55	
1200	1479.2	185.9	1600	1077.3	180.5	5.38	
1300	1475.5	200.9	1733	1073.4	194.8	6.04	
1400	1471.1	215.7	1867	1069.0	209.0	6.72	
1500	1466.1	230.3	2000	1064.6	223.0	7.32	
1600	1418.4	237.7	2133	1027.9	229.6	8.02	
1700	1370.1	243.9	2267	990.3	235.1	8.84	
1800	1321.2	249.0	2400	952.3	239.3	9.71	
1900	1294.8	257.6	2533	930.9	247.0	10.68	

2000	1270.8	266.2	2667	911.2	254.5	11.71	
2100	1283.4	282.2	2800	918.6	269.4	12.88	
2200	1219.4	280.9	2933	869.0	266.9	13.99	Governed
2225	1047.7	244.1	2967	740.7	230.1	14.00	
2250	876.0	206.4	3000	612.4	192.4	14.00	
2275	704.2	167.8	3033	484.1	153.8	14.00	
2300	532.4	128.2	3067	355.7	114.2	14.00	
2325	360.6	87.8	3100	227.3	73.8	14.00	
2350	188.7	46.4	3133	98.9	32.5	13.99	
2375	16.8	4.2	3167	-29.6	-9.8	13.99	
2400	-155.1	-39.0	3200	-158.0	-53.0	13.98	

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

Engine Fan		On		Engine Power		Standard Power Curve	
Air Conditioning		Off		Vehicle Parameters		Standard	
Engine Speed (rpm)	Net Engine Torque (N-m)	Net Engine Power (kW)	Transmission Output Speed (rpm)	Transmission Output Torque (N-m)	Transmission Output Power (kW)	Transmission Heat Rejection (kW)	Match Point
800	634.7	53.2	1227	392.2	50.4	2.78	
900	885.0	83.4	1380	552.0	79.8	3.62	
1000	1087.1	113.8	1534	680.6	109.3	4.53	
1100	1288.1	148.4	1687	808.6	142.9	5.52	
1200	1479.2	185.9	1840	930.3	179.3	6.59	
1300	1475.5	200.9	1994	926.1	193.4	7.51	
1400	1471.1	215.7	2147	921.5	207.2	8.47	
1500	1466.1	230.3	2301	916.9	220.9	9.39	
1600	1418.4	237.7	2454	884.1	227.2	10.45	
1700	1370.1	243.9	2607	850.9	232.3	11.59	
1800	1321.2	249.0	2761	817.2	236.3	12.80	
1900	1294.8	257.6	2914	797.9	243.5	14.12	
2000	1270.8	266.2	3067	780.2	250.6	15.54	
2100	1283.4	282.2	3221	786.0	265.1	17.11	
2200	1219.4	280.9	3374	742.4	262.3	18.62	Governed
2225	1047.7	244.1	3413	630.8	225.4	18.69	
2250	876.0	206.4	3451	519.2	187.6	18.76	
2275	704.2	167.8	3489	407.6	149.0	18.82	
2300	532.4	128.2	3528	296.0	109.4	18.89	
2325	360.6	87.8	3566	184.4	68.9	18.95	
2350	188.7	46.4	3604	72.7	27.4	19.00	
2375	16.8	4.2	3643	-39.0	-14.9	19.06	
2400	-155.1	-39.0	3681	-150.7	-58.1	19.12	

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	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

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

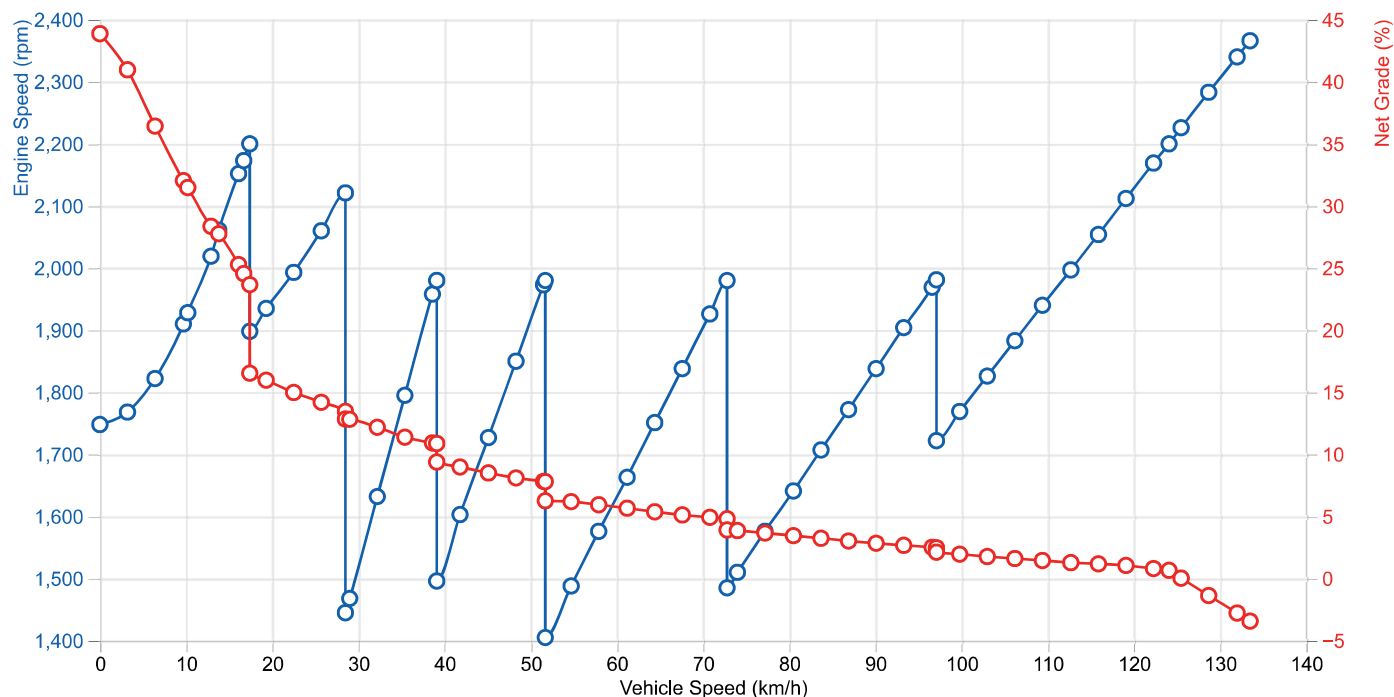
FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATA

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C	0.0	1748	0	75.64	74.85	0.0	43.87	246.46	
1C	3.2	1768	88	71.44	70.63	63.9	40.96	177.16	
1C	6.4	1822	175	64.61	63.77	115.5	36.43	123.83	
1C	9.7	1910	263	57.72	56.85	154.8	32.04	88.13	
1C	10.2	1928	276	56.83	55.95	160.4	31.48	83.58	70 Percent
1C	12.9	2019	350	51.75	50.84	185.1	28.36	65.56	
1C	13.8	2061	375	50.76	49.84	194.3	27.76	62.13	80 Percent
1C	16.1	2152	438	46.63	45.67	208.4	25.28	52.16	
1C	16.7	2173	453	45.39	44.43	210.0	24.55	50.12	85 Percent
1C	17.4	2200	473	43.87	42.89	211.9	23.66	47.68	
2C	17.4	1898	473	31.36	30.39	151.5	16.53	90.68	
2C	19.3	1935	525	30.38	29.38	163.0	15.97	81.24	
2C	22.5	1993	613	28.66	27.60	179.4	14.98	68.16	
2C	25.7	2060	700	27.30	26.18	195.2	14.19	60.98	
2C	28.5	2121	775	26.03	24.86	206.1	13.46	55.19	

2L	28.5	1445	775	24.90	23.73	197.1	12.84	5.24	
2L	29.0	1468	788	24.88	23.70	200.2	12.82	5.30	
2L	32.2	1632	875	23.78	22.52	212.6	12.18	5.65	
2L	35.4	1795	963	22.40	21.07	220.3	11.38	6.31	
2L	38.6	1958	1050	21.65	20.23	232.3	10.92	6.94	
2L	39.1	1980	1062	21.56	20.13	233.8	10.87	7.05	
3L	39.1	1496	1062	18.83	17.40	204.2	9.38	4.98	
3L	41.8	1603	1138	18.18	16.67	211.3	8.98	5.35	
3L	45.1	1727	1225	17.39	15.79	217.6	8.50	5.74	
3L	48.3	1850	1313	16.74	15.04	224.5	8.10	6.28	
3L	51.5	1973	1400	16.33	14.52	233.5	7.82	6.85	
3L	51.7	1980	1405	16.30	14.49	234.0	7.80	6.89	
4L	51.7	1405	1405	13.46	11.65	193.1	6.26	3.84	
4L	54.7	1488	1488	13.42	11.50	204.0	6.19	4.04	
4L	57.9	1576	1576	13.08	11.04	210.4	5.94	4.26	
4L	61.2	1663	1663	12.68	10.52	215.3	5.66	4.61	
4L	64.4	1751	1751	12.27	9.99	219.4	5.37	5.02	
4L	67.6	1838	1838	11.94	9.53	224.2	5.12	5.52	
4L	70.8	1926	1926	11.72	9.17	230.6	4.93	6.01	
4L	72.8	1980	1980	11.60	8.95	234.5	4.81	6.32	
5L	72.8	1485	1980	9.92	7.28	200.7	3.91	7.22	
5L	74.0	1510	2013	9.88	7.18	203.2	3.86	7.35	
5L	77.2	1576	2101	9.66	6.81	207.2	3.66	7.76	
5L	80.5	1641	2188	9.43	6.42	210.8	3.45	8.23	
5L	83.7	1707	2276	9.20	6.03	213.9	3.24	8.87	
5L	86.9	1772	2363	8.97	5.63	216.5	3.02	9.36	
5L	90.1	1838	2451	8.79	5.28	220.2	2.84	10.01	
5L	93.3	1904	2538	8.66	4.97	224.6	2.67	10.71	
5L	96.6	1969	2626	8.54	4.67	229.2	2.51	11.33	
5L	97.1	1981	2641	8.52	4.62	229.9	2.48	11.47	
6L	97.1	1722	2641	7.86	3.95	212.0	2.12	11.76	
6L	99.8	1769	2713	7.71	3.65	213.7	1.96	12.31	
6L	103.0	1826	2801	7.56	3.31	216.4	1.77	13.08	
6L	106.2	1883	2888	7.46	3.00	220.2	1.61	13.86	
6L	109.4	1940	2976	7.37	2.70	223.9	1.45	14.62	
6L	112.7	1997	3063	7.27	2.39	227.6	1.28	15.49	
6L	115.9	2054	3151	7.30	2.20	234.9	1.18	16.41	
6L	119.1	2112	3239	7.27	1.95	240.7	1.05	17.21	
6L	122.3	2169	3326	7.04	1.49	239.3	0.80	17.99	
6L	124.1	2200	3374	6.91	1.24	238.3	0.66	18.62	Governed
6L	125.5	2226	3414	5.85	0.06	203.9	0.03	18.69	
6L	128.7	2283	3501	3.48	-2.55	124.3	-1.37	18.84	
6L	132.0	2340	3589	1.10	-5.17	40.4	-2.78	18.98	
6L	133.5	2366	3629	0.00	-6.39	0.0	-3.43	19.04	

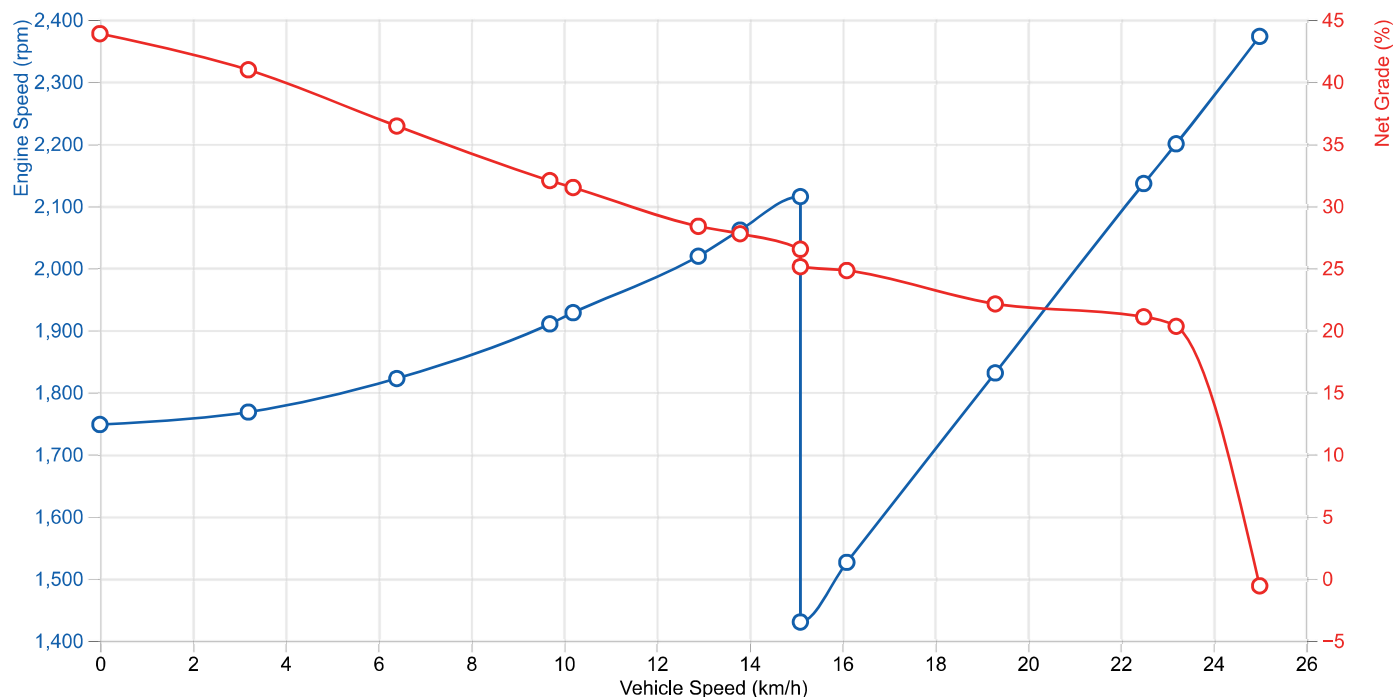
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲


