

GAS FORM-C

CLIPPER EIRENE



«Industry leading provider of LPG and petrochemical tonnage»

BASED ON:
OCIMF/SIGTTO
Ship Information Questionnaire for Gas Carriers
2nd Edition 1998

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Solvang ASA dates back to 1936. From very modest beginnings, the shipping company has now developed into one of the world's leading transporters of LPG and petrochemical gases. Solvang ASA has its headquarters in Stavanger, with offices in Oslo and the Philippines.

Solvang has a fleet of modern and efficient vessels - all built in the accordance with the most up to date specifications and fitted with new and efficient technology. Perhaps of greater importance than the modern technology is the way in which the vessels are operated – the people onboard. Good seamanship represents the very core of our business, and we place a firm focus on this area in the form of education, working on attitudes and training.

On every single sailing, we are required to demonstrate the full range of our experience and expertise. Our strength lies in reliable, high-quality deliveries. It is our goal to maintain a steady course towards the future, at the same time as making good use of the experience we have gained.

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1. SECTION A – GENERAL INFORMATION

1.1 PRINCIPAL SHIP PARTICULARS

A1	PRINCIPAL SHIP PARTICULARS		CLIPPER EIRENE
1.0	Date Questionnaire Completed		29.04.2020
1.1	Name of vessel		CLIPPER EIRENE
1.2	LR/IMO Number		IMO 9834715
1.3	Last Previous Name		N/A
1.3.1	Date of Name change		N/A
1.4	Second Last Name Change		N/A
1.4.1	Date of Name change		N/A
1.5	Third Last Name Change		N/A
1.5.1	Date of Name change		N/A
1.6	Fourth Last Name Change		N/A
1.6.1	Date of Name change		N/A
1.7	Flag		NIS
1.8	Port Of Registry		Stavanger
1.9	Official Number		9834715
1.10	Call Sign		LAEB8
1.11	VSAT		0044 2039368531 / 00442039368530
1.12	Fleet 77		+870 773236259
1.13	Fax		
1.14	Mini – M		
1.15	E-mail		Master.Clipper.Eirene@solvangship.no
1.16	GSM Mobile		+47 48282260
1.17	SAT C		425900917 / 425900918
1.18	Vessel's MMSI Number		257069560
1.19	Max tank pressure	UNIT	
1.19.1	(1) Pressurized	[bar g]	
1.19.2	(2) Semi- Refrigerated	[bar g]	3.9
1.19.3	(3) Refrigerated	[bar g]	
1.20	Minimum tank temperature	UNIT	
1.20.1	(1) Pressurized	[°C]	
1.20.2	(2) Semi- Refrigerated	[°C]	-104
1.20.3	(3) Refrigerated	[°C]	
A1	OWNERSHIP AND OPERATION		
1.21	REGISTERED OWNER		CLIPPER SHIPPING AS
1.22	Visitor's address		Strandkaien 36
1.22.1	City		N-4005 Stavanger
1.22.2	Country		Norway
1.23	Postal address		P.O. Box 90
1.23.1	City		N-4001 Stavanger
1.23.2	Country		Norway
1.24	Office Telephone Number		+47 51 84 84 00
1.25	Office Fax Number		+47 51 84 84 11
1.26	Office Telex Number		
1.27	Office e-mail Address		solvang.ethylene@solvangship.no
1.28	Number of Years Vessel Owned		0.9
1.29	NAME OF TECHNICAL OPERATOR		Solvang ASA
1.30	Visitor's address		Strandkaien 36
1.30.1	City		N-4005 Stavanger
1.30.2	Country		Norway
1.31	Postal address		P.O. Box 90
1.31.1	City		N-4001 Stavanger
1.31.2	Country		Norway

