DIESEL GENERATOR SET

Image shown may not reflect actual package

DE165E3

EU stage IIIA emissions compliant.
Suitable for Mobile Applications in the European Community.

Output Ratings

Generator Set Model - 3 Phase	Prime*	Standby*
400/230V, 50 Hz	150.0 kVA 120.0 kW	165.0 kVA 132.0 kW
	- -	- -

* Refer to ratings definitions on page 4.
Ratings at 0.8 power factor.

Technical Data

Engine Make & Model:	Cat® C7.1	
Generator Model:	R2453L4	
Control Panel:	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCCB	
Frequency:	**50 Hz**	**60 Hz**
Engine Speed: RPM	1500	-
Fuel Tank Capacity: litres (US gal)	327 (86.4)	
Fuel Consumption, Prime: l/hr (US gal/hr)	35.2 (9.3)	-
Fuel Consumption, Standby : l/hr (US gal/hr)	37.8 (10.0)	-

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:	16.8:1
Displacement: l (cu.in)	7.0 (427.8)
Bore/Stroke: mm (in)	105.0 (4.1)/135.0 (5.3)
Moment of Inertia: kg m² (lb. in²)	1.53 (5228)
Engine Electrical System:	
-Voltage/Ground:	12/Negative
-Battery Charger Amps:	65
Weight: kg (lb) **- Dry:**	788 (1737)
- Wet:	822 (1812)

Air System

	50 Hz	60 Hz
Air Filter Type:	Replaceable Element	
Combustion Air Flow:		
m³/min (cfm) **-Standby:**	11.0 (388)	-
-Prime:	10.6 (374)	-
Max. Combustion Air Intake Restriction: kPa (in H_2O)	8.0 (32.1)	-
Radiator Cooling Air Flow: m³/min (cfm)	276.0 (9747)	-
External Restriction to Cooling Air Flow: Pa (in H_2O)	125 (0.5)	-

Cooling System

	50 Hz	60 Hz
Cooling System Capacity: l (US gal)	21.0 (5.5)	-
Water Pump Type:	Centrifugal	
Heat Rejected to Water & Lube Oil: kW (Btu/min)		
-Standby:	72.5 (4123)	-
-Prime:	64.0 (3640)	-
Heat Radiation to Room: Heat radiated from engine and alternator		
kW (Btu/min) **-Standby:**	35.5 (2019)	
-Prime:	33.0 (1877)	
Radiator Fan Load: kW (hp)	4.5 (6.0)	-

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 l (US gal):	17.5 (4.6)
Oil Pan l (US gal):	15.5 (4.1)
Oil Type:	API CH4 / CI4 15W-40
Cooling Method:	Water

Performance

	50 Hz	60 Hz
Engine Speed: RPM	1500	-
Gross Engine Power: kW (hp)		
-Standby:	149.7 (201.0)	-
-Prime:	135.9 (182.0)	-
BMEP: kPa (psi)		
-Standby:	1708.0 (247.7)	-
-Prime:	1550.0 (224.8)	-
Regenerative Power: kW	11.5	-

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	37.8 (10.0)	35.2 (9.3)	28.2 (7.4)	20.0 (5.3)
60 Hz	-	-	-	-
Standby				
50 Hz		37.8 (10.0)	30.4 (8.0)	21.7 (5.7)
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)	0.15 (0.044)	-
Silencer Noise Reduction Level: dB	10	-
Max. Allowable Back Pressure: kPa (in. Hg)	15.0 (4.4)	-
Exhaust Gas Flow:		
m³/min (cfm) **-Standby:**	25.0 (883)	-
-Prime:	24.0 (848)	-
Exhaust Gas Temperature: °C (°F)		
-Standby:	513 (955)	-
-Prime:	513 (955)	-

DIESEL GENERATOR SET

Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V	380/220V						
Motor Starting Capability* kVA	224	208	188						
Short Circuit Capacity % **	300	300	300						
Reactances: Per Unit									
Xd	2.750	2.960	3.280						
X'd	0.240	0.260	0.290						
X''d	0.101	0.109	0.121						

Reactances shown are applicable to prime ratings.
*Based on 30% voltage dip at 0.6 power factor and SHUNT excitation system.
** With optional auxiliary winding .

Generator Technical Data

Physical Data	
R Frame	
Model:	R2453L4
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:	10.1 (574)
-60 Hz:	-

DIESEL GENERATOR SET

Technical Data

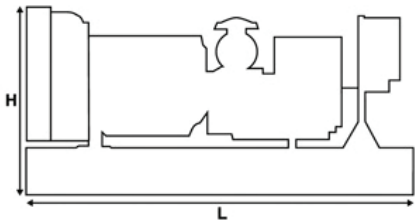
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	149.9	119.9	165.0	132.0
400/230V	150.0	120.0	165.0	132.0
380/220V	149.5	119.6	165.0	132.0

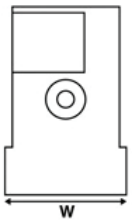
Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW

Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	1590 (3505)
Wet (+ lube oil & coolant)	1611 (3552)
Fuel, lube oil & coolant	1907 (4203)

Dimensions: mm (in)	
Length	2450 (96.5)
Width	1010 (39.8)
Height	1554 (61.2)





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

Definitions

Standby Rating

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 Rating

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 opeation 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.

General Data

Documents

A full set of operation and maintenance manuals and circuit wiring diagrams.

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.**

www.Cat-ElectricPower.com

Price List: C7.1PGBI, C7.1PGBT

Gen. Arr. Number:502-7328

Source: European or China

LEHE1165-00 (08/16)