



Fendt 312 Vario S4

Data sheet DLG PowerMix

Applicant

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Test performed by

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Specifications

Engine			
Manufacturer	AGCO Power		
Stage of emission	IV		
Exhaust aftertreatment device			
Nitrous gaseous emission	Selective Catalytic Reduction (SCR)		
Particulate matter emission	Diesel Oxidation Catalyst (DOC)		
Time for regeneration DPF (average)	-**	min	
Time between regeneration:			
- maximum*	-**	h	
- under PowerMix conditions*	-**	h	
- checked	-**		
Exhaust gas recuperation Extern, cooled			
Number of cylinders*	4		
Bore*	108	mm	
Stroke*	120	mm	
Displacement*	4400	cm ³	
Rated speed	2100	min ⁻¹	
Power* by ECE R24	standard	boost	
Rated power	85 kW	-	kW
Maximum power	95 kW	-	kW
at engine speed	1700 min ⁻¹	-	min ⁻¹
Loss of power during regeneration	-**		
Main fan			
Diameter	576	mm	
Number of fan blades	9		
Transmission			
Manufacturer	AGCO Fendt		
Type of construction	continuous		
Ranges	1		
Gears			
Forward	-		
Reverse	-		
Design speed	40	km/h	

Power take off				
Profile	6 spline (1¾")			
Transmission ratio*				
Standard pto speed	540	540E	1000	1000E
Engine speed [min ⁻¹]	1904	1500	1884	-
Chassis				
Front axle				
Manufacturer	Dana			
Type	Rigid axle, suspended			
Tires	front	rear		
Manufacturer	Michelin MULTIBIB		Michelin MULTIBIB	
Tire size	540/65 R24		600/65 R38	
Axle load	front	rear	total	
Permissible*	4500 kg	7000 kg	8500 kg	
Empty weight	2400 kg	3040 kg	5440 kg	
Hydraulic				
System*	Pressure ans flow compensated			
Supply of oil	Separate hydraulic tank			
Fluid type*	DIN 51 524-3 HVI			
Capacity*	50	l		
Extractable*	43	l		
Auxiliary valves				
Number	4			
Max. flowrate*	110	l/min		
Max. pressure*	200 ± 5		bar	
Fitted options				
Free return flow	Yes			
Air condition	Yes			
Air compressor	Yes			
Front hydraulic power lift	Yes			
Front pto	No			
	-			
	-			

* Manufacturer's data

** Active regeneration Diesel Particulate Filter (DPF) - only stand still regeneration, no time between regeneration fixed

Test conditions

Axle load	front	rear
With ballast	2840 kg	4030 kg
Ballast		
on frame	480 kg	950 kg
on axle	- kg	- kg
Axle load distribution	41 %	59 %
Tire pressure	front	rear
Field work	1,2 bar	1,2 bar
Transporttest	1,6 bar	1,6 bar

