John Deere 7280R AutoPowr

Datasheet DLG PowerMix

Applicant
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Test performed by
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Test No.

2011-551



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Specifications

Engine

Manufacturer	**John Deere**	
Stage of emission	**III B**	
Exhaust aftertreatment device		
Nitrous gaseous emission	-	
Particulate matter emission	Active regenerating Diesel particulate filter (DPF)	
Time for regeneration DPF (average)	22	min
Time between regeneration:		
- maximum*	25	h
- under PowerMix conditions*	25	h
- checked	No noticeable problems during this test but long-term test only available for 6R	
Exhaust gas recuperation	**Extern, cooled**	
Number of cylinders*	**6**	
Bore*	**118**	**mm**
Stroke*	**136**	**mm**
Displacement*	**8984**	**cm³**
Rated speed	**2100**	**min^{-1}**

Power by 97/68 EC	**standard**		**boost**	
Rated power	206	kW	228	kW
Maximum power	227	kW	235	kW
at engine speed	1900	min^{-1}	1900	min^{-1}
Loss of power during regeneration			no loss of power	

Main fan		
Diameter	700	mm
Number of fan blades	9	

Transmission

Manufacturer	**John Deere**	
Type of construction	**Continous variable Transmission**	
Ranges	**-**	
Gears		
Forward	-	
Reverse	-	
Design speed	**40**	**km/h**

Power take off

Profile	**Form 3: 20 tooth (1 ¾")**			
Transmission ratio*				
Standard pto speed	540	540E	1000	1000E
Engine speed [min^{-1}]	-	-	1950	1750

Chassis

Front axle		
Manufacturer	John Deere	
Type	Rigid axle, suspended	

Tires	**front**	**rear**
Manufacturer	Michelin AXIOBIB	Michelin AXIOBIB
Tire size	600/70 R30	710/70 R42

Axle load	**front**	**rear**	**total**
Permissible*	6500 kg	11000 kg	16000 kg
Empty weight	4370 kg	6540 kg	10910 kg

Hydraulic

System*	**Closed Center, Pressure and Flow Compensated**	
Supply of oil	**Common with transmission oil**	
Fluid type*	**John Deere HY-GARD**	
Capacity*	**188**	**l**
Extractable*	**65**	**l**
Auxiliary valves		
Number	4	
Max. flowrate*	162	l/min
Max. pressure*	**207**	**bar**

Fitted options

Free return flow	**Yes**
Air condition	**Yes**
Air compressor	**Yes**
Front hydraulic power lift	**Yes**
Front pto	**No**
	-
	-

Test conditions

Axle load	**front**	**rear**
With ballast	**5240 kg**	**7610 kg**
Ballast		
on frame	1000 kg	950 kg
on axle	- kg	- kg
Axle load distribution	**41 %**	**59 %**
Tire pressure	**front**	**rear**
	1,2 **bar**	1,2 **bar**

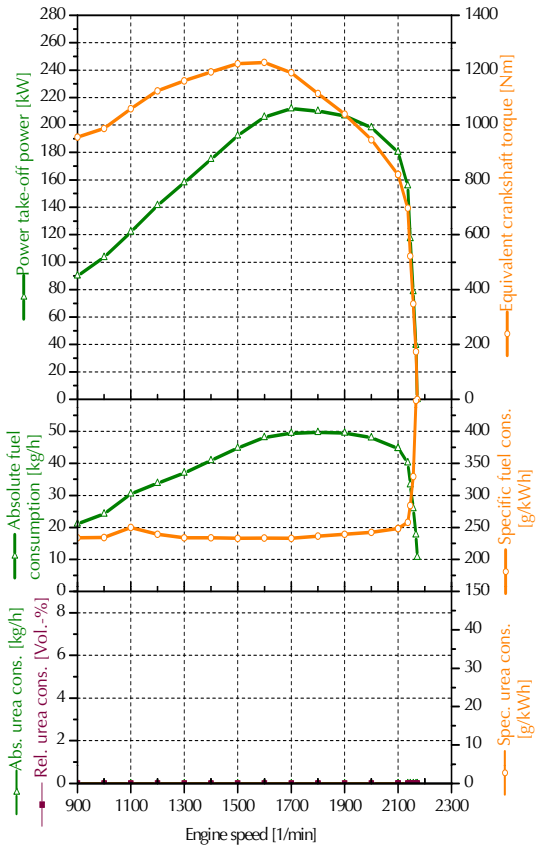
* Manufacturer´s data

Results of measurement at pto dynamometer – standard

Full load	
Rated speed	
Pto power	180,2 kW
Absolute fuel consumption	44,7 kg/h
Specific fuel consumption	248 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
Maximum power	
Engine speed	1700 min^{-1}
Pto power	212,0 kW
Absolute fuel consumption	49,4 kg/h
Specific fuel consumption	233 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
Maximum torque	
Engine speed	1600 min^{-1}
Pto power	205,8 kW
Absolute fuel consumption	48,0 kg/h
Specific fuel consumption	233 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
1000 rpm at pto	
Engine speed	1950 min^{-1}
Pto power	204,1 kW
Absolute fuel consumption	49,0 kg/h
Specific fuel consumption	240 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%

