

44 MW 2013 New Wartsila W 16V32 HFO Generator Sets



Harnessing Energy for Life

Description & Additional Notes

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Technical Data

Wärtsilä 16V32		AE IMO Tier 2	DE IMO Tier 2	AE SCR mode	DE SCR mode
Engine speed	RPM	720	720	720	720
Cylinder output	kW/cyl	560	560	560	560
Engine output	kW	8960	8960	8960	8960
Mean effective pressure	MPa	2.9	2.9	2.9	2.9
Combustion air system (Note 1)					
Flow at 100% load	kg/s	16.03	16.03	16.03	16.03
Temperature at turbocharger intake, max.	°C	45	45	45	45
Air temperature after air cooler (TE 601)	°C	55	55	55	55
Exhaust gas system (Note 2)					
Flow at 100% load	kg/s	16.5	16.5	16.5	16.5
Flow at 85% load	kg/s	14.3	14.3	13.9	13.9
Flow at 75% load	kg/s	13.2	13.2	12.8	12.8
Flow at 50% load	kg/s	8.9	8.9	8.9	8.9
Temperature after turbocharger, 100% load (TE 517)	°C	350	350	350	350
Temperature after turbocharger, 85% load (TE 517)	°C	330	330	340	340
Temperature after turbocharger, 75% load (TE 517)	°C	330	330	340	340
Temperature after turbocharger, 50% load (TE 517)	°C	380	380	380	380
Backpressure, max.	kPa	5.0	5.0	5.0	5.0
Calculated pipe diameter for 35m/s	mm	1026	1026	1026	1026
Heat balance (Note 3)					
Jacket water, HT-circuit	kW	1147	1147	1147	1147
Charge air, HT-circuit	kW	2043	2043	2043	2043
Charge air, LT-circuit	kW	1104	1104	1104	1104
Lubricating oil, LT-circuit	kW	1035	1035	1035	1035
Radiation	kW	293	293	293	293
Fuel system (Note 4)					
Pressure before injection pumps (PT 101)	kPa	700±50	700±50	700±50	700±50
Fuel flow to engine, approx.	m³/h	9.0	8.9	9.0	9.0
HFO viscosity before engine	cSt	16...24	16...24	16...24	16...24
HFO temperature before engine, max. (TE 101)	°C	140	140	140	140
MDF viscosity, min	cSt	2.0	2.0	2.0	2.0
MDF temperature before engine, max. (TE 101)	°C	45	45	45	45
Fuel consumption at 100% load, HFO	g/kWh	181	181	183	182
Fuel consumption at 85% load, HFO	g/kWh	181	180	183	183
Fuel consumption at 75% load, HFO	g/kWh	181	181	184	183
Fuel consumption at 50% load, HFO	g/kWh	192	187	194	189
Fuel consumption at 100% load, MDF	g/kWh	184	183	184	183
Fuel consumption at 85% load, MDF	g/kWh	181	179	182	180
Fuel consumption at 75% load, MDF	g/kWh	181	179	182	181

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Cylinder output	kW/cyl	560	560	560	560
Fuel consumption at 50% load, MDF	g/kWh	189	185	190	189
Clean leak fuel quantity, MDF at 100% load	kg/h	34.0	33.9	34.0	33.9
Clean leak fuel quantity, HFO at 100% load	kg/h	6.8	6.8	6.8	6.8
Lubricating oil system					
Pressure before bearings, nom. (PT 201)	kPa	500	500	500	500
Suction ability main pump, including pipe loss, max.	kPa	40	40	40	40
Priming pressure, nom. (PT 201)	kPa	50	50	50	50
Suction ability priming pump, including pipe loss, max.	kPa	35	35	35	35
Temperature before bearings, nom. (TE 201)	°C	63	63	63	63
Temperature after engine, approx.	°C	81	81	81	81
Pump capacity (main), engine driven	m³/h	158	158	158	158
Pump capacity (main), stand-by	m³/h	130	130	130	130
Priming pump capacity, 50Hz/60Hz	m³/h	38.0 / 45.9	38.0 / 45.9	38.0 / 45.9	38.0 / 45.9
Oil volume, wet sump, nom.	m³	3.9	3.9	3.9	3.9
Oil volume in separate system oil tank, nom.	m³	12.1	12.1	12.1	12.1
Oil consumption (100% load), approx.	g/kWh	0.35	0.35	0.35	0.35
Crankcase ventilation flow rate at full load	l/min	3760	3760	3760	3760
Crankcase ventilation backpressure, max.	kPa	0.1	0.1	0.1	0.1
Oil volume in turning device	liters	8.5...9.5	8.5...9.5	8.5...9.5	8.5...9.5
Oil volume in speed governor	liters	1.9	1.9	1.9	1.9
Cooling water system					
High temperature cooling water system					
Pressure at engine, after pump, nom. (PT 401)	kPa	250 + static	250 + static	250 + static	250 + static
Pressure at engine, after pump, max. (PT 401)	kPa	530	530	530	530
Temperature before cylinders, approx. (TE 401)	°C	77	77	77	77
HT-water out from engine, nom (TE432)	°C	96	96	96	96
Capacity of engine driven pump, nom.	m³/h	140	140	140	140
Pressure drop over engine, total	kPa	150	150	150	150
Pressure drop in external system, max.	kPa	100	100	100	100
Pressure from expansion tank	kPa	70...150	70...150	70...150	70...150
Water volume in engine	m³	0.84	0.84	0.84	0.84
Low temperature cooling water system					
Pressure at engine, after pump, nom. (PT 451)	kPa	250 + static	250 + static	250 + static	250 + static
Pressure at engine, after pump, max. (PT 451)	kPa	530	530	530	530
Temperature before engine (TE 451)	°C	25 ... 38	25 ... 38	25 ... 38	25 ... 38
Capacity of engine driven pump, nom.	m³/h	120	120	120	120