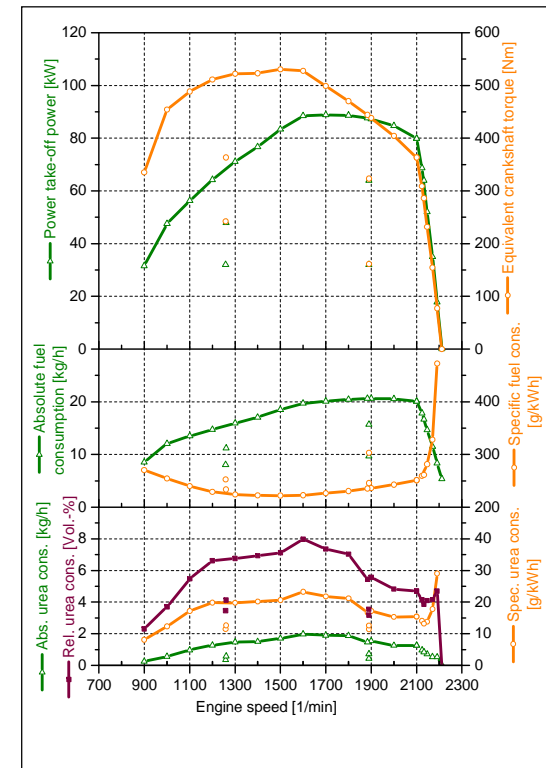
Remarks

Results of measurement at pto dynamometer – standard

Full load	
Rated speed	
Pto power	79,9 kW
Absolute fuel consumption	20,1 kg/h
Specific fuel consumption	251 g/kWh
Specific urea consumption	15 g/kWh
Ratio urea to fuel	4,7 Vol-%
Maximum power	
Engine speed	1700 min ⁻¹
Pto power	88,8 kW
Absolute fuel consumption	20,1 kg/h
Specific fuel consumption	226 g/kWh
Specific urea consumption	22 g/kWh
Ratio urea to fuel	7,4 Vol-%
Maximum torque	
Engine speed	1500 min ⁻¹
Pto power	83,3 kW
Absolute fuel consumption	18,5 kg/h
Specific fuel consumption	222 g/kWh
Specific urea consumption	21 g/kWh
Ratio urea to fuel	7,1 Vol-%
1000 rpm at pto	
Engine speed	1884 min ⁻¹
Pto power	88,1 kW
Absolute fuel consumption	20,6 kg/h
Specific fuel consumption	234 g/kWh
Specific urea consumption	18 g/kWh
Ratio urea to fuel	6,0 Vol-%

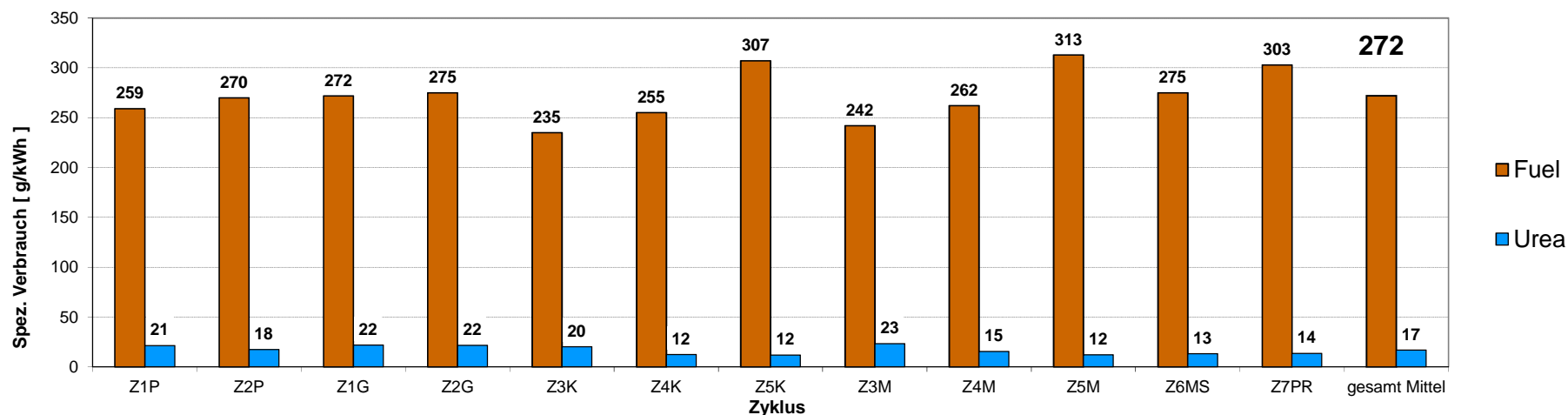
Part load	
Full throttle, 80 % of power at rated speed	
Absolute fuel consumption	16,7 kg/h
Specific fuel consumption	261 g/kWh
Specific urea consumption	13 g/kWh
Ratio urea to fuel	3,9 Vol-%
90 % of rated speed, 80 % of power at rated speed	
Absolute fuel consumption	15,7 kg/h
Specific fuel consumption	246 g/kWh
Specific urea consumption	11 g/kWh
Ratio urea to fuel	3,5 Vol-%
90 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	9,7 kg/h
Specific fuel consumption	303 g/kWh
Specific urea consumption	13 g/kWh
Ratio urea to fuel	3,2 Vol-%
60 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	8,1 kg/h
Specific fuel consumption	253 g/kWh
Specific urea consumption	12 g/kWh
Ratio urea to fuel	3,5 Vol-%
60 % of rated speed, 60 % of power at rated speed	
Absolute fuel consumption	11,2 kg/h
Specific fuel consumption	234 g/kWh
Specific urea consumption	13 g/kWh
Ratio urea to fuel	4,1 Vol-%

