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## Application: MarineAuxiliary



Engine data:			Cooling water data:		
Number of cvlinders	-	12	Two-stage charge air cooler:		
Cylinderbore	mm	320	-Low temp. stage		
Piston stroke	mm	400	-temp. at inlet, max	°C	37
Rated power (MCR), engine	kW	5760	-waterflowrate, normal	m³/h	90
Rated active power, generator	kW	5585	-waterflowrate, max	m³/h	108
Generatorefficiency	-	0,97	-High temp. stage:	_	
Rated output, electric			-waterflowrate, normal	m³/h	108
with $COS(phi) = 0.8$	kVA	6980	Jacket water system:	_	
Mean effective pressure	bar	24,9	pumpcapacity	m³/h	108
Rated speed	RPM	720	-normalstop/shut-down	barg	1.0
Mean piston speed	m/s	10	-water quantity, engine block	1	750
Displacement	1	386	-Temp. at engine outlet	0	
			-normal	$_{\circ}\mathrm{C}$	90
Fuel oil data:			-alarm, temp. high	$_{\circ}\mathrm{C}$	95
Specific fuel consumption	g/kWh	183	-shut-down, temp. high	$_{\circ}\mathrm{C}$	98
Fuel consumption at MCR	l/h	1275	-temp. rise in engine, max	$_{\circ}\mathrm{C}$	7,1
Fuel feed pump capacity	l/h	5900	-incl. high temp. ca-cooler	С	18,4
Daytank, 24hrs operation	m	31	-Expansiontank:		
			-volum, single-engined	1	300
Nozzle oil data:			-volum, multi-engined	1	500
Nozzle oil	-	SAE 40	-heightabove engine	m	3-10
Pressure normal (+- 0,2)	barg	2.0			
Alarm, pressure low	barg	1.0	Air data:		
Temp, normal (+- 5)	$\mathbf{C}$	90	Turbochargertype	ABB	TPS-61F33
			Charge air cooler type	3	RR12V3240B
Start air data:			Airconsumption	mn/h	30100
Startair pressure, max./min.	barg	30/20	Airconsumption	kg/h	39000
Air consumption per. start	mn	1,5	Charge air pressure	barg	3,2
No of starts, 500l receiver	-	7	Charge air temperature:	0	
No of starts, 250l receiver	-	3	-normal	$_{\circ}\mathrm{C}$	55-60
			-alarm, temp high	С	65
				0	
Lubrication data:			Turbocharger speed alarm	rpm	33989
Lubrication data: Lubrication oil	- 3	SAE40			
	- 3 m,⁄h	SAE 40 76			
Lubricationoil	- 3 m <sub>3</sub> /h m/h		Turbochargerspeed alarm		
Lubricationoil Mainpumpcapacity	m₃⁄h	76	Turbochargerspeed alarm Exhaust data:	rpm	33989
Lubrication oil Main pump capacity Priming pump capacity	m₃⁄h	76	Turbochargerspeed alarm Exhaust data: Massflow	rpm kg/h	33989 40000
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure	m₃/h m/h	76 13	Turbochargerspeed alarm Exhaust data: Mass flow Volume flow, after turbin	rpm kg/h m/h	33989 40000 68600
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low	m₃⁄h m∕h barg	76 13 4-5	Turbochargerspeed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine	rpm kg/h m/h °C	33989 40000 68600 375
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low	m₃/h m/h barg barg barg	76 13 4-5 2,5	Turbochargerspeed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder	rpm kg/h m/h °C C	33989 40000 68600 375 325
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low	m,⁄h m/h barg barg barg ₀	76 13 4-5 2,5	Turbochargerspeed alarm Exhaust data: Mass flow Volume flow, afterturbin Temp, aftercylinder Temp, afterturbine Back pressure, max	rpm kg/h m/h °C C	33989 40000 68600 375 325
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet	m₃/h m/h barg barg barg	76 13 4-5 2,5 1,7	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data:	rpm kg/h m/h °C C mmWG	33989 40000 68600 375 325 300
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal	m,/h m/h barg barg barg °_°C	76 13 4-5 2,5 1,7 60	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load	rpm kg/h m/h °C C mmWG kg/h C	33989 40000 68600 375 325 300 37600
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high	m,/h m /h barg barg barg °,C C C	76 13 4-5 2,5 1,7 60 70	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine	rpm kg/h m/h °C C mmWG kg/h	33989 40000 68600 375 325 300 37600 315
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption	m,/h m/h barg barg barg °, °C °, °C g/kWh	76 13 4-5 2,5 1,7 60 70 0,8	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load	rpm kg/h m/h °C °C mmWG kg/h C kg/h C	33989 40000 68600 375 325 300 37600 315 34400
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption	m,/h m/h barg barg barg °, °C °, °C g/kWh	76 13 4-5 2,5 1,7 60 70 0,8	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine	rpm kg/h m/h °C C mmWG kg/h C kg/h	33989 40000 68600 375 325 300 37600 315 34400 315
