



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator  
 1800 RPM (60 Hz)

**PowerTech 4.5L Engine**

Model: **4045TF275**

**102 hp (76 kW) Prime**

**113 hp (84 kW) Standby**

[See Option Table]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
102	76	113	84

Generator Efficiency %	Fan Power		Power Factor	Prime Rating		Standby Rating <sup>1</sup>		4 sec Standby Block Load Capability
	hp	kW		kW	kVA	kW	kVA	
88-92	5.6	4.2	0.8	64-66	79-83	70-73	88-92	100%

Note 1: Based on nominal engine power.

Air Intake Restriction ..... 12 in.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure ..... 30 in.H<sub>2</sub>O (7.5 kPa)

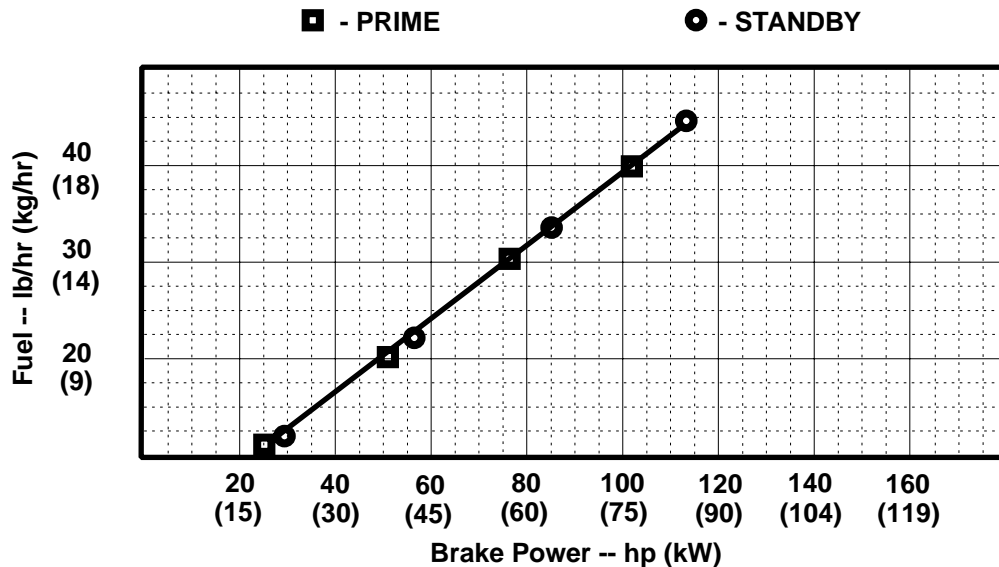
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:

- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N•m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.



Notes:

Tier-2 Emission Certifications:

Certified by:

CARB; EPA

*Brian L. Carlson*  
 3 Dec 2001

Ref: Engine Emission Label

\* Revised Data  
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## Engine Specification Data

### General Data

Model .....4045TF275  
 Number of Cylinders ..... 4  
 Bore and Stroke--in. (mm)..... 4.19 x 5.00 (106 x 127)  
 Displacement--in.<sup>3</sup> (L).....276 (4.5)  
 Compression Ratio ..... 17.0:1  
 Valves per Cylinder--Intake/Exhaust..... 1/1  
 Firing Order..... 1-3-4-2  
 Combustion System..... Direct Injection  
 Engine Type..... In-line, 4-Cycle  
 Aspiration..... Turbocharged  
 Engine Crankcase Vent System..... Open  
 Maximum Crankcase Pressure--in.H<sub>2</sub>O (kPa) .....2 (0.5)

### Physical Data

Length--in. (mm) .....34.1 (867)  
 Width--in. (mm) ..... 25.1 (637)\*  
 Height--in. (mm).....38.6 (982)  
 Weight, dry--lb (kg).....993 (451)  
 (Includes flywheel hsg., flywheel & electrics)  
 Center of Gravity Location  
 From Rear Face of Block (X-axis)--in. (mm)...9.8 (249)  
 Right of Crankshaft (Y-axis)--in. (mm) .....2.17 (55)  
 Above Crankshaft (Z-axis)--in. (mm) .....5.7 (145)  
 Max. Allow. Static Bending Moment at Rear  
 Face of Flywhl Hsg w/ 5-G Load--lb-ft (N\*m) ..600 (814)  
 Thrust Bearing Load Limit (Forward)  
 Continuous--lb (N) .....500 (2224)  
 Intermittent--lb (N).....900 (4003)

### Electrical System

Recommended Battery Capacity (CCA)  
 12 Volt System--am ..... 640  
 24 Volt System--am ..... 570  
 Maximum Allowable Starting Circuit Resistance  
 12 Volt System--Ohm..... 0.0012  
 24 Volt System--Ohm..... 0.002  
 Starter Rolling Current--12 Volt System  
 At 32 °F ( 0 °C)--amp..... 780  
 At -22 °F (-30 °C)--a..... 1000  
 Starter Rolling Current--24 Volt System  
 At 32 °F (0 °C)--amp ..... 600  
 At -22 °F (-30 °C)--amp..... 700