Graphical analysis



Torque rise	46 %
Engine speed drop	29 %
Pulling off torque	125 %

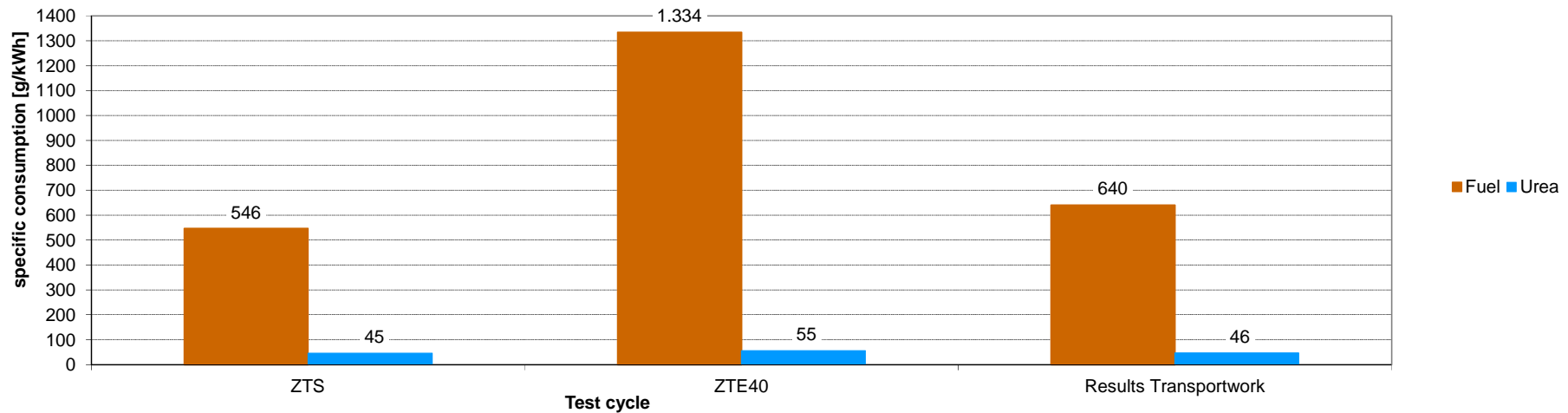
Results at DLG PowerMix - Field work



Load cycle	Test cycle	Engine speed [min ⁻¹]	Driving speed [km/h]	Total power [kW]	Absolute fuel consumption		Average values Specific fuel consumption		Spec. urea cons. [g/kWh]	Ratio urea to fuel [Vol-%]	Relative additional fuel for DPF regeneration** [%]	Calculated spec. Fuel cons. with DPF regeneration** [g/kWh]
					[kg/h]	[l/h]	[g/kWh]	[g/kWh]				
Drawbar work	Plough 100 %	Z1P	1307	7,5	67	17,3	20,9	259	21	6,3	*)	*)
	Plough 60 %	Z2P	1337	8,8	48	12,8	15,6	270	18	4,9	*)	*)
	Cultivator 100 %	Z1G	1768	9,6	72	19,3	23,2	272	22	6,2	*)	*)
	Cultivator 60%	Z2G	1298	11,5	53	14,6	17,8	275	22	5,9	*)	*)
Drawbar + PTO work	Rotary harrow 100 %	Z3K	1632	5,8	74	17,0	20,6	235	20	6,6	*)	*)
	Rotary harrow 70 %	Z4K	1656	5,9	52	13,1	15,9	255	12	3,8	*)	*)
	Rotary harrow 40 %	Z5K	1676	5,9	30	9,0	10,9	307	12	3,0	*)	*)
	Mower 100 %	Z3M	1604	15,4	75	18,1	22,0	242	23	7,3	*)	*)
Drawbar- + PTO + Hydraulic work	Mower 70 %	Z4M	1650	15,6	54	14,1	17,1	262	15	4,5	*)	*)
	Mower 40 %	Z5M	1672	15,7	31	9,7	11,9	313	12	2,9	*)	*)
Drawbar- + PTO + Hydraulic work	Manure spreader	Z6MS	1827	6,8	60	16,0	19,5	275	13	3,8	*)	*)
	Baler	Z7PR	1837	9,8	50	14,2	17,3	303	14	3,5	*)	*)
Total average DLG PowerMix - Field work								272	17	4,9	*)	*)

*) No activ regenerating diesel-particel-filter (DPF)

Results DLG-PowerMix - Transport work



Load type	Test cycle		Engine speed [min ⁻¹]	Driving speed [km/h]	Total power [kW]	Absolute fuel consumption		Average values				
