Mechanical Power driven by Perkins®

- Manufactured in facilities certified with ISO 9001:2015, ISO 14001:2015 & OHSAS
- 18001:2007.
- Manufactured in accordance to 8528-1 to 12.
- Engine performance according to ISO 3046, BS 5514, DIN 6271.
- Alternator performance according to NEMA-MG1, BS 5000, DIN EN, relevant ISO, IEC60034.
- Breaker complies with IEC — 60947-2.

High شـــركة الأداء العالـــي للصناعـــة Performance Industry
Power Generators

ISO 9001:2015 ISO 14001:2015 ISO 45001:2018

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PI 438P

Industrial Generating Set

POWERED BY Perkins

MODEL	rpm / Hz	VOLTAGE	PRIME (1)	STANDBY (2)
PI 438P	1800 / 60	480 / 277	400 kVA / 320 kWe	438 kVA / 350.4 kWe

ENGINE SPECIFICATIONS

Rated Output (PRP) (1)	373 kW_m
Rated Output (ESP) (2)	406.5 kW_m
Engine Make & Model	Perkins 2206A-E13TAG3
No. of Cylinders	6 Vertical In-line
Cycle	4 Strokes
Aspiration	Turbocharged
Cooling Method	Water
Governing Type	Electrical
Governing Class	G2 - ISO 8528 Part 1
Compression Ratio	16.3:1
Displacement	12.5 L(762.in^3)
BorexStroke	130x157mm
Battery and Charger Alternator	24 VDC , 70 Amp

AIR SYSTEM

Air Filter Type	Dry Element
Combustion Air Flow (PRP)	27.4 m^3/min
Combustion Air Flow (ESP)	29 m^3/min
Radiator Air Flow	716 m^3/min

COOLING SYSTEM

Total Coolant Capacity (L)	51.4 L (13.57 US gal)
Water Pump Type	Centrifugal Eng-Driven
Radiator Fan Load	19 kW
Heat Radiation to Room (PRP)	40.3 kW
Heat Radiation to Room (ESP)	49.6 kW

LUBRICATION SYSTEM

Oil Filter Type	Full-flow replaceable filter
Total Oil Capacity	40 L (10.56 US gal)
Oil Pan	38 L (10 US gal)
Oil Type	API CH4/CI4; SAE 15W-40

FUEL SYSTEM

Fuel Filter	Replaceable 'Ecoplus' fuel filter elements with primary filter/water separator
Recommended Fuel	Class A2 Diesel
Fuel Consumption Standby	87 L/hr (22.98 US gal/hr)
Fuel Consumption 100% PRP	81 L/hr (21.39 US gal/hr)
Fuel Consumption 75% PRP	62 L/hr (16.37 US gal/hr)
Fuel Consumption 50% PRP	43 L/hr (11.35 US gal/hr)

EXHAUST SYSTEM

Muffler Type	Industrial Grade
Max. Back Pressure	6.8 kPa
Exhaust Gas Flow (PRP/ESP)	67.5 / 73.5 m^3/min
Exhaust Gas Temperature(PRP/ESP)	660^{0}C

ALTERNATOR SPECIFICATIONS

Rated Output (Prime) (1)	500 kVA
Rated Output (Standby) (2)	550 kVA
Alternator Make & Model	Stamford HCI444F / S4L1D-F41
Number of Poles	4
Number of Winding Leads	12
Type of Bearing	Single
Insulation Class / Temp Rise	H/H
Efficiency @ Rated Voltage	93.2%
Ingress Protection Rating	IP 23
Excitation System	Self Excited
AVR Model	Stamford – AS440

ALTERNATOR OPERATING DATA

Overspeed	2250 r.p.m
Voltage Regulation	± 1 %
Waveform distortion	No load < 1.5%, Linear load < 5%
Radio Interface	EN 61000-6-2 & EN 61000-6-4
Cooling Air Flow	0.99 m^3/sec

(1) **PRIME POWER RATING (PRP):** PRP is defined as the maximum power which a Generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year. The permissible average power output over 24 hours shall not exceed 70% of PRP unless otherwise agreed by RIC engine manufacturer. An overload capability of 10% of 100% of the prime rated electrical power is permitted for emergency use for a period of 1 hour within 12 hours of operation

(2) **EMERGENCY STANDBY POWER RATING (ESP):** ESP is defined as the maximum power available during a variable electrical power sequence, under the stated operation condition, for which a generating set is capable of delivering power in the event of a utility power outage or under test condition for up to 200 Hours of operation per year. The permissible average output over 24 hour of operation shall not exceed 70 % of the ESP power rating noting that no over load is permitted.

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CONTROLLER SPECIFICATIONS

Controller Make & Model	DeepSea 6120
Operation Mode	MRS / AMF (optional)
Display	Graphic Back-lit LCD (128x64) pixles
Ingress Protection Rating	IP65
Binary Inputs/Outputs	6 / 4
Analog Inputs	4
Measurement	Vac, A, Hz, kVA, kW, Vdc
Event Log	Alarms log, Hrs log
Communication	USB

ENCLOSURE SPECIFICATIONS

Enclosure Type	Acoustic & Weather Proof
Anticorrosive Protection	
Polyester Powder Coated Galvanized Sheet	
Ingress Protection Rating	IP23
Lifting	ISO Standard Lifting
Emergency	External Emergency Push Button
Canopy RAL Color	RAL 2000
Baseframe RAL Color	RAL 9011
Noise Pressure level @ 7m	78 dB(A)

GENSET DIMENSIONS & WEIGHT

GENSET TYPE	Length (mm)	Width (mm)	Height (mm)	Fuel Tank Capacity (L)	Dry Weight (kg)	Wet Weight (kg)
OPEN	3515	1250	2204	690	3097	3190
CLOSE	5205	1624	2605	1030	4107	4200

STANDARD MECHANICAL FEATURES

Genset design provides a low noise level with an optimized performance of the ventilation and exhaust systems at 50 ºC ambient temperature.

Robust structure design of Enclosure and Baseframe.

Heavy duty lifting lugs.

Multi doors for easy access & maintenance.

Ingress Protection Rating according to BS EN 60529.

Heavy Duty Baseframe with built-in tank & forklift pockets.

Industrial Grade Muffler with rain cap.

STANDARD ELECTRICAL FEATURES

An advance Control system is designed to provide a comprehensive protection and to monitor the parameters of generating set.

MCCB power circuit breaker.

Battery with charging alternator, cables, and tray.

Sealed harness & high resistant electrical connections.

Fast and accurate protection response.

Generating Set remote start function.

Numeric display with LED. Various languages capable.

OPTIONAL FEATURES

Advanced Controllers are available on request.

4 poles manual / Motorized Circuit breaker

Jacket water pre-heater

Static Battery Charger

Residential / Critical grade muffler

Fuel Filter / Water separator Fuel Filter

Remote Annunciator

Application

Infrastructure, Industrial, Residential, Telecom,Defense, Mining, Agriculture

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