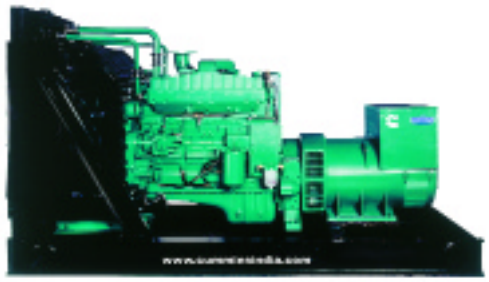
POWERICA

Cummins Power Generation

Specification sheet

Diesel Generator Set 855 Series



256 kWe, 320 kVA Prime

Lowest life cycle cost

'855 series' design features has made Cummins® diesel generator sets, the standard for comparison of operating economy, reliability and long life. When all cost factors like initial purchase, fuel, lube oil, maintenance etc. are considered, the bottom line will show that this Cummins® '855 series' will deliver the lowest life cycle cost.

Heavy duty, durable and emission compliant

Cummins® '855 series' diesel engine comes with heavy duty features, a bigger size camshaft, optimized turbo-matching, premium STC injectors and is yet compact in size with optimum power to weight ratio making it the obvious choice for your long-term power needs.

CPCB Compliant

This genset powered by the reliable Cummins® '855 series' diesel engine meets stringent exhaust emission tests as per CPCB norms without sacrificing fuel efficiency at normal operating loads.

Silent Power

Cummins® 320 kVA enclosures are designed so as to have optimum performance and serviceability over the complete operating range. The enclosures are compact with integral fuel tank and are designed for ease in maintenance. The powder coated enclosures are manufactured on latest CNC machines to ensure superior finish and durability.

Single source power assurance

Design, manufacture and testing of engine, alternator and other accessories is done by Cummins India/ Channel partners (Powerica Limited) for optimum performance and is backed by a countrywide product support network with a single source responsibility for the entire package.

Standard scope

Engine: Cummins® 'NTA 855 G2-I' series, direct injection, water cooled engine, 6 cylinder, in-line, 4 stroke, rated at 1500 RPM, conforming to ISO 3046 / BS 5514 has the following specifications:

- Cummins PT Fuel Pump
- Holset turbocharger
- Stainless steel exhaust flexible connections
- Radiator
- Coolant inhibitor
- Lube oil cooler
- Cartridge paper filters, fuel and lube oil
- Dry-type replaceable paper element air cleaner with restriction indicator
- Flywheel housing and flywheel to suit single bearing alternator
- Electrical starter motor
- Battery charging alternator
- First fill lube oil

Alternator: Stamford brushless alternator

- Self-excited, self regulated
- Class 'H' insulation
- Salient pole revolving field
- Single bearing
- Automatic voltage regulator

Accessories:

- Silencer suitably optimized to meet stringent sound emission standards as laid down by MOEF / CPCB
- Base rail with integral fuel tank (410 litres capacity) is provided with drain plug, air vent, inlet and outlet connections, level indicator, manhole etc.
- 2 x 12 V dry, uncharged batteries with connecting leads and terminals

Control panel: Powder coated control panel manufactured with 14 / 16 gauge CRCA sheet provides:

- MCCB of suitable rating with overload and short circuit protection
- Combined meter for Voltage, amps and frequency
- Combined meter for KW, kVA and PF
- KWh meter
- Indicating lamps for “DG On” and “Load On”
- Current transformers
- Aluminium busbars of suitable capacity with incoming and outgoing terminations
- Instrument fuses/ MCB duly wired and ferruled

PowerCom® controller: A Cummins manufactured microprocessor based genset controller for metering, monitoring, protecting and electronic governing of the engine.

