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 - G2 Class* capable

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 water)	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 water)	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)	

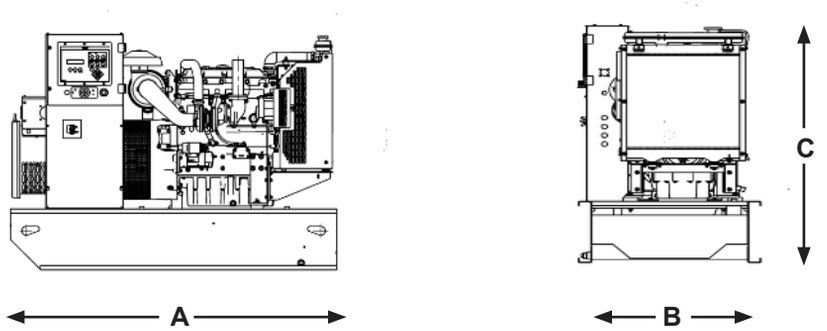
Exhaust System	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Exhaust Gas Flow: m³/min (cfm)	22.7 (800)	20.8 (733)	29.1 (1026)	27.2 (959)
Exhaust Gas Temperature: °C (°F)	561 (1042)	561 (1042)	526 (979)	526 (979)
Silencer Type	Industrial		Industrial	
Silencer Model & Quantity:	EXSY1 (1)		EXSY1 (1)	
Pressure Drop Across Silencer System: kPa (in water)	0.45 (0.133)		0.72 (0.213)	
Silencer Noise Reduction Level: dB	10		10	
Max. Allowable Back Pressure: kPa (in water)	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



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.

APPLICABLE CODES AND STANDARDS:

AS1359, IEC60034-1, ISO3046, ISO8528, NEMA MG1-33, EAC,CE,UKCA.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

PRIME: Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

DEFINITIONS AND CONDITIONS

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

[2] Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

[3] Generator temperature rise is based on a 40° C ambient per IEC60034-1.

* Governing Class capability as per ISO8528-5. Consult your local Cat dealer for configuration and site specific transient performance classification.

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