Diesel Generator Set

QSM15 Series

380 - 500 kVA, 304 - 400 kWe Prime

CPCB IV+ Emission Compliant

Specification Sheet

Latest Technology and Unmatched Performance

- The Cummins® QSM15 series rugged engine and world class Stamford alternator powered diesel generator set
- Proven technology with common rail electronic fuel system
- Exhaust after-treatment and in-cylinder solution to meet stringent emission norms
- Superior finish and aesthetics
- Compact in size with optimum power to weight ratio

Environment Friendly Power

- Class defining and technologically advanced engine to meet stringent exhaust emission norms as per the latest MoEF notification
- The Cummins® diesel generator sets are available with the lowest noise levels in its range

Lowest Operating Cost and Comprehensive Warranty

- Highly reliable and durable product
- Maximum efficiency even at part loads, offering the advantage of lowest operating costs
- 500 Hours/ 1 year service interval
- Industry acknowledged best-in-class comprehensive warranty on the entire package including rubber components

Single Source Power Assurance

- All the major components - the engine, alternator, aftertreatment system, control system and canopy are designed, manufactured, and tested by Cummins India
- Best and largest customer support network in India, capable of providing round-the-clock service and spares support

Engine

- Cummins® QSM15 series, 6 cylinder, In-line 4 stroke, radiator cooled engine
- Robust and efficient air handling system with
  - Dry type and replaceable paper element air cleaner with restriction indicator
  - Optimized turbocharger for increased altitude capabilities
- Optimized fuel consumption with common rail electronic injection
- Spin on single fuel filter with water separator
- Cooling system is designed and tested for 50°C ambient conditions
- Full flow spin on lube oil filter
- First fill of lube oil and coolant
- Electrical starter motor with soft start engagement feature
- Battery charging alternator
- 2 x 12 V DC battery

Alternator

- STAMFORD HCI444E, HCI444F & HCI544D alternator frames from Cummins Generator Technologies Brushless
- type, Screen protected, Revolving field, Self-excited alternator conforming to IS/IEC 60034-1 Better motor
- starting capability
- Best in class efficiency
- Compact design with sealed bearings for longer life and lesser maintenance
- Impregnation on all wound components for better mechanical strength

EATS

- Switch Back architecture supplied by Cummins Emission Solutions
- Compact design enabling optimized genset size
- Integrated control module for engine and EATS
- Best in class proven technology for meeting stringent emission norms

Control Panel

Control panel is powder coated for weather-proof and long-lasting finish. The control panel consists of the following parts:

- PS0602 Controller
- Bus bars with suitable capacity with incoming/ outgoing terminals
- Indicating lamps for 'Load ON' and 'Set Running' Instrument fuses duly wired and ferruled
- MCCB of suitable rating with short circuit protections
- AC/DC separation inside control panel for safety

PS0602 Features

- Cummins® PowerStart™ PS0602 control is a microprocessor based generator set monitoring, metering and control system with LCD display designed to meet the demands of today's engine driven generator set
- AMF Functionality
- Electronic Governing
- CAN (J1939) Compatible
- Sync Compatible (Capable to accept external speed signal from 3rd party sync controller)
- Intuitive operator interface which includes LED backlit 128X64 pixel graphic display with tactile feel soft-switches & generator set status LED lamps
- Remote start-stop
- Audible & Visual warning for Inducement
- Suitable for FAE based engine architecture
- Engine Metering: Oil pressure, Engine temperature, Starting battery voltage, Engine running hours
- AC Alternator Metering: L-L Voltage and L-N Voltage, Current (phase and total), kVA (phase and total) and Frequency. kwh, Total & per phase (kw & kVA), PF, Utility Voltage and Freq
- Engine Protection: Low lube oil pressure, High/Low coolant temperature, Battery High/Low/Weak Volts, Fail to Crank/Start, Sensor failure, Cranking lockout, Low fuel level
- AC Alternator Protection: Over/Under Voltage, Over/Under Frequency, Loss of AC sensing. Overspeed, Over Current, kW Overload
- Data Logging: Engine hours, Control hours and upto 5 recent fault codes
- Configurable glow plug control
- 12/24 Volt DC operation
- Sleep mode
- Modbus interface (RS485 RTU)
- In Power compatible (PC based service tool)
- Certifications - meets the requirement of relevant ISO, EN, Mil Std. and CE standards
- Maintenance due alarm based on Engine Run Time and due date
- Fuel and DEF level visual display
- Exerciser scheduler

Silencer

- Hospital Grade Silencer inside canopy with rain cap suitably optimized to meet stringent noise limit
- Silencer specifically tuned to EATS