PowerCom® features:

- Engine electronic governing
- Genset metering parameters like lube oil pressure, coolant temperature, engine speed (rpm), run hours, DC voltage, intake manifold temperature (wherever applicable), 3 phase volts and 3 phase amperes, frequency, kW, kVA, power factor
- Engine protection for low lube oil pressure, high coolant temperature (alarm and shutdown)
- Alternator protection parameters like under voltage, over voltage, over frequency, over current, under frequency (alarm and shutdown)
- Relay drivers for remote annuciations
- Cyclic cranking
- Auto/ manual start/ stop
- Alternator trim adjustment from the front key pad
- Model specific calibration from the front key pad
- Speed bias or raise/ lower inputs are provided for paralleling
- Remote monitoring capability through separate interface modules
- 6 configurable discrete outputs
- 2 configurable discrete inputs
- Smooth transition to rated speed
- Smart start algorithm
- Housed in a NEMA 3R/IP 53 non-metallic enclosure
- Operates within a wide temperature range (0-60 degrees C) and humidity up to 95%

Acoustic enclosure:

- Specially designed to meet stringent MOEF/ CPCB norms of 75 dBA @ 1mtr at 75% load under free field conditions
- Designed to have optimum serviceability
- Air inlet louvers specially designed to operate at rated load even at 50 deg C air inlet temp.
- Made on special purpose CNC machines for consistency in quality and workmanship
- Powder coated for long lasting service life and superior finish
- With UV resistant powder coating, can withstand extreme environment
- Use of stainless steel hardware
- Insulation material meets exacting IS 8183 specs for better attenuation

Optionals

Engine: Heavy duty air cleaner, heat exchanger, lube oil/ Coolant heater with thermostatic switch
Alternator: RTDs, BTD, PMG excitation, space heater
Others: Mobile sets with canopy

Technical data

Generator set specifications

Model	CP320 D5 P
Prime Power Rating kVA	320
Output Voltage and Frequency	415 Volts, 50 Hz
Power Factor	0.8 (lag)
No. of phases	3 phase

Engine specifications

Make	Cummins
Model	NTA 855 G2-I
No. of cylinders	6, in- line
Aspiration	Turbocharged-Aftercooled
Bore x Stroke	140 mm x 152 mm
Displacement	14 ltrs
Output - Prime	283 KWm
Fuel consumption @ 75% load with Radiator & Fan	51.1 ltr/hr
Fuel consumption @ 100 % load with Radiator & Fan	66.6 ltr/hr
Typical lube oil consumption @ full load	0.12 ltr/hr
Total wet weight (engine + radiator)	1620 kg
Length x Width x Height (engine)	1775 x 890 x 1475 mm
Compression Ratio	14 : 1
Piston Speed	7.6 m/s
Governor / Class	Electronic / A1
Lubricating oil sytem capacity	38.6 ltrs
Coolant capacity (engine + radiator)	95 ltrs
Combustion air intake @ 100% load (+/- 5%)	20.3 m^3/min
Fan air flow across radiator	604 m^3/min
Exhaust Temperature	502 °C

Alternator specifications

Make	Stamford
Frame size / Model No.	HC4E
Voltage Regulation	± 1%
Insulation	Class H
Standard Enclosure	IP 23
Winding Pitch	2 / 3 Pitch
Stator Winding	Double layer lap
Rotor	Dynamically balanced
Wave form distortion	No load < 1.8 %, non distorting balanced linear load < 5 %
Telephone Interference Factor	Better than 50
Total Harmonic Factor	Better than 2%

Conformance standards

IS 4722, BS 5000, IS 1460, ISO 8528, BS 5514, ISO 3046

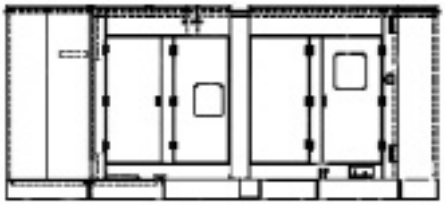
Rating definitions

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

- Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460
- Oil consumption data is based on oil having specific gravity of 0.89 and meeting CH4 API categories
- Fuel consumption tolerance is +5%

Typical enclosed genset dimensions*

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Weight (kgs.) (Wet)	Std. Fuel Tank Capacity (Ltrs)
CP320 D5 P	320 kVA	5300	1500	2025	5995	410



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