PowerMix Datasheet

DLG TEST REPORT **7551**

	Boost	Standard	
Rated power*	213	184	kW
Maximum power*	222	202	kW
According to*	ECE-R120		

	Boost	Standard	
Rated power	182	156	kW
Maximum power	195	181	kW
According to	OECD Code 2		

	Diesel	AdBlue	
Energy efficiency	256	10.2	g/kWh
Consumption per hectare	5.7	0.2	l/ha
Area output	10.2		ha/h

	Diesel	AdBlue	
Energy efficiency	350	14.0	g/kWh
Consumption per 100 kilometre per ton	4.0	0.1	l/100tkm
Haul capacity (40km/h)		1022	tkm/h

* Manufacturer information

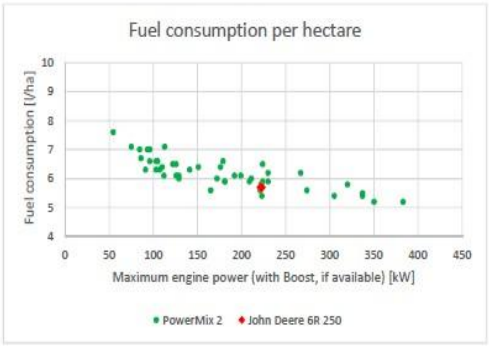
Assessment in brief

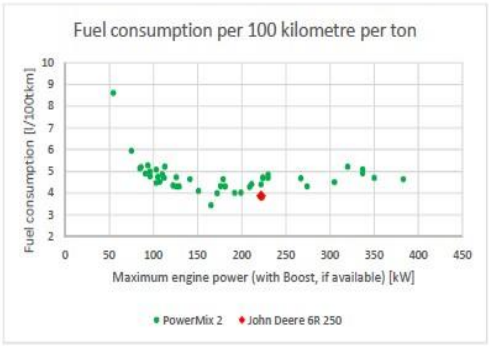
The DLG PowerMix is a standardized test procedure in which the German Agricultural Society (DLG) measures the energy efficiency of tractors under conditions that replicate real-life field and transport operations. Testing is carried out on the DLG roller test bench. The resulting data provide a transparent basis for evaluating tractor performance and overall efficiency under consistent and repeatable conditions. The scatter plots below illustrate the results in fuel consumption and productivity.

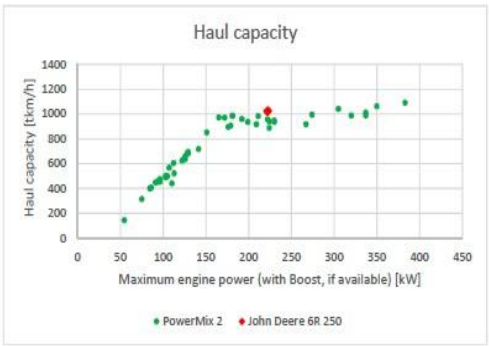
Field work:
The DLG PowerMix test results for tractors in the power class of 222 kW +/- 20 kW indicate a specific fuel consumption range of 242 g/kWh to 288 g/kWh under standardized field load conditions. The tractor evaluated in this test showed a specific fuel consumption of 256 g/kWh.

Transport work:
In the DLG transport test, tractors within the same power range have achieved specific fuel consumption values between 332 g/kWh and 436 g/kWh. The tested machine showed a fuel consumption of 350 g/kWh.

Fieldwork	Transportation work







The green scatter plots show the results of all machines tested on the roller test bench according to PowerMix 2 (period 2018 – present).

Performance and fuel consumption during field and transport operations

Performance and fuel consumption during exemplary field work		Engine speed	Driving speed	Delivered net power	Diesel consumption		Ratio AdBlue to Diesel	Specific consumption	
								Diesel	AdBlue
		1/min	km/h	kW	kg/h	l/h	Vol-%	g/kWh	
Z1P[1]	ploughing, heavy tine cultivator	1417	7.4	135	34.4	41.4	4.4	255	14.9
Z1G[1]	cultivator, disc harrow	1653	9.9	151	39.4	47.2	2.9	260	10.0
Z2P[1]	mech. seed drill, planter	1400	8.6	96	24.9	29.8	3.7	260	12.9
Z2G[1]	stubble working, seed bed combination	1400	11.6	110	28.1	33.6	4.2	255	14.4
Z3K	milling, rotary harrows seeding combination	1791	5.7	163	39.8	47.7	2.8	244	9.1
Z3M	cut 1. step, cultivator-rotary harrows-seeding combination	1778	14.8	167	41.2	49.4	2.9	247	9.5
Z4K	pneumatic seeding drill, milling as plant care, mulch	1492	5.9	117	28.0	33.6	2.4	240	7.7
Z4M	cut 2. step, direct seeding machine	1492	15.8	123	30.4	36.4	2.7	247	8.8
Z5K	plant protector, mineral fertiliser, tedder, swather	1492	5.9	67	17.8	21.4	2.1	268	7.4
Z5M	cut 3. step, airseeder	1492	15.9	71	19.3	23.2	2.1	274	7.7
Z6MS	self-loading wagon, manure spreading	1649	6.7	131	33.6	40.2	2.8	256	9.6
Z7PR	high pressure baler, round baler or square baler	1651	9.8	110	29.6	35.5	2.8	269	10.2
								256	**10.2**