### Air System

**Prime Standby**

Max. Allowable Temp Rise--Ambient Air to  
 Engine Inlet--°F (°C) ..... 15 (8) ..... 15 (8)  
 Maximum Air Intake Restriction  
 Dirty Air Cleaner--in.H<sub>2</sub>O (kPa) ...25 (6.25) .... 25 (6.25)  
 Clean Air Cleaner--in.H<sub>2</sub>O (kPa) ..... 12 (3) ..... 12 (3)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 226 (6.4).... 240 (6.8)  
 Intake Manifold Pressure--psi (kPa) ... 15 (106)..... 18 (125)  
 Recm'd Intake Pipe Dia--in. (mm).....3 (76.2) ..... 3 (76.2)

### Exhaust System

**Prime Standby**

Exhaust Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min).....618(17.5) ... 674(19.1)  
 Exhaust Temperature--°F (°C) ..... 1040(560) .. 1094(590)  
 Maximum Allowable Back  
 Pressure--in.H<sub>2</sub>O (kPa).....30 (7.5) ..... 30 (7.5)  
 Recm'd Exhaust Pipe Dia--in. (mm) ..4 (101.6) .... 4 (101.6)

### Cooling System

**Prime Standby**

Engine Heat Reject.--BTU/min (kW) .2959 (52) ... 3300 (58)  
 Coolant Flow--gal/min (L/min).....38 (144) ..... 38 (144)  
 Thermostat Start to Open--°F (°C) ..... 180 (82) ..... 180 (82)  
 Thermostat Fully Open--°F (°C).....201 (94) ..... 201 (94)  
 Engine Coolant Capacity--qt (L) .....9 (8.5) ..... 9 (8.5)  
 Recm'd Pressure Cap--psi (kPa) ..... 10 (69) ..... 10 (69)  
 Max. Top Tank Temp--°F (°C) .....221 (105) ... 221 (105)  
 Min. Coolant Fill Rate--gal/min (L/min) ...3 (11) ..... 3 (11)  
 Min. Air-to-Boil Temperature--°F (°C) . 117 (47) ..... 117 (47)

### Fuel System

**Prime Standby**

Fuel Injection Pump (Stanadyne)..... DE10 ..... DE10  
 Governor Regulation.....4 % ..... 4 %  
 Governor Type ..... Electronic .....Electronic  
 Fuel Consumption--lb/hr (kg/hr).....40 (18.2) ..... 45 (20.4)  
 Total Fuel Flow--lb/hr (kg/hr).....153 (69.2) .... 157 (71.4)  
 Maximum Fuel Transfer Pump  
 Suction--ft (m) fuel .....3 (0.9) ..... 3 (0.9)  
 Fuel Filter Micron Size @ 98 % Efficiency. 2\* ..... 2\*

### Lubrication System

**Prime Standby**

Oil Pressure  
 at Rated Speed--psi (kPa) ..... 50 (345) ..... 50 (345)  
 Oil Pressure at Low Idle--psi (kPa) .... 15 (105) ..... 15 (105)  
 In Pan Oil Temperature--°F (°C) .....240 (115) ... 240 (115)

### Performance Data

**Prime Standby**

Rated Power--hp (kW) ..... 102 (76)..... 113 (84)  
 Rated Speed--rpm ..... 1800..... 1800  
 Low Idle Speed--rpm ..... 1150..... 1150  
 BMEP--psi (kPa) .....162 (1119).... 179 (1238)  
 Friction Power  
 @ Rated Speed--hp (kW) ..... 17 (13)..... 17 (13)  
 Altitude Capability--ft (m) ... 10,000 (3050).... 10,000 (3050)  
 Ratio--Air : Fuel..... 24.1:1..... 23.0:1  
 Noise--dB(A) @ 1 m ..... 90.2\*..... 91.1\*

### Fuel Consumption -- lb/hr (kg/h)

**Prime Standby**

25 % Power ..... 11.7 (5.3) ..... 12.3 (5.6)  
 50 % Power .....20.7 (9.4) ... 22.4 (10.2)  
 75 % Power .....30.4 (13.8) ... 33.7 (15.3)  
 100 % Power .....40.0 (18.2) ... 44.9 (20.4)

All values at rated speed and power with standard options unless otherwise noted.

\* Revised Data  
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## Engine Specification Data

### Electronic Engine Controller (JDEC)

Performance System Option Code Table		
Option Codes		System Voltage
Injection Pump	Performance Software	
Standard Feature ECU		
161K	7292	12V
163L	7293	24V
Extended Feature ECU		
163H	7292	12V
161L	7293	24V

ECU Feature Software Option Code (8300 Group) Table Generator Applications - Stanadyne DE10							
Option Code	Oil Pressure Sensor	Governing	Cruise Control	Engine Protection		Available Throttle Inputs	
				ECU Software	External Input	Analog	Digital
Standard Feature ECU							
8325	No	4% Droop	No	None	None	None	2-State
8326	Yes	4% Droop	No	None	None	None	2-State
8327	Yes	4% Droop	No	Shutdown Only	None	None	2-State
8328	No	Isochronous	No	None	None	None	2-State
8329	Yes	Isochronous	No	None	None	None	2-State
8330	Yes	Isochronous	No	Shutdown Only	None	None	2-State
Extended Feature ECU							
8331	No	Selectable	No	None	Derate & Shutdown	Two	Adj. 3-State
8332	Yes	Selectable	No	None	Derate & Shutdown	Two	Adj. 3-State
8333	Yes	Selectable	No	Shutdown Only	Derate & Shutdown	Two	Adj. 3-State

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