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	149.5 kVA 119.6 kW	135.0 kVA, 108.0 kW	Non Certified Emissions
	60	168.8 kVA 135.0 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 System[1]				
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_2O)	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_2O)	125 (0.5)		125 (0.5)	
Cooling System[2]				
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: m³/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 H_2O)	0.45 (0.133)		0.72 (0.213)	
Silencer Noise Reduction Level: dB	10		10	
Max. Allowable Back Pressure: kPa (in H_2O)	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

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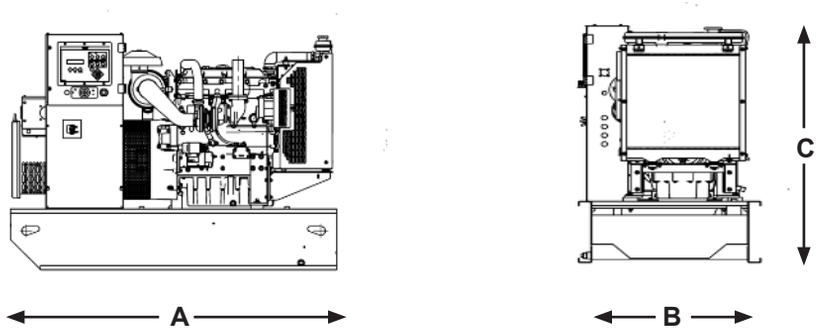
WEIGHTS & DIMENSIONS



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)

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

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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