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# HiMSEN Dual Fuel Engine

Hi-touch Marine & Stationary Engine

## H35DF(V)



## H35DF HiMSEN Family...

### >> Design Philosophy

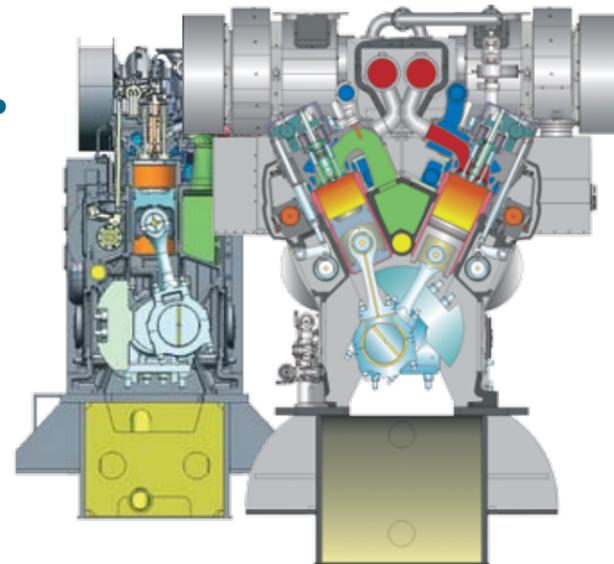
**H35DF of HiMSEN Family** has simple and smart design which is suitable for marine & stationary power generation application with gas diesel fuel with high reliability and performance. The key features are:

**Economical and Ecological Engine** with higher efficiency and lower emission, etc., which is based on the following specific designs;

- Optimized turbocharging with enhanced Miller Cycle.
- Lowest NOx emission satisfied with Tier II (Diesel mode) and Tier III (Gas mode) without after-treatment device.

### Reliable and Practical Engine

- Number of engine components is minimized for customer preference.
- Most of the components are directly accessible for easier maintenance.

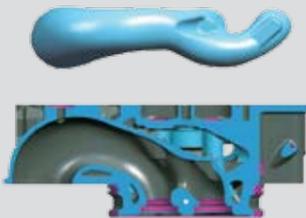


<b>No. of Cylinder In-line type</b>	6, 7, 8, 9
<b>No. of Cylinder V-type</b>	12, 14, 16, 18, 20
<b>Rated Speed</b>	720 / 750 rpm
<b>Power per Cylinder</b>	480 kW
<b>Cylinder Bore</b>	350 mm
<b>Piston Stroke</b>	400 mm
<b>Mean Piston Speed</b>	9.6 / 10.0 m/s
<b>Mean Effective Pressure</b>	20.8 / 20.0 bar
<b>Compression Ratio</b>	12.5 : 1

### Major Advantages : Smart Electronic Engine Control System with Excellent Reliability

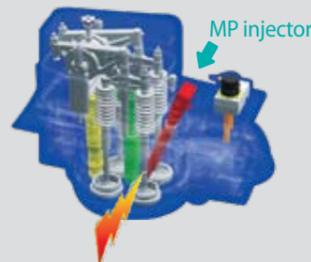
#### Cylinder Head

- Optimized port design
- High mixture flow



#### MicroPilot System

- High pressure injection
- Controllable fuel quantity



#### AFR Control

- Quick response for operation
- Efficiency, NOx control



### Rated Power of Gen-Set at 100% Load

Engine Type	Rated Output (kW)			
	720 rpm / 60 Hz		750 rpm / 50 Hz	
	Engine	Generator	Engine	Generator
6H35DF	2,880	2,779	2,880	2,779
7H35DF	3,360	3,242	3,360	3,242
8H35DF	3,840	3,706	3,840	3,706
9H35DF	4,320	4,169	4,320	4,169
12H35DFV	5,760	5,558	5,760	5,558
14H35DFV	6,720	6,485	6,720	6,485
16H35DFV	7,680	7,411	7,680	7,411
18H35DFV	8,640	8,338	8,640	8,338
20H35DFV	9,600	9,264	9,600	9,264

#### Remarks

- The alternator outputs are calculated for an efficiency of 96.5%.

### Specific Lubricating Oil Consumption: 0.5 g/kWh

(Tolerance: +25% depending on the operating conditions and 100% load)

### Dimensions & Weights

Engine Type	Dimension (mm)		Dry Weight (ton)	
	L	H	Engine	Gen-Set
6H35DF	8,890	4,367	34.7	69.6
7H35DF	9,486	4,538	39.6	78.1
8H35DF	10,196	4,538	42.5	83.0
9H35DF	11,189	4,538	45.6	90.1
12H35DFV	10,384	4,723	58.0	110.8
14H35DFV	11,155	4,723	65.3	123.3
16H35DFV	11,393	4,723	71.1	132.9
18H35DFV	12,444	4,794	78.3	143.2
20H35DFV	13,003	4,794	86.0	155.9

### Heat Rate & SFOC

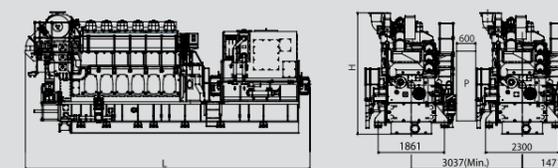
	720 rpm / 60 Hz	750 rpm / 50 Hz
Heat rate @ Gas mode	7,568 kJ/kWh	
SFOC @ Diesel mode	185 g/kWh	

#### Remarks

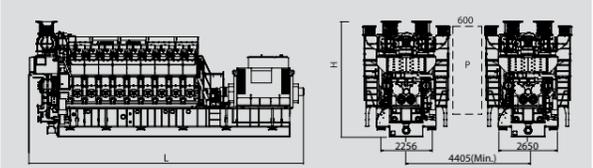
- 1) ISO 3046/1 reference conditions & optimized at the reference condition.
- 2) Heat rate & SFOC without engine driven pumps. (+5% tolerance)
- 3) Fuel gas L.H.V.  $\geq 36$  MJ/Nm<sup>3</sup> with M.N.  $\geq 80$ .
- 4) Warranted at 100% load.



#### L - Type



#### V - Type



#### Remarks

- All dimensions and weight are approximate value and subject to change without prior notice.
- Free passage way, P, between engines, width 600 mm and height 2,000 mm.