

**Model: DFLE**  
**Frequency: 60**  
**Fuel type: Diesel**

➤ **Generator set data sheet**  
**1500 kW standby**



**Power  
Generation**

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<b>Exhaust emission data sheet:</b>	<b>EDS-163</b>
<b>Emission compliance sheet:</b>	<b>EPA-1004</b>
<b>Sound performance data sheet:</b>	<b>MSP-159</b>
<b>Cooling performance data sheet:</b>	<b>MCP-125</b>
<b>Prototype test summary data sheet:</b>	<b>PTS-140</b>
<b>Standard set-mounted radiator cooling outline:</b>	<b>0500-4000</b>
<b>Optional set-mounted radiator cooling outline:</b>	<b>0500-3997</b>
<b>Optional heat exchanger cooling outline:</b>	
<b>Optional remote radiator cooling outline:</b>	<b>0500-3995</b>

<b>Fuel consumption</b>	<b>Standby</b>				<b>Prime</b>				<b>Continuous</b>
	<b>kW (kVA)</b>				<b>kW (kVA)</b>				<b>kW (kVA)</b>
<b>Ratings</b>	1500 (1875)				1250 (1563)				
<b>Load</b>	<b>1/4</b>	<b>1/2</b>	<b>3/4</b>	<b>Full</b>	<b>1/4</b>	<b>1/2</b>	<b>3/4</b>	<b>Full</b>	<b>Full</b>
<b>US gph</b>	32.8	55.8	79.4	103.6	29.2	47.6	68	87.3	
<b>L/hr</b>	124	211	301	392	111	180	257	330	

<b>Engine</b>	<b>Standby rating</b>	<b>Prime rating</b>	<b>Continuous rating</b>
Engine manufacturer	Cummins Inc.		
Engine model	KTA50-G9		
Configuration	Cast iron, 60°V 16 cylinder		
Aspiration	Turbocharged and low temperature aftercooled		
Gross engine power output, kWm (bhp)	1656 (2220)	1384 (1855)	1224 (1640)
BMEP at set rated load, kPa (psi)	2221 (318)	1835 (266)	
Bore, mm (in)	159 (6.25)		
Stroke, mm (in)	159 (6.25)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	9.5 (1875)		
Compression ratio	13.9:1		
Lube oil capacity, L (qt)	120 (127)	204.4 (216)	
Overspeed limit, rpm	2100 ±50		
Regenerative power, kW	168		

<b>Fuel flow</b>		
Maximum fuel flow with C180, L/hr (US gph)	693 (183)	
Maximum fuel flow with C174, L/hr (US gph)	984 (260)	
Maximum fuel inlet restriction w/clean filter, mm Hg (in Hg)	102 (4.0)	
Maximum return restriction, mm Hg (in Hg)	165 (6.5)	

<b>Air</b>	<b>Standby rating</b>	<b>Prime rating</b>	<b>Continuous rating</b>
Combustion air, m <sup>3</sup> /min (scfm)	124 (4400)	116 (4100)	
Maximum air cleaner restriction, kPa (in H <sub>2</sub> O)	6.2 (25)		
Alternator cooling air, m <sup>3</sup> /min (cfm)	190 (6720)		

### **Exhaust**

Exhaust gas flow at set rated load, m <sup>3</sup> /min (cfm)	301 (10650)	272 (9600)	
Exhaust gas temperature, °C (°F)	516 (960)	471 (880)	
Maximum exhaust back pressure, kPa (in H <sub>2</sub> O)	6.7 (27)		

### **Standard set-mounted radiator cooling**

Ambient design, °C (°F)	40 (104)		
Fan load, kW/m (HP)	56 (75)		
Coolant capacity (with radiator), L (US gal)	379 (100)		
Cooling system air flow, m <sup>3</sup> /min (scfm)	1613 (57000)		
Total heat rejection, MJ/min (Btu/min)	81.7 (77065)	69.1 (65170)	
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)		
Maximum fuel return line restriction kPa (in Hg)			

### **Optional set-mounted radiator cooling**

Ambient design, °C (°F)	50 (122)		
Fan load, kW/m (HP)	45 (60)		
Coolant capacity (with radiator), L (US gal)	519 (137)		
Cooling system air flow, m <sup>3</sup> /min (scfm)	1700 (60150)		
Total heat rejection, MJ/min (Btu/min)	79.8 (75335)	67.0 (63250)	
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)		
Maximum fuel return line restriction, kPa (in Hg)			

### **Optional heat exchanger cooling**

Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
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 raw water pressure, jacket water circuit, kPa (psi)			
Maximum raw water pressure, aftercooler circuit, kPa (psi)			
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)			
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)			
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow @ 27 °C (80 °F) Inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow @ 27 °C (80 °F) Inlet temp, aftercooler circuit, L/min (US gal/min)			
Minimum raw water flow @ 27 °C (80 °F) Inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P @ min flow, jacket water circuit, kPa (psi)			
Raw water delta P @ min flow, aftercooler circuit, kPa (psi)			
Raw water delta P @ min flow, fuel circuit, kPa (psi)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum aftercooler inlet temp @ 25 °C (77 °F) ambient, °C (°F)			
Maximum fuel return line restriction, kPa (in Hg)			

