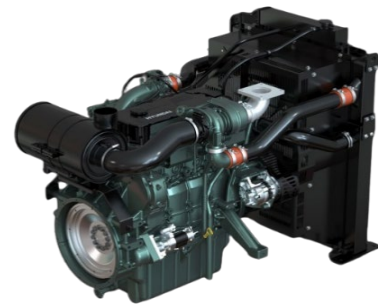


| Speed rpm | Type of Operation | Engine Output | | Typical Generator Output* (Net) | | |
|----------------|----------------------|---------------|------------|------------------------------------|-----|--------|
| | | Gross kWm | Net kWm | kVA | kWe | alter. |
| 1500 (50hz) | ESP | 156 | 151 | 178 | 142 | 94.5% |
| | PRP/DCP | 142 | 137 | 161 | 129 | 94.5% |
| | COP | 99 | 94 | 111 | 89 | 94.5% |
| 1800 (60hz) | ESP | 175 | 166 | 199 | 159 | 96.0% |
| | PRP/DCP | 159 | 150 | 180 | 144 | 96.0% |
| | COP | 111 | 102 | 122 | 98 | 96.0% |



* Ratings Definitions

The power ratings of Emergency Standby and Prime are in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046. The typical generator output shown is an estimation. Consult your local application engineer for engine selection support and actual OEM genset power output calculation. Also, it must be considered alternator efficiency, altitude derating and ambient temperature.

ESP(STANDBY POWER) is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

PRP(PRIME POWER) is available for an unlimited number of hours per year in variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 24 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12 hours period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

COP(CONTINUOUS POWER) is defined as being the maximum power which the generating set is capable of delivering continuously whilst supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

DCP(DATA CENTRE POWER) is available for variable or continuous electrical loads in a data centre application. Up to 100 percent load factor is permitted for unlimited time. DCP power definition relies on ISO 8528-1 2018 standard to be followed by generator set manufacturer, and will support Tier I to Tier IV classifications of data centres as per UPTIME institute guidelines.

This definition is only back up a reliable utility.

Continuous operation at load is available as after approval of Engine manufacturer (HDI).

General Engine Data

| | |
|------------------------|--|
| • Engine Suffix | DX05-MFG01 |
| • Emission Compliance | EU Stage V |
| • Engine Type | 4-cycle, In-line, Diesel engine |
| • Number of Cylinders | 4-cylinder |
| • Bore x Stroke | 110 x 132 mm |
| • Displacement | 5,018 |
| • Compression Ratio | 16.6 : 1 |
| • Compression Pressure | |
| • Rotation | Counter clockwise viewed from Flywheel |
| • Firing Order | 1-3-4-2 |
| • Aspiration | Turbo charged & Intercooled (air to air) |
| • Injection Timing | Controlled by ECU |
| • Dry Weight | 820 kg(With Fan) |
| • Dimension (LxWxH) | 1,311 x 967 x 1,237 mm |
| • Flywheel Housing | SAE NO.3M |
| • Flywheel Size | Clutch NO.11-1/2" |
| - Number of Teeth | 131 |

Engineering Data

| | |
|--|--|
| • Maximum Bending Moment at Rear Face to Block | - |
| • Maximum Intake Air Restriction | 6.3kPa |
| • Maximum Exhaust Back Pressure | 25kPa |
| • Maximum Static Pressure After Radiator | 0.125kPa |
| • Maximum CAC Pressure Drop | 10kPa |
| • Maximum Turbine Inlet Gas Temperature | 760°C at ESP 730°C at PRP&COP |
| • ATB | 62°C (Cooling fan inlet air temp.) |
| • Valve System Type | Over head valve |
| • Number of Valves | Intake 2, exhaust 2 per cylinder |
| • Valve lashes at cold | N/A (Hydraulic Lash Adjustment) |
| • Valve timing | Opening Close |
| - Intake valve | 16° BTDC 39° ABDC |
| - Exhaust valve | 43° BBDC 23° ATDC |

Electrical System

| | |
|-------------------------|--|
| • Alternator | 27.5V x 45A |
| • Voltage Regulator | Built-in type IC regulator |
| • Starting Motor | 24V x 6.0kW |
| • Battery Voltage | 24V |
| • Battery Capacity | 200Ah x 2ea (recommended) |
| • Starting Aid (Option) | N/A |
| • Cold start | -20°C Without heater: In 20sec 25°C Without heater: In 3sec |