1.32	Office Telephone Number	(+47) 51 84 84 00
1.33	Office Fax Number	(+47) 51 84 84 11
1.34	Office Telex Number	
1.35	Office e-mail Address	solvang.ethylene@solvangship.no
1.36	Number of Years as vessel Operator	
1.37	Total number of vessels, Operator	27
1.38	COMMERCIAL OPERATOR	Solvang ASA
1.39	Visitor's address	Haakon VII's gt 6
1.39.1	City	N-0121 Oslo
1.39.2	Country	Norway
1.40	Postal address	P.O.Box 1737 Vika
1.40.1	City	N-0121 Oslo
1.40.2	Country	Norway
1.41	Office Telephone Number	(+47) 22 47 19 50
1.42	Office e-mail Address	chartering@solvangship.no
1.42.1	Office e-mail Address 2	operation@solvangship.no
1.43	Number of Years as vessel Operator	0.9
1.44	Builder	Hyundai MD
1.45	Name of Yard Vessel Built At	Ulsan, Korea
1.46	Hull Number	8260
1.47	Date Keel Laid	23.11.2018
1.48	Date Launched	25.01.2019
1.49	Date Delivered	29.05.2019
1.50	Date of Completion of Major Hull Changes (If Any)	N/A
1.51	If Changes were made, specify changes and yard	N/A
A1	CLASSIFICATION	UNIT
1.52	Classification Society	[Text]
1.53	Class Notation	[Text]
1.53.1	Cont.	[Text]
1.53.2	Cont.	[Text]
1.54	If Class Society Changed, Name of Previous society	[Text]
1.55	If Class Society Changed, Date of Change	[Date]
1.56	Built in accordance with Regulations:	
1.56.1	IMO	[Yes/No]
1.56.2	USCG	[Yes/No]
1.56.3	RINA	[Yes/No]
1.56.4	Other	[Yes/No]
1.57	IMO Certification Certificate of Fitness	
1.57.1	IGC	[Yes/No]
1.57.2	A328	[Yes/No]
1.57.3	A329	[Yes/No]
1.57.4	Letter of compliance	[Yes/No]
1.57.5	Issued By	[Text]
1.58	Unattended Machinery Space certificate	[Yes/No]
A1	TONNAGES	UNIT
1.59	Nett Registered Tonnage	[NT]
1.60	Gross Tonnage	[GT]
1.61	Suez Canal Tonnage	
1.61.1	Net Tonnage	[NT]
1.61.2	Gross Tonnage	[GT]
1.62	Panama Canal Tonnage	
1.62.1	Net Tonnage	[NT]
1.62.2	Gross Tonnage	[GT]

1.2 HULL DIMENSIONS

A2	HULL DIMENSIONS	UNIT	CLIPPER EIRENE
2.1	Length Overall	[m]	159.9
2.2	Length Between Perpendiculars	[m]	155.8
2.3	Distance Bow to Bridge	[m]	126.9
2.4	Distance Bridge Front to Mid-Point Manifold	[m]	50.5
2.5	Distance Bow to Mid-Point Manifold	[m]	75.9
2.6	Extreme Breadth	[m]	25.6
2.7	Extreme Depth	[m]	16.4
2.8	Summer Draught	[m]	9.0
2.9	Corresponding Deadweight	[ton]	18056.0
2.10	Light Displacement/weight	[ton]	8543.0
2.11	Loaded Displacement (Summer)	[ton]	26599.0
2.12	Cargo Tank Cubic Capacity (100% full)	[m3]	21341.4
2.13	Distance from Keel to Highest Point (With mast down)	[m]	48.6
2.14	Air Draught normal ballast (With mast down)	[m]	42.0