[1] scaled with PTO Power 180.5 KW

	Energy efficiency		Consumption per hectare		Area output
	Diesel	AdBlue	Diesel	AdBlue	
	g/kWh	g/kWh	l/ha	l/ha	ha/h
Heavy pulling work[1]	258	12.44	12.1	0.5	4.3
Medium-duty pulling work[1]	258	13.6	7.4	0.3	5.0
Heavy PTO work	246	9.3	5.3	0.2	13.3
Medium-duty PTO work	244	8.3	3.6	0.1	14.1
Light PTO work	271	7.6	2.3	0.0	14.2
Traction+PTO+hydraulic work	263	9.9	3.8	0.1	10.1

Test conditions fieldwork	Ballasting		Axle load distribution				Total weight	Tire pressure		PTO shaft
	Front	Rear	Front		Rear			Front	Rear	
	kg	kg	kg	%	kg	%	kg	bar	bar	1000/1000E
Heavy pulling work	1800	2256	6040	44	7620	56	13660	1.2	1.2	-
Medium-duty pulling work	0	0	3835	40	5755	60	9590	1.2	1.2	-
Heavy PTO work	0	0	3835	40	5755	60	9590	1.2	1.2	1000
Medium-duty PTO work	0	0	3835	40	5755	60	9590	1.2	1.2	1000E
Light PTO work	0	0	3835	40	5755	60	9590	1.2	1.2	1000E
Traction+PTO+hydraulic work	0	0	3835	40	5755	60	9590	1.2	1.2	1000E

Performance and fuel consumption in transport operations

PowerMix - Transport work	Motor speed	Delivered effective power	Specific consumption		Consumption per 100 km and per ton		Transport performance
			Diesel	AdBlue	Diesel	AdBlue	
	min^{-1}	kW	g/kWh		l/100tkm		tkm/h
Heavy transportation work	1772	136	328	13.5	6.5	0.2	830
Light transport work at 40 km/h	1331	32	497	18.0	1.6	0.0	1215
Light transport work at 50 km/h	1629	41	517	20.0	1.7	0.1	1514
Light transport work at 60 km/h	-	-	-	-	-	-	-
Overall result transportation work 40 km/h			**350**	**14.0**	**4.0**	**0.1**	**1022**
Overall result transportation work 50 km/h			**353**	**14.3**	**4.1**	**0.1**	**1172**
Overall result transportation work 60 km/h			**-**	**-**	**-**	**-**	**-**
Idle consumption	**3.1**	**l/h**					
Trailer weight	**30410**	**kg**					

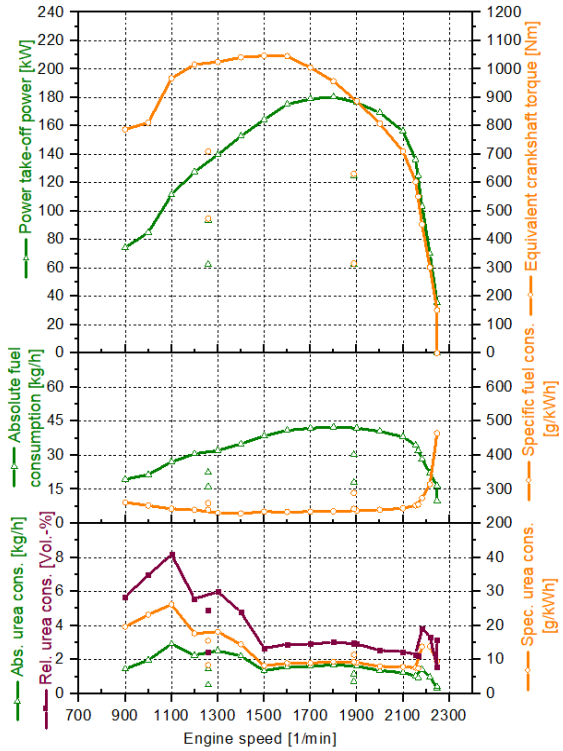
Test conditions Transport use	Ballasting		Axle load distribution				Total weight	Tire pressure	
	Front	Rear	Front		Rear			Front	Rear
	kg	kg	kg	%	kg	%	kg	bar	bar
Transportation work	-	-	3835	40	5755	60	9590	1.6	1.6