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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C	0.0	1748	0	75.64	74.85	0.0	43.87	246.46	
1C	3.2	1768	88	71.44	70.63	63.9	40.96	177.16	
1C	6.4	1822	175	64.61	63.77	115.5	36.43	123.83	
1C	9.7	1910	263	57.72	56.85	154.8	32.04	88.13	
1C	10.2	1928	276	56.83	55.95	160.4	31.48	83.58	70 Percent
1C	12.9	2019	350	51.75	50.84	185.1	28.36	65.56	
1C	13.8	2061	375	50.76	49.84	194.3	27.76	62.13	80 Percent
1C	15.1	2115	410	48.69	47.75	203.9	26.51	57.62	
1L	15.1	1430	410	46.31	45.37	194.0	25.11	6.55	
1L	16.1	1526	438	45.80	44.85	204.7	24.80	6.87	
1L	19.3	1831	525	41.23	40.23	221.2	22.11	8.31	
1L	22.5	2136	613	39.48	38.42	247.1	21.07	9.82	
1L	23.2	2200	631	38.16	37.09	245.9	20.31	10.25	Governed
1L	25.0	2373	680	0.00	-1.10	0.0	-0.59	8.12	

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

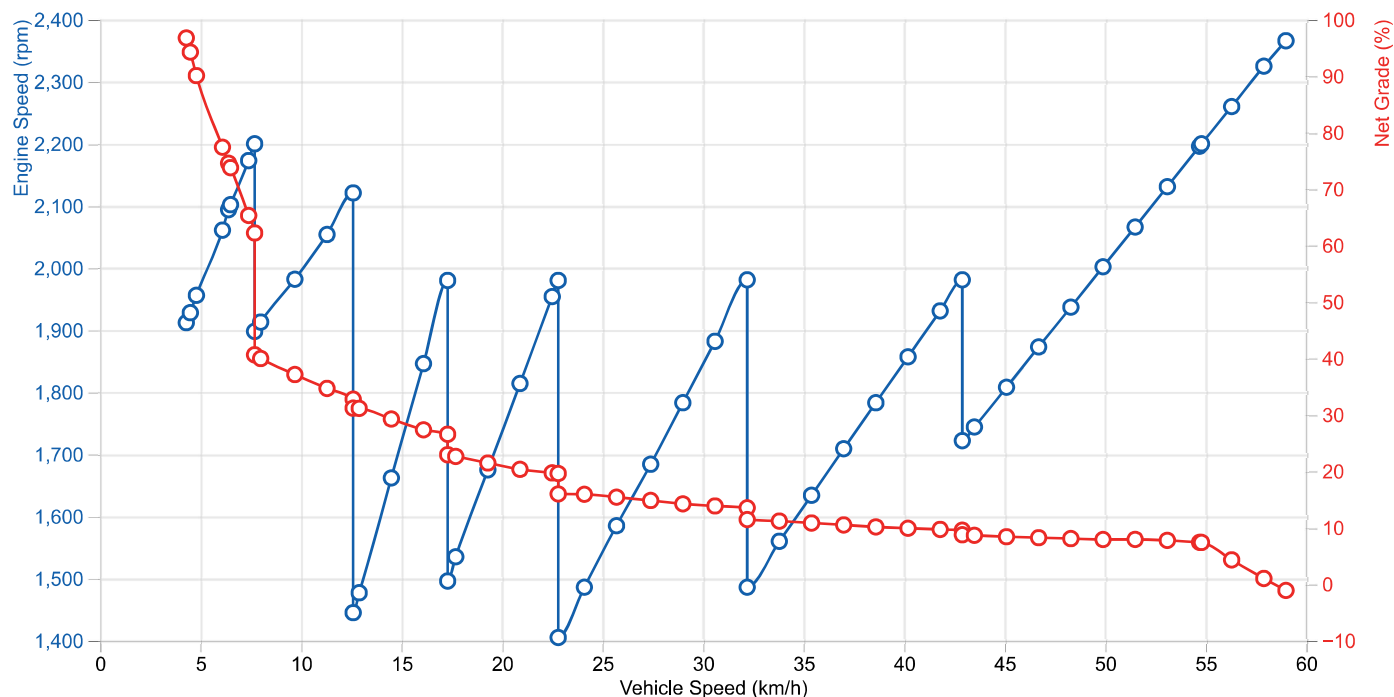

FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT▲

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C !	0.0	1748	0	171.19	170.40	0.0	226.07	246.46	
1C !	1.6	1774	99	159.86	159.06	71.5	163.92	169.09	
1C !	3.2	1841	198	141.74	140.93	126.7	115.63	113.09	
1C	4.3	1912	264	130.43	129.56	155.5	96.76	87.58	0.70 TE/Weight Ratio
1C	4.5	1928	276	128.62	127.80	160.4	94.25	83.58	70 Percent
1C	4.8	1956	297	125.53	124.71	168.4	90.08	77.17	
1C	6.1	2061	375	114.88	114.05	194.3	77.40	62.13	80 Percent
1C	6.4	2094	396	112.22	111.38	200.7	74.57	60.49	
1C	6.5	2102	402	111.80	110.63	202.0	73.78	59.88	0.60 TE/Weight Ratio
1C	7.4	2173	453	102.73	101.88	210.0	65.31	50.12	85 Percent
1C	7.7	2200	473	99.28	98.42	211.9	62.21	47.68	
2C	7.7	1898	473	70.98	70.13	151.5	40.63	90.68	
2C	8.0	1913	495	70.01	69.15	156.5	39.97	86.53	
2C	9.7	1982	594	65.72	64.85	176.3	37.13	70.59	
2C	11.3	2054	693	61.92	61.04	193.8	34.67	61.51	
2C	12.6	2121	775	58.91	58.00	206.1	32.76	55.19	
2L	12.6	1445	775	56.35	55.45	197.1	31.17	5.24	
2L	12.9	1477	792	56.30	55.39	201.4	31.14	5.32	
2L	14.5	1662	891	53.24	52.31	214.2	29.25	5.74	
2L	16.1	1846	990	50.11	49.16	224.0	27.35	6.47	
2L	17.3	1980	1062	48.79	47.82	233.8	26.55	7.05	

3L	17.3	1496	1062	42.61	41.64	204.2	22.93	4.98	
3L	17.7	1535	1089	42.10	41.13	207.0	22.63	5.00	
3L	19.3	1675	1189	40.10	39.10	215.1	21.46	5.54	
3L	20.9	1814	1288	38.16	37.14	221.8	20.34	6.16	
3L	22.5	1954	1387	37.09	36.03	232.1	19.71	6.75	
3L	22.8	1980	1405	36.90	35.84	234.0	19.60	6.89	
4L	22.8	1405	1405	30.46	29.39	193.1	15.98	3.84	
4L	24.1	1486	1486	30.37	29.29	203.7	15.92	4.03	
4L	25.7	1585	1585	29.50	28.38	211.0	15.41	4.32	
4L	27.4	1684	1684	28.47	27.32	216.4	14.82	4.75	
4L	29.0	1783	1783	27.43	26.25	220.7	14.23	5.23	
4L	30.6	1882	1882	26.77	25.55	227.4	13.85	5.78	
4L	32.2	1981	1981	26.24	24.98	234.6	13.53	6.33	
5L	32.2	1486	1981	22.46	21.20	200.8	11.45	7.23	
5L	33.8	1560	2080	21.98	20.68	206.3	11.17	7.62	
5L	35.4	1634	2179	21.40	20.06	210.4	10.83	8.18	
5L	37.0	1709	2278	20.81	19.43	213.9	10.49	8.87	
5L	38.6	1783	2377	20.21	18.80	216.9	10.14	9.49	
5L	40.2	1857	2476	19.82	18.36	221.5	9.90	10.19	
5L	41.8	1931	2575	19.49	17.99	226.6	9.70	10.94	
5L	42.9	1981	2641	19.29	17.75	229.9	9.57	11.47	
6L	42.9	1722	2641	17.78	16.25	212.0	8.75	11.76	
6L	43.5	1744	2674	17.63	16.08	212.8	8.66	11.98	
6L	45.1	1808	2773	17.19	15.59	215.2	8.40	12.88	
6L	46.7	1873	2872	16.93	15.28	219.5	8.23	13.70	
6L	48.3	1937	2971	16.68	14.98	223.7	8.07	14.58	
6L	49.9	2002	3070	16.45	14.70	228.0	7.91	15.57	
6L	51.5	2066	3169	16.53	14.72	236.5	7.93	16.60	
6L	53.1	2131	3268	16.28	14.42	240.2	7.76	17.43	
6L	54.7	2196	3368	15.69	13.77	238.5	7.41	18.53	
6L	54.8	2200	3374	15.65	13.73	238.3	7.39	18.62	Governed
6L	56.3	2260	3467	9.99	8.01	156.2	4.30	18.78	
6L	57.9	2325	3566	3.91	1.87	62.9	1.01	18.95	
6L	59.0	2366	3629	0.00	-2.07	0.0	-1.11	19.04	

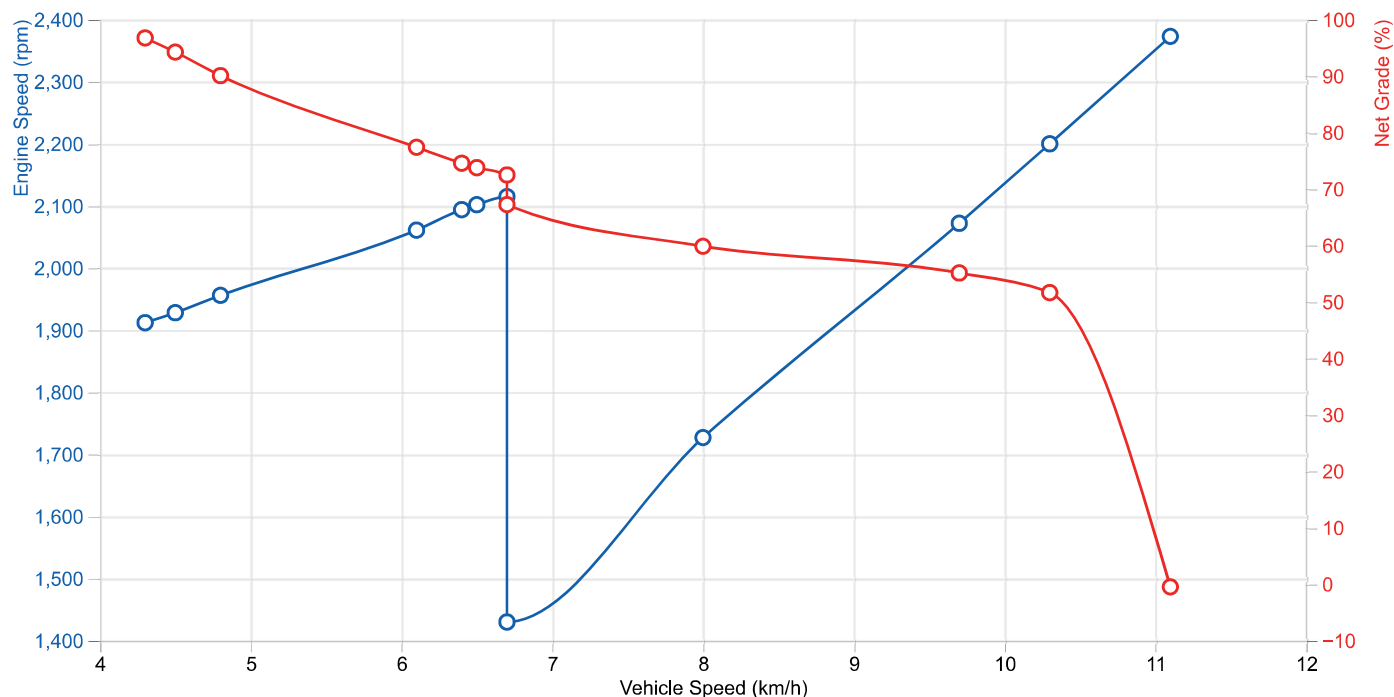
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6,000, ▲


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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
1C !	0.0	1748	0	171.19	170.40	0.0	226.07	246.46	
1C !	1.6	1774	99	159.86	159.06	71.5	163.92	169.09	
1C !	3.2	1841	198	141.74	140.93	126.7	115.63	113.09	
1C	4.3	1912	264	130.43	129.56	155.5	96.76	87.58	0.70 TE/Weight Ratio
1C	4.5	1928	276	128.62	127.80	160.4	94.25	83.58	70 Percent
1C	4.8	1956	297	125.53	124.71	168.4	90.08	77.17	
1C	6.1	2061	375	114.88	114.05	194.3	77.40	62.13	80 Percent
1C	6.4	2094	396	112.22	111.38	200.7	74.57	60.49	
1C	6.5	2102	402	111.80	110.63	202.0	73.78	59.88	0.60 TE/Weight Ratio
1C	6.7	2115	410	110.20	109.36	203.9	72.49	57.62	
1L	6.7	1430	410	104.81	103.97	194.0	67.24	6.55	
1L	8.0	1727	495	96.55	95.69	215.8	59.85	7.78	
1L	9.7	2072	594	90.81	89.94	243.6	55.12	9.68	
1L	10.3	2200	631	86.37	85.49	245.9	51.64	10.25	Governed
1L	11.1	2373	680	0.00	-0.89	0.0	-0.48	8.12	

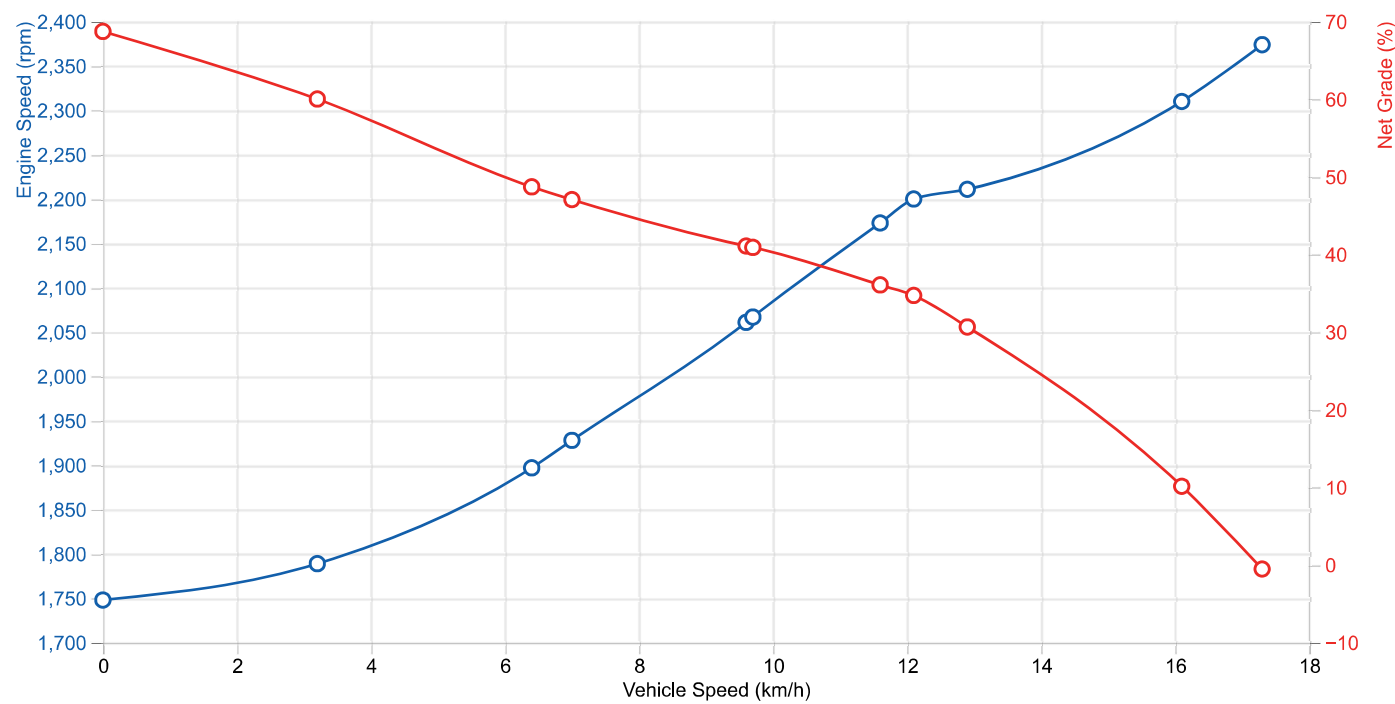
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX ➤


