

Diesel generator set N14 series



Specification sheet
304 kWe, 380 kVA Prime



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Lowest life cycle cost

N14 series design features have made Cummins® diesel, the standard for comparison of operating economy, reliability and long life. When all cost factors like initial purchase, fuel, lube oil, maintenance and overhaul are considered, the bottom line will show that this **Cummins® 'N14 series'** will deliver the lowest life cycle cost.

Heavy duty, durable and emission compliant

Cummins® 'N14 series' diesel engine comes with heavy duty features, bigger size camshaft, optimized turbo-matching, electrical 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.



The Genset powered by the reliable **Cummins® 'N14 series'** diesel engine meets stringent exhaust emission tests as per MOEF norms without sacrificing fuel efficiency at normal operating loads.

Silent Power

Cummins® 380 kVA enclosure is so designed as to have optimum performance and serviceability over the complete operating range. The enclosure is compact with integral fuel tank and is designed for ease in maintenance. The powder coated enclosure is manufactured on latest CNC machines to ensure superior finish and durability.

Single source power assurance

Design, manufacture and testing of engine, alternator, enclosure and other accessories is done by Cummins Group of companies for that optimum performance integrity and is backed by countrywide product support network with single source responsibility for the entire package.

Standard scope

Engine: Cummins® 'N14' 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, Step Timing Control (STC) injector
- Holset turbocharger, pulse tuned exhaust manifold, stainless steel exhaust flexible coupling
- Radiator or heat exchanger, coolant inhibitor, Low Temperature After cooling (LTA)
- Articulated piston
- Gear train with spur gears
- Plate type lube oil cooler
- Spin-on filters - fuel, lube oil and coolant
- Dry type replaceable paper element air cleaner with restriction indicator
- Flywheel housing & flywheel to suit single bearing alternator
- Starting motor – electric
- First fill lube oil

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

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 laid down by MOEF / CPCB
- Base rail with integral fuel tank (520 litres capacity) is provided with drain plug, air vent, inlet and outlet connection, level indicator, manhole etc.
- 2 x 12 V dry, uncharged batteries with connecting leads and terminals

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 environments
- Use of stainless steel hardware
- Insulation material meets exacting IS 8183 specs for better attenuation



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 annunciations
- 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%



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

Optionals

Engine: Heavy duty air cleaner, heat exchanger, lube oil/ Coolant heater with thermostatic switch

Alternator: RTDs, BTd, PMG excitation, space heater

Control panel: "PowerCommand® Control Panel (PCC 3100)" for microprocessor based governing, regulation, metering, monitoring and auto synchronising control system. AMF control panel, battery charger, remote/ auto start panel, auto/ manual synchronizing panel and audio/ visual annunciation for faults.

Others: Mobile sets with canopy

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Accessories shown are not part of standard equipment
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Technical data

Generator set specifications

| | |
|------------------------------|------------------|
| Model | C 380 D5 P |
| Prime Power Rating kVA | 380 |
| Output Voltage and Frequency | 415 Volts, 50 Hz |
| Power Factor | 0.8 (lag) |
| No. of phases | 3 phase |

Engine specifications

| | |
|--|---------------------------|
| Make | Cummins |
| Model | NTA 14 G3 |
| No. of cylinders | 6, in- line |
| Aspiration | Turbocharged-Aftercooled |
| Bore x Stroke | 140 mm x 152 mm |
| Displacement | 14 ltrs |
| Output - Prime | 336 KWm |
| Fuel consumption @ 75% load with Radiator & Fan | 58.2 ltr/hr |
| Fuel consumption @ 100% load with Radiator & Fan | 76 ltr/hr |
| Typical lube oil consumption @ full load | 0.092 ltr/hr |
| Total wet weight (engine + radiator) | 1620 kg |
| Length x Width x Height (engine) | 1655 x 900 x 1313 mm |
| Compression Ratio | 17:1 |
| Piston Speed | 7.6 m/s |
| Governor / Class | Electronic / A1 |
| Lubricating oil sytem capacity | 38.6 ltrs |
| Coolant capacity (engine + radiator) | 76.8 ltrs |
| Combustion air intake @ 100% load (+/- 5%) | 223.7 m ³ /min |
| Fan air flow across radiator | 623 m ³ /min |
| Exhaust Temperature | 527 °C |
| Battery Capacity / Rating | 180 AH, 2 X 12 V |