Mounting Arrangement

- Engine and alternator are mounted on a common MS fabricated base frame with AVM pads
- Skid mounted radiator
- Base frame with integral fuel tank and DEF tank is provided with drain plug, air vent, inlet and outlet connection and provision for cleaning

Optional

- Engine: Heated Architecture & HD Air cleaner
- Alternator: PMG and Space Heater
- EATS: Heated Architecture
- Controller: PCC3.3

Acoustic Enclosure

- Specially designed to meet stringent MoEF/ CPCB norms of 75 dBA@1mtr at 75% load under free field conditions
- The acoustic enclosure is made CRCA sheets in Munsell green shade and a structural/sheet metal base frame painted in black
- 11 tank pretreatment process and UV resistant powder coating of all parts to withstand extreme environment
- High quality noise absorbent and fire-retardant grade acoustic Insulation material (Rockwool) complying to IS 8183
- Top lifting for easy handling at customer site
- External fuel & DEF filling provision

Remote monitoring system

- Compact & robust device
- Real time DG status & monitoring
- 4G compatible
- Compatible for 12/24 V DC
- Reports & Notification – Alerts & Warning
- Isolated RS 485 interface
- Device location using triangulation

Technical Data

Generator Set Specification			
Model	CI 380D5P	CI 400D5P	CI 500D5P
Duty	Prime	Prime	Prime
Power Rating kVA / kWe	380/304	400/320	500/400
No. of Phases	3 Phase	3 Phase	3 Phase
Output Voltage and Frequency (V and Hz)	415 V, 50 Hz	415 V, 50 Hz	415 V, 50 Hz
Power Factor	0.8	0.8	0.8
Current (A)	528.6	556.5	695.6
RPM	1500	1500	1500

Engine Specification			
Make	Cummins®		
Model	QSM15-G1	QSM15-G1	QSM15-G1
Required Power for Rated kVA (hp)	594	594	594
Cooling	Liquid Cooled (EG Compleat 50:50)		
DEF	AUS 32 (Premix) as per ISO 22241		
Aspiration	Turbocharged, Charge Air Cooled		
No. of cylinders	6, In-line	6, In-line	6, In-line
Bore (mm) x Stroke (mm)	135 x 169	135 x 169	135 x 169
Compression ratio	23:1	23:1	23:1
Displacement (litre)	14.5	14.5	14.5
Fuel	High Speed Diesel	High Speed Diesel	High Speed Diesel
Performance class of generator set	ISO 8528-5 G3	ISO 8528-5 G3	ISO 8528-5 G3
Starting system	24 V DC Electrical	24 V DC Electrical	24 V DC Electrical
Lube oil specification	CK4	CK4	CK4
Lube oil sump capacity, High-Low level (litre)	50-35	50-35	50-35
Total lubrication system capacity (litre)	52	52	52
Total coolant capacity (litre)	67	67	67
Exhaust pipe size (inch)	8	8	8
Total wet weight (Engine+Radiator)* (kg)	1460	1460	1460
Length X Width X Height (Coolpac) (mm)	2400 X 1540 X 1716	2400 X 1540 X 1716	2400 X 1540 X 1716
Mean Piston speed (m/s)	8.45	8.45	8.45
Combustion air intake @100% load (±5%) (cfm)	980	980	980
Exhaust Temperature (°C)	556	556	556

Alternator Specification			
Make	STAMFORD (CGT)	STAMFORD (CGT)	STAMFORD (CGT)
Alternator Frame	HCI444E	HCI444F	HCI544D
Enclosure	IP 23	IP 23	IP 23
Voltage regulation (Max.)	±1%	±1%	±1%
Class of Insulation	H Class	H Class	H Class
Winding Pitch	2/3	2/3	2/3
Stator Winding	Double layer concentric		
Rotor	Dynamically Balanced		
Waveform distortion/ Total Harmonic Distortion	No load < 1.5%, Non distorting balanced linear load < 5 %		
Maximum Unbalanced Load across phases•	less than or equal to 25%		
Telephonic Harmonic factor	< 2%		

Rating Definitions	Conformance Standards
Prime Power (PRP): Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528.	• IS/IEC 60034-1 • ISO 1460 • ISO 8528 • ISO 3046 • ISO 9001 • ISO 13018

Typical Enclosed Genset Dimensions							
Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Wet Weight* (kg)	DEF Tank Capacity (litre)	Standard Fuel tank Capacity** (litre)
CI 380D5P	380	5300	1900	2490	5515	87	715
CI 400D5P	400	5300	1900	2490	5650	87	715
CI 500D5P	500	5300	1900	2490	5915	87	745

**Approximate Weight*
*** Total tank capacity including dead stock*

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