Cooling System

| | |
|-----------------------------|---|
| • Cooling Method | Fresh water forced circulation |
| • Water Capacity | 12.5 liter (engine only) 26 liter (with radiator) |
| • Water flow rate | 338liter/min@1500rpm 405liter/min@1800rpm |
| • Pressure CAP | 90kPa |
| • Water Temperature | Maximum : 110°C Before start of full load : 40.0°C |
| • Water Pump | Centrifugal type driven by belt |
| • Thermostat type and range | Wax-pellet type, Opening temp 71°C, Full open temp 85°C |
| • Cooling Fan | Blower type, Ø680mm, 9 blades |
| • Water Pump Path | 1Path, 1Line |

Fuel System

| | |
|------------------------------------|--|
| • Injection Pump | Bosch CP4 |
| • Governor | Controlled by ECU |
| • Speed Drop | G3 Class (ISO 8528) |
| • Feed Pump | Gear type |
| • Injection Nozzle | Multi hole type |
| • Max. Injection Pressure | 1800bar |
| • Opening Pressure | Controlled by ECU |
| • Fuel Filter | Full flow, Cartridge type |
| • Maximum Fuel Inlet Restriction | N/A |
| • Maximum Fuel Return Restriction | N/A |
| • Fuel Inlet Pressure Requirement | 0.5~1bar(abs) |
| • Fuel Outlet Pressure Requirement | 0.6~1.2bar(abs) |
| • Fuel Feed Pump Capacity | 450liter/hr@1500rpm, 450liter/hr@1800rpm |
| • Used fuel | Korea : ENFORCEMENT RULE OF CLEAN AIR CONSERVATION ACT ATTACHED TABLE 33 DIESEL North America : ASTM D975C-15 Grades 1D or 2D Europe : EN 590: 2013+A1:2017 Japan : JIS K2204:2007 |

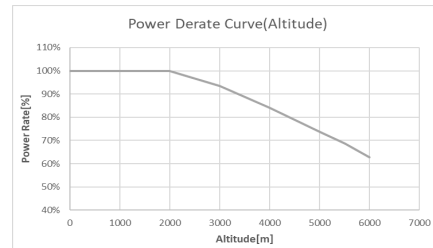
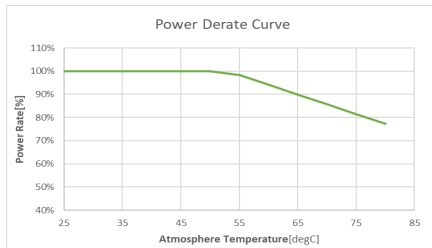
Lubrication System

| | |
|---------------------|--|
| • Lubrication Oil | SAE 10W40 (API CK-4 grade) |
| • Lub. Method | Fully forced pressure feed type |
| • Oil Pump | Gear type driven by crankshaft gear |
| • Oil Filter | Full flow, cartridge type |
| • Oil Pan Capacity | High level 26 liter Low level 15 liter |
| • Maximum Oil Temp. | 130°C |
| • Lub Oil Pressure | Idle speed : Min 100 kPa Rated speed @ 1500RPM : Min 250 kPa Rated speed @ 1800RPM : Min 300 kPa |

