

Natural Gas GENERATOR SET

RATINGS ^{1,2}(60Hz)

Model	COP
	kWe
IRPG3000NG	3000

NOx:500mg/Nm³

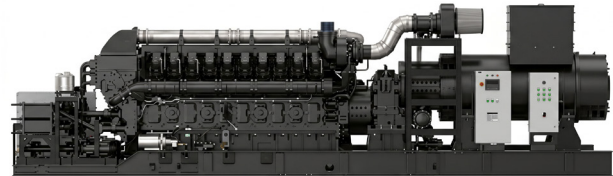


Image shown may not reflect actual configuration

PRODUCT STANDARD FEATURES

Engine and Block

- Cast iron cylinder block with inspection door per cylinder
- Cast iron cylinder liners, wet type and replaceable valves guides and seats
- Separate cast iron cylinder heads with 4 valves
- Hardened steel forged crankshaft with induction hardened journals, crank pins and radius
- Lube oil cooled light alloy pistons with high performance piston rings

Cooling System

- Two separate circuits
- High temperature circuit equipped with thermostatically-controlled system with one electric coolant pump
- Low temperature circuit equipped with thermostatically-controlled system with one electric coolant pump
- High efficiency coolant heater

Lubrication System

- Full flow screw able oil filters
- Lube oil purifier with replaceable cartridge
- Water cooled lube oil cooler

Gas train System

- High pressure gas train
Provide ignition gas for the precombustion chamber
- Low pressure Gas train
Supply gas to the combustion chamber

Electrical System

- Standard starting system comes with 24 Vdc electric motors
- LOP + HWT sensors

Air Intake and Exhaust System

- Multi singlestage turbochargers
- Special rear mounted air filter with restriction indicator
- Exhaust manifold and turbocharger shield for heat isolating

Alternator

- High Efficiency Brushless, 4 Pole, IP23 dripproof revolving field
- Design built with Class H insulation/Class F Temperature
- Low reactance
- Coupled by highelasticated coupling
- Sustained overcurrent > 300% in 10 sec
- Direct drive centrifugal blower fan cooling
- Excitation by PMG

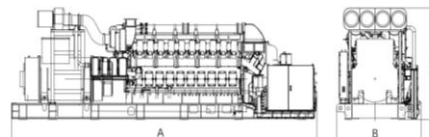
Generator Set Controller

- IR's generator set controller is ideal for a wide of applications.
- Display status message
- Provide protection Auto shutdown at fault detection

GENERATOR SET SPECIFICATIONS (without coolant pump)		
Model		IRPG3000NG
Governor and regulation class		Contact with company
Phase number and connection		3 phase, 4 wires, Ytype
Cooling method		Closed looped watercooled
Starting method		DC 24V Electric starter
Steadystate voltage deviation	%	$\leq \pm 1$
Steadystate frequency band	%	≤ 0.5
ENGINE SPECIFICATIONS		
Brand		Baudouin
Model		20M61G6N1/5
Gross Power 1,4,5,11	kWm	COP - 3300
Brake Mean Effective Pressure 4,5	kPa	2170
Cylinder / Type / Aspiration		20 / Vee Type / Turbocharged and Aftercooled
Bore x Stroke	mm	190 x 215
Displacement	L	121.9
Gas fuel supply pressure 3	kPa	650~700 (Pre-combustion) / 30~50 (Combustion)
** See engine data sheet for detailed specification		
ALTERNATOR SPECIFICATIONS		
Model		LSA 54 XL90
Voltage/Frequency	V/Hz	13800/60
Coupling / No. of Bearing		Coupling / Double
Winding Pitch		5/6
Type of Excitation		PMG
Cooling type		Air cooled as IEC60034-6
Voltage regulation method		AVRD550
Winding temperature sensor		PT100 *6
Bearing temperature sensor		PT100 *2
Anticondensation heater voltage	V	AC277
Protection Grade		IP23
Efficiency at 1.0 p.f.@100% load 6	%	97.02
** See alternator data sheet for detailed specification.		
FUEL CONSUMPTION 10		
	100% COP	75% COP
Genset fuel consumption LHV - (BTU/kWh) 1,10	7815.21	8248.01
Genset efficiency (%) 1,2,6,11	41.94	39.74
Engine mechanical efficiency (%)1,4,5,11	43.66	41.37
Recoverable thermal efficiency (%) 7	45.74	45.03
Totally efficiency (%)	87.68	84.77
GENERATOR SET CONTROLLER		
IR's generator set controller is developed in line with the latest market trends, grid code standards, and security protocols and comes with extensive communication capabilities.		
The controller provides flexible solution for complex power generation application with synchronous or asynchronous generator, including gas gensets and cogeneration heat and power units, it ensures cutting- edge performance with unrivalled PLC resources, modular expandability, and supreme control algorithm flexibility.		
Key Benefits • Preprogrammed controller functions allow customers to make the genset running quickly and focus on engine management • Communication with majority of onengine products like Ignitions, Breakers, AVRs, Speed governors, Inverters and others allows engine uptime optimisation and new business generation • Cyber secure concept (in compliance with ISA 62443) allows easy, simple and secure monitoring of controlled assets from anywhere around the globe. • Opened platform allows adopting controller to any system with synchronous or asynchronous generator. • Controller complies with the lates markets requirements as Grid Codes, Emissions standards (stage V, Tier IV Final) and Cyber security.		