Part load	
Full throttle, 80 % of power at rated speed	
Absolute fuel consumption	38,0 kg/h
Specific fuel consumption	263 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
90 % of rated speed, 80 % of power at rated speed	
Absolute fuel consumption	35,9 kg/h
Specific fuel consumption	249 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
90 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	21,3 kg/h
Specific fuel consumption	296 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
60 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	18,3 kg/h
Specific fuel consumption	255 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%
60 % of rated speed, 60 % of power at rated speed	
Absolute fuel consumption	26,2 kg/h
Specific fuel consumption	242 g/kWh
Specific urea consumption	-* g/kWh
Ratio urea to fuel	-* Vol-%

Graphical analysis



Torque rise	50 %
Engine speed drop	24 %
Pulling off torque	121 %

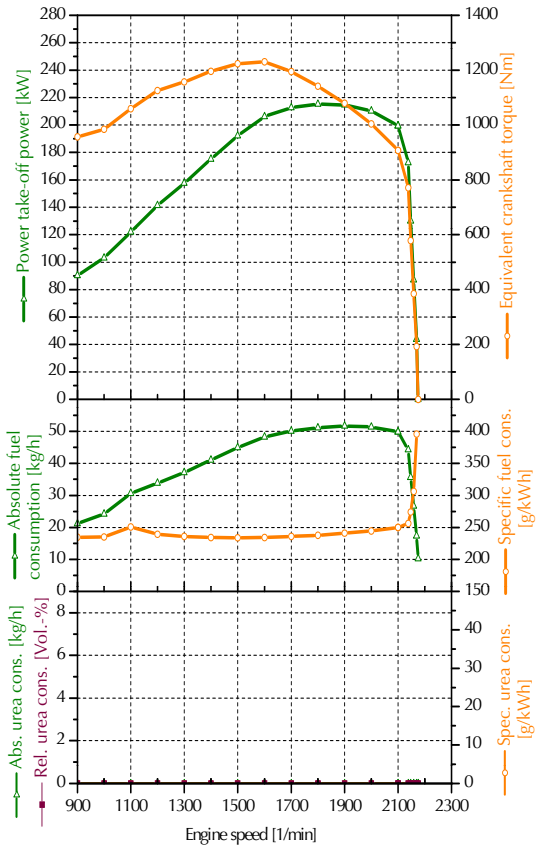
* No Selectiv catalytic reduction

Results of measurement at pto dynamometer – boost

Full load		
Rated speed		
Pto power	199,5	kW
Absolute fuel consumption	49,9	kg/h
Specific fuel consumption	250	g/kWh
Specific urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
Maximum power		
Engine speed	1800	min^{-1}
Pto power	215,2	kW
Absolute fuel consumption	51,1	kg/h
Spec. Fuel consumption	238	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
Additional fuel consump. during regeneration	4,1	kg
Additional fuel consump. turned-over**	0,3	%
Calculated spec. fuel consump. with reg.	239	g/kWh
Maximum torque		
Engine speed	1600	min^{-1}
Pto power	206,1	kW
Absolute fuel consumption	48,2	kg/h
Spec. Fuel consumption	234	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
1000 rpm at pto		
Engine speed	1950	min^{-1}
Pto power	212,7	kW
Absolute fuel consumption	51,7	kg/h
Spec. Fuel consumption	243	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%

Part load		
Full throttle, 80 % of power at rated speed		
Absolute fuel consumption	41,4	kg/h
Spec. Fuel consumption	259	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
90 % of rated speed, 80 % of power at rated speed		
Absolute fuel consumption	39,3	kg/h
Spec. Fuel consumption	246	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
90 % of rated speed, 40 % of power at rated speed		
Absolute fuel consumption	23,2	kg/h
Spec. Fuel consumption	291	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
Additional fuel consump. during regeneration	3,1	kg
Additional fuel consumption turned-over**	0,5	%
Calculated spec. fuel consump. with reg.	293	g/kWh
60 % of rated speed, 40 % of power at rated speed		
Absolute fuel consumption	20,1	kg/h
Spec. Fuel consumption	252	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
60 % of rated speed, 60 % of power at rated speed		
Absolute fuel consumption	28,8	kg/h
Spec. Fuel consumption	240	g/kWh
Spec. urea consumption	-*	g/kWh
Ratio urea to fuel	-*	Vol-%
Additional fuel consump. during regeneration	2,7	kg
Additional fuel consumption turned-over**	0,4	%
Calculated spec. fuel consump. with reg.	241	g/kWh

