

Model: DFHD
Frequency: 60
Fuel type: Diesel
KW rating: 1000 standby
900 prime

➤ **Generator set data sheet**



**Power
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Exhaust emission data sheet:	EDS-164
Exhaust emission compliance sheet:	
Sound performance data sheet:	MSP-173
Cooling performance data sheet:	MCP-115
Prototype test summary data sheet:	PTS-126
Standard set-mounted radiator cooling outline:	0500-3636
Optional set-mounted radiator cooling outline:	
Optional heat exchanger cooling outline:	0500-3613
Optional remote radiator cooling outline:	0500-3612

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	1000 (1250)				900 (1125)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	20.6	35.3	51.1	69.3	19.2	32.3	46.2	61.8	
L/hr	78	134	193	262	73	122	175	234	

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QST30-G5		
Configuration	Cast iron, 50°V 12 cylinder		
Aspiration	Turbocharged and aftercooled		
Gross engine power output, kWm (bhp)	1111.5 (1490.0)	1007.1 (1350.0)	
BMEP at set rated load, kPa (psi)	2427.0 (352.0)	2199.4 (319.0)	
Bore, mm (in)	140.0 (5.51)		
Stroke, mm (in)	165.1 (6.50)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	9.9 (1949.0)		
Compression ratio	14.0:1		
Lube oil capacity, L (qt)	132.5 (140.0)		
Overspeed limit, rpm	2100 ± 50		
Regenerative power, kW	82.00		

Fuel flow		
Fuel flow at rated load, L/hr (US gph)	567.8 (150.0)	
Maximum inlet restriction, mm Hg (in Hg)	101.6 (4.0)	
Maximum return restriction, mm Hg (in Hg)	508.0 (20.0)	

Air	Standby rating	Prime rating	Continuous rating
Combustion air, m ³ /min (scfm)	80.4 (2840.0)	75.0 (2650.0)	
Maximum air cleaner restriction, kPa (in H ₂ O)	6.2 (25.0)		
Alternator cooling air, m ³ /min (scfm)	190.2 (6720.0)		

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	220.0 (7775.0)	197.0 (6960.0)	
Exhaust temperature, °C (°F)	523.9 (975.0)	493.3 (920.0)	
Maximum back pressure, kPa (in H ₂ O)	6.7 (27.0)		

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)		
Fan load, kW _m (HP)	42.4 (56.9)		
Coolant capacity (with radiator), L (US gal)	202.5 (53.5)		
Cooling system air flow, m ³ /min (scfm)	962.2 (34000)		
Total heat rejection, MJ/min (Btu/min)	49.4 (46630)	43.1 (40590)	
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)		

Optional set-mounted radiator cooling

Ambient design, °C (°F)			
Fan load, kW _m (HP)			
Coolant capacity (with radiator), L (US gal)			
Cooling system air flow, m ³ /min (scfm)			
Total heat rejection, MJ/min (Btu/min)			
Maximum cooling air flow static restriction, kPa (in H ₂ O)			

Optional heat exchanger cooling

Set coolant capacity, L (US gal)	265.0 (70.0)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	22.1 (20880.0)	20.5 (19350.0)	
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	16.3 (15420.0)	12.8 (12120.0)	
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum raw water pressure, jacket water circuit, kPa (psi)	1241.1 (180.0)		
Maximum raw water pressure, aftercooler circuit, kPa (psi)	1034.2 (150.0)		
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)	1362.6 (360.0)		
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)	567.8 (150.0)		
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US gal/min)	159.0 (42.0)		
Minimum raw water flow at 27 °C (80 °F) inlet temp, aftercooler circuit, L/min (US gal/min)	340.6 (90.0)		
Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P at min flow, jacket water circuit, kPa (psi)	1379.0 (0.2)		
Raw water delta P at min flow, aftercooler circuit, kPa (psi)	5516.0 (0.8)		
Raw water delta P at min flow, fuel circuit, kPa (psi)			
Maximum jacket water outlet temp, °C (°F)	104.4 (220.0)	100.0 (212.0)	
Maximum aftercooler inlet temp, °C (°F)	65.6 (150.0)		
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			

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Optional remote radiator cooling¹	Standby rating	Prime rating	Continuous rating
Set coolant capacity, L (US gal)	91.6 (24.2)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	991.7 (262.0)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)	22.1 (20880.0)	20.5 (19350.0)	
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum friction head, jacket water circuit, kPa (psi)	68.9 (10.0)		
Maximum friction head, aftercooler circuit, kPa (psi)			
Maximum static head, jacket water circuit, m (ft)	14.0 (46.0)		
Maximum static head, aftercooler circuit, m (ft)			
Maximum jacket water outlet temp, °C (°F)	104.4 (220.0)	100.0 (212.0)	
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

Weights²

Unit dry weight kgs (lbs)	7676 (16922)
Unit wet weight kgs (lbs)	7973 (17578)

Notes:

¹ For non-standard remote installations contact your local Cummins Power Generation representative.

² Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Engine power available up to 1512 m (4958 ft) at ambient temperatures up to 40 °C (104 °F) and up to 1350 m (4433 ft) at 50 °C (122 °F). Above these elevations, derate at 3.4% per 305 m (1000 ft) up to 3000 m (9843 ft). Above 50 °C (122 °F) and 3000 m (9843 ft), derate an additional 9.0% per 305 m (1000 ft) and 15% per 10 °C (18 °F).
Prime	
Continuous	

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

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Alternator data

Three phase table ¹		80 °C	80 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	105 °C		
Feature code		B284	B604	B283	B301	B252	B282	B288	B276	B300		
Alternator data sheet number		331	330	330	312	312	330	312	311	311		
Voltage ranges		220/380 thru 277/480	347/600	220/380 thru 277/480	347/600	120/208 thru 139/240 240/416 thru 277/480	220/380 thru 277/480	240/416 thru 277/480	277/480	347/600		
Surge kW		1024	1004	1018	1024	1019	1018	1019	1018	1021		
Motor starting kVA (at 90% sustained voltage)	Shunt											
	PMG	5521	4602	4602	4234	4234	4602	4234	3866	3866		

Full load current amps at standby rating	<u>120/208</u> 3470	<u>127/220</u> 3280	<u>120/240</u> 3007	<u>139/240</u> 3007	<u>220/380</u> 1899	<u>230/400</u> 1804	<u>240/416</u> 1735	<u>255/440</u> 1640	<u>277/480</u> 1504	<u>347/600</u> 1202
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¹: Single phase power can be taken from a three phase generator set at up to 40% of the generator set nameplate kW rating at unity power factor.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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