



The Cat® C27 ACERT™ Industrial Diesel Engine is offered in ratings ranging from 597-783 kW (800-1050 bhp) @ 1800 rpm. These ratings meet U.S. EPA Tier 4 Final emission standards. Industries and applications powered by C27 ACERT engines include: Bore/Drill Rigs, Chippers/Grinders, Construction, Cranes, Dredgers, Forestry, Hydraulic Power Units, Irrigation Equipment, Material Handling, Mobile Earthmoving Equipment, Paving Equipment, Pumps, Shovels/Draglines, Surface Hauling Equipment and Trenchers. Specifications are for configurations with side-mounted turbos. Configurations are also available with rear-mounted turbos for 652 kW (875 bhp) and 708 kW (950 bhp) ratings.

**Specifications**

Power Rating		
Minimum Power	597 kW	800 BHP
Maximum Power	783 kW	1050 BHP
Rated Speed	1800 rpm	

Emission Standards	
Emissions	U.S. EPA Tier 4 Final

General	
Engine Configuration	V-12, 4-Stroke-Cycle Diesel
Bore	137.2 mm (5.4 in)
Stroke	152.4 mm (6 in)
Displacement	27 L (1649.5 in <sup>3</sup> )
Aspiration	Twin Turbocharged-Aftercooled (TTA)
Compression Ratio	16.0:1
Combustion System	Direct Injection
Rotation from Flywheel End	Counterclockwise
Cooling System - Capacity	67.9 L (71.7 qt)
Lube System - Refill	68 L (71.9 qt)

Engine Dimensions - Approximate	
Height	1370 mm (53.9 in)
Length	1874 mm (73.8 in)
Weight - Net Dry - Basic Operating Engine Without Optional Attachments	3004 kg (6625 lb)
Width	1600 mm (63 in)



## Benefits and Features

### Emissions

Meets U.S. EPA Tier 4 Final emission standards.

### Reliable, Quiet and Durable Power

World-class manufacturing capability and processes coupled with proven core engine designs assure reliability, quiet operation, and many hours of productive life.

### Fuel Efficiency

Fuel consumption optimized to match operating cycles of a wide range of equipment and applications while maintaining low operating costs.

### Broad Application Range

Industry leading range of factory configurable ratings and options for agricultural, material handling, construction, mining, aircraft ground support, and other industrial applications.

### Package Size

Exceptional power density enables standardization across numerous applications. Multiple installation options minimize total package size. Ideal for equipment with narrow engine compartments.

### World-class Product Support Offered Through Global Cat Dealer Network

- Scheduled maintenance, including SOSSM sample
- Customer Support Agreements (CSA)
- Caterpillar Extended Service Coverage (ESC)
- Superior dealer service network
- Extended dealer service network through the Cat Industrial Service Distributor (ISD) program

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## Standard Equipment

### Air Inlet System

- Turbocharged
- Air-to-Air Aftercooled

### Control System

- Electronic control system
- Over-foam wiring harness
- Automatic altitude compensation
- Power compensated for fuel temperature
- Configurable software features
- Engine monitoring system SAE J1939 broadcast and control

### Cooling System

- Thermostats and housing, vertical outlet



- Jacket water pump, centrifugal
- Water pump, inlet

### Exhaust System

- Exhaust manifold, dry
- Optional exhaust outlet

### Flywheels and Flywheel Housing

- Choice of SAE No. 0 or SAE No. 1 flywheel housing

### Fuel System

- MEUI injection
- Fuel filter, secondary (2 micron)
- Fuel transfer pump
- Electronic fuel priming

### Lube System

- Open crankcase ventilation system
- Oil cooler
- Oil filler
- Lube oil filter
- Rear sump oil pan
- Oil dipstick
- Gear driven oil pump

### General

- Paint: Caterpillar yellow, with optional colors available at request
- Vibration damper
- Lifting eyes

The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.



**C27 ACERT**

**653 bkW (875 bhp) @ 1800 rpm**

**Rating Type: IND-B RATING**

**Emissions: U.S. EPA Tier 4 Final Nonroad Emission Standards**

**C27 ACERT**

**DITA**

**653 bkW (875 bhp) @ 1800 rpm**



Image shown may not reflect actual configuration

	Metric	English
<b>General Engine</b>		
Power Rating	653 kW	875 hp
Number of Cylinders	12	
Bore	137 mm	5.4 in
Stroke	152 mm	6.0 in
Displacement	27.0 L	1648.0 cu in.
Compression Ratio	16.0 : 1	

**RATING DEFINITIONS AND CONDITIONS**

**IND-B RATING:**For service where power and/or speed are cyclic (time at full load not to exceed 80%).

Diesel Engines — up to 7.1 liter All rating conditions are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance measured using fuel to EPA specifications in 40 CFR Part 1065 and EU specifications in Directive 97/68/EC with a density of 0.845-0.850 kg/L @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Diesel Engines — greater than 7.1 liter All rating conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42,780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with a density of 838.9 g/L.

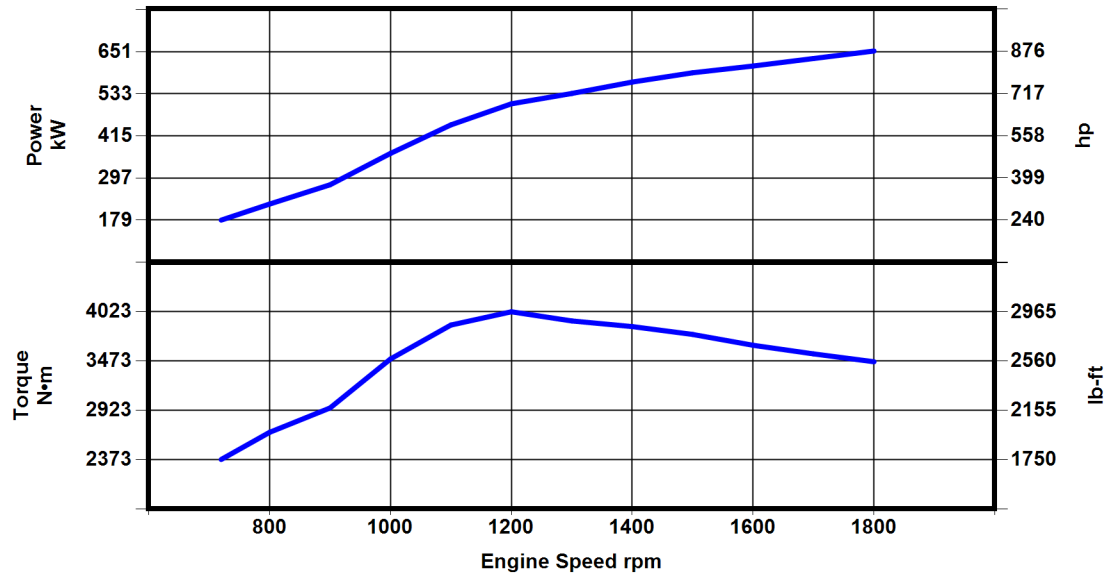


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Engine Speed rpm	Engine Power bkW	Engine Power bhp	Torque N*m	Torque lb-ft
1800	653	876	3464	2555
1700	632	848	3552	2620
1600	611	820	3648	2691
1500	592	794	3769	2780
1400	566	758	3857	2845
1300	534	716	3920	2891
1200	505	678	4022	2966
1100	446	598	3874	2858
1000	366	491	3495	2578
900	278	373	2948	2174
800	224	301	2676	1974
720	179	240	2373	1750

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