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<b>Optional remote radiator cooling<sup>1</sup></b>	<b>Standby rating</b>	<b>Prime rating</b>	<b>Continuous rating</b>
Set coolant capacity, L (US gal)	174 (46)		
Max flow rate @ max friction head, jacket water circuit, L/min (US gal/min)	1422 (376)		
Max flow rate @ max friction head, aftercooler circuit, L/min (US gal/min)	378 (100)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	42.8 (40600)	37.0 (35100)	
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	20.6 (19500)	16.0 (15200)	
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)	16.1 (15235)	13.7 (12950)	
Maximum friction head, jacket water circuit, kPa (psi)	67 (10)		
Maximum friction head, aftercooler circuit, kPa (psi)	48 (7)		
Maximum static head, jacket water circuit, m (ft)	18.3 (60)		
Maximum static head, aftercooler circuit, m (ft)	18.3 (60)		
Maximum jacket water outlet temp, °C (°F)	104 (220)	100 (212)	
Maximum aftercooler inlet temp @ 25 °C (77 °F) ambient, °C (°F)	55 (130)		
Maximum aftercooler inlet temp, °C (°F)	71 (160)	66 (150)	
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

## Weights<sup>2</sup>

Unit dry weight kgs (lbs)	10350 (22817)
Unit wet weight kgs (lbs)	10788 (23784)

### Notes:

<sup>1</sup> For non-standard remote installations contact your local Cummins Power Generation representative.

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

## Derating factors

<b>Standby</b>	Engine power available up to 915 m (3300 ft) at ambient temperatures up to 40 °C (104 °F) and up to 457 m (1500 ft) for 50 °C (122 °F). Above these elevations, derate at 4.5% per 305 m (1000 ft) and 10% per 10 °C (18 °F).
<b>Prime</b>	Engine power available up to 915 m (3300 ft) at ambient temperatures up to 40 °C (104 °F) and up to 457 m (1500 ft) for 50 °C (122 °F). Above these elevations, derate at 4.5% per 305 m (1000 ft) and 10% per 10 °C (18 °F).
<b>Continuous</b>	Engine power available up to 700 m (2300 ft) at ambient temperatures up to 40 °C (104 °F) and up to 60 m (200 ft) at 50 °C (122 °F). Above these elevations, derate at 4.5% per 305 m (1000 ft) and 10% per 10 °C (18 °F).

## Ratings definitions

<b>Emergency standby power (ESP):</b>	<b>Limited-time running power (LTP):</b>	<b>Prime power (PRP):</b>	<b>Base load (continuous) power (COP):</b>
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

Voltage	Connection <sup>1</sup>	Temp rise degrees C	Duty <sup>2</sup>	Single phase factor <sup>3</sup>	Max surge kVA <sup>4</sup>	Winding No.	Alternator data sheet	Feature Code
380	Wye, 3-phase	125	P		5743		ADS-332	B596-2
380	Wye, 3-phase	150/105	S/P		6716		ADS-333	B595-2
380	Wye, 3-phase	80	P		6716		ADS-333	B687-2
380	Wye, 3-phase	105/80	S/P		7361		ADS-334	B599-2
380	Wye, 3-phase	80	S		7695		ADS-335	B660-2
440	Wye, 3-phase	125	P		4602		ADS-330	B692-2
440	Wye, 3-phase	150/125	S/P		5521		ADS-331	B691-2
440	Wye, 3-phase	80	P		5521		ADS-331	B689-2
440	Wye, 3-phase	125/105	S/P		5743		ADS-332	B663-2
440	Wye, 3-phase	80	S		6716		ADS-333	B688-2
480	Wye, 3-phase	105	P		4602		ADS-330	B693-2
480	Wye, 3-phase	125/105	S/P		5521		ADS-331	B276-2
480	Wye, 3-phase	80	P		5521		ADS-331	B694-2
480	Wye, 3-phase	105/80	S/P		5743		ADS-332	B600-2
480	Wye, 3-phase	80	S		6716		ADS-333	B601-2
600	Wye, 3-phase	105	P		4602		ADS-330	B581-2
600	Wye, 3-phase	125/105	S/P		5521		ADS-331	B602-2
600	Wye, 3-phase	80	P		5521		ADS-331	B695-2
600	Wye, 3-phase	105/80	S/P		5743		ADS-332	B603-2
600	Wye, 3-phase	80	S		6716		ADS-333	B604-2
4160	Wye, 3-phase	105	P		6204		ADS-322	B312-2
4160	Wye, 3-phase	125/105	S/P		7005		ADS-323	B467-2
4160	Wye, 3-phase	105/80	S/P		7005		ADS-323	B313-2
4160	Wye, 3-phase	80	S		7926		ADS-324	B605-2

### Notes:

<sup>1</sup> Limited single phase capability is available from some three phase rated configurations. To obtain single phase rating, multiply the three phase kW rating by the Single Phase Factor<sup>3</sup>. All single phase ratings are at unity power factor.

<sup>2</sup> Standby (S), Prime (P) and Continuous ratings (C).

<sup>3</sup> Factor for the *Single Phase Output from Three Phase Alternator* formula listed below.

<sup>4</sup> Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

## 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

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

## Cummins Power Generation

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Important: 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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