

# NEBRASKA OECD TRACTOR TEST 2211—SUMMARY 1157

## JOHN DEERE 5125ML DIESEL

### 16 SPEED

PFC hydraulic system

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—566 rpm)</b>						
113.48 (84.62)	2201	6.61 (25.01)	0.407 (0.248)	17.18 (3.38)	0.29 (1.10)	Fuel used during active exhaust regeneration-0.43 gal (1.62 l) (see note 1, p.2)
<b>Standard Power Take-off Speed (540 rpm)</b>						
115.48 (86.12)	2100	6.54 (24.76)	0.396 (0.241)	17.65 (3.48)	0.29 (1.09)	
<b>Maximum Power (1 hour)</b>						
118.68 (88.50)	1950	6.53 (24.73)	0.385 (0.234)	18.16 (3.58)	0.26 (0.98)	

#### VARYING POWER AND FUEL CONSUMPTION

113.48 (84.62)	2201	6.61 (25.01)	0.407 (0.248)	17.18 (3.38)	0.29 (1.10)	Air temperature
99.43 (74.14)	2269	6.01 (22.74)	0.423 (0.257)	16.55 (3.26)	0.24 (0.89)	72°F (22°C)
75.01 (55.93)	2284	4.92 (18.62)	0.459 (0.279)	15.25 (3.00)	0.17 (0.65)	Relative humidity
50.41 (37.59)	2298	3.89 (14.73)	0.540 (0.329)	12.96 (2.55)	0.09 (0.36)	41%
25.35 (18.90)	2313	2.89 (10.95)	0.799 (0.486)	8.76 (1.73)	0.05 (0.21)	Barometer
1.33 (0.99)	2332	1.87 (7.07)	9.857 (5.996)	0.71 (0.14)	0.07 (0.27)	28.69" Hg (97.15 kPa)

Maximum torque - 357 lb.-ft. (484 Nm) at 1598 rpm

Maximum torque rise - 31.9%

Torque rise at 1758 engine rpm - 27%

Power increase at 1950 engine rpm - 4.6%

#### DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	D.E.F. Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing dry med bulb	Barom. inch Hg (kPa)
<b>Power at Rated Engine Speed—9th(C1) Gear</b>								
97.00 (72.33)	7663 (34.09)	4.75 (7.64)	2202	8.8	0.481 (0.293)	14.55 (2.87)	0.029 (0.017)	202 (94) 63 (17) 28.79 (97.49)
<b>75% of Pull at Rated Engine Speed—9th(C1) Gear</b>								
78.52 (58.55)	5756 (25.60)	5.12 (8.23)	2276	4.7	0.493 (0.300)	14.20 (2.80)	0.021 (0.013)	201 (94) 67 (20) 28.77 (97.43)
<b>50% of Pull at Rated Engine Speed—9th(C1) Gear</b>								
53.51 (39.90)	3818 (16.98)	5.26 (8.46)	2293	2.8	0.560 (0.341)	12.49 (2.46)	0.020 (0.012)	196 (91) 66 (19) 28.77 (97.43)
<b>75% of Pull at Reduced Engine Speed—11th(C3) Gear</b>								
78.40 (58.46)	5718 (25.43)	5.14 (8.27)	1495	4.7	0.414 (0.252)	16.89 (3.33)	0.023 (0.014)	194 (90) 66 (19) 28.76 (97.39)
<b>50% of Pull at Reduced Engine Speed—11th(C3) Gear</b>								
53.61 (39.98)	3816 (16.97)	5.27 (8.48)	1502	2.8	0.433 (0.264)	16.15 (3.18)	0.024 (0.015)	190 (88) 66 (19) 28.76 (97.39)

**Location of tests:** Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

**Dates of tests:** April 30 to May 6, 2019

**Manufacturer:** John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown Ga. USA 30813

**CONSUMABLE Fluids, OIL and TIME: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8404 **Fuel weight** 6.998 lbs/gal (0.839 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W30 API service classification CJ-4 Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated** 17.5 hours.

**ENGINE: Make** John Deere **Diesel Type** four cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** \*PE4045U083122\* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.19" x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 16.9 to 1 **Displacement** 276 cu in (4525 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Fuel cooler** radiator for return fuel **Exhaust** regenerative aftertreatment system consisting of DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) with an underhood muffler with horizontal exhaust to right side **Cooling medium temperature control** two thermostats and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 44.0 - 46.7 lb/h (19.9 - 21.2 kg/h) **High idle:** 2300 - 2350 rpm **Turbo boost:** nominal 18.9 - 21.8 psi (130 - 150 kPa) as measured 19.4 psi (134 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** \*1LV5125MLKK700506\* **Tread width** rear 62.4" (1587 mm) to 70.9" (1803 mm) front 62.1" (1578 mm) to 67.9" (1724 mm) **Wheelbase** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.14 (1.84) second 1.41 (2.27) third 1.75 (2.82) fourth 2.15 (3.46) fifth 2.65 (4.26) sixth 3.27 (5.26) seventh 4.05 (6.52) eighth 4.97 (8.00) ninth 5.13 (8.25) tenth 6.33 (10.19) eleventh 7.84 (12.62) twelfth 9.62 (15.49) thirteenth 11.48 (18.47) fourteenth 14.17 (22.81) fifteenth 17.56 (28.26) sixteenth 20.44 (32.89)