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Cylinder output	kW/cyl	560	560	560	560
Pressure drop over charge air cooler	kPa	35	35	35	35
Pressure drop over oil cooler	kPa	20	20	20	20
Pressure drop in external system, max.	kPa	100	100	100	100
Pressure from expansion tank	kPa	70 ... 150	70 ... 150	70 ... 150	70 ... 150
Starting air system (Note 5)					
Pressure, nom.	kPa	3000	3000	3000	3000
Pressure at engine during start, min. (20°C)	kPa	1600	1600	1600	1600
Pressure, max.	kPa	3000	3000	3000	3000
Low pressure limit in air vessels (alarm limit)	kPa	1600	1600	1600	1600
Air consumption per start	Nm ³	3.6	3.6	3.6	3.6
Air consumption per start without propeller shaft engaged	Nm ³	-	-	-	-
Air consumption with automatic start and slowturning	Nm ³	-	-	-	-
Air consumption per start with propeller shaft engaged	Nm ³	-	-	-	-
Air consumption with automatic start and high inertia slowturning	Nm ³	-	-	-	-
Air assist consumption (for engines with 580 kW/cyl)	Nm ³	2.67	2.67	2.67	2.67

Notes:

- Note 1 At ISO 15550 conditions (ambient air temperature 25°C, LT-water 25°C) and 100% load. Flow tolerance 5%.
- Note 2 At ISO 15550 conditions (ambient air temperature 25°C, LT-water 25°C). Flow tolerance 5% and temperature tolerance 10°C.
- Note 3 At ISO 15550 conditions (ambient air temperature 25°C, LT-water 25°C) and 100% load. Tolerance for cooling water heat 10%, tolerance for radiation heat 30%. Fouling factors and a margin to be taken into account when dimensioning heat exchangers.
- Note 4 At ambient conditions according to ISO 15550. Lower calorific value 42 700 kJ/kg. With engine driven pumps (two cooling water + one lubricating oil pump). Tolerance 5%. Note: SOI is different for MDO and HFO engines. If the engine is made for operation on both HFO and MDO, the consumption on both fuels will be according to HFO consumption.
- Note 5 Automatic (remote or local) starting air consumption (average) per start, at 20°C for a specific long start impulse (DE/AUX: 2...3 sec, CPP/FPP: 4...6 sec) which is the shortest time required for a safe start.

ME = Engine driving propeller, variable speed

AE = Auxiliary engine driving generator

DE = Diesel-Electric engine driving generator

Subject to revision without notice.

Specifications



Manufacturer	Wartsila
Model	W 16V32
Year	2013
Condition	New
Location	North America
Price	\$3,450,000
Category	HFO Generators
Subcategories	<ul style="list-style-type: none">10 - 99 MW
Stock Number	USP010084
Wattage	44 MW
Hours	Zero
Frequency	60 Hz
Fuel type	HFO
Voltage	11000
Balance of Plant Available? (BOP)	-

Asset Images



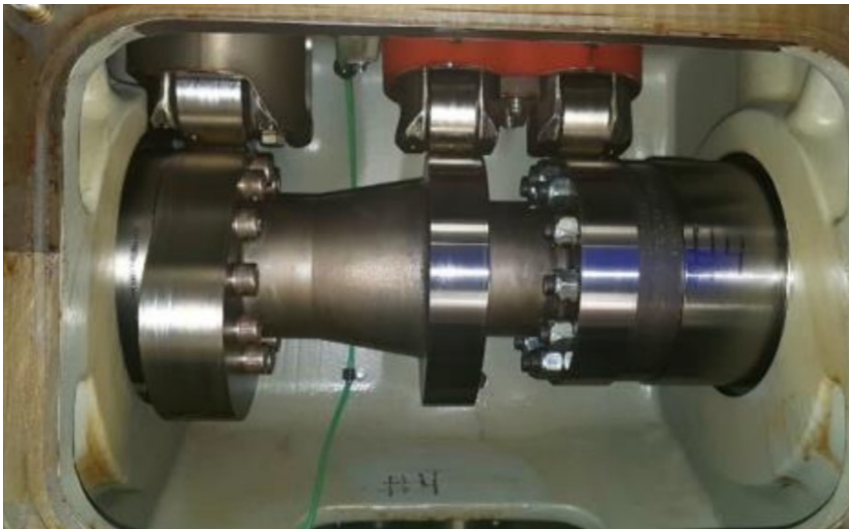
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