

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres	10,84
	in ³	661,3
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm	123
	in	4,84
Stroke	mm	152
	in	5,98
Compression ratio		16,5:1
Max. static forward inclination:	°	0
Max. static backward inclination:	°	7
Max. intermittent forward inclination while running:	°	10
Max. intermittent backward inclination while running:	°	17
Max. intermittent side inclination while running:	°	30
Idling speed	rpm	600 (+50)
Rated speed R5	rpm	2450
Propeller selection range R5	rpm	2450-2500
Dry weight engine BT	kg	1145
	lb	2524

Performance	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Crankshaft power 1), 5)	5	kW	71	120	180	288	375	445	493	493	493	493
		hp	97	163	245	392	510	605	670	670	670	670
Propeller shaft power 1) (At full load) With drive Reverse gear	5	kW	69	116	175	279	364	432	478	478	478	478
		hp	94	158	237	380	495	587	650	650	650	650
Propellershaft power at prop. load x ^{2,5} With drive Reverse gear	5	kW	21	39	65	98	165	253	325	408	454	478
		hp	28	53	88	133	224	344	442	555	618	650
Torque at crankshaft 2)	5	Nm	968,6	1273	1563	2116	2238	2237	2242	2047	1962	1922
		lbf ft	714	939	1153	1560	1651	1650	1653	1510	1447	1417
Mean piston speed		m/s	3,5	4,6	5,6	6,6	8,1	9,6	10,6	11,7	12,2	12,4
		ft/s	11,6	15,0	18,3	21,6	26,6	31,6	34,9	38,2	39,9	40,7
Effective mean pressure 2)	5	MPa	1,12	1,48	1,81	2,45	2,60	2,59	2,60	2,37	2,27	2,23
		psi	162,9	214,1	262,8	355,8	376,4	376,2	377,0	344,3	329,9	323,2
Max combustion pressure 2)	5	MPa	15	16,5	17,5	19	19	20	20,5	19,5	19	19
		psi	2176	2393	2538	2756	2756	2901	2973	2828	2756	2756

Lubricating system

Specific lubricating oil consumption.		g/kWh	0,1
Max. oil volume including filters for all allowed installation inclinations:		litres	30
		US gal	7,93
Max. oil volume excluding filters for all allowed installation inclinations:		litres	25
		US gal	6,60
Min. oil volume excluding filters for all allowed installation inclinations:		litres	21
		US gal	5,55

Fuel system	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Specific fuel consumption 2)	5	g/kWh	243	243	232	217	199	202	209	216	219	221
		lb/hph	0,394	0,394	0,376	0,352	0,322	0,327	0,339	0,35	0,355	0,358
Fuel consumption, Test cycle E5	5	g/kWh	222									
		lb/hph	0,36									
Fuel consumption at prop. load x ^{2,5}	5	l/h	6,4	11,6	19,7	25,8	40,5	63,9	84,5	108,6	122,6	129,5
		US gal/h	1,7	3,1	5,2	6,8	10,7	16,9	22,3	28,7	32,4	34,2
Fuel consumption at full load	5	l/h	20,6	34,9	50,0	74,8	89,3	107,6	123,3	127,4	129,2	130,4
		US gal/h	5,5	9,2	13,2	19,8	23,6	28,4	32,6	33,7	34,1	34,4

Intake and exhaust system	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450	
Specific exhaust heating effect in percent of crankshaft power	5	%	76	67	66	66	74	79	82	84	83	84	
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C °F	507 945	650 1202	652 1206	630 1166	495 923	479 894	504 939	497 927	499 930	499 930	
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa psi								Max	15 2,2		
		kPa psi								Min			
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min cu.ft./min	4 141,3	6,4 226	8,9 314,3	14,8 522,7	22,4 791	29,1 1028	33,2 1172	35,6 1257	36,7 1296	37,2 1314	
Charge air pressure Inlet manifold	5	kPa psi	18 2,6	45 6,5	67 9,7	136 19,7	190 27,6	220 31,9	233 33,8	229 33,2	228 33,1	226 32,8	
Exhaust gas flow	5	m³/min cu.ft./min	12 423,8	22 776,9	31 1095	49 1730	60 2119	73 2578	83 2931	87 3072	90 3178	90 3178	

Cooling system	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Radiated heat in percent of crankshaft power.	5	%	4,2	3,8	3,4	1,8	1,2	1,1	1,1	1,1	1,1	1,1
Heat rejection to charge air cooler in percent of crankshaft power.	5	%	4	7	8	14	18	20	21	22	23	23
Coolant heat rejection to HE, incl. engine oil cooler and excl. charge air cooler, in percent of crankshaft power.	5	%	51	74	74	46	29	32	36	42	54	54
Coolant flow with fully open thermostat and std cooling system		l/min cu.ft./min	249 8,8	342 12,1	400 14,1	477 16,8	591 20,9	693 24,5	742 26,2	750 26,5	738 26,1	735 26,0
Max. permissible temperature on coolant in engine outlet		°C °F	98 208									
Coolant volume engine, including heat exchanger and charge air cooler		litres US gal.	46 12,15									
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres US gal.	40 10,57									
Maximum coolant flow to cabin heater etc.		l/min cu.ft./min	76 2,68									
Thermostat, start open at		°C °F	76 169									
Thermostat, fully open at		°C °F	86 187									

Raw water circuit	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Nominal raw water design flow	l/min cu.ft./min	91 3,2	99 3,5	121 4,3	141 5,0	174 6,1	204 7,2	227 8,0	249 8,8	258 9,1	263 9,3
Maximum raw water pump suction head	kPa psi	-10 -1,5									
Maximum raw water temperature entering heat exchanger	°C °F	32 90									

Emissions	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Smoke at prop. load x ^{2.5}	5	*BSU	0,0	0,2	0,3	0,6	0,5	0,2	0,2	0,2	0,3	0,4
Noise at prop. load x ^{2.5} . 4)	5	dBA	103,1	106,3	109	110,3	111,1	113,8	115,3	116,9	117,8	118,2

*NB.! BSU are calculated values. Measured values are acc. to ISO 10054 in FSN units