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume	m,/h m/h barg barg barg °.C C g/kWh kg/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load	rpm kg/h m/h °C °C mmWG kg/h C kg/h C kg/h	33989 40000 68600 375 325 300 37600 315 34400 315 22300
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level	m,/h m/h barg barg barg °.C C g/kWh kg/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load	rpm kg/h m/h °C °C mmWG kg/h C kg/h C kg/h	33989 40000 68600 375 325 300 37600 315 34400 315 22300
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level	m,/h m/h barg barg °.C C g/kWh kg/h l l	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine	rpm kg/h m/h °C °C mmWG kg/h C kg/h C kg/h	33989 40000 68600 375 325 300 37600 315 34400 315 22300
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level	m,/h m/h barg barg °.C C g/kWh kg/h l l	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine	rpm kg/h m/h °C °C mmWG kg/h C kg/h C kg/h	33989 40000 68600 375 325 300 37600 315 34400 315 22300
Lubrication oil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y	m,/h m/h barg barg barg °.C C g/kWh kg/h l l	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h °C C mmWG kg/h C kg/h C kg/h C kg/h C	33989 40000 68600 375 325 300 37600 315 34400 315 22300 340
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h °C C mmWG kg/h C kg/h C kg/h C kg/h C	33989 40000 68600 375 325 300 37600 315 34400 315 22300 340
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h C C mmWG kg/h C kg/h C kg/h C MJ/h	33989 40000 68600 375 325 300 37600 315 34400 315 22300 340
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h C C mmWG kg/h C kg/h C kg/h C MJ/h MJ/h	33989 40000 68600 375 325 300 37600 315 22300 340 2305 1880
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h C C mmWG kg/h C kg/h C kg/h C MJ/h MJ/h	33989 40000 68600 375 325 300 37600 315 22300 340 2305 1880
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: •Mass flow, 90% load •Temp, after turbine •Mass flow, 80% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine •Mass flow 50% load •Temp, after turbine	rpm kg/h m/h °C °C mmWG kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C MJ/h MJ/h	<ul> <li>33989</li> <li>40000</li> <li>68600</li> <li>375</li> <li>325</li> <li>300</li> <li>37600</li> <li>315</li> <li>34400</li> <li>315</li> <li>22300</li> <li>340</li> </ul> 2305 1880 5105
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Part load data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine	rpm kg/h m/h °C °C mmWG kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C °C mmWG	33989 40000 68600 375 325 300 37600 315 34400 315 22300 340 2305 1880 5105 3220
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Partload data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine	rpm kg/h m/h °C °C mmWG kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C kg/h °C °C mmWG	33989 40000 68600 375 325 300 37600 315 34400 315 22300 340 2305 1880 5105 3220
Lubricationoil Main pump capacity Priming pump capacity Lub. oil pressure -normal -alarm, pressure low -shut-down, pressure low Lub. oil temp engine inlet -normal -alarm, temp high Spec. lub. oil consumption Lub. oil consumption Lub. oil consumption Crankcase, lub. oil volume -high level -low level Jacket water waste heat recover y Waste heat, 100% load Waste heat, 80% load	m,/h m/h barg barg barg °.C C g/kWh kg/h l l : MJ/h MJ/h	76 13 4-5 2,5 1,7 60 70 0,8 4,6 3400 3000 8325 5840	Turbocharger speed alarm Exhaust data: Mass flow Volume flow, after turbin Temp, after cylinder Temp, after turbine Back pressure, max Partload data: -Mass flow, 90% load -Temp, after turbine -Mass flow, 80% load -Temp, after turbine -Mass flow 50% load -Temp, after turbine Heat dissipation: Lubrication data: Lub, oil .cooler Cooling water data: Low temp. stage High temp. stage Jacket water cooler: -Heat dissipation, engine -incl. high temp. ca-cooler Ventilation data:	rpm kg/h m/h C C mmWG kg/h C kg/h C kg/h C kg/h C MJ/h MJ/h MJ/h	<ul> <li>33989</li> <li>40000</li> <li>68600</li> <li>375</li> <li>325</li> <li>300</li> <li>37600</li> <li>315</li> <li>34400</li> <li>315</li> <li>22300</li> <li>340</li> </ul> 2305 1880 5105 3220 8325

