

DIESEL GENERATOR SET



Engine Technical Data

Physical Data	
Manufacturer:	Caterpillar
Model:	C7.1
No. of Cylinders/Alignment:	6 / In Line
Cycle:	4 Stroke
Induction:	Turbocharged Air To Air Charge Cooled
Cooling Method:	Water
Governing Type:	Electronic
Governing Class:	ISO 8528 G2
Compression Ratio:	16.0:1
Displacement: l (cu.in)	7.0 (427.8)
Bore/Stroke: mm (in)	105.0 (4.1)/135.0 (5.3)
Moment of Inertia: kg m ² (lb. in ²)	1.26 (4306)
Engine Electrical System:	
-Voltage/Ground:	12/Negative
-Battery Charger Amps:	85
Weight: kg (lb) - Dry:	788 (1737)
- Wet:	822 (1812)

Air System	50 Hz	60 Hz
Air Filter Type:	Paper Element	
Combustion Air Flow:		
m ³ /min (cfm)	-Standby: 13.2 (466)	-
	-Prime: 12.6 (445)	-
Max. Combustion Air Intake		
Restriction: kPa (in H ₂ O)	8.0 (32.1)	-
Radiator Cooling Air Flow:		
m ³ /min (cfm)	307.2 (10849)	-
External Restriction to		
Cooling Air Flow: Pa (in H ₂ O)	125 (0.5)	-

Cooling System	50 Hz	60 Hz
Cooling System Capacity:		
l (US gal)	27.0 (7.1)	-
Water Pump Type:	Centrifugal	
Heat Rejected to Water & Lube Oil: kW (Btu/min)		
-Standby:	81.0 (4606)	-
-Prime:	78.2 (4447)	-
Heat Radiation to Room: Heat radiated from engine and alternator		
kW (Btu/min)	-Standby: 26.0 (1479)	-
	-Prime: 24.3 (1382)	-
Radiator Fan Load: kW (hp)	5.0 (6.7)	-
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.		

Lubrication System	
Oil Filter Type:	Spin-On, Full Flow
Total Oil Capacity I (US gal):	16.5 (4.4)
Oil Pan I (US gal):	14.9 (3.9)
Oil Type:	API CI4 15W-40
Cooling Method:	Water

Performance	50 Hz	60 Hz
Engine Speed: RPM	1500	-
Gross Engine Power: kW (hp)		
-Standby:	196.3 (263.0)	-
-Prime:	178.9 (240.0)	-
BMEP: kPa (psi)		
-Standby:	2239.0 (324.7)	-
-Prime:	2041.0 (296.0)	-
Regenerative Power: kW	9.3	-

Fuel System				
Fuel Filter Type:	Replaceable Element			
Recommended Fuel:	Class A2 Diesel or BSEN590			
Fuel Consumption: l/hr (US gal/hr)				
	110% Load	100% Load	75% Load	50% Load
Prime				
50 Hz	49.0 (12.9)	45.1 (11.9)	34.6 (9.1)	23.3 (6.2)
60 Hz	-	-	-	-
Standby				
50 Hz	49.0 (12.9)	37.8 (10.0)	25.6 (6.8)	-
60 Hz	-	-	-	-
(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)				

Exhaust System	50 Hz	60 Hz
Silencer Type:	Industrial	
Silencer Model & Quantity:	EXSY1 (1)	
Pressure Drop Across		
Silencer System: kPa (in Hg)	3.50 (1.034)	-
Silencer Noise Reduction		
Level: dB	10	-
Max. Allowable Back		
Pressure: kPa (in. Hg)	15.0 (4.4)	-
Exhaust Gas Flow:		
m ³ /min (cfm)	-Standby: 36.8 (1300)	-
	-Prime: 34.9 (1232)	-
Exhaust Gas Temperature: °C (°F)		
-Standby:	580 (1076)	-
-Prime:	527 (981)	-

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Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V 230/115V 200/115V	380/220V 220/110V	220/127V					
Motor Starting Capability* kVA	311	290	259	367					
Short Circuit Capacity** %	300	300	300	300					
Reactances: Per Unit									
Xd	2.870	3.090	3.430	2.550					
X'd	0.240	0.260	0.290	0.220					
X''d	0.095	0.102	0.113	0.084					

Reactances shown are applicable to prime ratings.

*Based on 30% voltage dip at 0 power factor and SHUNT excitation system.

**With optional Auxiliary Winding.

Generator Technical Data

Physical Data	
R Frame	
Model:	R2473L4
No. of Bearings:	1
Insulation Class:	H
Winding Pitch - Code:	2/3 - M0
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	Mark V

Operating Data	
Overspeed: RPM	2250
Voltage Regulation: (steady state)	+/- 0.5%
Wave Form NEMA = TIF:	50
Wave Form IEC = THF:	2.0%
Total Harmonic Content LL/LN:	2.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
-50 Hz:	12.8 (728)
-60 Hz:	-

