

Cat[®] C7.1

DIESEL GENERATOR SETS



Standby & Prime: 50 Hz & 60 Hz



Image shown might not reflect actual configuration

Engine Model	Cat [®] C7.1 In-line 6, 4-cycle diesel
Bore / Stroke mm (in)	105.0 (4.1) / 135.0 (5.3)
Displacement L (in ³)	7.0 (427.8)
Compression Ratio	18.2:1
Aspiration	Turbocharged
Fuel Injection System	Direct Injection
Governor	Mechanical

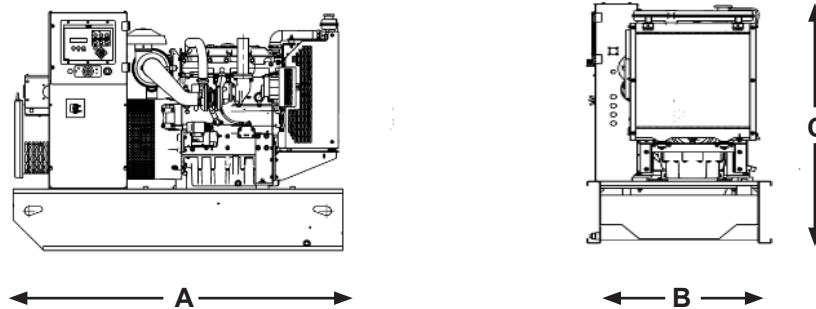
Model	Hz	Standby	Prime	Emission Strategy
DE169AE0	50	110.0 kVA 88.0 kW	135.0 kVA, 108.0 kW	Non Certified Emissions
	60	125.0 kVA 100.0 kW	150.0 kVA, 120.0 kW	

PACKAGE PERFORMANCE

Technical Data	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Engine Speed: RPM	1500		1800	
Gross Engine Power: kW (hp)	136.9 (184.0)	123.7 (166.0)	155.4 (208.0)	140.5 (188.0)
BMEP: kPa (psi)	1562.0 (226.5)	1411.0 (204.6)	1477.0 (214.2)	1336.0 (193.7)
Regenerative Power: kW	6.2		7.0	
Fuel System¹				
110% load: l/hr (US gal/hr)	N/A	34.0 (9.0)	N/A	37.8 (10.0)
100% load: l/hr (US gal/hr)	34.0 (9.0)	30.3 (8.0)	37.8 (10.0)	33.1 (8.7)
75% load: l/hr (US gal/hr)	25.1 (6.6)	22.9 (6.0)	28.1 (7.4)	25.5 (6.7)
50% load: l/hr (US gal/hr)	17.7 (4.7)	16.4 (4.3)	21.1 (5.6)	19.8 (5.2)
Fuel Filter Type	Replaceable Element		Replaceable Element	
Recommended Fuel	Class A2 Diesel or BSEN590		Class A2 Diesel or BSEN590	
Air System				
Combustion Air Flow: m ³ /min (cfm)	8.1 (286)	7.6 (270)	11.5 (405)	11.0 (387)
Air Filter Type	Paper Element		Paper Element	
Max. Combustion Air intake restriction: kPa (in H ₂ O)	5.0 (20.1)		5.0 (20.1)	
Radiator Cooling Air flow: m ³ /min (cfm)	264.0 (9323)		256.3 (9051)	
External Restriction to Cooling Air Flow: Pa (in H ₂ O)	125 (0.5)		125 (0.5)	
Cooling System²				
Heat Rejected to Water & Lube Oil: kW (Btu/min)	82.0 (4663)	74.9 (4259)	92.0 (5232)	84.2 (4788)
Heat Radiated from Engine and Alternator: kW (Btu/min)	28.4 (1615)	23.3 (1325)	27.9 (1587)	24.1 (1371)
Cooling System Capacity: L (US gal)	21.0 (5.5)		21.0 (5.5)	
Water Pump Type	Centrifugal		Centrifugal	
Radiator Fan Load: kW (hp)	5.0 (6.7)		7.0 (9.4)	

Exhaust System		50 Hz		60 Hz					
		Standby	Prime	Standby	Prime				
Exhaust Gas Flow: m ³ /min (cfm)		22.7 (800)	20.8 (733)	29.1 (1026)	27.2 (959)				
Exhaust Gas Temperature: °C (°F)		561 (1042)	561 (1042)	526 (979)	526 (979)				
Silencer Type		Industrial		Industrial					
Silencer Model & Quantity:		EXSY1 (1)		EXSY1 (1)					
Pressure Drop Across Silencer System: kPa (in Hg)		0.45 (0.133)		0.72 (0.213)					
Silencer Noise Reduction Level: dB		10		10					
Max. Allowable Back Pressure: kPa (in. Hg)		6.0 (1.8)		6.0 (1.8)					
Generator Technical Data									
Physical Data			Operating Data						
Frame Model	GTA 251AE27		Overspeed: RPM	2250					
No. of Bearings	1		Voltage Regulation: (steady state)	+/- 0.5%					
Wires	12		Wave Form NEMA = TIF:	50					
IP Rating & Insulation Class	IP21		Wave Form IEC = THF:	2.0%					
Winding Pitch-Code	2/3 - NA		Total Harmonic Content LL/LN:	5.0%					
Excitation	AUX COIL		Radio Interference:	Suppression is in line with European Standard EN61000-6					
AVR Model	A-OPT-04E		Radiant Heat: kW (Btu/min) 50 Hz / 60 Hz	13.1 (745) / 13.0 (739)					
Generator Performance Data ³			50 Hz		60 Hz				
Voltage			380/220V		208/120V 220/127V				
Motor Starting Capability*: kVA			399		385 439				
Short Circuit Capacity: %			300		300 300				
Reactances: Per Unit									
			X _d		2.005 2.583 2.132				
			X' _d		0.125 0.144 0.126				
			X'' _d		0.081 0.093 0.082				
Capacities									
50 Hz				60 Hz					
Voltages	Prime		Standby		Voltages	Prime		Standby	
	kVA	kW	kVA	kW		kVA	kW	kVA	kW
380/220V	135.0	108.0	149.5	119.6	220/127V	150.0	120.0	168.8	135.0
					208/120V	150.0	120.0	165.0	132.0

WEIGHTS & DIMENSIONS



Note: General configuration not to be used for installation. See general dimension drawings for detail.

Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
2450 (96.5)	1010 (39.8)	1544 (60.8)	1422 (3135)

NOTES:

- ¹ Based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2.
- ² Cooling system designed to operate in ambient conditions up to 50°C (122°F). Contact your local Cat dealer for power ratings at specific site conditions.
- ³ Reactances shown are applicable to prime ratings.
*Based on 30% voltage dip at 0.6 power factor

DEFINITIONS:

STANDBY: These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO 8528-3).

PRIME: These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and this model can supply 10% overload power for 1 hour in 12 hours.

DOCUMENTS:

A full set of operation and maintenance manuals and circuit wiring diagrams.

STANDARD REFERENCE CONDITIONS:

Note: Standard reference conditions 25°C (77°F) air inlet temp, 100m (328ft) A.S.L. 30% relative humidity. Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.

QUALITY STANDARDS:

The equipment meets the following standards: BS5000, ISO 8528, ISO 3046, IEC 60034, NEMA MG-1.22.

WARRANTY:

All prime equipment carries a one year manufacturer's warranty. Standby equipment, limited to 500 running hours per year, has a two-year manufacturer's warranty. For details on warranty cover please contact your local CAT Dealer.

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