Cat® C7.1 DIESEL GENERATOR SETS

Standby & Prime: 50Hz & 60 Hz, 230/400V, 277/480V; 3-Ph

Image shown might not reflect actual configuration

Engine Model	Cat® C7.1 Inline 4-Stroke Diesel
Bore x Stroke	105.0mm x 135.0mm (4.1in x 5.3 in)
Displacement	7L (427.8 in^3)
Compression Ratio	18.2:1
Aspiration	Turbocharged
Governor	Mechanical
Emission Strategy	Non-Certified Emissions

Model	Voltage/Frequency	Standby	Prime
DE150E0	400/230 V, 50 Hz	150 kVA, 120 ekW	135 kVA, 108 ekW
	480/277 V, 60 Hz	165 kVA, 132 ekW	150 kVA, 120 ekW

PACKAGE PERFORMANCE

Performance	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)	135.0 kVA	150.0 kVA
BMEP: kPa (psi)	1562.0 (226.5)	1411.0 (204.6)	108.0 kW	120.0 kW
Regenerative Power: kW	6.2		7.0	
Fuel System1 : L/hr (gal/hr)				
110% Load	NA	NA	32.3 (8.5)	35.5 (9.4)
100% load	32.3 (8.5)	35.5 (9.4)	28.9 (7.6)	32.0 (8.5)
75% load	24.1 (6.4)	26.6 (7.0)	21.9 (5.8)	24.7 (6.5)
50% load	17.0 (4.5)	20.0 (5.3)	15.7 (4.1)	19.1 (5.0)
Fuel Filter Type	Replaceable Element			
Recommended Fuel	Class A2 Diesel or BSEN590			
Air System				
Combustion Air Flow: m^3/min (cfm)	8.1 (286)	11.5 (405)	7.6 (270)	11.0 (387)
Air Filter Type	Paper Element			
Max. Combustion Air intake restriction: kPa (in H_2O)	5.0 (20.1)			
Radiator Cooling Air flow: m^3/min (cfm)	228.6 (8073)		234.0 (8264)	
External Restriction to Cooling Air Flow: kPa (in H_2O)	0.125 (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 & Alternator: kW (Btu/min)	25.9 (1473)	21.6 (1228)	27.0 (1535)	24.1 (1371)
Cooling System Capacity: L (gal)	21.0 (5.5)			
Radiator Fan Load: kW (hp)	5.0 (6.7)		7.0 (9.4)	
Water Pump Type	Centrifugal			

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)	576 (1069)	576 (1069)	526 (979)	526 (979)
Silencer Type	Industrial			
Silencer Model & Quantity	EXSY1 (1)			
Pressure Drop Across Silencer System: kPa (in.H_2O)	0.45 (1.8)		0.72 (2.8)	
Silencer Noise Reduction Level: dB	10		10	
Max. Allowable Back Pressure: kPa (in.H_2O)	6.0 (24)		6.0 (24)	

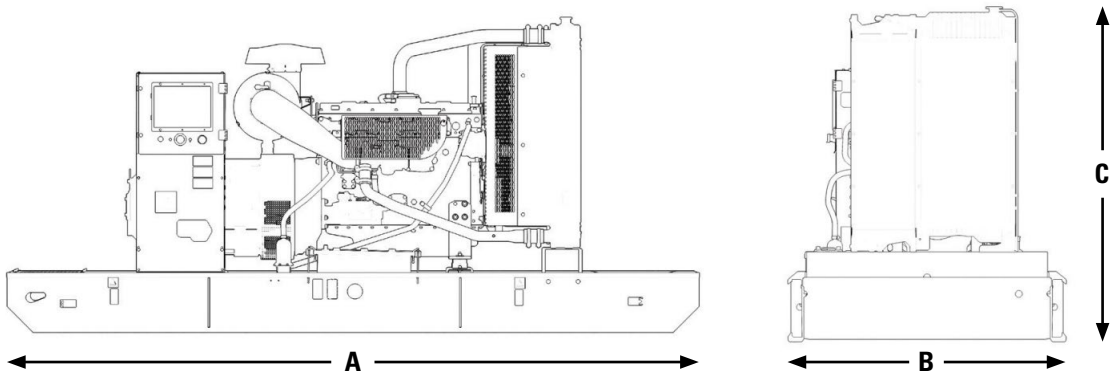
Generator Performance Data[3]	50 Hz				60 Hz			
Voltage	415/240V	400/230V 230/115V 200/115V	380/220V 220/110V	220/127V	480/277V 240/139V	380/220V 220/110V	240/120V 208/120V	440/254V 220/127V
Motor Starting Capability* kVA	281	260	233	307	306	195	231	262
Short Circuit Capacity** %	300	300	300	300	300	300	300	300
Reactances: Per Unit Xd	2.508	2.700	2.881	2.231	2.750	2.683	3.328	3.273
X'd	0.183	0.197	0.210	0.163	0.201	0.272	0.243	0.239
X''d	0.090	0.097	0.103	0.080	0.099	0.134	0.120	0.118

Generator Technical Data			
Physical Data		**Operating Data**	
Frame Model	R2273L4	Overspeed: RPM	2250
No. of Bearings	1	Voltage Regulation: (steady state)	+/- 0.5%
Wires	12	Wave Form NEMA = TIF:	50
IP Rating & Insulation Class	IP23 & H	Wave Form IEC = THF:	2.0%
Winding Pitch-Code	2/3 - M0	Total Harmonic Content LL/LN:	2.0%
Excitation	SHUNT	Radio Interference:	Suppression is in line with European Standard EN61000-6
AVR Model	Mark V	Radiant Heat: kW (Btu/min)	50 Hz: 10.6 (603) 60 Hz: 12.1 (688)

Capacities

50 Hz					60 Hz				
Voltage	Prime		Standby		Voltage	Prime		Standby	
	kVA	kVA	kVA	kVA	480/277V	kVA	kVA	kVA	kVA
415/240V	135.0	108.0	150.0	120.0	480/277V	150.0	120.0	165.0	132.0
400/230V	135.0	108.0	150.0	120.0	220/127V	150.0	120.0	165.0	132.0
380/220V	130.0	104.0	142.0	113.6	380/220V	140.0	112.0	153.0	122.4
230/115V	135.0	108.0	150.0	120.0	240/120V	150.0	120.0	165.0	132.0
220/127V	135.0	108.0	148.0	118.4	220/110V	140.0	112.0	153.0	122.4
220/110V	130.0	104.0	142.0	113.6	208/120V	150.0	120.0	165.0	132.0
200/115V	135.0	108.0	150.0	120.0	240/139V	150.0	120.0	165.0	132.0

Weight: kg (lb)			Dimensions: mm (in)		
Net (+ lube oil)	Wet (+ lube oil & coolant)	Fuel, lube oil & coolant	Length, A	Length, B	Length, C
1569 (3459)	1590 (3505)	1886 (4157)	2500 (98.4)	1120 (44.1)	1430 (56.3)



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 power factor and shunt excitation system. **With optional Auxiliary winding.

DEFINITIONS

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.

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: IEC60034-1, IEC60034-22, ISO3046, ISO8528, NEMA MG 1-32, NEMA MG

1-33, 2004/108/EC, 2006/42/EC, 2006/95/EC.

FUEL RATES: Fuel consumption reported in accordance with ISO3046-1.

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