Technical data:

Application: Marine Auxiliary

POWERING BUSINESS. EMPOWERING PEOPLE

Engine data:		
Number of cylinders	-	12
Cylinder bore	mm	320
Piston stroke	mm	400
Rated power (MCR), engine	kW	5760
Rated active power, generator	kW	5585
Generator efficiency	-	0,97
Rated output, electric with COS(phi) = 0,8	kVA	6980
Mean effective pressure	bar	24,9
Rated speed	RPM	720
Mean piston speed	m/s	10
Displacement	l	386
Fuel oil data:		
Specific fuel consumption	g/kWh	183
Fuel consumption at MCR	l/h	1275
Fuel feed pump capacity	l/h	5900
Daytank, 24hrs operation	m³	31
Nozzle oil data:		
Nozzle oil	-	SAE 40
Pressure normal (+- 0,2)	barg	2.0
Alarm, pressure low	barg	1.0
Temp, normal (+- 5)	°C	90
Start air data:		
Start air pressure, max./min.	barg	30/20
Air consumption per. start	m³n	1,5
No of starts, 500l receiver	-	7
No of starts, 250l receiver	-	3
Lubrication data:		
Lubrication oil	-	SAE 40
Main pump capacity	m³/h	76
Priming pump capacity	m³/h	13
Lub. oil pressure		
-normal	barg	4-5
-alarm, pressure low	barg	2,5
-shut-down, pressure low	barg	1,7
Lub. oil temp engine inlet		
-normal	°C	60
-alarm, temp high	°C	70
Spec. lub. oil consumption	g/kWh	0,8
Lub. oil consumption	kg/h	4,6
Crankcase, lub. oil volume		
-high level	l	3400
-low level	l	3000
Jacket water waste heat recovery:		
Waste heat, 100% load	MJ/h	8325
Waste heat, 80% load	MJ/h	5840
Waste heat, 50% load	MJ/h	2995

Cooling water data:		
Two-stage charge air cooler:		
-Low temp. stage:		
-temp. at inlet, max	°C	37
-water flowrate, normal	m³/h	90
-water flowrate, max	m³/h	108
-High temp. stage:		
-water flowrate, normal	m³/h	108
Jacket water system:		
-pump capacity	m³/h	108
-normal stop/shut-down	barg	1.0
-water quantity, engine block	l	750
-Temp. at engine outlet		
-normal	°C	90
-alarm, temp. high	°C	95
-shut-down, temp. high	°C	98
-temp. rise in engine, max	°C	7,1
-incl. high temp. ca-cooler	°C	18,4
-Expansion tank:		
-volum, single-engined	l	300
-volum, multi-engined	l	500
-height above engine	m	3-10
Air data:		
Turbocharger type	ABB	TPS-61F33
Charge air cooler type	-	RR12V3240B
Air consumption	m³n/h	30100
Air consumption	kg/h	39000
Charge air pressure	barg	3,2
Charge air temperature:		
-normal	°C	55-60
-alarm, temp high	°C	65
Turbocharger speed alarm	rpm	33989
Exhaust data:		
Mass flow	kg/h	40000
Volume flow, after turbin	m³/h	68600
Temp, after cylinder	°C	375
Temp, after turbine	°C	325
Back pressure, max	mmWG	300
Part load data:		
-Mass flow, 90% load	kg/h	37600
-Temp, after turbine	°C	315
-Mass flow, 80% load	kg/h	34400
-Temp, after turbine	°C	315
-Mass flow 50% load	kg/h	22300
-Temp, after turbine	°C	340
Heat dissipation:		
Lubrication data:		
Lub. oil .cooler	MJ/h	2305
Cooling water data:		
Low temp. stage	MJ/h	1880
High temp. stage	MJ/h	5105
Jacket water cooler:		
-Heat dissipation, engine	MJ/h	3220
-incl. high temp. ca-cooler	MJ/h	8325
Ventilation data:		
Radiation engine	MJ/h	705
Radiation generator (IP23)	MJ/h	630

Engine power definition is according to ISO 3046-1
However the engine ratings are valid for the following reference conditions:

Air inlet temperature	max. 45 °C
Air inlet temperature	min. 0 °C
Charge air low temp. fresh water inlet temp.	max. +37°C
Relative humidity	60%

Specific fuel oil consumption is measured on testbed according to ISO 3046-1, using diesel-oil with a net heating value of 42.7 MJ/kg and no engine-driven pumps. With engine-driven pumps, add 1g/kWh for each pump.
Spec. lub. oil consumption is for guidance only.

NOTE! Due to continuous development, some data may change.