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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
R1C	0.0	1748	0	106.34	105.55	0.0	68.74	246.46	
R1C	3.2	1789	88	96.71	95.90	86.5	60.03	153.34	
R1C	6.4	1897	175	82.43	81.60	147.4	48.71	95.18	
R1C	7.0	1928	192	80.20	79.36	157.0	47.07	87.27	70 Percent
R1C	9.6	2061	260	71.68	70.81	190.4	41.09	66.46	80 Percent
R1C	9.7	2067	263	71.42	70.55	191.6	40.91	66.10	
R1C	11.6	2173	314	64.14	63.24	205.9	36.08	54.68	85 Percent
R1C	12.1	2200	328	62.01	61.11	207.8	34.72	52.28	Governed
R1C	12.9	2211	350	55.55	54.64	198.7	30.67	45.90	
R1C	16.1	2310	438	19.75	18.80	88.3	10.14	15.61	
R1C	17.3	2374	471	0.00	-0.97	0.0	-0.52	6.53	

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

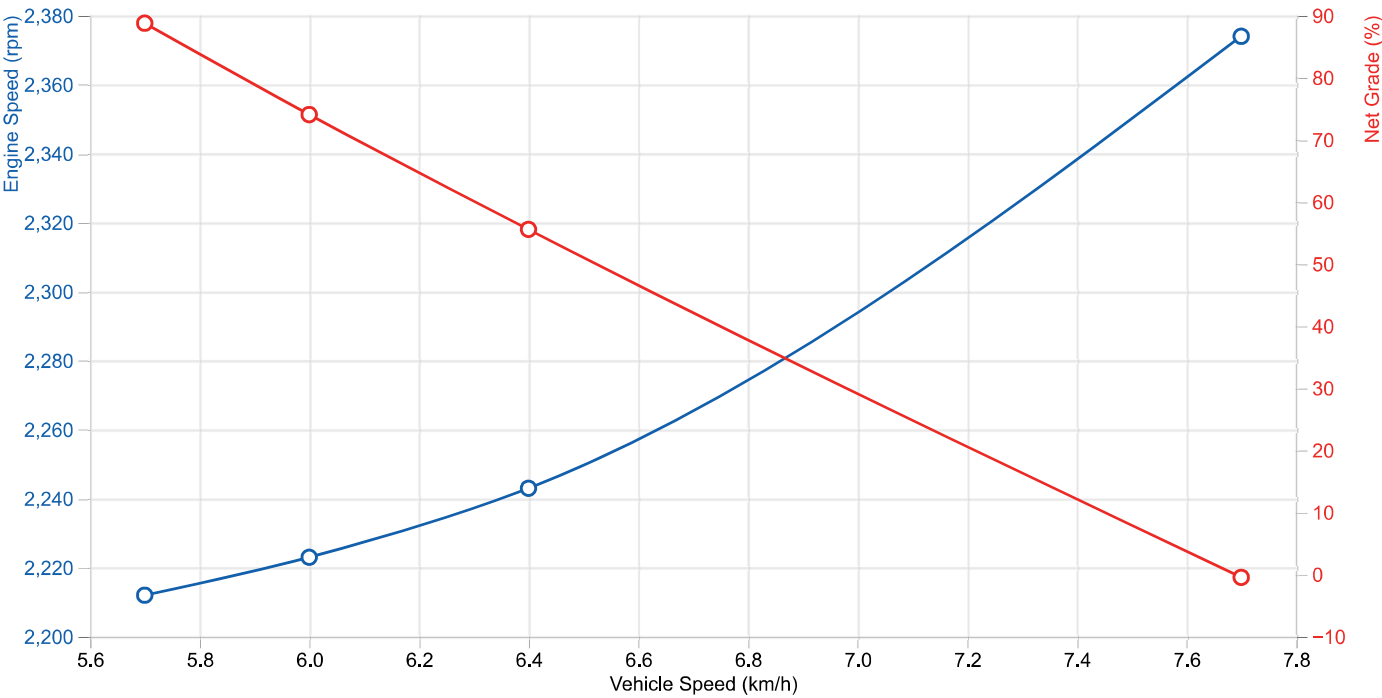


FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAN▲

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)	Match Point
R1C I	0.0	1748	0	240.66	239.87	0.0	999.00	246.46	
R1C I	1.6	1799	99	214.70	213.90	96.0	999.00	143.40	
R1C I	3.1	1928	192	181.51	180.70	157.0	397.51	87.27	70 Percent
R1C I	3.2	1941	198	179.61	178.80	160.6	341.01	84.42	
R1C I	4.2	2061	260	162.23	161.41	190.4	173.42	66.46	80 Percent
R1C I	4.8	2140	297	151.37	150.54	203.0	137.11	58.31	
R1C I	5.1	2173	314	145.15	144.32	205.9	122.47	54.68	85 Percent
R1C I	5.3	2200	328	140.34	139.51	207.8	112.95	52.28	Governed
R1C	5.7	2212	351	130.43	123.71	197.4	88.78	45.57	0.70 TE/Weight Ratio
R1C	6.0	2223	370	111.80	110.91	186.7	74.07	41.67	0.60 TE/Weight Ratio
R1C	6.4	2243	396	91.36	90.52	163.4	55.58	36.78	
R1C	7.7	2374	471	0.00	-0.85	0.0	-0.46	6.53	

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



Vehicle Full Throttle Performance - Defense Wheeled

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

PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

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

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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C ✖							60.00	
1C	18.9	2216	515	37.51	36.52	197.4	20.00	40.06
1C	22.4	2283	610	19.77	18.71	123.2	10.00	20.03
1C	24.8	2368	675	1.10		7.6	0.00	8.46
2C ✖							60.00	
2C	7.7	1780	208	37.43	36.58	79.6	20.00	160.43
2C	35.8	2218	972	19.87	18.53	197.4	10.00	37.63
2C	46.0	2360	1251	1.63		20.8	0.00	7.23
2L ✖							60.00	
2L ✖							20.00	
2L	43.5	2204	1182	20.09	18.54	242.7	10.00	8.01
2L	46.6	2360	1266	1.65		21.3	0.00	6.60
3L ✖							60.00	
3L ✖							20.00	
3L ✖	0.1						10.00	
3L	61.3	2349	1667	2.16		36.8	0.00	7.25
4L ✖							60.00	
4L ✖							20.00	
4L ✖	0.1						10.00	
4L	85.4	2321	2321	3.26		77.2	0.00	8.53
5L ✖							60.00	
5L ✖							20.00	
5L ✖	0.1						10.00	
5L	111.3	2269	3026	4.79		147.9	0.00	14.00
6L ✖							60.00	
6L ✖							20.00	
6L ✖	0.1						10.00	
6L	125.6	2227	3416	5.79		202.1	0.00	18.70

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

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

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

1C	18.9	2216	515	37.51	36.52	197.4	20.00	40.06
1C	22.4	2283	610	19.77	18.71	123.2	10.00	20.03
1C	24.8	2368	675	1.10		7.6	0.00	8.46
1L ✖							60.00	
1L	23.2	2202	632	37.61	36.54	242.7	20.00	10.22
1L	24.1	2284	655	19.63	18.54	131.3	10.00	9.27
1L	25.0	2368	679	1.10		7.6	0.00	8.19

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

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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C	7.8	2201	480	97.92	97.07	212.4	60.00	46.34
1C	10.1	2297	621	37.82	36.94	106.0	20.00	17.07
1C	10.5	2333	649	19.48	18.60	57.0	10.00	11.36
1C	11.0	2371	677	0.89		2.7	0.00	8.32
2C ✖							60.00	
2C	17.0	2235	1045	37.63	36.66	177.5	20.00	34.04
2C	19.0	2300	1166	19.70	18.71	103.7	10.00	14.67
2C	20.6	2370	1265	1.02		5.8	0.00	6.71
2L ✖							60.00	
2L	19.5	2234	1198	37.55	36.54	203.1	20.00	7.76
2L	20.1	2301	1234	19.55	18.54	108.9	10.00	7.17
2L	20.7	2370	1271	1.02		5.9	0.00	6.50
3L ✖							60.00	
3L	21.8	1887	1339	37.58	36.54	227.2	20.00	6.48
3L	26.3	2276	1616	19.67	18.54	143.4	10.00	7.63
3L	27.3	2368	1680	1.15		8.7	0.00	7.15
4L ✖							60.00	
4L ✖							20.00	
4L	36.3	2235	2235	19.90	18.54	200.7	10.00	7.94
4L	38.4	2363	2363	1.41		15.0	0.00	8.83
5L ✖							60.00	
5L ✖							20.00	
5L	39.5	1821	2428	19.98	18.54	219.0	10.00	9.87
5L	51.0	2353	3137	1.79		25.3	0.00	13.99
6L ✖							60.00	
6L ✖							20.00	
6L ✖	0.1						10.00	
6L	58.4	2344	3596	2.05		33.3	0.00	18.99

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

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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
1C	7.8	2201	480	97.92	97.07	212.4	60.00	46.34
1C	10.1	2297	621	37.82	36.94	106.0	20.00	17.07
1C	10.5	2333	649	19.48	18.60	57.0	10.00	11.36
1C	11.0	2371	677	0.89		2.7	0.00	8.32
1L	8.0	1722	494	96.72	95.86	215.6	60.00	7.77
1L	10.7	2298	659	37.42	36.54	111.3	20.00	9.10
1L	10.9	2334	669	19.43	18.54	58.7	10.00	8.64
1L	11.0	2371	680	0.89		2.7	0.00	8.15

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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
R1C	3.2	1788	87	96.83	96.02	85.8	60.00	154.01
R1C	14.8	2253	403	37.50	36.57	154.3	20.00	32.30
R1C	16.1	2310	438	19.51	18.56	87.3	10.00	15.45
R1C	17.3	2370	470	0.97		4.7	0.00	6.78

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

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

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Transmission Heat Rejection (kW)
R1C	6.3	2237	390	96.88	96.04	170.5	60.00	39.06
R1C	7.2	2320	443	37.50	36.66	75.0	20.00	13.61
R1C	7.4	2346	457	19.37	18.52	39.9	10.00	9.51
R1C	7.6	2372	471	0.85		1.8	0.00	6.63

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

Vehicle Acceleration Performance

MISSION

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

PLATFORM

Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE

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

The **!** symbol indicates that Wheel Slip may occur.

Initial conditions for this report are Service Brakes locked and Engine at Full Throttle.

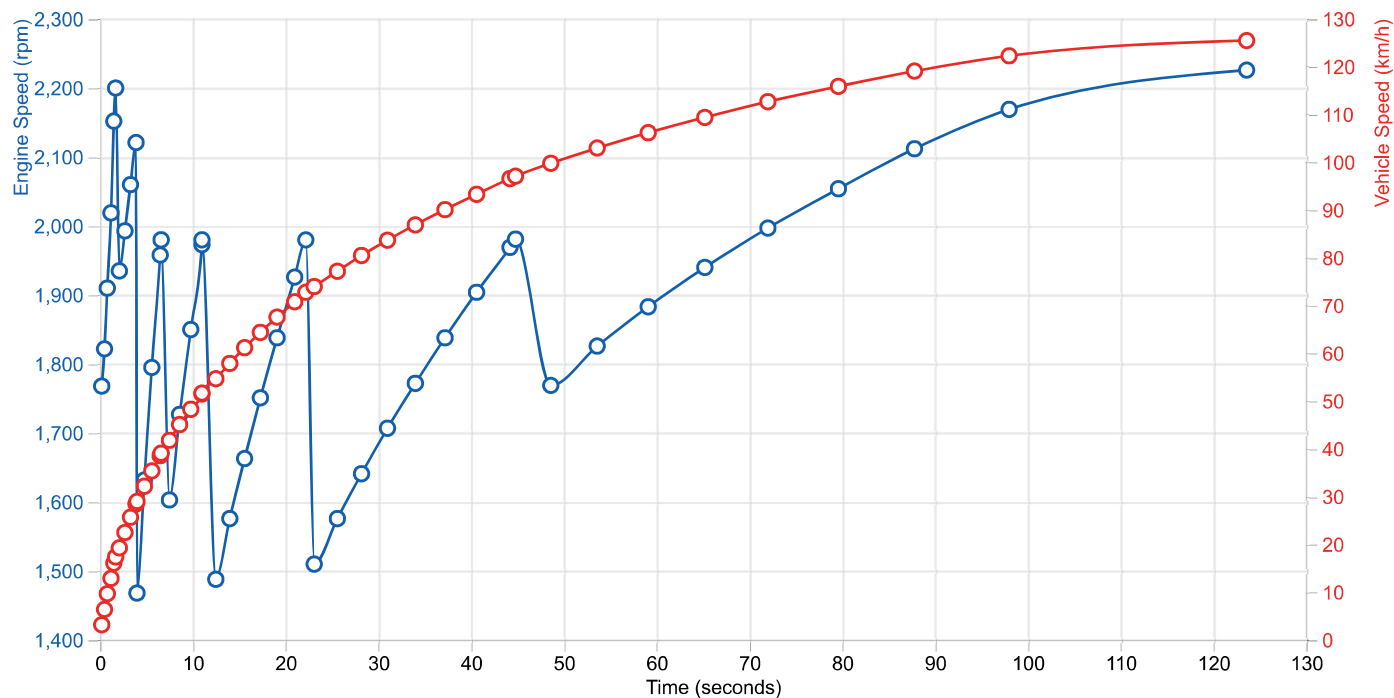
FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RAT