## DRAWBAR PERFORMANCE

### UNBALLASTED - FRONT DRIVE ENGAGED-2200 ENGINE RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
7th(B3) Gear										
80.53 (60.05)	8246 (36.68)	3.67 (5.90)	2269	13.4	0.531 (0.323)	13.19 (2.60)	0.023 (0.014)	197 (92)	60 (16)	28.81 (97.56)
8th(B4) Gear										
95.54 (71.24)	7862 (34.97)	4.56 (7.34)	2201	9.5	0.488 (0.297)	14.35 (2.83)	0.023 (0.014)	203 (93)	62 (17)	28.79 (97.49)
9th(C1) Gear										
97.00 (72.33)	7663 (34.09)	4.75 (7.64)	2202	8.8	0.481 (0.293)	14.55 (2.87)	0.029 (0.017)	202 (94)	63 (17)	28.79 (97.49)
10th(C2) Gear										
100.52 (74.95)	6224 (27.69)	6.06 (9.74)	2200	5.4	0.465 (0.283)	15.06 (2.97)	0.023 (0.014)	202 (94)	64 (18)	28.79 (97.49)
11th(C3) Gear										
102.09 (76.13)	5023 (22.34)	7.62 (12.26)	2200	3.9	0.457 (0.278)	15.32 (3.02)	0.024 (0.015)	211 (99)	65 (18)	28.77 (97.43)
12th(C4) Gear										
102.42 (76.37)	4063 (18.07)	9.46 (15.22)	2201	2.9	0.452 (0.275)	15.48 (3.05)	0.026 (0.016)	212 (100)	66 (19)	28.77 (97.43)

### UNBALLASTED - FRONT DRIVE ENGAGED-1950 ENGINE RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
7th(B3) Gear										
80.54 (60.06)	8248 (36.69)	3.67 (5.90)	2269	13.4	0.531 (0.323)	13.18 (2.60)	0.023 (0.014)	197 (92)	60 (16)	28.81 (97.56)
8th(B4) Gear										
95.62 (71.30)	7869 (35.00)	4.56 (7.34)	2199	9.4	0.488 (0.297)	14.35 (2.83)	0.023 (0.014)	203 (93)	62 (17)	28.79 (97.49)
9th(C1) Gear										
97.20 (72.48)	7690 (34.21)	4.74 (7.63)	2201	8.9	0.481 (0.292)	14.56 (2.87)	0.025 (0.015)	200 (93)	64 (18)	28.79 (97.49)
10th(C2) Gear										
103.43 (77.13)	7044 (31.33)	5.51 (8.87)	2030	6.9	0.449 (0.273)	15.58 (3.07)	0.022 (0.013)	208 (98)	64 (18)	28.78 (97.46)
11th(C3) Gear										
106.16 (79.16)	5957 (26.50)	6.69 (10.76)	1950	5.0	0.430 (0.262)	16.28 (3.21)	0.022 (0.014)	211 (99)	65 (19)	28.77 (97.43)
12th(C4) Gear										
106.18 (79.17)	4789 (21.30)	8.32 (13.38)	1950	3.6	0.432 (0.263)	16.22 (3.19)	0.021 (0.013)	213 (100)	66 (19)	28.77 (97.43)

Horizontal distances of drawbar hitch point behind rear wheel axis - 32.5"(825 mm), 34.4" (875 mm)

#### TIRES AND WEIGHT

**Rear tires**—No., size, ply & psi (kPa)  
**Front tires**—No., size, ply & psi (kPa)  
**Height of drawbar**  
**Static weight with operator**—Rear  
 — Front  
 — Total

#### Tested without ballast

Two 19.5L-24; 10; 12 (85)  
 Two 12.5/80-18; 6; 22 (150)  
 12.5 in (315 mm)  
 5440 lb (2468 kg)  
 3360 lb (1524 kg)  
 8800 lb (3992 kg)

reverse 1.22 (1.97), 1.51 (2.43), 1.87 (3.01), 2.29 (3.69), 2.83 (4.55), 3.49 (5.62), 4.32 (6.96), 5.31 (8.54), 5.47 (8.81), 6.76 (10.87), 8.37 (13.47), 10.53 (16.53), 12.25 (19.71), 15.13 (24.34), 18.64 (30.00), 18.64 (30.00) electronically limited **Clutch** wet disc hydraulically actuated by foot pedal **Brakes** wet disc hydraulically actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2100 engine rpm, Economy PTO 540 rpm at 1645 engine rpm, 1000 rpm at 2103 engine rpm **Unladen tractor mass** 8625 lb (3912 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** The manufacturer declares that the average time between active regenerations is 150 hours. A 4% power decrease was observed during the active exhaust regeneration.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2211**, Nebraska Summary 1157, July 26, 2019.