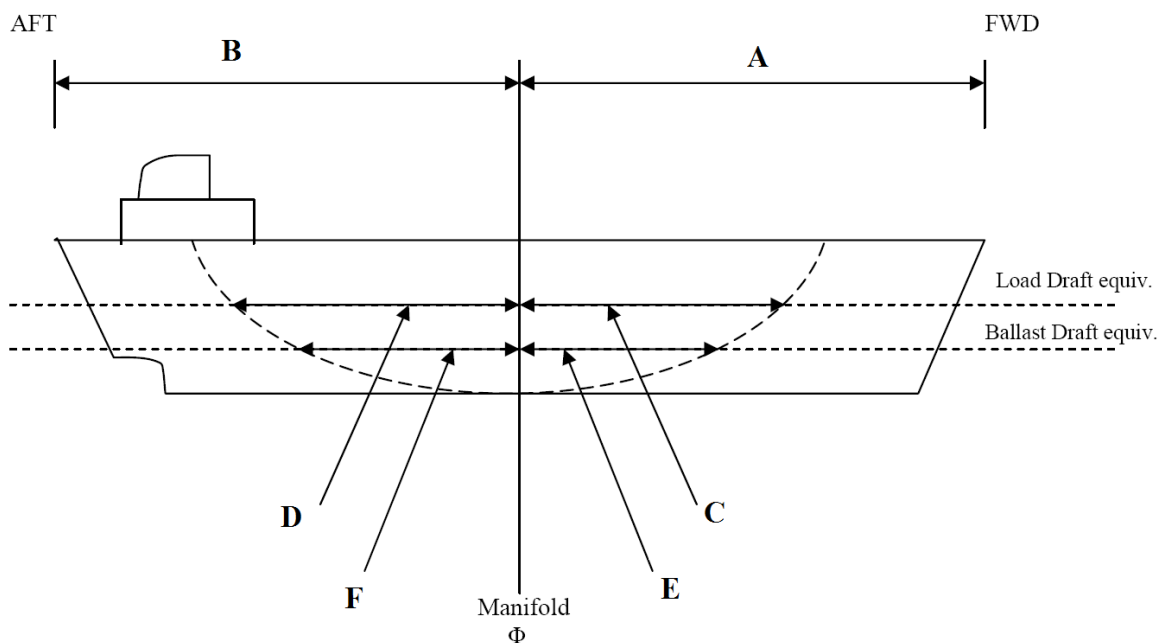
1.3 IMMERSION

A3	IMMERSION	UNIT	CLIPPER EIRENE
3.1	Normal Ballast Draught	[TPC]	31.75
3.1.1	Draught	[m]	6.09
3.2	Loaded Draught	[TPC]	35.7
3.2.1	Draught	[m]	9.02

1.4 LOADED PARTICULARS

A4	LOADED PARTICULARS	UNIT	CLIPPER EIRENE		
4.1	Cargo:				
4.2	Density:	[ton/m3]	0.57	0.58	0.6801
4.3	Cargo	[ton]	11717.00	12029	14102
4.4	Bunkers	[ton]	1167.00	1167	1167
4.5	D0	[ton]	176.00	176	176
4.6	Fresh Water	[ton]	206.00	206	206
4.7	Stores/Spares	[ton]	150	150	150
4.8	Lube Oil	[ton]	54	54	54
4.9	Ballast	[ton]	1662	1622	1319
4.10	Deadweight Const.	[ton]	250	250.00	250.00
4.11	Draught - Forward	[m]	8.3	8.35	8.85
4.11.1	Aft	[m]	8.3	8.35	8.85
4.11.2	Equiv.	[m]	8.3	8.35	8.85

1.5 PARALLEL MID-BODY DIMENSIONS



A5	PARALLEL MID-BODY DIMENSIONS	UNIT	CLIPPER EIRENE
5.1	A Manifold to FWD	[m]	75.87
5.2	B Manifold to AFT	[m]	83.99
5.3	Loaded draft equiv-		
5.3.1	C Manifold to FWD side tangent line	[m]	31.5
5.3.2	D Manifold to AFT side tangent line	[m]	41.7
5.4	Ballast draft equiv.		
5.4.1	E Manifold to FWD	[m]	25.6
5.4.2	F Manifold to AFT	[m]	33.5