Engine Fan	On	Engine Power	Standard Power Curve
Air Conditioning	Off	Vehicle Parameters	Standard
Axle Ratio	6.000	Auxiliary Gearing Ratio	0.950
Grade	0.00%		

Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C	3.2	0.2	0	3.514	1768	71.44	70.63	63.9	177.16
1C	6.4	0.5	0	3.145	1822	64.61	63.77	115.5	123.83
1C	9.7	0.8	1	2.757	1910	57.72	56.85	154.8	88.13
1C	12.9	1.2	2	2.442	2019	51.75	50.84	185.1	65.56
1C	16.1	1.5	4	2.214	2152	46.63	45.67	208.4	52.16
1C	17.4	1.7	5	2.120	2200	43.87	42.89	211.9	47.68
2C	19.3	2.1	6	1.493	1935	30.38	29.38	163.0	81.24
2C	22.5	2.7	10	1.407	1993	28.66	27.60	179.4	68.16

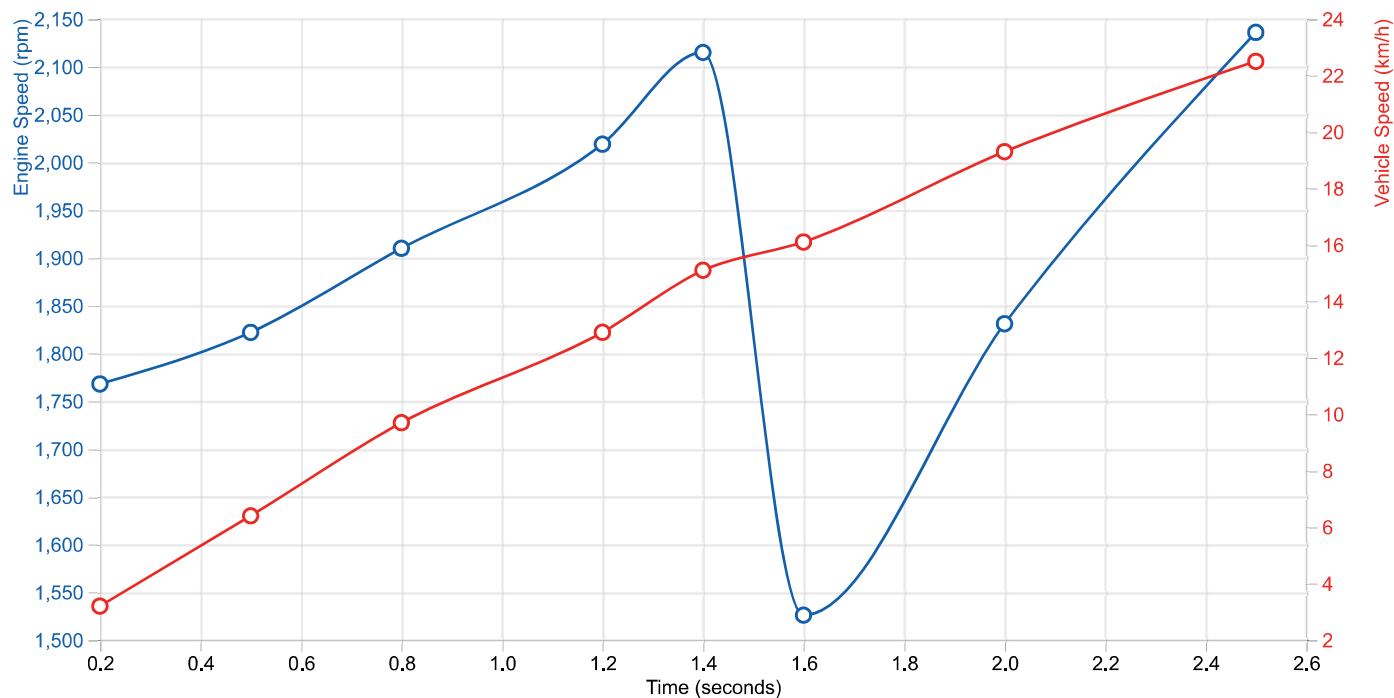
2C	25.7	3.3	14	1.325	2060	27.30	26.18	195.2	60.98
2C	28.5	3.9	19	1.262	2121	26.03	24.86	206.1	55.19
2L	29.0	4.0	20	1.179	1468	24.88	23.70	200.2	5.30
2L	32.2	4.8	26	1.123	1632	23.78	22.52	212.6	5.65
2L	35.4	5.6	34	1.050	1795	22.40	21.07	220.3	6.31
2L	38.6	6.5	43	1.008	1958	21.65	20.23	232.3	6.94
2L	39.1	6.6	44	1.002	1980	21.56	20.13	233.8	7.05
3L	41.8	7.5	54	0.845	1603	18.18	16.67	211.3	5.35
3L	45.1	8.6	68	0.801	1727	17.39	15.79	217.6	5.74
3L	48.3	9.8	82	0.762	1850	16.74	15.04	224.5	6.28
3L	51.5	11.0	99	0.736	1973	16.33	14.52	233.5	6.85
3L	51.7	11.0	100	0.734	1980	16.30	14.49	234.0	6.89
4L	54.7	12.5	121	0.589	1488	13.42	11.50	204.0	4.04
4L	57.9	14.0	145	0.566	1576	13.08	11.04	210.4	4.26
4L	61.2	15.6	172	0.539	1663	12.68	10.52	215.3	4.61
4L	64.4	17.3	202	0.512	1751	12.27	9.99	219.4	5.02
4L	67.6	19.1	235	0.488	1838	11.94	9.53	224.2	5.52
4L	70.8	21.0	271	0.470	1926	11.72	9.17	230.6	6.01
4L	72.8	22.2	295	0.459	1980	11.60	8.95	234.6	6.33
5L	74.0	23.1	313	0.370	1510	9.88	7.18	203.2	7.35
5L	77.2	25.6	365	0.351	1576	9.66	6.81	207.2	7.76
5L	80.5	28.2	423	0.331	1641	9.43	6.42	210.8	8.23
5L	83.7	31.0	486	0.311	1707	9.20	6.03	213.9	8.87
5L	86.9	34.0	557	0.290	1772	8.97	5.63	216.5	9.36
5L	90.1	37.2	635	0.272	1838	8.79	5.28	220.2	10.01
5L	93.3	40.6	722	0.257	1904	8.66	4.97	224.6	10.71
5L	96.6	44.2	817	0.241	1969	8.54	4.67	229.2	11.33
5L	97.1	44.8	834	0.238	1981	8.52	4.62	229.9	11.47
6L	99.8	48.6	938	0.189	1769	7.71	3.65	213.7	12.31
6L	103.0	53.6	1079	0.171	1826	7.56	3.31	216.4	13.08
6L	106.2	59.1	1238	0.155	1883	7.46	3.00	220.2	13.86
6L	109.4	65.2	1421	0.140	1940	7.37	2.70	223.9	14.62
6L	112.7	72.0	1631	0.124	1997	7.27	2.39	227.6	15.49
6L	115.9	79.6	1871	0.114	2054	7.30	2.20	234.9	16.41
6L	119.1	87.8	2141	0.101	2112	7.27	1.95	240.7	17.21
6L	122.3	98.0	2481	0.078	2169	7.04	1.49	239.3	17.99
6L	125.5	123.6	3370	0.007	2226	5.85	0.06	203.9	18.69

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


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

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		0.950		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C	3.2	0.2	0	3.514	1768	71.44	70.63	63.9	177.16
1C	6.4	0.5	0	3.145	1822	64.61	63.77	115.5	123.83
1C	9.7	0.8	1	2.757	1910	57.72	56.85	154.8	88.13
1C	12.9	1.2	2	2.442	2019	51.75	50.84	185.1	65.56
1C	15.1	1.4	3	2.307	2115	48.67	47.73	204.0	57.55
1L	16.1	1.6	4	2.037	1526	45.80	44.85	204.7	6.87
1L	19.3	2.0	6	1.824	1831	41.23	40.23	221.2	8.31
1L	22.5	2.5	9	1.748	2136	39.48	38.42	247.1	9.82

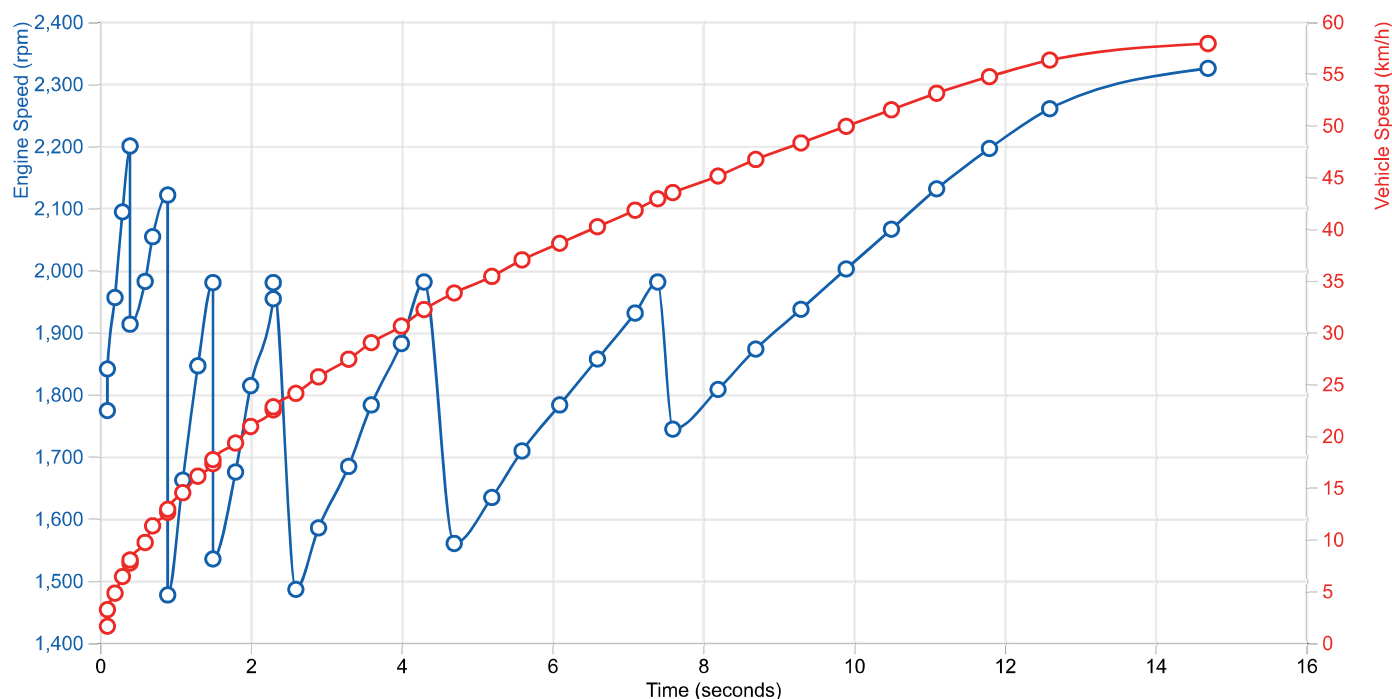
PLOTS - FULL THROTTLE MANUAL 1ST HOLD - LOCKUP APPLY (1C, 1L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AU ➤


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

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		2.150		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
1C Ⅰ	1.6	0.1	0	6.673	1774	159.86	159.06	71.5	169.09
1C Ⅰ	3.2	0.1	0	5.675	1841	141.74	140.93	126.7	113.09
1C	4.8	0.2	0	4.743	1956	125.53	124.71	168.4	77.17
1C	6.4	0.3	0	4.126	2094	112.22	111.38	200.7	60.49
1C	7.7	0.4	0	4.041	2200	99.28	98.42	211.9	47.68
2C	8.0	0.4	1	3.232	1913	70.01	69.15	156.5	86.53
2C	9.7	0.6	1	3.051	1982	65.72	64.85	176.3	70.59
2C	11.3	0.7	1	2.790	2054	61.92	61.04	193.8	61.51
2C	12.6	0.9	2	2.697	2121	58.91	58.00	206.1	55.19
2L	12.9	0.9	2	2.355	1477	56.30	55.39	201.4	5.32
2L	14.5	1.1	3	2.233	1662	53.24	52.31	214.2	5.74
2L	16.1	1.3	4	2.095	1846	50.11	49.16	224.0	6.47
2L	17.3	1.5	4	2.036	1980	48.79	47.82	233.8	7.05
3L	17.7	1.5	5	1.896	1535	42.10	41.13	207.0	5.00
3L	19.3	1.8	6	1.803	1675	40.10	39.10	215.1	5.54
3L	20.9	2.0	7	1.710	1814	38.16	37.14	221.8	6.16
3L	22.5	2.3	9	1.659	1954	37.09	36.03	232.1	6.75
3L	22.8	2.3	9	1.649	1980	36.90	35.84	234.0	6.89
4L	24.1	2.6	11	1.420	1486	30.37	29.29	203.7	4.03
4L	25.7	2.9	13	1.379	1585	29.50	28.38	211.0	4.32
4L	27.4	3.3	16	1.327	1684	28.47	27.32	216.4	4.75
4L	29.0	3.6	18	1.275	1783	27.43	26.25	220.7	5.23

4L	30.6	4.0	21	1.240	1882	26.77	25.55	227.4	5.78
4L	32.2	4.3	24	1.213	1981	26.24	24.98	234.6	6.33
5L	33.8	4.7	28	1.033	1560	21.98	20.68	206.3	7.62
5L	35.4	5.2	32	1.002	1634	21.40	20.06	210.4	8.18
5L	37.0	5.6	37	0.970	1709	20.81	19.43	213.9	8.87
5L	38.6	6.1	42	0.939	1783	20.21	18.80	216.9	9.49
5L	40.2	6.6	47	0.916	1857	19.82	18.36	221.5	10.19
5L	41.8	7.1	53	0.897	1931	19.49	17.99	226.6	10.94
5L	42.9	7.4	57	0.885	1981	19.29	17.75	229.9	11.47
6L	43.5	7.6	59	0.809	1744	17.63	16.08	212.8	11.98
6L	45.1	8.2	66	0.784	1808	17.19	15.59	215.2	12.88
6L	46.7	8.7	73	0.769	1873	16.93	15.28	219.5	13.70
6L	48.3	9.3	81	0.754	1937	16.68	14.98	223.7	14.58
6L	49.9	9.9	89	0.739	2002	16.45	14.70	228.0	15.57
6L	51.5	10.5	98	0.740	2066	16.53	14.72	236.5	16.60
6L	53.1	11.1	107	0.727	2131	16.28	14.42	240.2	17.43
6L	54.7	11.8	116	0.694	2196	15.69	13.77	238.5	18.53
6L	56.3	12.6	129	0.422	2260	9.99	8.01	156.2	18.78
6L	57.9	14.7	162	0.113	2325	3.91	1.87	62.9	18.95