Tires	Front	Rear
Manufacturer/Type	Nokian Soil King	Nokian Soil King
Tire size	600/70 R30	710/70 R42
Equipment		
Pressureless return		**Yes**
A/C		**Yes**
Compressor		**Yes**
Front power lift		**Yes**
Front PTO (can be disengaged)		**No**

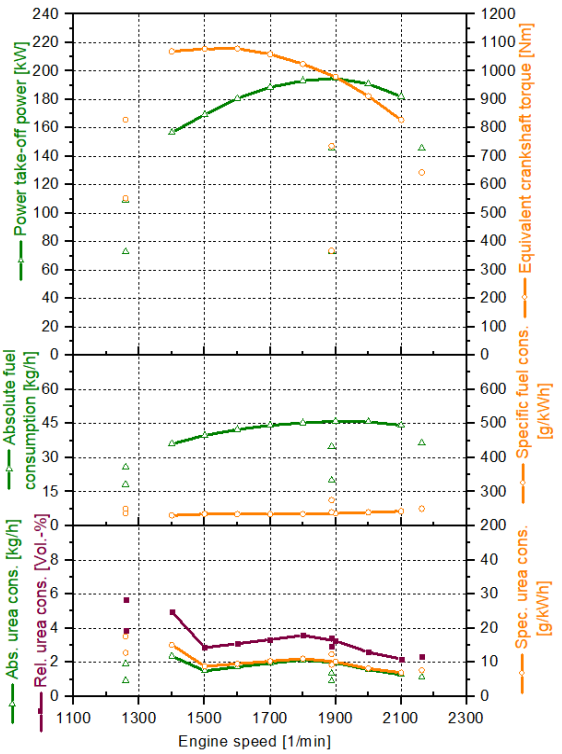
Power Take-Off Power according to OECD Code 2

Measuring point	Engine speed	PTO power	Equiv. Torque	Absolute consumption				Ratio AdBlue to Diesel	specific consumption	
				Diesel		AdBlue			Diesel	AdBlue
	1/min	kW	Nm	kg/h	l/h	kg/h	l/h	Vol-%	g/kWh	
Rated power										
Boost	2100	182.2	828	44.2	53.0	1.3	1.2	2.2	243	7.0
Standard	2100	156.1	710	38.1	45.7	1.2	1.1	2.5	244	7.9
Maximum power										
Boost	1900	194.9	979	46.0	55.1	2.0	1.8	3.3	236	10.1
Standard	1800	180.5	957	42.4	50.9	1.7	1.5	3.0	235	9.4
Maximum torque										
Boost	1600	180.8	1,079	42.4	50.7	1.7	1.6	3.1	234	9.5
Standard	1500	164.4	1,047	38.5	46.1	1.4	1.2	2.7	234	8.2
1000 PTO shaft rotation										
Boost	2010	190.4	905	45.7	54.7	1.6	1.4	2.6	240	8.1
Standard	2010	169.3	804	40.6	48.6	1.4	1.2	2.5	240	2.5
Part loads at full throttle										
80 % of boost rated pw.	2136	145.7	643	36.4	43.7	1.1	1.0	2.3	250	7.7
80 % of standard rated pw.	2166	124.9	551	32.0	38.3	0.9	0.9	2.2	256	7.5
Part loads with governor control set to 90% of rated engine speed										
80 % of boost rated pw.	1888	145.6	736	34.9	41.8	1.4	1.2	2.9	240	9.3
80 % of standard rated pw.	1888	124.8	631	30.2	36.2	1.2	1.1	2.9	242	9.3
40 % of boost rated pw.	1888	72.7	368	20.0	24.0	0.9	0.8	3.4	275	12.4
40 % of standard rated pw.	1888	62.3	315	18.0	21.6	0.7	0.7	3.0	289	11.4
Part loads with governor control set to 60% of rated engine speed										
60 % of boost rated pw.	1259	109.2	828	25.8	30.9	1.9	1.8	5.6	236	17.6
60 % of standard rated pw.	1259	93.6	710	22.4	26.9	1.5	1.3	4.9	240	15.6
40 % of boost rated pw.	1259	72.8	553	18.2	21.8	0.9	0.9	3.9	250	12.8
40 % of standard rated pw.	1259	62.4	474	16.2	19.4	0.5	0.5	2.5	259	8.4