Optional

40 °C remote Radiator
 480V, 12470V, 13800V, Multiple voltages are available
 Industrial Silencer
 Enclosure

**Rating definitions****Continuous power (COP):**

These ratings are applicable for supplying continuous electrical power (at 100% load) in the event of a utility power failure. There is no limitation to the annual hours of operation under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed.

Open Generator Set

This outline drawing is to provide representative configuration details for Model series only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design.

8 Dimension and Weight ^{8,9}

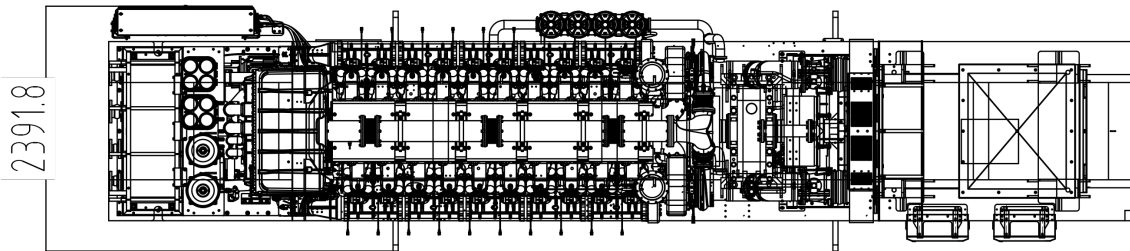
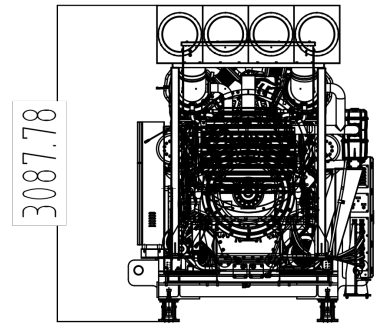
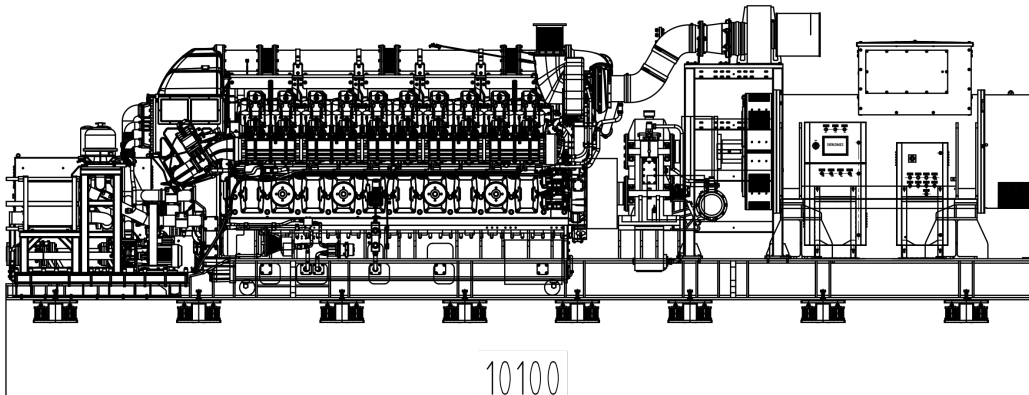
Model	Voltage V	Dim"A"mm	Dim"B"mm	Dim"C"mm	Dry wt.Kg
IRPG3000NG	480	10100	2392	3077	37200
IRPG3000NG	13800	10100	2392	3077	37200

Codes and standards

ISO 9001	This generator set is designed and manufactured in facilities certified to ISO 9001.	ISO 8528	This generator set has been designed to comply with ISO 8528 regulation.
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The generator set is designed and manufactured in facilities certified to standards ISO9001: 2015 and ISO14001: 2015.
 The generator set is prototype-tested, factory-built and production tested and is in compliance with the relevant standards:
 - ISO 8528, ISO 3046, DIN6271
 - EN 60034-1, EN 60204-1

- 1) All ratings are based on operating conditions under ISO 8528, ISO 3046, DIN6271. Performance tolerance of $\pm 5\%$.
- 2) Excluding radiator and coolant pumps.
- 3) Fuel pressure range specified is to the engine fuel control valve. Additional fuel train components should be considered in pressure and flow calculations.
- 4) Tested using pipeline natural gas with LHV of 33.44 MJ/Nm³, MN>85.
- 5) Deviations from the layout parameters respectively the reference fuel can have influence on the obtained efficiency and exhaust emissions.
- 6) Generator (at nominal power) max. 1000 m height of location and max. 40°C intake air temperature; else power derating. With a tolerance according to IEC60034.
- 7) Thermal Efficiency is calculated based on energy recovery from the jacket water, lube oil, aftercooler, and exhaust to 120°C with engine operation at ISO 3046/1 Genset Efficiency, and assumes unburned fuel is converted in an oxidation catalyst.
- 8) Sizes and weights represent a set with standard features and are for reference only. See the outline drawings for the detailed configurations of sizes and weights.
- 9) Without radiator.
- 10) According to ISO3046/1 fuel consumption with a tolerance of 0% ~ +5%.
- 11) Test conditions: 100 kPa, 25°C air inlet temperature, relative humidity of 30%. Derating may be required for conditions outside these; please contact the factory for details.
- 12) The values given in this data sheet are for information purposes only and not binding.



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with emergency response readiness



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