Diesel Generator Set

X1.3 Series

7.5-15 kVA, 6-12 kWe Prime

Specification Sheet

Latest Technology and Unmatched Performance

- The Cummins® X1.3 series rugged engine and world class Stamford alternator powered diesel generator set
- Advanced in-cylinder technology to meet latest emission norms without any after-treatment device.
- Best in class transient response
- High altitude capabilities
- Smart aesthetic and superior finish
- Compact in size with optimum power to weight ratio

Environment Friendly Power

- Class defining technology engine is designed to meet stringent exhaust emission tests as per revised MoEF norms, thus offering environment friendly power.
- 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
- All elements are designed to work together to maximize 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

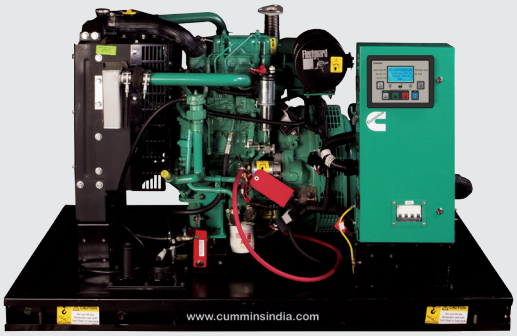
Single Source Power Assurance

- All the major components – the engine, alternator, 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
- All these things put together, Cummins® offers you SINGLE SOURCE POWER ASSURANCE

maynhatdienvinpower.com

Engine

- Cummins® X1.3 series, 2 cylinder, In-line 4 stroke, radiator cooled engine
- Well designed air handling system with
  - Dry type, Replacable paper element air cleaner with restriction indicator
  - Air to air aftercooling
  - Optimised turbocharger for increased altitude capabilities
- Best in class fuel economy with
  - Inline fuel pump with A1 class mechanical governing
  - Spin on fuel filter
- Standard integral set-mounted radiator system, designed and tested for 50°C ambient temperatures
- 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
- 1 X 12 V DC battery



Alternator

- Stamford PI0,S0L1,S0L2 and PT0 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

Control Panel

Control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish. The control panel consists of the following parts:

- PS0600 controller
- Aluminum bus bars with suitable capacity with incoming/ outgoing terminals
- Indicating lamps for 'Load ON' and 'Set Running'
- Instrument fuses duly wired and ferruled
- Circuit breakers of suitable rating with overload and short circuit protections

PS0600 Features

Cummins PowerStart™ PS0600 control is a microprocessor based generator set monitoring and control system. AMF Functionality is inbuilt and this control includes an intuitive operator interface that allows for complete generator set control as well as system metering, fault annunciation, configuration, and diagnostics.

AMF Functionality

- Intuitive operator interface which includes LED backlit 128X64 pixel graphic display with tactile feel soft-switches. Indications - Generator set, Utility Status Lamp.
- Remote start-stop
- 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 Over/Under/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.
- 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)
- InPower 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
- Exercisor scheduler

Silencer

- Critical grade silencer suitably optimized to meet stringent sound emission standards laid down by MoEF / CPCB

Mounting Arrangement

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

Optional

- **Engine:** Coolant heater, Oil Drain Pump, Electronic Governing
- **Control Panel:** Microprocessor / relay based AMF control panel

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 of CRCA sheets in munsel green shade and a structural/ sheet metal base frame painted in black.
- High quality noise absorbant and fire-retardant grade acoustic Insulation material (P.U. Foam) complying to IS 8183
- Two point lifting for easy handling at customer site
- Designed to have optimum serviceability
- Air inlet louvers specially designed to operate at rated load
- Made on special purpose CNC machines for consistency in quality and workmanship
- 11 tank pretreatment process and UV resistant Powder Coating of all parts to withstand extreme environment
- Use of special hardware for longer life
- Flush styling - no projections
- Fluid drains for lube oil and fuel
- Fuel filling arrangement inside the enclosure