Graphical analysis

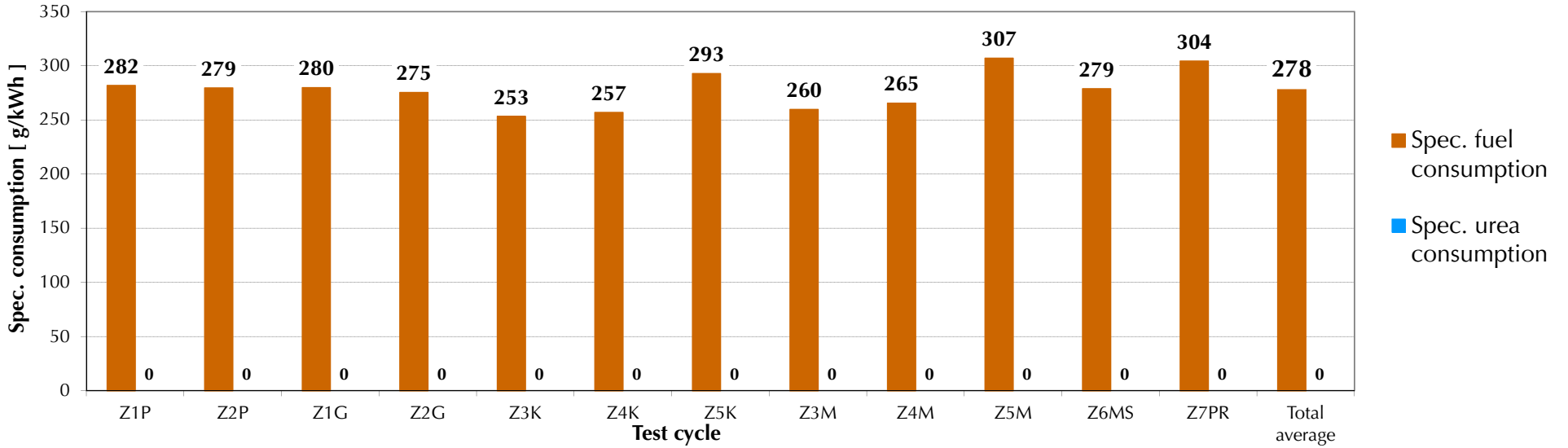


Torque rise	36 %
Engine speed drop	24 %

* No Selectiv catalytic reduction

** Ratio of additional fuel for regeneration to total fuel consumption during two regenerations; calculated with maximum operating hours during regeneration (see Specification-Engine)

Results at DLG PowerMix



Belastungsart	Test cycle		Average values: Engine speed [min^{-1}]	Driving speed [km/h]	Total power [kW]	Absolute fuel consumption [kg/h]	Absolute fuel consumption [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]
Drawbar work	Plough 100 %	Z1P	1687	7,7	164	45,9	55,4	281	-*	-*	0,3	282
	Plough 60 %	Z2P	1482	8,7	113	31,2	37,8	278	-*	-*	0,3	279
	Cultivator 100 %	Z1G	1740	9,5	170	47,1	56,8	279	-*	-*	0,3	280
	Cultivator 60%	Z2G	1489	11,6	129	35,1	42,3	274	-*	-*	0,3	275
Drawbar + PTO work	Rotary harrow 100 %	Z3K	1760	5,5	179	44,7	54,1	252	-*	-*	0,4	253
	Rotary harrow 70 %	Z4K	1593	5,9	129	32,5	39,4	256	-*	-*	0,3	257
	Rotary harrow 40 %	Z5K	1592	5,9	73	20,9	25,4	291	-*	-*	0,6	293
	Mower 100 %	Z3M	1753	14,5	181	46,8	56,7	259	-*	-*	0,3	260
	Mower 70 %	Z4M	1593	15,8	135	35,7	43,3	265	-*	-*	0,3	265
	Mower 40 %	Z5M	1592	15,8	77	23,3	28,2	305	-*	-*	0,5	307
Drawbar- + PTO + Hydraulic work	Manure spreader	Z6MS	1719	6,7	142	38,7	47,0	278	-*	-*	0,3	279
	Baler	Z7PR	1749	9,8	122	35,1	42,6	303	-*	-*	0,3	304
Total average DLG PowerMix								**277**	**-***	**-***	**0,4**	**278**

* No Selectiv catalytic reduction

** Ratio of additional fuel for regeneration to total fuel consumption during two regenerations; calculated with maximum operating hours during regeneration (see Specification-Engine)