						[kg/h]	[l/h]	Specific fuel consumption [g/kWh]	Spec. urea cons. [g/kWh]	Ratio urea to fuel [Vol-%]	Relative additional fuel for DPF regeneration** [%]	Calculated spec. Fuel cons. with DPF regeneration** [g/kWh]
Transportwork	only hill section	ZTS	1780	32,8	36	19,6	23,5	546	45	6,3	*)	*)
	flat section 40 km/h	ZTE40	1667	40,0	7	9,2	11,1	1334	55	2,7	*)	*)
Idle***		ZLL	796	-	-	1,3	1,6	-	-	-	-	-
Result DLG-PowerMix - Transporttest flat section with 40 km/h (50 % ZTS : 40 % ZTE40 : 10 % ZLL)***								640	46	5,6	*)	*)

Optional tests (e.g. ZTS with reduced (R) engine speed, flat section with additional speed settings)

Transportwork	only hill section	ZTSR	-	-	-	-	-	-	-	-	*)	*)
	flat section 50 km/h	ZTE50	-	-	-	-	-	-	-	-	*)	*)
	flat section 60 km/h	ZTE60	-	-	-	-	-	-	-	-	*)	*)
Optional results based on	hill section with reduced engine speed ZTSR (50 % ZTSR : 40 % ZTE40 : 10 % ZLL)***							-	-	-	*)	*)
	flat section with 50 km/h ZTE50 (50 % ZTS : 40 % ZTE50 : 10 % ZLL)***							-	-	-	*)	*)
	flat section with 60 km/h ZTE60 (50 % ZTS : 40 % ZTE60 : 10 % ZLL)***							-	-	-	*)	*)

* No active regenerating diesel-particulate-filter (DPF)

** Relation of additional fuel consumption caused by regeneration to conventional fuel consumption within two regeneration cycles; calculated for the maximum regeneration interval (see technical data - engine)

*** 70 % in parking position w/o driver, 30 % w/ inserted drive position and w/ driver, e.g. waiting at traffic lights

**** single results are weighted as follows: 50 % ZTS, 40 % ZTE und 10 % ZLL

The fuel consumption in cycle ZLL is taken into the final result by a calculation based on the real measured fuel consumption during the test.