Alternator specifications

| | |
|-------------------------------|---|
| Make | Stamford |
| Frame size / Model No. | HC4F |
| 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, IEC 34 / 1, ISO 8528, BS 5514, ISO 3046

Rating definition

- Prime power rating is applicable for supplying continuous electric power (at variable load) in lieu of commercially purchased power.
- Prime power is available for an unlimited number of hours per year in a variable load application.
- 10% overload is available for 1 hour in every 12 hours of operation.
- Rating definition is as per ISO 3046 / BS 5514.
- Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460/ Equivalent
- Oil consumption data is based on oil having specific gravity of 0.89 and meeting CH4 API categories
- Fuel consumption tolerance is +5%

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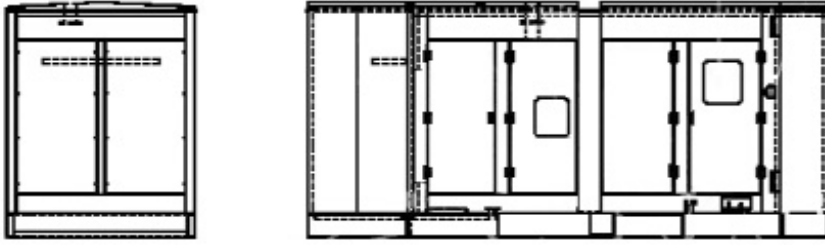
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Typical enclosed genset dimensions*

| Genset Model | Rating (kVA) | Length (mm) | Width (mm) | Height (mm) | Weight (kgs.) (Dry) |
|--------------|--------------|-------------|------------|-------------|---------------------|
| C 380 D5 P | 380 kVA | 5500 | 2000 | 2500 | 7215 |



Typical diesel genset dimensions

| Genset Model | Rating (kVA) | Length (mm) | Width (mm) | Height (mm) | Weight (kgs.) (Dry) |
|--------------|--------------|-------------|------------|-------------|---------------------|
| C 380 D5 P | 380 kVA | 3387 | 1576 | 1988 | 3215 |

Cummins Power Generation Offices:

| Location: | Tel: | Fax: | Location: | Tel: | Fax: |
|-----------------|----------------------------|-----------------|-----------|-----------------------------|-----------------|
| Bangalore: | (080) 2361 3831/ 2361 1958 | (080) 2361 4552 | Indore: | (0731) 645 1042 | |
| Chandigarh: | (0172) 506 3218 | (0172) 266 3087 | Jaipur: | (0141) 236 4944 | (0141) 236 3746 |
| Chennai: | (044) 2441 6429/ 2442 3412 | (044) 2491 1120 | Kolkota: | (033) 2287 8065/ 2247 2481 | (033) 2290 3839 |
| Delhi: Telefax: | (011) 4161 8357/ 61 | | Lucknow: | (0522) 278 6718/ 278 7514 | (0522) 278 7880 |
| Hyderabad: | (040) 2766 3017 | (040) 2767 8892 | Mumbai: | (022) 2756 6351/ 52/ 53/ 54 | (022) 27566355 |
| | | | Vadodara: | (0265) 232 4207/ 654 0390 | (0265) 234 0623 |

Cummins India Limited
 Power Generation Business Unit
 35A/1/2, Erandawana,
 Pune 411 038. India
 Tel.: (91) 020-6602 7525
 Fax: (91) 020-6602 8090

Authorised
 Representative

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*Dimensions of the enclosure are excluding the silencer
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