Roger M. Hoy  
 Director

M.F. Kocher  
 P.J. Jasa  
 S.K. Pitla  
 Board of Tractor Test Engineers

## Shiftable PTO Performance

### Economy mode 540 PTO rpm @ 1645 engine rpm

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption	
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)
111.62 (83.23)	1644	5.90 (22.35)	0.370 (0.225)	18.91 (3.72)	0.26 (1.00)
83.77 (62.46)	1648	4.52 (17.11)	0.378 (0.230)	18.54 (3.65)	0.20 (0.76)
55.85 (41.65)	1650	3.25 (12.30)	0.407 (0.248)	17.19 (3.39)	0.12 (0.46)
27.86 (20.78)	1646	2.06 (7.80)	0.517 (0.315)	13.53 (2.66)	0.04 (0.17)
1.15 (0.86)	1648	1.13 (4.29)	6.896 (4.194)	1.01 (0.20)	0.02 (0.07)

### Normal mode 540 PTO rpm @ 2100 engine rpm

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption	
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)
111.55 (83.18)	2103	6.36 (24.08)	0.399 (0.243)	17.54 (3.45)	0.27 (1.03)
83.75 (62.45)	2104	5.02 (19.00)	0.419 (0.255)	16.69 (3.29)	0.19 (0.71)
55.82 (41.62)	2107	3.82 (14.48)	0.480 (0.292)	14.59 (2.88)	0.11 (0.42)
27.94 (20.84)	2107	2.66 (10.08)	0.667 (0.406)	10.49 (2.07)	0.04 (0.16)
1.08 (0.81)	2106	1.60 (6.07)	10.347 (6.294)	0.68 (0.13)	0.07 (0.28)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 8th (B4) gear	86.5	86.5
Transport in 16th (D4) gear		88.8
Bystander in 16th (D4) gear		86.5

## HYDRAULIC PERFORMANCE

CATEGORY: II

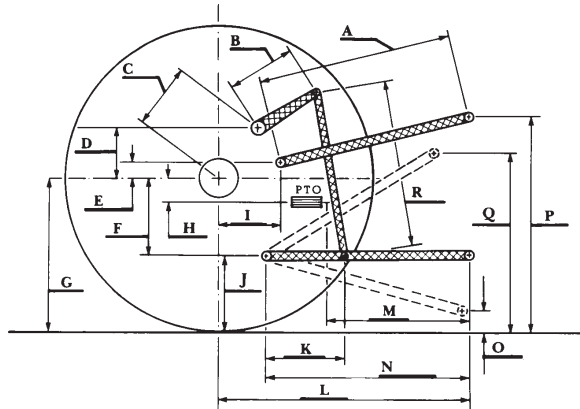
Quick Attach: None

OECD Static test

	<u>lift cylinders</u>	
Maximum force exerted through whole range:	6979 lbs (31.0 kN) (2 x 75 mm)	
	7872 lbs (35.0 kN) (2 x 80 mm)	
	<u>single outlet set</u>	<u>three outlet sets combined</u>
i) Sustained pressure of the open relief valve:	2862 psi (197 bar)	2893 psi (199 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	30.3 GPM (114.7 l/min)	31.6 GPM (119.5 l/min)
iii) Pump delivery rate at maximum hydraulic power:	28.4 GPM (107.6 l/min)	30.8 GPM (116.6 l/min)
Delivery pressure:	2369 psi (163 bar)	2691 psi (186 bar)
Power:	39.3 HP (29.3 kW)	48.4 HP (36.1 kW)

## HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	26.4	670
B	14.1	358
C	17.7	449
D	15.0	380
E	14.4	365
F	8.8	223
G	27.4	695
H	0.2	4
I	14.4	365
J	18.6	472
K	17.5	444
L	41.7	1060
M	23.0	585
N	33.1	840
O	5.1	130
P	42.6	1082
Q	34.4	875
R	32.3	820



### RECOMMENDED CITATION FORMAT:

NTTL.(2019). Nebraska OECD tractor test 2211 for John Deere 5125ML PFC Diesel.  
Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>



## JOHN DEERE 5125ML DIESEL

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University of Nebraska–Lincoln