

Cat® C3.3 DIESEL GENERATOR SETS



Standby & Prime: 50 Hz, 380/220V & 60Hz 220/127V; 3-Ph



Image shown might not reflect actual configuration

Engine Model	Cat® C3.3 In-line 3, 4-cycle diesel
Bore x Stroke	105.0 mm x 127.0 mm (4.1 in x 5.0 in)
Displacement	3.3 L (201.4 in³)
Compression Ratio	17.25:1
Aspiration	Turbocharged
Governor	Mechanical
Emission Strategy	Non-Certified Emissions

PACKAGE PERFORMANCE

Model	Voltage/Frequency	Standby	Prime
DE56AE0	380/220 V, 50 Hz	49.2 kVA, 39.4 kW	45 kVA, 36 kW
	220/127 V, 60 Hz	56.3 kVA, 45 ekW	50 kVA, 40 kW

Technical Data	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Engine Speed: RPM	1500		1800	
Gross Engine Power: kW (hp)	46.5 (62.0)	42.2 (57.0)	55.6 (75.0)	50.5 (68.0)
BMEP: kPa (psi)	1127.0 (163.5)	1023.0 (148.4)	1124.0 (163.0)	1020.0 (148.0)
Regenerative Power: kW	7.0		9.0	
Fuel System ¹				
	Standby	Prime	Standby	Prime
110% load: l/hr (US gal/hr)	-NA-	12.0 (3.2)	-NA-	13.6 (3.6)
100% load: l/hr (US gal/hr)	12.0 (3.2)	10.8 (2.9)	13.6 (3.6)	11.9 (3.1)
75% load: l/hr (US gal/hr)	8.7 (2.3)	8.0 (2.1)	10.0 (2.6)	9.1 (2.4)
50% load: l/hr (US gal/hr)	6.0 (1.6)	5.6 (1.5)	7.2 (1.9)	6.6 (1.7)
Fuel Filter Type	Replaceable Element		Replaceable Element	
Recommended Fuel	Class A2 Diesel or BSEN590		Class A2 Diesel or BSEN590	
Air System	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Combustion Air Flow: m³/min (cfm)	3.1 (109)	2.9 (102)	3.9 (138)	3.7 (131)
Air Filter Type	Replaceable Element		Replaceable Element	
Max. Combustion Air intake restriction: kPa (in H2O)	8.0 (32.1)		8.0 (32.1)	
Radiator Cooling Air flow: m³/min (cfm)	86.4 (3051)		105.6 (3729)	
External Restriction to Cooling Air Flow: Pa (in H2O)	120 (0.5)		120 (0.5)	
Cooling System ²	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Heat Rejected to Water & Lube Oil: kW (Btu/min)	30.0 (1706)	26.1 (1484)	34.0 (1934)	31.0 (1763)
Heat radiated from engine and alternator: kW (Btu/min)	14.9 (847)	11.6 (660)	16.1 (916)	13.4 (762)
Cooling System Capacity: L (US gal)	10.2 (2.7)		10.2 (2.7)	
Water Pump Type	Centrifugal		Centrifugal	
Radiator Fan Load: kW (hp)	0.5 (0.7)		0.9 (1.2)	

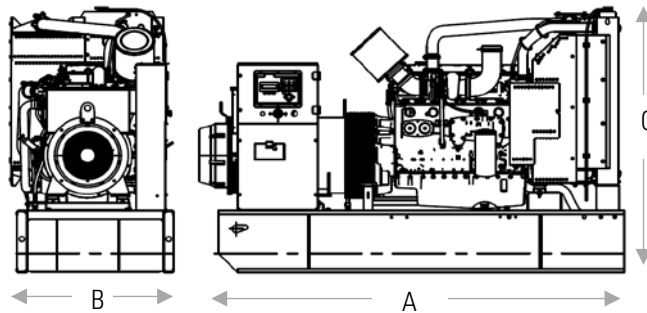
Exhaust System	50 Hz		60 Hz	
	Standby	Prime	Standby	Prime
Exhaust Gas Flow: m ³ /min (cfm)	7.7 (272)	7.0 (247)	9.5 (335)	8.8 (311)
Exhaust Gas Temperature: °C (°F)	537 (999)	492 (918)	551 (1024)	510 (950)
Silencer Type	Industrial		Industrial	
Silencer Model & Quantity:	EXSY1 (1)		EXSY1 (1)	
Pressure Drop Across Silencer System: kPa (in Hg)	0.82 (0.242)		1.08 (0.319)	
Silencer Noise Reduction Level: dB	20		18	
Max. Allowable Back Pressure: kPa (in. Hg)	10.0 (3.0)		15.0 (4.4)	

Generator Technical Data			
Physical Data		Operating Data	
Frame Model	GTA 201AE20	Overspeed: RPM	2250
No. of Bearings	1	Voltage Regulation: (steady state)	±0.5%
Wires	12	Wave Form NEMA = TIF:	50
IP Rating & Insulation Class	H, IP21	Wave Form IEC = THF:	2%
Winding Pitch-Code	2/3- NA	Total Harmonic Content LL/LN:	5%
Excitation	Aux Coil	Radio Interference:	Suppression is in line with European Std EN61000-6
AVR Model	AVR-A-OPT-03	Radiant Heat: kW (Btu/min)	50 Hz: 6.9 (392) 60 Hz: 7.1 (404)

Generator Performance Data ³	50 Hz		60 Hz	
Voltage	380/220V		208/120V	220/127V
Motor Starting Capability*: kVA	115		112	127
Short Circuit Capacity: %	300		300	300
Reactances: Per Unit				
	X _d	2.340	2.830	2.420
	X' _d	0.145	0.166	0.146
	X'' _d	0.104	0.118	0.104

Capacities									
50 Hz				60 Hz					
Voltages	Prime		Standby		Voltages	Prime		Standby	
	kVA	kW	kVA	kW		kVA	kW	kVA	kW
380/220V	45.0	36.0	49.2	39.4	220/127V	50.0	40.0	56.3	45.0
					208/120V	50.0	40.0	56.3	45.0

Weights			Dimensions		
Net (+ lube oil)	Wet (+ lube oil & coolant)	Fuel, lube oil & coolant	Length, A	Width, B	Height, C
814 kg, 1795 lb	826 kg, 1821 lb	949 kg, 2092 lb	1680 mm, 66.1 in	760 mm, 29.9 in	1333 mm, 52.5 in



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

Notes:

¹Based 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.

³Reactances 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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