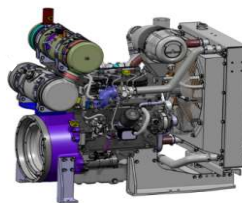


Speed rpm	Type of Operation	Engine Output		Typical Generator Output* (Net)		
		Gross kWm	Net kWm	kVA	kWe	alter.
1500 (50hz)	ESP	95,8	92,9	105,1	84,1	90,5%
	PRP	92,4	89,5	101,3	81,0	90,5%
	COP					
1800 (60hz)	ESP	113,1	108,2	122,3	97,9	90,5%
	PRP	102,7	97,8	110,6	88,5	90,5%
	COP					



#### \* 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.

#### General Engine Data

• Engine Suffix	DM03-MFG05
• Emission Compliance	Stage V
• Engine Type	4-cycle, In-line, Diesel engine
• Number of Cylinders	4-cylinder
• Bore x Stroke	98 x 113 mm
• Displacement	3.409 liter
• Compression Ratio	18 : 1
• Compression Pressure	-
• Rotation	Counter clockwise viewed from Flywheel
• Firing Order	1-3-4-2
• Aspiration	Turbo charged & air to air aftercooled
• Injection Timing	Controlled by ECU
• Dry Weight	535 kg (except mounting brackets)
• Dimension (LxWxH)	1,278 x 710 x 1,181 mm
• Flywheel Housing	SAE NO.3, NO.4 M(F-2-1,F-2-2,F-2-3 )
• Flywheel Size	SAE 10, SAE 11.5
- Number of Teeth	125

#### Engineering Data

• Maximum Bending Moment at Rear Face to Block	-	
• Maximum Intake Air Restriction	6.5kPa	
• Maximum Exhaust Back Pressure	-	
• Maximum Static Pressure After Radiator	25kPa	
• Maximum CAC Pressure Drop	10kPa	
• Maximum Turbine Inlet Gas Temperature	760°C at ESP 730°C at PRP&COP	
• ATB	52(Tropical)	
• Valve System Type	Over head valve	
• Number of Valves	Intake 2, exhaust 2 per cylinder	
• Valve lashes at cold	Hydraulic Valve Lash Adjust	
• Valve timing	Opening	Close
- Intake valve	34° BTDC	62° ABDC
- Exhaust valve	80° BBDC	52° ATDC

### Electrical System

• Alternator	12V x 110A / 12V x 140A / 24V x 80A
• Voltage Regulator	Built-in type IC regulator
• Starting Motor	12V x 2.5kW / 24V x 5.0kW
• Battery Voltage	12V / 24V
• Battery Capacity	100Ah, 750CCA (recommended)
• Starting Aid (Option)	Glow Plug
• Cold start	-25°C (with Glow Plug)

### Cooling System

• Cooling Method	Fresh water forced circulation
• Water Capacity	4.7 liter (engine only) 12.4 liter (with radiator)
• Water flow rate	94 liter/min@1500rpm 114 liter/min@1800rpm
• Pressure CAP	90 kPa
• 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 82°C, Full open temp 97°C
• Cooling Fan	Blower type
• Water Pump Path	1Path, 1Line

### Fuel System

• Injection Pump	Bosch Common-rail pump
• Governor	Controlled by ECU
• Speed Drop	G2 Class ( ISO 8528 )
• Feed Pump	Mechanical type
• Injection Nozzle	Multi hole type
• Max. Injection Pressure	Controlled by ECU
• Opening Pressure	6.1 Mpa
• Fuel Filter	Full flow, Spin-on Type
• Maximum Fuel Inlet Restriction	N/A
• Maximum Fuel Return Restriction	N/A
• Fuel Inlet Pressure Requirement	0.35~1.5 bar(abs)
• Fuel Outlet Pressure Requirement	Max. 1.2 bar(abs)
• Fuel Feed Pump Capacity	180 liter/hr
• Used fuel	Article 115 Schedule 33 "Ultra Low Sulfur Diesel" of the Clean Air Conservation Act ASTM D975C-15 Grades 1D or 2D EN590:2013/AC:2014, EN16734:2016 JIS K2204:2007

### Lubrication System

• Lubrication Oil	SAE 10W40 (API CJ-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 13.5 liter Low level 5.5 liter
• Maximum Oil Temp.	135°C @ Oil Main Gallery
• Lub Oil Pressure	Idle speed : Min 100 kPa 1.0 Bar Governed speed : Min 3 bar

## Performance data

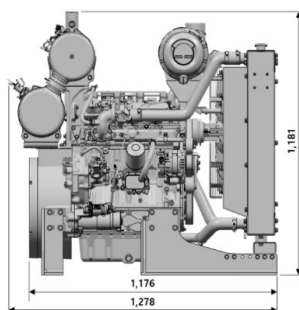
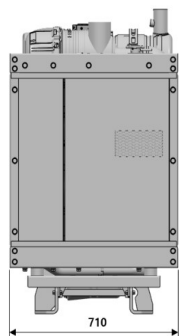
		ESP		PRP		COP	
• Governed Engine Speed	rpm	1500	1800	1500	1800	-	-
• Engine Idle Speed	rpm	800	800	800	800	-	-
• Over Speed Limit	rpm	N/A	N/A	N/A	N/A	-	-
• Gross Engine Power Output	kW	95.8	113.1	92.4	102.8	-	-
• Break Mean Effective Pressure	Mpa	2.70	2.21	2.17	2.01	-	-
• Mean Piston Speed.	m/s	-	-	-	-	-	-
• Specific Fuel Consumption							
25% load	liters/hr	6,6	8,0	6,4	7,5	-	-
50% load	liters/hr	12,2	14,4	11,7	13,2	-	-
75% load	liters/hr	17,9	21,1	17,3	19,1	-	-
100% load	liters/hr	24,0	28,7	23,1	25,7	-	-
• Fan Power	kW	2.86	4.95	2.86	4.95	-	-
• Sound Pressure at 1m from the each side of Cylinder Block (Without Fan)	dB(A)	85,3	86,8	85,3	86,8	-	-
• Intake Air Flow	m <sup>3</sup> /min	5.6	7.2	5.5	7.0	-	-
• Exhaust gas temp. after turbo	°C	510	477	501	443	-	-
• Exhaust gas flow	m <sup>3</sup> /min	6.0	9.6	5.8	7.4	-	-
• Heat rejection to exhaust	kW	-	-	-	-	-	-
• Heat rejection to coolant	kW	56	61	54	57	-	-
• Heat rejection to intercooler	kW	14	20	13	18	-	-
• Radiated heat to ambient	kW	-	-	-	-	-	-
• Cooling water circulation	liters/min	94	114	94	114	-	-
• Cooling fan air flow	m <sup>3</sup> /min	113	130	113	130	-	-

## Derating from ISO 3046 Standard Conditions

- The engine operation at up to 2000 m without power deration.
- For sustained derate operation is in accordance with ISO 3046.
- Ambient temperature is air cleaner inlet temperature.

## Engine Dimension

- Dimension (LxW 1,278 x 710 x 1,181 mm)



## Conversion Table

in = mm x 0.0394	hp = PS x 0.98635	kW = 0.2388 kcal/s
ps = kW x 1.3596	lb = kg x 2.20462	lb/PS.h = g/kW.h x 0.00162
psi = kg/cm <sup>2</sup> x 14.2233	lb/ft = N.m x 0.737	cfm = m <sup>3</sup> /min x 35.336
in3 = lit. x 61.02	U.S. gal = lit. x 0.264	

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※ Specifications are subject to change without prior notice.