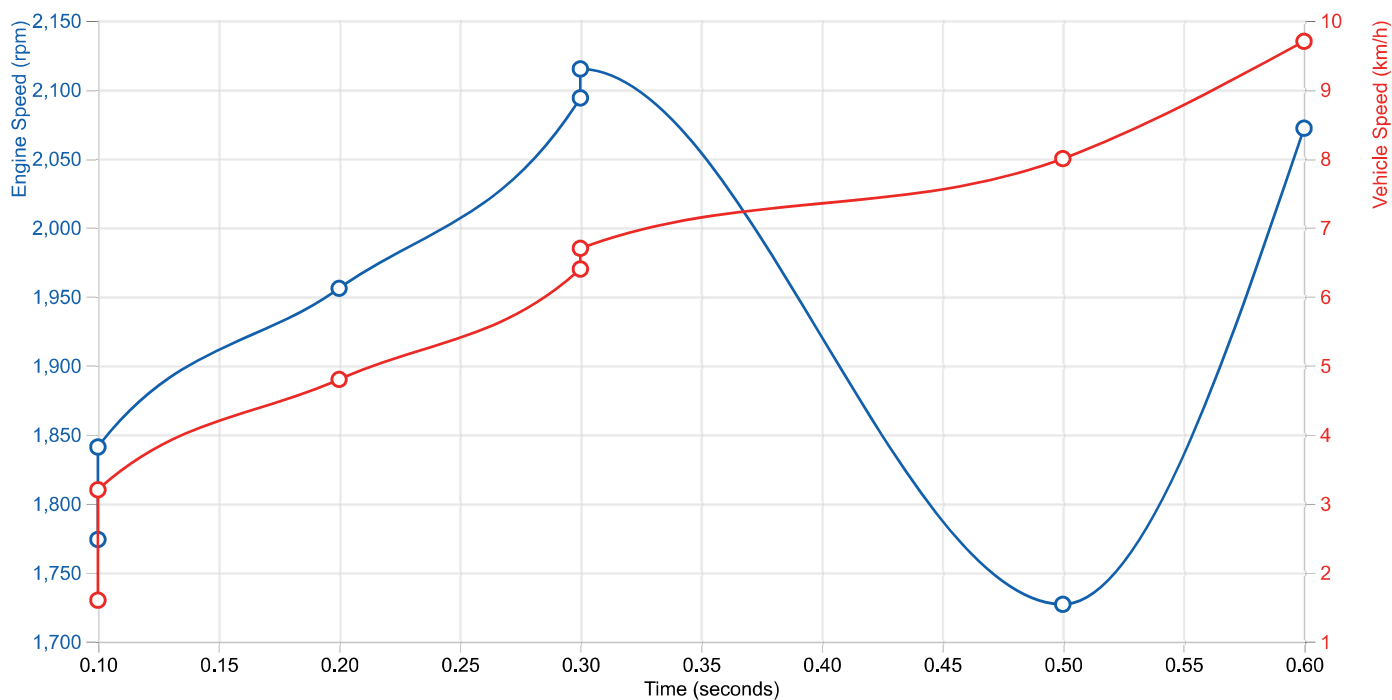
PLOTS - FULL THROTTLE AUTOMATIC UPSHIFTS (1C, 2C, 2L, 3L, 4L, 5L, 6L) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, ▲



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

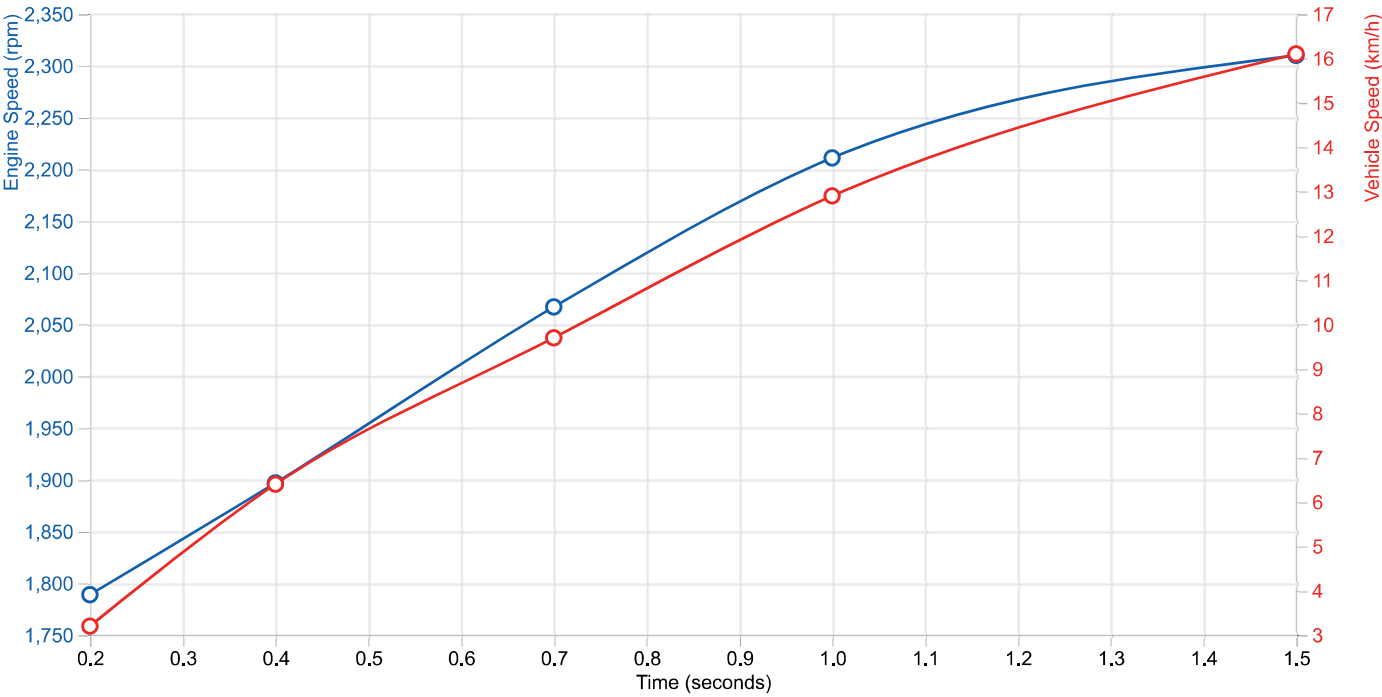
Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		2.150		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)

1C !	1.6	0.1	0	6.673	1774	159.86	159.06	71.5	169.09
1C !	3.2	0.1	0	5.675	1841	141.74	140.93	126.7	113.09
1C	4.8	0.2	0	4.743	1956	125.53	124.71	168.4	77.17
1C	6.4	0.3	0	4.126	2094	112.22	111.38	200.7	60.49
1C	6.7	0.3	0	4.060	2115	110.20	109.36	203.9	57.62
1L	8.0	0.5	1	2.859	1727	96.55	95.69	215.8	7.78
1L	9.7	0.6	1	2.659	2072	90.81	89.94	243.6	9.68

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

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

Engine Fan		On			Engine Power		Standard Power Curve		
Air Conditioning		Off			Vehicle Parameters		Standard		
Axle Ratio		6.000			Auxiliary Gearing Ratio		0.950		
Grade		0.00%							
Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
R1C	3.2	0.2	0	4.522	1789	96.71	95.90	86.5	153.34
R1C	6.4	0.4	0	3.702	1897	82.43	81.60	147.4	95.18
R1C	9.7	0.7	1	3.128	2067	71.42	70.55	191.6	66.10
R1C	12.9	1.0	2	2.604	2211	55.55	54.64	198.7	45.90
R1C	16.1	1.5	4	0.921	2310	19.75	18.80	88.3	15.61

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

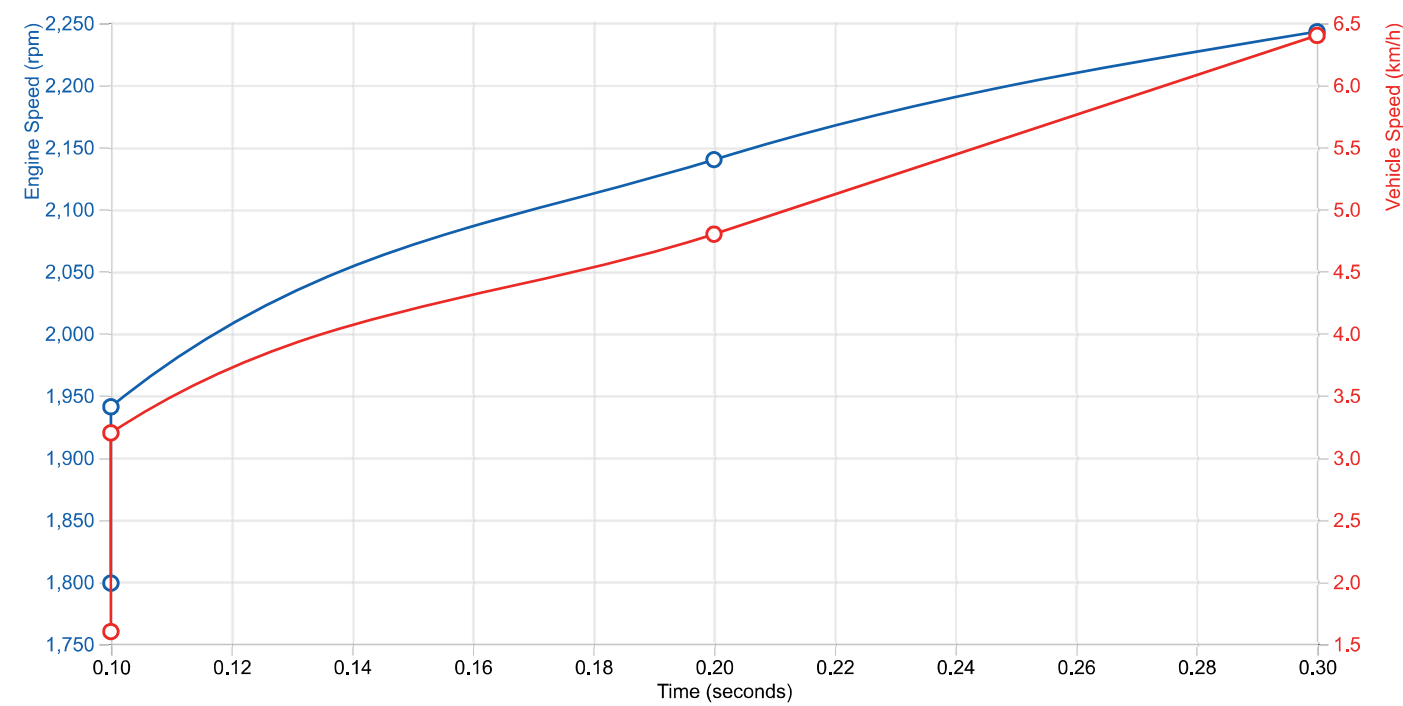


FULL THROTTLE REVERSE PERFORMANCE (R1C) - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STAN▲

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

Gear Range	Vehicle Speed (km/h)	Time (seconds)	Distance (m)	Acceleration Rate (m/sec²)	Engine Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Transmission Heat Rejection (kW)
R1C I	1.6	0.1	0	7.179	1799	214.70	213.90	96.0	143.40
R1C II	3.2	0.1	0	5.192	1941	179.61	178.80	160.6	84.42
R1C III	4.8	0.2	0	4.396	2140	151.37	150.54	203.0	58.31
R1C	6.4	0.3	0	3.009	2243	91.36	90.52	163.4	36.78

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



Vehicle Closed Throttle Braking Performance

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

PLATFORM	
Vehicle Manufacturer	Unknown - Europe/ME/SA - Germany (Europe/ME/SA)
Vehicle Model	UAT-4
Vehicle Configuration	4x4 MRAP
Engine Description	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