Performance data

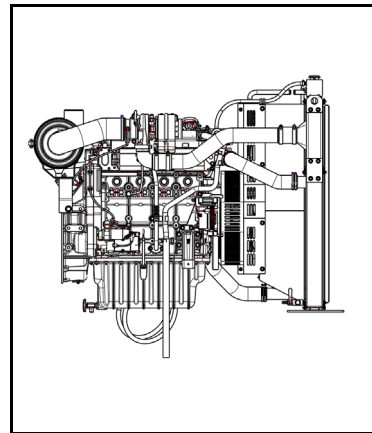
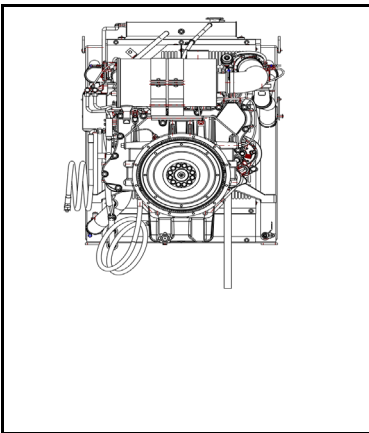
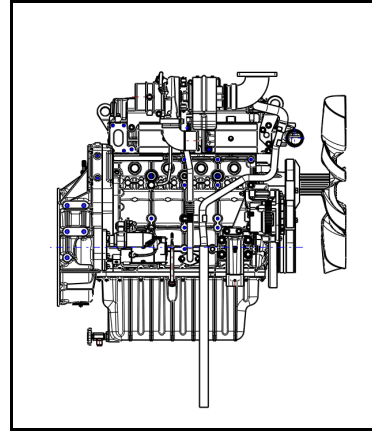
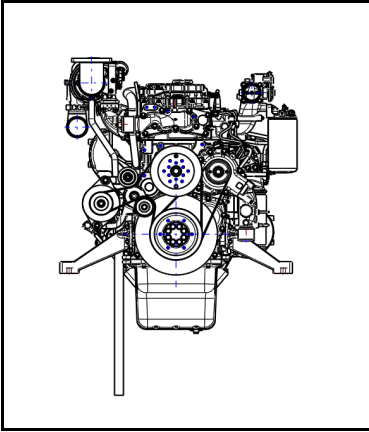
| | | ESP | | PRP | | COP | |
|--------------------------------------|---------------------|------|------|------|------|------|------|
| • Governed Engine Speed | rpm | 1500 | 1800 | 1500 | 1800 | 1500 | 1800 |
| • Engine Idle Speed | rpm | 800 | 800 | 800 | 800 | 800 | 800 |
| • Over Speed Limit | rpm | 2160 | 2160 | 2160 | 2160 | 2160 | 2160 |
| • Gross Engine Power Output | kW | 156 | 175 | 142 | 159 | 99 | 111 |
| • Break Mean Effective Pressure | Mpa | 2.87 | 2.72 | 2.60 | 2.47 | 1.83 | 1.73 |
| • Mean Piston Speed. | m/s | 6.6 | 7.9 | 6.6 | 7.9 | 6.6 | 7.9 |
| • Specific Fuel Consumption | | | | | | | |
| 25% load | liters/hr | 10.8 | 12.9 | 10.1 | 12.0 | 8.2 | 10.0 |
| 50% load | liters/hr | 18.9 | 22.2 | 17.5 | 20.4 | 12.9 | 15.3 |
| 75% load | liters/hr | 27.3 | 31.6 | 25.1 | 29.0 | 18.2 | 21.3 |
| 100% load | liters/hr | 35.8 | 40.9 | 32.7 | 37.5 | 23.5 | 27.1 |
| • Fan Power | kW | 5.3 | 9.2 | 5.3 | 9.2 | 5.3 | 9.2 |
| • Sound Pressure at 1m (Without Fan) | | 95.0 | 96.4 | 94.7 | 96.2 | 92.4 | 94.4 |
| • Intake Air Flow | m ³ /min | 10.6 | 12.3 | 10.3 | 12.1 | 8.9 | 11.2 |
| • Exhaust gas temp. after turbo | °C | 610 | 629 | 562 | 583 | 472 | 456 |
| • Exhaust gas flow | m ³ /min | 28.6 | 32.5 | 27.0 | 30.9 | 21.8 | 26.0 |
| • Heat rejection to coolant | kW | | | | | | |
| 50Hz(1500 rpm) | | 65 | 65 | 65 | 65 | 65 | 65 |
| 60HZ(1800 rpm) | | 72 | 72 | 72 | 72 | 72 | 72 |
| • Heat rejection to intercooler | kW | | | | | | |
| 50Hz(1500 rpm) | | 38 | 38 | 38 | 38 | 38 | 38 |
| 60HZ(1800 rpm) | | 42 | 42 | 42 | 42 | 42 | 42 |
| • Cooling water circulation | liliters/min | | | | | | |
| 50Hz(1500 rpm) | | 338 | 338 | 338 | 338 | 338 | 338 |
| 60HZ(1800 rpm) | | 405 | 405 | 405 | 405 | 405 | 405 |
| • Cooling fan air flow | m ³ /min | 228 | 270 | 228 | 270 | 228 | 270 |

Derating from ISO 3046 Standard Conditions



Engine Dimension

- Dimension With Out Rad (LxWxH) : 1,096 x 887.3 x 1282 mm
- Dimension With Rad (LxWxH) : 653.5 x 907 x 1,226.5 mm



Conversion Table

in = mm x 0.0394

ps = kW x 1.3596

psi = kg/cm² x 14.2233

in³ = lit. x 61.02

hp = PS x 0.98635

lb = kg x 2.20462

lb/ft = N.m x 0.737

U.S. gal = lit. x 0.264

kW = 0.2388 kcal/s

lb/PS.h = g/kW.h x 0.00162

cfm = m³/min x 35.336

HD Hyundai Infracore Co., Ltd.

13F, HD Hyundai Group's Global R&D Center, 477, Bundangsuseo-ro

Bundang-gu, Seongnam-si, Gyeonggi-do, Korea(13553)

Tel : +82 32 211 1114

E-mail : enginesales@hd.com

Website : www.hd-hyundaiengine.com



※ Specifications are subject to change without prior notice.