 $Engine power definition is according to ISO 3046-1 \\ However the engine ratings are valid for the following reference conditions:$ Air inlet temperature max. 45 °CAir inlet temperature min 0 °CCharge air low temp. fresh water inlet temp. max. +37°CRelative 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

## Application: MarineAuxiliary



Engine data			Cooling water data:		
Number of cylinders Cylinderbore	- mm	$9 \\ 320$	Two-stage charge air cooler: -Low temp. stage:		
Piston stroke		320 400		С	37
Rated power (MCR), engine	mm kW	$400 \\ 4320$	-temp. at inlet, max -waterflowrate, normal	m/h	50
Rated power (MCR), engine Rated active power, generator	kW	4320 4190	-water flowrate, normal -water flowrate, max	m/h m/h	50 58
	- -	4190 0,97	-High temp. stage:	111/11	99
Generatorefficiency		0,97	-waterflowrate, normal	m /h	36
Rated output, electric	kVA	5005	,	m/h	90
with $COS(phi) = 0.8$	-	5235	Jacket water system:	/l	81
Mean effective pressure	bar RPM	24,9 720	-pump capacity	m/h	
Rated speed		720	-normal stop/shut-down	barg	1.0
Mean piston speed	m/s	10	-water quantity, engine block	1	370
Displacement 1	1	289	-Temp. at engine outlet	C	00
			-normal	°C	90
Fuel oil data:	4 3 3 7	100	-alarm, temp. high	°C	95
Specific fuel consumption	g/kWh	183	-shut-down, temp. high	°C °C °C	98
Fuel consumption at MCR	l/h	955	-temp. rise in engine, max	°C	7,1
Fuel feed pump capacity	l/h	4030	-incl. high temp. ca-cooler	°C	13,8
Daytank, 24hrs operation	m 3	23	Expansiontank		
	-		-volum, single-engined	1	300
Nozzle oil data:		0. E :-	-volum, multi-engined	1	500
Nozzle oil	-	SAE 40	-height above engine	m	3-10
Pressure normal (+- 0,2)	barg	2.0			
Alarm, pressure low	barg	1.0	Air data:		
Temp, normal (+- 5)	$^{\circ}C$	90	Turbochargertype	ABB	TPL-67C33
	0		Charge air cooler type	-	RR9L3240B
Start air data:			Airconsumption	m n/h	22600
Startair pressure, max./min.	barg	30/20	Airconsumption	kở/h	29300
Air consumption per. start	m'n	2	Charge air pressure	barg	3,2
No of starts, 500l receiver	- 3	4	Charge air temperature:		
No of starts, 250l receiver	-	2	-normal	$^{\circ}C$	55-60
			-alarm, temp high	$^{\circ}C$	65
Lubrication data:			Turbochargerspeed alarm	rpm	29216
Lubricationoil	-	SAE 40	-		
Mainpumpcapacity	m³/h	65	Exhaust data:		
Priming pump capacity	m³/h	13	Massflow	kg/h	30100
Lub. oil pressure			Volume flow, after turbin	m'/h	51600
-normal	barg	4-5	Temp, aftercylinder	$^{\circ}C$	375
-alarm, pressure low	barg	2,5	Temp, afterturbine	$^{\circ}$ Č	325
-shut-down, pressure low	barg	1,3	Back pressure, max	mmWG	
Lub. oil tempengine inlet	U	_,.	Partload data:		
-normal	$^{\circ}C$	60	-Mass flow, 90% load	kg/h	27800
-alarm, temp high	$\tilde{\mathbf{C}}$	70	-Temp, afterturbine	°Č	320
Spec. lub. oil consumption	g/kWh	0,8	-Mass flow, 80% load	kg/h	25200
Lub. oil consumption	kg/h	3,5	-Temp, after turbine	°Č	320
Crankcase, lub. oil volume		0,0	-Massflow 50% load	kg/h	16100
-high level	1	4500	-Temp, afterturbine	°C	355
-low level	1	3850	romp, and throme	C	200
			Heat dissipation:		
Jacket water waste heat recover	v:		Lubricationdata		
Waste heat, 100% load	MJ/h	4685	Lub. oil .cooler	MJ/h	1855
Waste heat, 80% load	MJ/h	3395	Cooling waterdata:	1410/11	1000
Waste heat, 50% load	MJ/h	1800	Low temp. stage	MJ/h	2890
wasteneat, 50% toad	1010/11	1000	High temp. stage	MJ/h	2890 2295
			Jacket watercooler:	1010/11	4490
				MJ/h	2200
			-Heat dissipation, engine -incl. high temp. ca-cooler	MJ/h MJ/h	$2390 \\ 4685$
				1010/11	-1000
			Ventilation data:	<b>N/I T/</b> -	FOF
			Radiationengine	MJ/h	525
			Radiation generator (IP23)	MJ/h	470

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 min. 0 ° C Air inlet temperature max. +37°C Charge air low temp. fresh water inlet temp. 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