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

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

Engine Retarder Off

Transmission Retarder Off

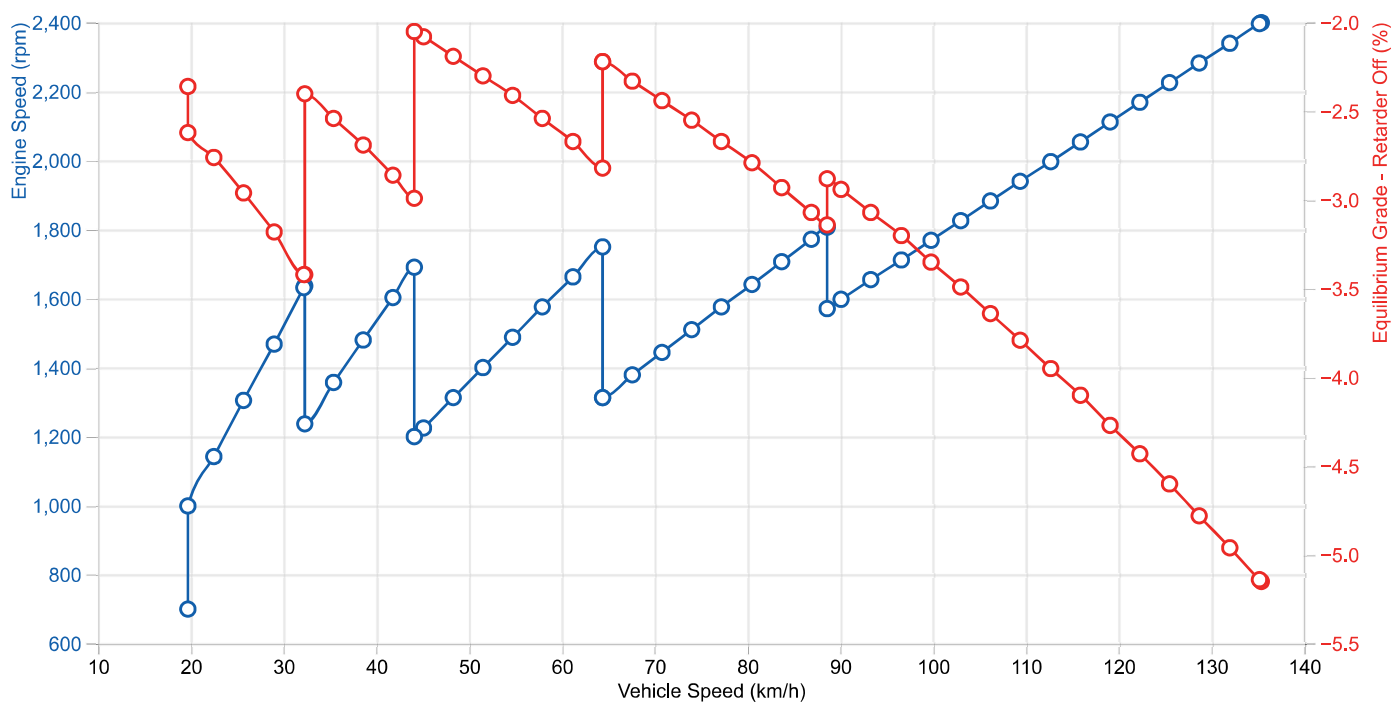
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	135.4	2400	3681	-5.15	20.29	-0.494	114.5
6L	135.2	2397	3676	-5.14	20.23	-0.493	114.1
6L	132.0	2340	3589	-4.96	19.20	-0.475	108.1
6L	128.7	2283	3501	-4.78	18.21	-0.458	102.4
6L	125.5	2226	3414	-4.60	17.23	-0.442	97.0
6L	122.3	2169	3326	-4.43	16.30	-0.425	91.7
6L	119.1	2112	3239	-4.27	15.41	-0.409	86.6
6L	115.9	2054	3151	-4.10	14.54	-0.394	81.8
6L	112.7	1997	3063	-3.95	13.70	-0.379	77.2
6L	109.4	1940	2976	-3.79	12.90	-0.364	72.7
6L	106.2	1883	2888	-3.64	12.12	-0.349	68.3
6L	103.0	1826	2801	-3.49	11.37	-0.335	64.1
6L	99.8	1769	2713	-3.35	10.66	-0.321	60.1
6L	96.6	1712	2626	-3.20	9.94	-0.308	56.2
6L	93.3	1655	2538	-3.07	9.28	-0.295	52.5
6L	90.1	1598	2451	-2.94	8.67	-0.282	49.1
6L	88.6	1571	2409	-2.88	8.40	-0.276	47.5
5L	88.6	1807	2409	-3.14	8.23	-0.301	59.5
5L	86.9	1772	2363	-3.07	7.93	-0.294	57.3
5L	83.7	1707	2276	-2.93	7.33	-0.281	53.0
5L	80.5	1641	2188	-2.79	6.79	-0.268	49.1
5L	77.2	1576	2101	-2.67	6.33	-0.256	45.5
5L	74.0	1510	2013	-2.55	5.94	-0.245	42.2
5L	70.8	1444	1926	-2.44	5.55	-0.234	39.0
5L	67.6	1379	1838	-2.33	5.16	-0.223	36.0
5L	64.4	1313	1751	-2.22	4.77	-0.213	33.2
5L	64.4	1313	1750	-2.22	4.76	-0.213	33.2
4L	64.4	1750	1750	-2.82	5.13	-0.268	52.9
4L	61.2	1663	1663	-2.67	4.70	-0.255	47.9
4L	57.9	1576	1576	-2.54	4.36	-0.242	43.3
4L	54.7	1488	1488	-2.41	4.10	-0.230	39.2
4L	51.5	1400	1400	-2.30	3.83	-0.219	35.4
4L	48.3	1313	1313	-2.19	3.52	-0.208	31.8
4L	45.1	1225	1225	-2.08	3.22	-0.198	28.5
4L	44.1	1200	1200	-2.05	3.11	-0.196	27.6
3L	44.1	1691	1200	-2.99	4.45	-0.282	49.0
3L	41.8	1603	1138	-2.86	4.14	-0.269	44.3
3L	38.6	1480	1050	-2.69	3.80	-0.254	38.6
3L	35.4	1357	963	-2.54	3.45	-0.239	33.3
3L	32.3	1237	878	-2.40	3.09	-0.226	28.8
2L	32.3	1637	878	-3.42	4.12	-0.317	45.9

2L	32.2	1632	875	-3.42	4.10	-0.316	45.6
2L	29.0	1468	788	-3.18	3.78	-0.294	38.1
2L	25.7	1305	700	-2.96	3.38	-0.274	31.4
2L	22.5	1142	613	-2.76	2.88	-0.255	25.5
2L	19.7	999	536	-2.62	2.42	-0.243	21.2
2C	19.7	700	536	-2.36	5.62	-0.214	18.6

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	135.4	2400	3681	-11.07	393.26	-1.057	524.8
6L	135.2	2397	3676	-11.06	393.20	-1.056	524.5
6L	132.0	2340	3589	-11.02	392.17	-1.053	518.5
6L	128.7	2283	3501	-10.99	391.18	-1.050	512.8
6L	125.5	2226	3414	-10.98	390.20	-1.048	507.3
6L	122.3	2169	3326	-10.98	389.27	-1.048	502.1
6L	119.1	2112	3239	-10.98	388.38	-1.049	497.0
6L	115.9	2054	3151	-11.01	387.51	-1.051	492.2
6L	112.7	1997	3063	-11.05	386.67	-1.055	487.5
6L	109.4	1940	2976	-11.10	385.87	-1.060	483.0
6L	106.2	1883	2888	-11.17	385.09	-1.066	478.6
6L	103.0	1826	2801	-11.26	384.34	-1.075	474.5
6L	99.8	1769	2713	-11.36	383.63	-1.085	470.4
6L	96.6	1712	2626	-11.49	382.91	-1.097	466.5
6L	93.3	1655	2538	-11.64	382.25	-1.111	462.9
6L	90.1	1598	2451	-11.81	381.64	-1.127	459.4
6L	88.6	1571	2409	-11.91	381.37	-1.136	457.9
5L	88.6	1807	2409	-12.18	381.20	-1.159	469.9
5L	86.9	1772	2363	-12.28	380.90	-1.169	467.6
5L	83.7	1707	2276	-12.50	380.30	-1.189	463.4
5L	80.5	1641	2188	-12.75	379.76	-1.213	459.4
5L	77.2	1576	2101	-13.04	379.30	-1.240	455.8
5L	74.0	1510	2013	-13.34	377.64	-1.268	451.1
5L	70.8	1444	1926	-13.22	361.08	-1.257	430.2
5L	67.6	1379	1838	-13.11	344.52	-1.247	409.4
5L	64.4	1313	1751	-13.00	327.96	-1.237	388.8
5L	64.4	1313	1750	-13.00	327.85	-1.237	388.7
4L	64.4	1750	1750	-13.61	328.22	-1.286	408.4
4L	61.2	1663	1663	-13.46	311.71	-1.272	385.7
4L	57.9	1576	1576	-13.32	295.20	-1.259	363.3
4L	54.7	1488	1488	-13.20	278.77	-1.248	341.4
4L	51.5	1400	1400	-13.08	262.30	-1.237	319.8
4L	48.3	1313	1313	-12.96	245.79	-1.226	298.4
4L	45.1	1225	1225	-12.85	229.29	-1.216	277.2
4L	44.1	1200	1200	-12.82	224.48	-1.213	271.1
3L	44.1	1691	1200	-13.78	225.82	-1.288	292.6
3L	41.8	1603	1138	-13.64	214.00	-1.275	275.2
3L	38.6	1480	1050	-13.47	197.47	-1.259	251.7
3L	35.4	1357	963	-13.31	180.91	-1.244	228.6

3L	32.3	1237	878	-12.08	148.87	-1.131	189.1
2L	32.3	1637	878	-13.13	149.89	-1.207	206.3
2L	32.2	1632	875	-13.08	148.72	-1.202	204.8
2L	29.0	1468	788	-11.32	113.78	-1.042	159.1
2L	25.7	1305	700	-9.65	83.92	-0.890	120.0
2L	22.5	1142	613	-8.09	59.10	-0.747	87.4
2L	19.7	999	536	-6.86	41.55	-0.634	64.3
2C	19.7	700	536	-6.60	44.75	-0.596	61.6

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

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

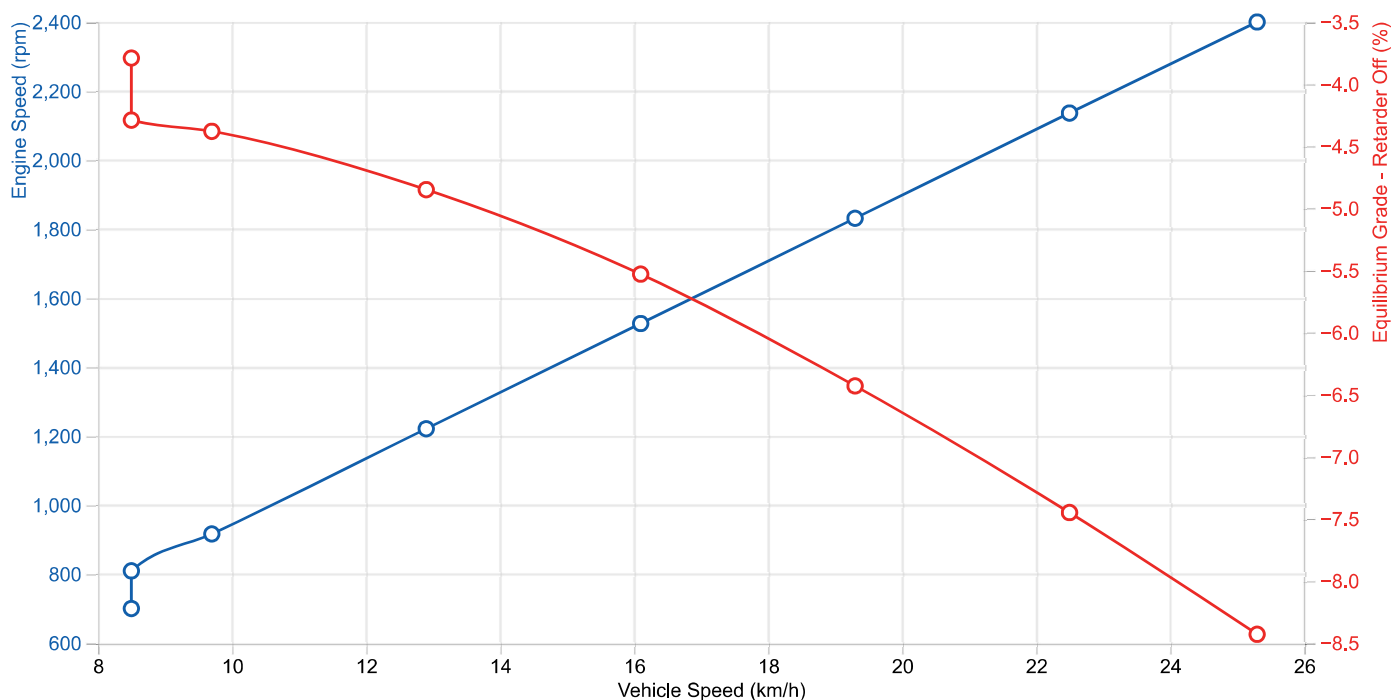
Transmission Retarder Off

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	25.3	2400	688	-8.43	9.16	-0.708	102.2
1L	22.5	2136	613	-7.45	7.75	-0.626	80.0
1L	19.3	1831	525	-6.43	6.24	-0.541	58.7
1L	16.1	1526	438	-5.53	4.94	-0.466	41.8
1L	12.9	1221	350	-4.85	3.81	-0.408	29.0
1L	9.7	916	263	-4.38	2.63	-0.369	19.5
1L	8.5	809	232	-4.29	2.26	-0.362	16.9
1C	8.5	700	232	-3.79	2.09	-0.297	14.7

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	25.3	2400	688	-15.02	86.07	-1.163	186.8
1L	22.5	2136	613	-12.83	63.96	-0.996	141.8
1L	19.3	1831	525	-10.55	43.29	-0.821	99.5
1L	16.1	1526	438	-8.54	27.55	-0.666	66.6
1L	12.9	1221	350	-6.75	15.29	-0.527	41.6
1L	9.7	916	263	-5.35	7.04	-0.418	24.4
1L	8.5	809	232	-5.02	5.15	-0.392	20.1
1C	8.5	700	232	-4.52	4.99	-0.353	17.9

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

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

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

Engine Retarder Off
Transmission Retarder Off

Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Output Speed (rpm)	Equilibrium Grade (%)	Transmission Heat Rejection (kW)	Deceleration Rate (m/sec ² s)	Wheel Power (kW)
6L	59.8	2400	3681	-4.83	20.29	-0.452	114.5
6L	59.5	2389	3665	-4.81	20.09	-0.449	113.3
6L	57.9	2325	3566	-4.65	18.94	-0.435	106.6
6L	56.3	2260	3467	-4.50	17.82	-0.421	100.2
6L	54.7	2196	3368	-4.36	16.74	-0.407	94.2
6L	53.1	2131	3268	-4.22	15.71	-0.394	88.3
6L	51.5	2066	3169	-4.08	14.72	-0.382	82.8
6L	49.9	2002	3070	-3.95	13.77	-0.369	77.5