NOx according to Tier 2 of Annex VI of MARPOL 73/78

Technical data

POWERING BUSINESS. EMPOWERING PEOPLE

Application: Marine Auxiliary

Engine data:		
Number of cylinders	-	9
Cylinder bore	mm	320
Piston stroke	mm	400
Rated power (MCR), engine	kW	4320
Rated active power, generator	kW	4190
Generator efficiency	-	0,97
Rated output, electric with COS(phi) = 0,8	kVA	5235
Mean effective pressure	bar	24,9
Rated speed	RPM	720
Mean piston speed	m/s	10
Displacement	l	289
Fuel oil data:		
Specific fuel consumption	g/kWh	183
Fuel consumption at MCR	l/h	955
Fuel feed pump capacity	l/h	4030
Daytank, 24hrs operation	m^3	23
Nozzle oil data:		
Nozzle oil	-	SAE 40
Pressure normal (+- 0,2)	barg	2.0
Alarm, pressure low	barg	1.0
Temp, normal (+- 5)	°C	90
Start air data:		
Start air pressure, max./min.	barg	30/20
Air consumption per. start	m^3n	2
No of starts, 500l receiver	-	4
No of starts, 250l receiver	-	2
Lubrication data:		
Lubrication oil	-	SAE 40
Main pump capacity	m^3/h	65
Priming pump capacity	m^3/h	13
Lub. oil pressure		
-normal	barg	4-5
-alarm, pressure low	barg	2,5
-shut-down, pressure low	barg	1,7
Lub. oil temp engine inlet		
-normal	°C	60
-alarm, temp high	°C	70
Spec. lub. oil consumption	g/kWh	0,8
Lub. oil consumption	kg/h	3,5
Crankcase, lub. oil volume		
-high level	l	4500
-low level	l	3850
Jacket water waste heat recover y:		
Waste heat, 100% load	MJ/h	4685
Waste heat, 80% load	MJ/h	3395
Waste heat, 50% load	MJ/h	1800

Cooling water data:		
Two-stage charge air cooler:		
-Low temp. stage:		
-temp. at inlet, max	C	37
-water flow rate, normal	m/h	50
-water flow rate, max	m/h	58
-High temp. stage:		
-water flow rate, normal	m/h	36
Jacket water system:		
-pump capacity	m/h	81
-normal stop/shut-down	barg	1.0
-water quantity, engine block	l	370
-Temp. at engine outlet		
-normal	°C	90
-alarm, temp. high	°C	95
-shut-down, temp. high	°C	98
-temp. rise in engine, max	°C	7,1
-incl. high temp. ca-cooler	°C	13,8
-Expansion tank:		
-volum, single-engined	l	300
-volum, multi-engined	l	500
-height above engine	m	3-10
Air data:		
Turbocharger type	ABB	TPL-67C33
Charge air cooler type	-	RR9L3240B
Air consumption	m n/h	22600
Air consumption	kg^3/h	29300
Charge air pressure	barg	3,2
Charge air temperature:		
-normal	°C	55-60
-alarm, temp high	°C	65
Turbocharger speed alarm	rpm	29216
Exhaust data:		
Mass flow	kg/h	30100
Volume flow, after turbin	m^3/h	51600
Temp, after cylinder	°C	375
Temp, after turbine	°C	325
Back pressure, max	mmWG	300
Part load data:		
-Mass flow, 90% load	kg/h	27800
-Temp, after turbine	°C	320
-Mass flow, 80% load	kg/h	25200
-Temp, after turbine	°C	320
-Mass flow 50% load	kg/h	16100
-Temp, after turbine	°C	355
Heat dissipation:		
Lubrication data:		
Lub. oil .cooler	MJ/h	1855
Cooling water data:		
Low temp. stage	MJ/h	2890
High temp. stage	MJ/h	2295
Jacket water cooler:		
-Heat dissipation, engine	MJ/h	2390
-incl. high temp. ca-cooler	MJ/h	4685
Ventilation data:		
Radiation engine	MJ/h	525
Radiation generator (IP23)	MJ/h	470

Engine power definition is according to ISO 3046-1
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Air inlet temperature	min. 0 ° C
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Relative humidity	60%

NOx according to Tier 2 of Annex VI of MARPOL 73/78

Specific fuel oil consumption is measured on testbed according to ISO 3046-1, using diesel-oil with a net heating value of 42.7 MJ/kg and no engine-driven pumps. With engine-driven pumps, add 1g/kWh for each pump. Spec. lub. oil consumption is for guidance only.

NOTE! Due to continuous development, some data may change.