Standard



Boost



Technical Data

Engine*				
Manufacturer			**John Deere PS**	
Stage of exhaust emission			**Stage V**	
Rated engine speed			**2100**	**min^{-1}**
Motor power according to				
ECE-R120	**Standard**		**Boost**	
Rated power*	184	kW	213	kW
Maximum power*	202	kW	222	kW
at engine speed*	1800		1900	min^{-1}
Boost activation Prerequisites				
Driving operation from 15 km/h Driving operation with loaded PTO shaft from 0.5 km/h decrease in hydraulic power				
Exhaust aftertreatment device				
Nitrous gaseous emission	Selective Catalytic Reduction (SCR)			
Particulate emission	Diesel Particulate Filter (DPF), Diesel Oxidation Catalysator (DOC)			
Time for regeneration (average)			30	min
Regeneration interval:				
- maximum*			100	h
Replacement intervals			-	
Exhaust gas recuperation			**ja**	
Exhaust-gas turbocharger	**Series turbocharging (VTG+FTG)**			
Number of cylinders			**6**	
Bore			**107**	**mm**
Stroke			**127**	**mm**
Displacement			**6788**	**cm³**
Main fan				
Diameter			650	mm
Number of fan blades			9	
Fan Type			E-Visco-fan	
Tank volume				
Diesel / AdBlue	470 l	/	25 l	

Transmission				
Manufacturer			**ZF**	
Type of contruction			**AutoPowr™**	
Number of ranges			**4 Fahrbereiche**	
Number of gears			**0**	
Forward			0	
Reverse			0	
Design-related maximum speed			**50**	**km/h**

Chassis*			
Front axle			
Manufacturer			DANA
Type			Suspended TLS front axle
Axle load	**Front**	**Rear**	**Total**
Unladen masses	3835 kg	5755 kg	9590 kg
Permissible	6900 kg	11400 kg	15000 kg[2]
Technically permissable	8300 kg	- kg	- kg

Dimensions*				
Length w/o front linkage			**5135**	**mm**
Width			**2750**	**mm**
Height			**3250**	**mm**
Wheelbase			**2900**	**mm**
Distance hitch points to PTO shaft (lower links horizontal)	**Front**		**Rear**	
	570	**mm**	**673**	**mm**
Distance axle to hitch points (lower links horizontal)	**Front**		**Rear**	
	1487	**mm**	**1305**	**mm**
Turning circle			**13000**	**mm**

Rear PTO Shaft*				
Profile				**6 spline (1 ⅜")**
Transmission ratio				
PTO mode	540	540E	1000	1000E
Engine speed [min^{-1}]	-	1618	2012	1659

Front PTO Shaft*				
Profile				**6 spline (1 ⅜")**
Transmission ratio				
PTO mode	540	540E	1000	1000E
Engine speed [min-1]	-	-	-	-

Hydraulic power lift*	Front		Rear	
Categorie	3N		3/3N	
Lifting force at the hitch points exerted through full range	43.2	kN	68.65	kN

Hydraulic power*			
System	**CCLS (Closed Centre Load Sensing System)**		
Hydraulic oil		**John Deere Hy-Gard**	
Total capacity		**80**	**l**
Removable		**32**	**l**
Hydraulic flow			
Maximum delivery		195	l/min
Optional		-	l/min
Max. flow at one rear remote		120	l/min
Maximum pressure		**205**	**bar**

* Manufacturer data

[2] up to 50 km/h

Additional information

Applicant

John Deere GmbH & Co. KG
John Deere Straße 90
68163 Mannheim
Germany
www.deere.com

Test performed by

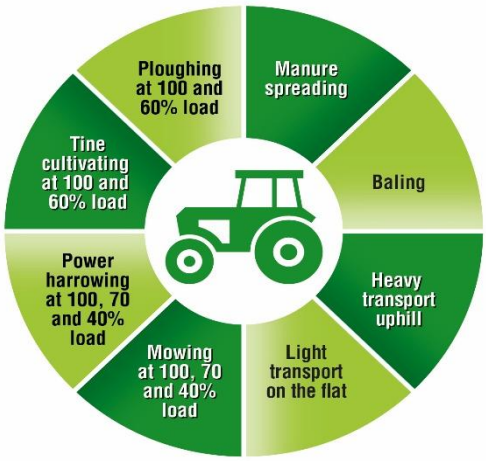
DLG TestService GmbH
Test center technology and farm inputs
Max-Eyth-Weg 1
64823 Groß-Umstadt
https://www.dlg-testservice.com

DLG-Testframe
DLG-PowerMix_2.0 (Stand 01/2025)

Department
Vehicle technology

Testing expertise in agricultural technology and equipment

With its methods, test frameworks and awards, the DLG Test Center for Technology and Equipment is a leader in the testing and certification of agricultural technology and equipment. The methods and test profiles are practice-oriented, manufacturer-independent and developed by neutral test commissions. They are based on state-of-the-art measurement and testing procedures, and international standards and norms are also taken into account.



https://www.dlg.org/powermix

Internal check number DLG: 2504-0055

DLG TestService GmbH
Location Groß-Umstadt
Max-Eyth-Weg 1 • 64823 Groß-Umstadt
Telephone +49 69 24788-600
Fax +49 69 24788-690
Tech@DLG.org • www.DLG.org