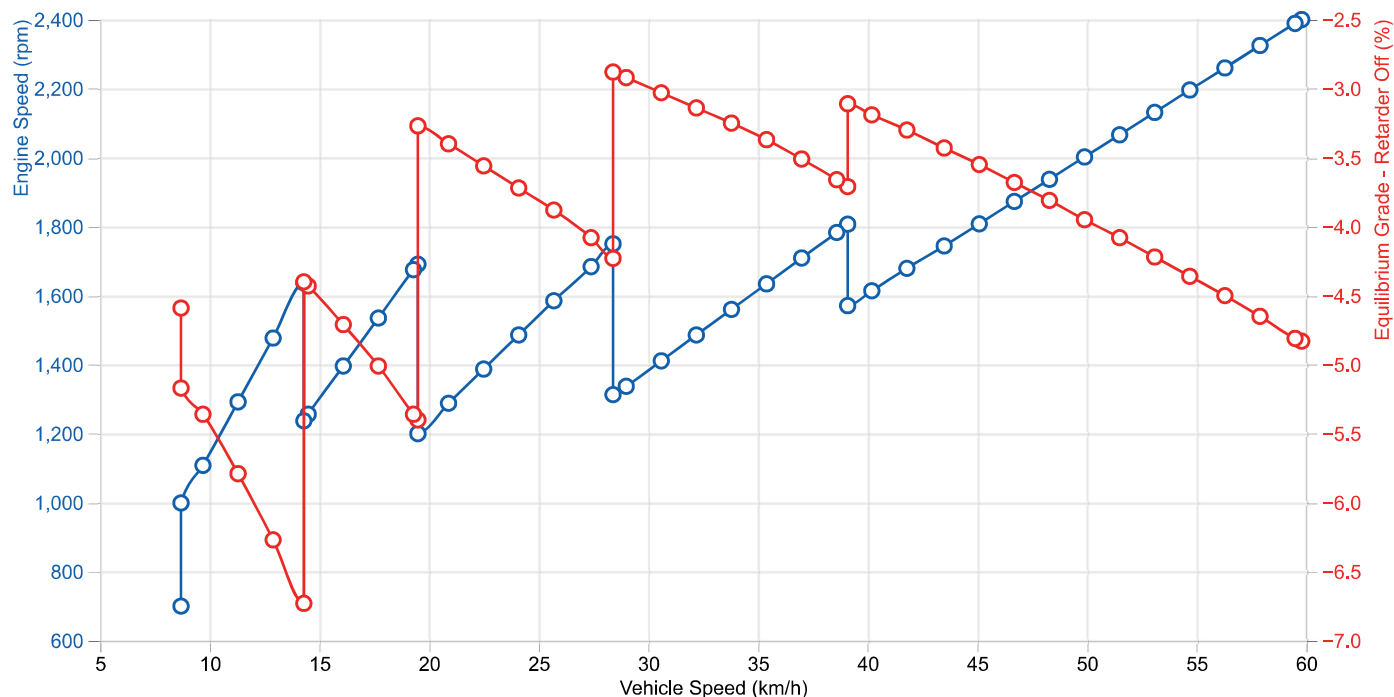
6L	48.3	1937	2971	-3.81	12.86	-0.357	72.4
6L	46.7	1873	2872	-3.68	11.98	-0.344	67.5
6L	45.1	1808	2773	-3.55	11.14	-0.332	62.8
6L	43.5	1744	2674	-3.43	10.34	-0.321	58.3
6L	41.8	1679	2575	-3.30	9.55	-0.309	54.0
6L	40.2	1614	2476	-3.19	8.84	-0.298	50.0
6L	39.1	1571	2409	-3.11	8.40	-0.291	47.5
5L	39.1	1807	2409	-3.71	8.23	-0.344	59.5
5L	38.6	1783	2377	-3.66	8.02	-0.340	57.9
5L	37.0	1709	2278	-3.51	7.35	-0.326	53.1
5L	35.4	1634	2179	-3.37	6.74	-0.313	48.7
5L	33.8	1560	2080	-3.25	6.24	-0.302	44.7
5L	32.2	1486	1981	-3.14	5.79	-0.291	41.0
5L	30.6	1411	1882	-3.03	5.36	-0.281	37.5
5L	29.0	1337	1783	-2.92	4.91	-0.271	34.2
5L	28.4	1313	1750	-2.88	4.76	-0.268	33.2
4L	28.4	1750	1750	-4.23	5.13	-0.382	52.9
4L	27.4	1684	1684	-4.08	4.79	-0.368	49.0
4L	25.7	1585	1585	-3.88	4.38	-0.350	43.7
4L	24.1	1486	1486	-3.72	4.09	-0.335	39.1
4L	22.5	1387	1387	-3.56	3.78	-0.321	34.8
4L	20.9	1288	1288	-3.40	3.43	-0.307	30.8
4L	19.5	1200	1200	-3.27	3.11	-0.295	27.6
3L	19.5	1691	1200	-5.40	4.45	-0.462	49.0
3L	19.3	1675	1189	-5.36	4.38	-0.458	48.1
3L	17.7	1535	1089	-5.01	3.95	-0.429	41.1
3L	16.1	1396	990	-4.71	3.57	-0.403	34.9
3L	14.5	1256	891	-4.43	3.15	-0.379	29.4
3L	14.3	1237	878	-4.40	3.09	-0.376	28.8
2L	14.3	1637	878	-6.73	4.12	-0.532	45.9
2L	12.9	1477	792	-6.27	3.79	-0.495	38.4
2L	11.3	1292	693	-5.79	3.34	-0.458	30.9
2L	9.7	1108	594	-5.36	2.78	-0.424	24.4
2L	8.7	999	536	-5.17	2.42	-0.409	21.2
2C	8.7	700	536	-4.59	5.62	-0.328	18.6

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	59.8	2400	3681	-18.39	393.26	-1.693	524.8
6L	59.5	2389	3665	-18.42	393.06	-1.696	523.7
6L	57.9	2325	3566	-18.65	391.91	-1.716	517.0
6L	56.3	2260	3467	-18.90	390.79	-1.738	510.6
6L	54.7	2196	3368	-19.19	389.71	-1.764	504.5
6L	53.1	2131	3268	-19.50	388.68	-1.792	498.7
6L	51.5	2066	3169	-19.85	387.69	-1.823	493.2
6L	49.9	2002	3070	-20.24	386.74	-1.857	487.9
6L	48.3	1937	2971	-20.66	385.83	-1.894	482.8
6L	46.7	1873	2872	-21.12	384.95	-1.934	477.9

6L	45.1	1808	2773	-21.64	384.11	-1.979	473.2
6L	43.5	1744	2674	-22.20	383.31	-2.029	468.7
6L	41.8	1679	2575	-22.82	382.52	-2.083	464.4
6L	40.2	1614	2476	-23.52	381.81	-2.143	460.4
6L	39.1	1571	2409	-24.03	381.37	-2.187	457.9
5L	39.1	1807	2409	-24.68	381.20	-2.225	469.9
5L	38.6	1783	2377	-24.93	380.99	-2.245	468.3
5L	37.0	1709	2278	-25.74	380.32	-2.315	463.5
5L	35.4	1634	2179	-26.67	379.71	-2.392	459.0
5L	33.8	1560	2080	-27.71	379.21	-2.480	455.0
5L	32.2	1486	1981	-28.37	371.54	-2.534	443.4
5L	30.6	1411	1882	-28.24	352.81	-2.524	419.8
5L	29.0	1337	1783	-28.12	334.06	-2.513	396.4
5L	28.4	1313	1750	-28.08	327.85	-2.510	388.7
4L	28.4	1750	1750	-29.60	328.22	-2.563	408.4
4L	27.4	1684	1684	-29.43	315.64	-2.550	391.0
4L	25.7	1585	1585	-29.20	296.93	-2.532	365.6
4L	24.1	1486	1486	-29.01	278.34	-2.516	340.9
4L	22.5	1387	1387	-28.83	259.69	-2.502	316.4
4L	20.9	1288	1288	-28.65	241.02	-2.487	292.2
4L	19.5	1200	1200	-28.50	224.48	-2.475	271.1
3L	19.5	1691	1200	-30.91	225.82	-2.529	292.6
3L	19.3	1675	1189	-30.86	223.63	-2.525	289.3
3L	17.7	1535	1089	-30.45	204.87	-2.495	262.1
3L	16.1	1396	990	-30.10	186.15	-2.469	235.8
3L	14.5	1256	891	-27.67	154.71	-2.284	196.2
3L	14.3	1237	878	-27.05	148.87	-2.236	189.1
2L	14.3	1637	878	-29.66	149.89	-2.252	206.3
2L	12.9	1477	792	-25.49	115.49	-1.956	161.3
2L	11.3	1292	693	-21.03	81.78	-1.630	117.2
2L	9.7	1108	594	-16.98	54.53	-1.326	81.3
2L	8.7	999	536	-14.88	41.55	-1.166	64.3
2C	8.7	700	536	-14.28	44.75	-1.012	61.6

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


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

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

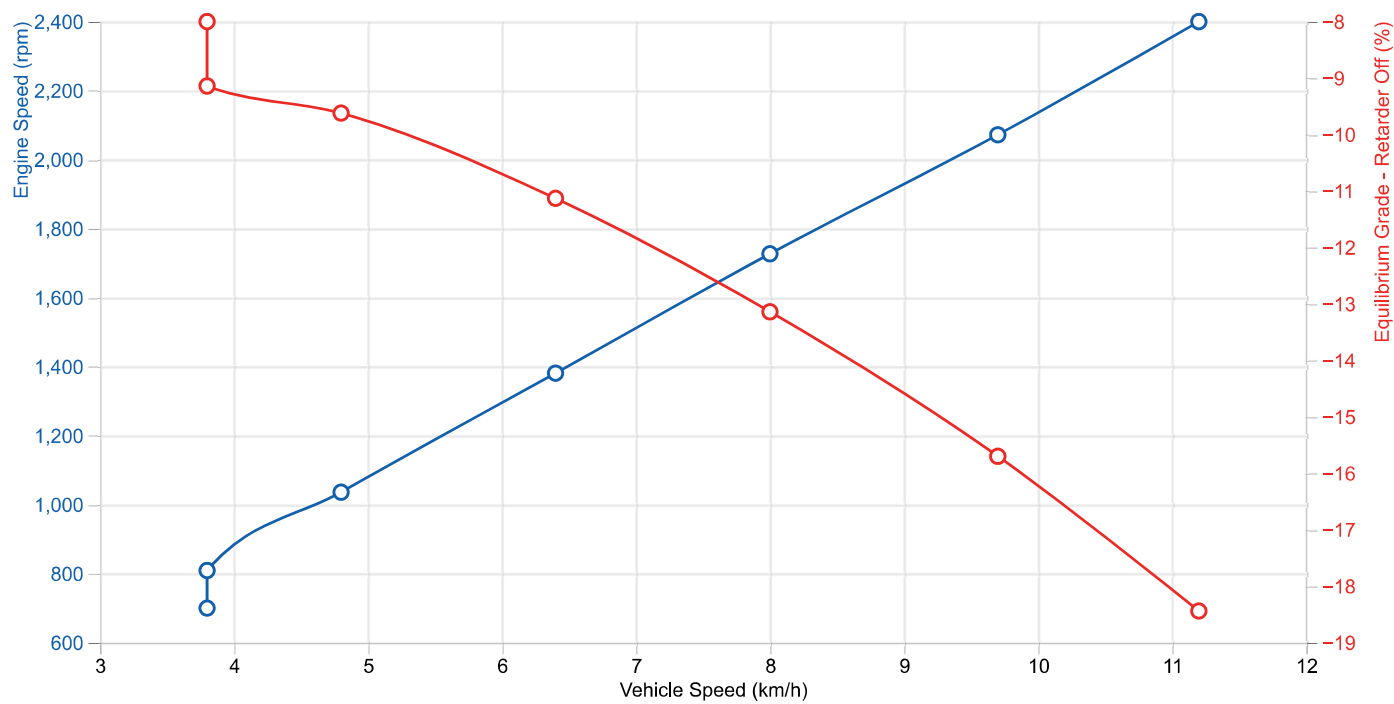
Engine Retarder Off
Transmission Retarder Off

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	11.2	2400	688	-18.44	9.16	-1.002	102.2
1L	9.7	2072	594	-15.70	7.42	-0.857	75.2
1L	8.0	1727	495	-13.14	5.75	-0.720	52.4
1L	6.4	1381	396	-11.13	4.42	-0.611	35.3
1L	4.8	1036	297	-9.62	3.09	-0.529	22.8
1L	3.8	809	232	-9.14	2.26	-0.503	16.9
1C	3.8	700	232	-8.00	2.09	-0.349	14.7

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	11.2	2400	688	-34.67	86.07	-1.435	186.8
1L	9.7	2072	594	-27.93	59.17	-1.179	132.1
1L	8.0	1727	495	-21.90	37.41	-0.937	87.2
1L	6.4	1381	396	-16.85	21.26	-0.728	53.9
1L	4.8	1036	297	-12.64	9.81	-0.549	30.2
1L	3.8	809	232	-10.80	5.15	-0.470	20.1
1C	3.8	700	232	-9.66	4.99	-0.421	17.9

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	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	

NOTE	
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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.

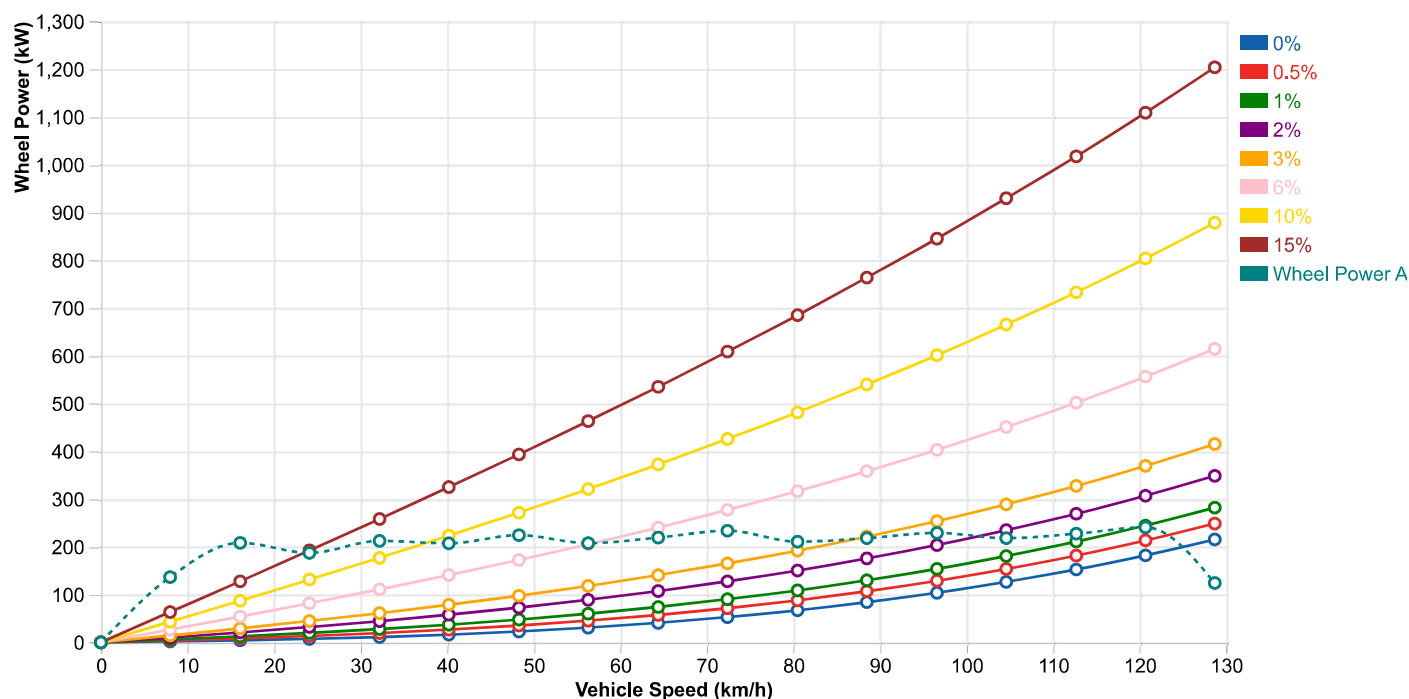
Positive grades indicate uphill operation and negative grades indicate downhill operation.