Technical Data

Generator set specification						
Model	C7.5D5P		C10D5P		C15D5P	
Duty	Prime		Prime		Prime	
Power Rating kVA / kWe	7.5/6		10/8		15/12	
No. of Phases	3 Phase	1 Phase	3 Phase	1 Phase	3 Phase	1 Phase
Output Voltage (V)	415	230	415	230	415	230
Power Factor	0.8 (lagging)		0.8 (lagging)		0.8 (lagging)	
Current (3 phase/ 1 phase) (A)	11	33	14	44	21	65
Frequency (Hz) and RPM	50 Hz, 1500 RPM		50 Hz, 1500 RPM		50 Hz, 1500 RPM	
Engine Specification						
Make	Cummins®		Cummins®		Cummins®	
Model	X1.3TAA-G1		X1.3TAA-G1		X1.3TAA-G1	
MoEF Certified Power (bhp)	23		23		23	
Required Power for Rated kVA (bhp)	12		15		21	
Cooling	Liquid Cooled (EG Compleat 50:50)		Liquid Cooled (EG Compleat 50:50)		Liquid Cooled (EG Compleat 50:50)	
Aspiration	Turbocharged, Charge Air Cooled		Turbocharged, Charge Air Cooled		Turbocharged, Charge Air Cooled	
No. of cylinders	2, In-line		2, In-line		2, In-line	
Bore (mm) x Stroke (mm)	95 x 91		95 x 91		95 x 91	
Compression ratio	18.3:1		18.3:1		18.3:1	
Displacement (litre)	1.29		1.29		1.29	
Fuel	High Speed Diesel		High Speed Diesel		High Speed Diesel	
Fuel consumption @75% load with radiator and fan* (litre/hr)	2.04	2.27	2.49	2.63	3.28	3.46
Fuel consumption @100% load with radiator and fan* (litre/hr)	2.49	2.75	3.08	3.36	4.27	4.47
Performance class of generator set	ISO 8528-5 G2		ISO 8528-5 G2		ISO 8528-5 G2	
Starting system	12 V DC Electrical		12 V DC Electrical		12 V DC Electrical	
Lube oil specification	CH4 15W40		CH4 15W40		CH4 15W40	
Lube oil sump capacity, High-Low level (litre)	4 - 3		4 - 3		4 - 3	
Total lubrication system capacity (litre)	4.5		4.5		4.5	
Total coolant capacity (litre)	5.5		5.5		5.5	
Exhaust pipe size (inch)	1.5		1.5		2	
Total wet weight (Engine+Radiator)## (kg)	180		180		180	
Length x Width x Height (Engine) (mm)	481 x 715 x 662		481 x 715 x 662		481 x 715 x 662	
Mean Piston speed (m/s)	4.6		4.6		4.6	
Combustion air intake @100% load (±5%) (cfm)	61		61		61	
Exhaust Temperature (°C)	346		346		346	
Alternator Specification						
Make	Stamford (CGT)		Stamford (CGT)		Stamford (CGT)	
Alternator frame	PI044D	PT044F	PI044E	PT044G	PT044G	PT144D
Enclosure	IP23		IP23		IP23	
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 lap		Double layer lap		Double layer lap	
Rotor	Dynamically Balanced		Dynamically Balanced		Dynamically Balanced No	
Waveform distortion/ Total Harmonic Distortion	No load < 1.5 %, Non distorting balanced linear load < 5 %		No load < 1.5 %, Non distorting balanced linear load < 5 %		No load < 1.5 %, Non distorting balanced linear load < 5 %	
Maximum Unbalanced Load across phases#	less than or equal to 25%		less than or equal to 25%		less than or equal to 25%	
Telephonic Harmonic factor	< 2%		< 2%		< 2%	

** Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460. Fuel consumption tolerance is +5%*
 # With the condition that none of the phases exceeds its rated current

mayphatdienvinpower.com

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.

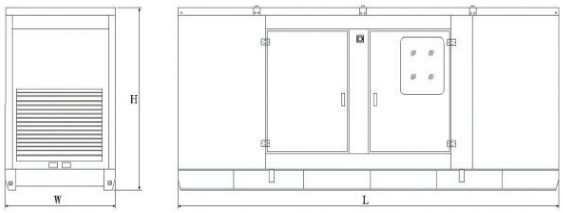
Conformance Standards

- IS/IEC 60034-1
- IS 1460
- ISO 8528
- ISO 3046
- ISO 9001
- IS 13018

Typical Enclosed Genset Dimensions

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Wet Weight## (kg)	Standard Fuel tank Capacity (litre)
C7.5D5P	7.5	1460	940	915	600	49
C10D5P	10	1460	940	915	600	49
C15D5P	15	1600	940	1100	640	62

Approximate Weight



Authorised Representative

Cummins Power Systems Offices

Bengaluru:	Tel.: (080) 2325 9161 / 63, 2325 9165 / 67 Fax: (080) 2325 9164
Chandigarh:	Tel.: (0172) 224 0371-73 Fax: (0172) 224 0372
Chennai:	Tel.: (044) 2446 8110 / 2446 8113 Fax: (044) 2491 1120
Gurgaon:	Tel.: (0124) 391 0900-01 Fax : (0124) 391 0916
Hyderabad:	Tel.: (040) 2340 9970 / 2340 9980 Fax. (040) 2340 9990
Jaipur:	Tel.: (0141) 236 4944 Fax: (0141) 403 8794
Kolkata:	Tel.: (033) 2287 8065 / 2287 2481 Fax: (033) 2290 3839
Lucknow:	Tel.: (0522) 230 5049 / 230 5059 Fax: (0522) 230 5035
Mohali:	Tel.: (0172) 224 0371 / 72 / 73 Fax: (0172) 224 0371 / 72 / 73
Vadodara:	Tel.: (0265) 233 0627 / 3053627 Fax: (0265) 234 0623

Visit our facebook page at :
Cummins Power Generation India

"Our energy working for you."

Cummins is registered trademarks of Cummins Inc.
Specifi cations are subject to change without notice.
PSBU/001/X1.3/HD/MP/Revision-4 (11-2019)

Cummins India Limited
Power Systems Business
Cummins India Office Campus
Tower-A, 8th Floor, S. No. 21,
Balewadi, Pune – 411 045 (India)

Email: cpgindia@cummins.com
www.cumminsindia.com

mayphatdienvinpower.com