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	136.7	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	208.4	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	187.4	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	212.6	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	207.4	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	224.5	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
56.3	207.8	30.9	45.5	60.0	89.2	118.3	205.5	321.0	463.3
64.4	219.4	40.8	57.5	74.1	107.5	140.7	240.4	372.4	535.1
72.4	233.8	52.9	71.6	90.4	127.8	165.3	277.4	425.8	608.9
80.5	210.8	67.2	88.1	108.9	150.5	192.1	316.7	481.6	685.0
88.5	218.2	84.2	107.1	130.0	175.8	221.5	358.5	540.0	763.8
96.6	229.2	103.9	128.9	153.9	203.8	253.8	403.2	601.2	845.3
104.6	218.2	126.7	153.7	180.8	234.9	289.0	450.9	665.4	929.8
112.7	227.6	152.7	181.8	211.0	269.3	327.5	501.9	732.9	1017.6
120.7	240.9	182.2	213.5	244.7	307.1	369.6	556.4	803.8	1108.9
128.7	124.3	215.5	248.8	282.1	348.7	415.3	614.6	878.6	1204.0

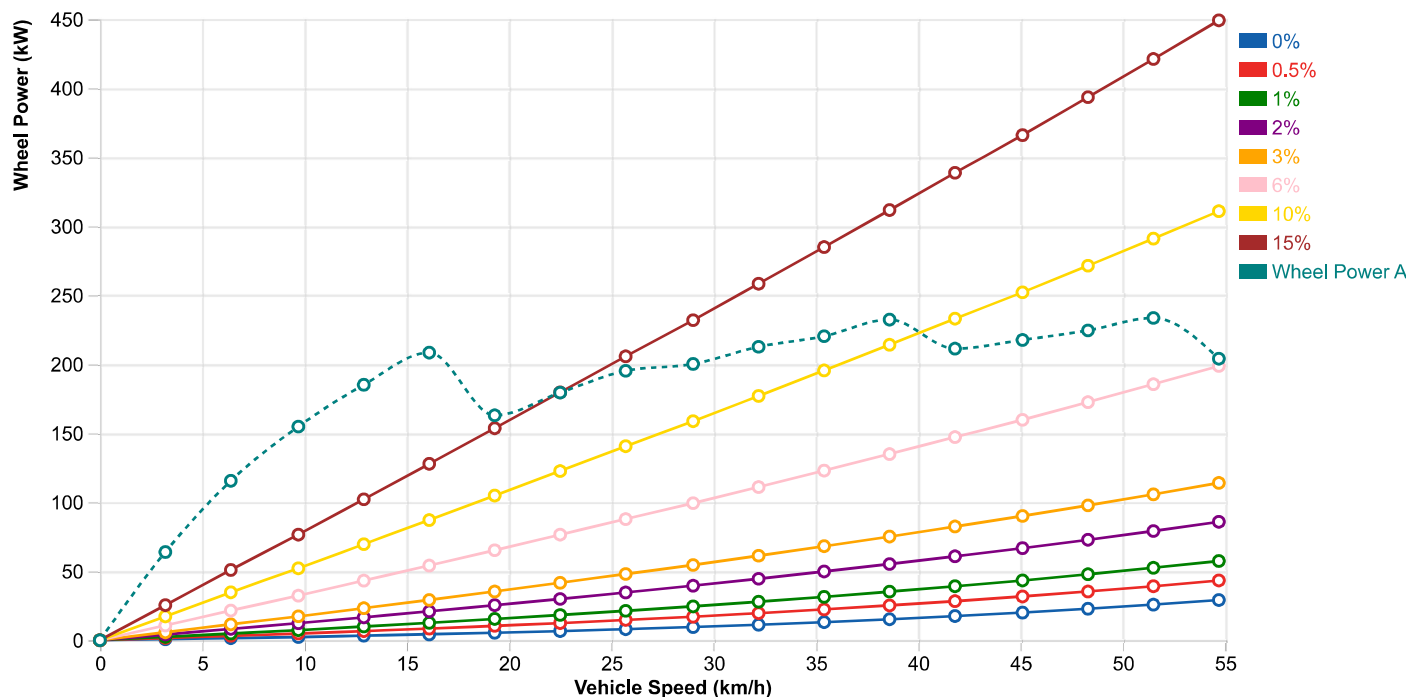
PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 0.950, STAND▲



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

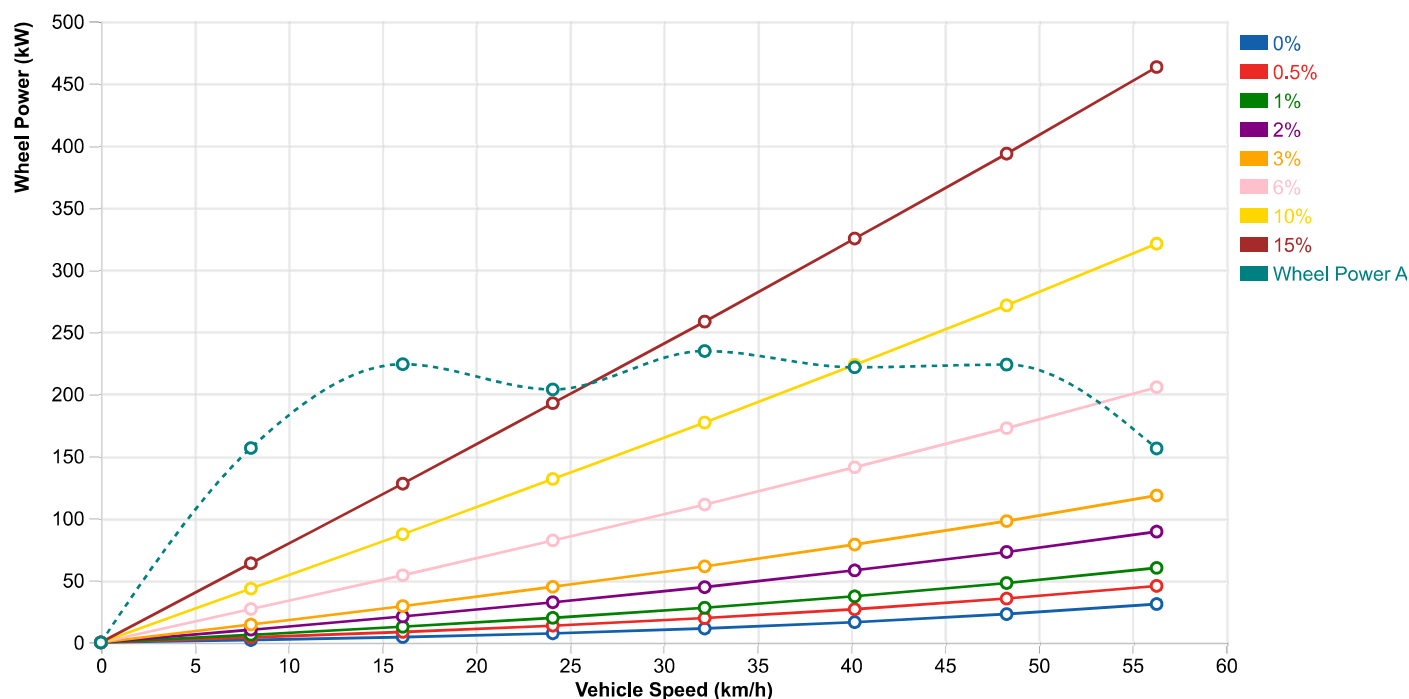
Vehicle Speed (km/h)	Wheel Power Available (kW)	0%	0.5%	1%	2%	3%	6%	10%	15%
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.2	63.9	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	115.5	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	154.8	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	185.1	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	208.4	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	163.0	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	179.4	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	195.2	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	200.2	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	212.6	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	220.3	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	232.3	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	211.3	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	217.6	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	224.5	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
51.5	233.5	25.8	39.1	52.5	79.1	105.7	185.5	291.0	421.2
54.7	204.0	29.1	43.3	57.4	85.8	114.0	198.7	310.9	449.2

PLOTS - WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 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	156.5	1.9	4.0	6.1	10.2	14.4	26.9	43.3	63.7
16.1	224.0	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
24.1	203.7	7.3	13.5	19.8	32.3	44.8	82.1	131.6	192.6
32.2	234.6	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
40.2	221.5	16.3	26.7	37.1	58.0	78.8	141.0	223.5	325.2
48.3	223.7	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
56.3	156.2	30.9	45.5	60.0	89.2	118.3	205.5	321.0	463.3

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

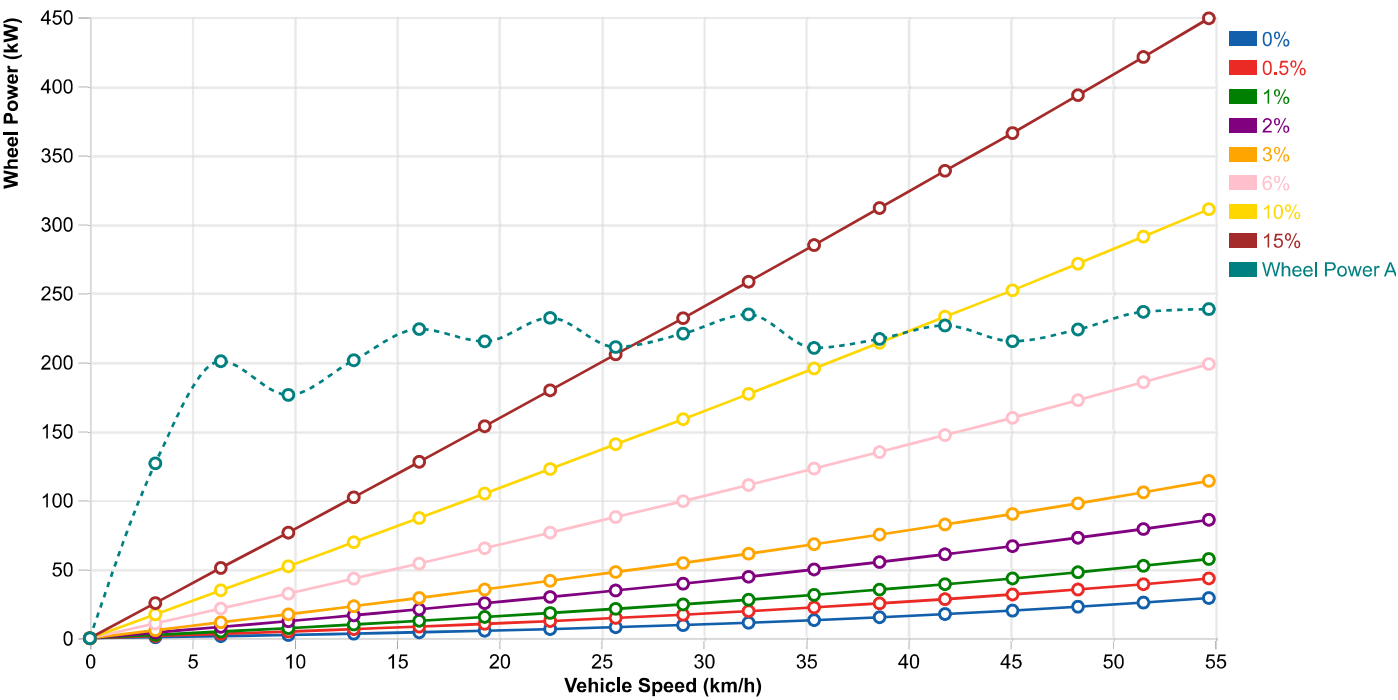


WHEEL POWER REQUIRED ON GRADE - STANDARD, FAN ON, AC OFF, AXLE RATIO = 6.000, AUX RATIO = 2.150, STANDARD POW

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	126.7	0.7	1.6	2.4	4.1	5.7	10.7	17.3	25.4
6.4	200.7	1.5	3.2	4.8	8.2	11.5	21.5	34.7	50.9
9.7	176.3	2.3	4.8	7.3	12.3	17.3	32.3	52.1	76.5
12.9	201.4	3.3	6.6	9.9	16.6	23.2	43.2	69.6	102.1
16.1	224.0	4.3	8.4	12.6	20.9	29.2	54.1	87.1	127.8
19.3	215.1	5.4	10.4	15.4	25.4	35.3	65.2	104.8	153.6
22.5	232.1	6.6	12.4	18.3	29.9	41.6	76.5	122.6	179.6
25.7	211.0	8.0	14.7	21.3	34.6	48.0	87.8	140.6	205.7
29.0	220.7	9.5	17.0	24.5	39.5	54.5	99.3	158.7	231.9
32.2	234.6	11.2	19.6	27.9	44.5	61.2	111.0	177.0	258.3
35.4	210.4	13.1	22.3	31.4	49.8	68.1	122.9	195.5	284.9
38.6	216.9	15.2	25.2	35.2	55.2	75.1	134.9	214.1	311.7
41.8	226.6	17.5	28.3	39.1	60.8	82.4	147.2	233.0	338.7
45.1	215.2	20.0	31.7	43.3	66.7	90.0	159.7	252.1	366.0
48.3	223.7	22.8	35.3	47.8	72.8	97.7	172.5	271.4	393.5
51.5	236.5	25.8	39.1	52.5	79.1	105.7	185.5	291.0	421.2
54.7	238.5	29.1	43.3	57.4	85.8	114.0	198.7	310.9	449.2

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



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	Cummins ISL9 (Diesel) -- 298kW@2100rpm 1550Nm@1100-1400rpm -- without SEM/LRTP (116-L033736-E, Rev A)
Transmission	3200 SP Retarder (1-L007346-T, Rev E)
Transmission Rating	3200 SP Retarder Specialty/Military - Diesel Allison 6th Generation Controls without SEM/LRTP (1-L022117-R, Rev C)
Vehicle Parameters	Standard
Torque Converter	TC421 (1-L001255-TC, Rev C) Unacceptable
Transmission Retarder	3000 Series Medium Capacity (1-L001293-TR, Rev A)
LRTP Status	
NOTE	

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

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

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

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

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

Engine Fan		On				Air Conditioning		Off			
Engine Power		Standard Power Curve				Vehicle Parameters		Standard			
Axle Ratio		6.000				Auxiliary Gearing Ratio		0.950			
Limiting Ambient Temp		37.778 °C				End User Sub Region					
Gear Range	Vehicle Speed (km/h)	Engine Speed (rpm)	Speed Ratio	Turbine Speed (rpm)	Output Speed (rpm)	Tractive Effort (kN)	Drawbar Pull (kN)	Wheel Power Available (kW)	Net Grade (%)	Heat Rejection (kW)	Match Point
F4	48.1	2061	0.634	1307	1307	14.74	13.05	196.7	7.02	59.42	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	21.2	2061	0.634	1307	1307	33.36	32.32	196.7	17.61	59.42	80% Converter Efficiency