1.6 BUNKER CAPACITIES

A6	BUNKER CAPACITIES	UNIT	CLIPPER EIRENE
6.1	HFO	[Grade]	IFO 380 (Standard)
6.1.1	Capacity @ 100 %	[m3]	1420
6.2	LSHFO	[Grade]	N/A
6.2.1	Capacity @ 100 %	[m3]	N/A
6.3	Diesel Oil	[Grade]	LSMGO
6.3.1	Capacity @ 100 %	[m3]	269.5

1.7 FUEL CONSUMPTION DETAILS

Average speed and consumption, based on max force 4 Beaufort and 15% Sea Margin.

Vessel use mainly HFO for all consumers. DO/GO for INCN and when Rules & Regulations demands it for other consumers

A7	FUEL CONSUMPTION DETAILS	UNIT	CLIPPER EIRENE
7.1	LOADED CONDITION		*About
7.2	Average speed over 12 months	[kn]	16.0
7.3	Average consumption, Main engine	[ton/day]	22.0
7.4	Consumption, AUX		
7.4.1	LPG	[ton/day]	3-6
7.4.2	Ethylene	[ton/day]	5-10
7.5	Average consumption, AUX		
7.5.1	LPG	[ton/day]	4
7.5.2	Ethylene	[ton/day]	7.5
7.6	BALLAST CONDITION		
7.7	Average speed over 12 months	[kn]	16.0
7.8	Average consumption, Main engine	[ton/day]	19.5
7.9	Average consumption, AUX	[ton/day]	5
7.10	PORT/IDLE		
7.11	Average consumption, AUX, Loading	[ton/day]	9
7.12	Average consumption, AUX, Discharging	[ton/day]	6
7.13	Average consumption, AUX, Idle	[ton/day]	4
7.14	Average consumption, Boiler (depending on weather)	[ton/day]	0-1,0
7.15	OTHER		
7.16	INCN (When operating) - MDO/MGO	[ton/day]	0.2
7.17	IGG-plant (When operating)	[ton/day]	0.1
7.18	ME CONSUMPTION GRAPH/KNOTS		LOADED BALLAST
7.18.1	17	[ton/day]	27.5 23.0
7.18.2	16	[ton/day]	22.0 19.5
7.18.3	15	[ton/day]	17.5 16.0
7.18.4	14	[ton/day]	14.5 13.5
7.18.5	13	[ton/day]	12.0 11.5

**Consumption of AUX will increase with 0,2-1,0 MT/24h when systems for exhaust gas cleaning is running, depending on sulfur content in fuel oil, load of engines, alkalinity, degree of cleaning, etc

1.8 MAIN ENGINE PARTICULARS

A8	MAIN ENGINE PARTICULARS	UNIT	CLIPPER EIRENE
8.1	Main Engine Make and Type	[Text]	Hyundai-B&W 6S50ME-C8.5
8.2	No of Units	Pcs	1
8.3	Maximum Continuous Rating (MCR)	[kW]	7100
8.3.1	RPM	[RPM]	112.7
8.4	Total Available Power	kW	7 100
8.5	Normal service Power	kW	5 595

1.9 AUXILIARY PLANT

A9	AUXILIARY PLANT	UNIT	CLIPPER EIRENE
9.1	Make and Type of Auxiliary Generators	[Text]	Himsen 8H21/32
9.2	Main Generators	[Pcs]	
9.2.1	No of Units	[Pcs]	3
9.2.2	Maximum Generator Output per Unit	[kW]	1 400

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9.3	Generators, other	[Yes/No]	NO
9.3.1	No of Units	[Pcs]	N/A
9.3.2	Maximum Generator Output per Unit	[kW]	N/A
9.4	Shaft Generator	[kW]	N/A
9.5	Total Available Power	[kW]	4200
9.6	Emergency Generator	[kW]	120
9.7	Emergency Fire Pump	[Text]	
9.7.1	Type	[Text]	Vertical Centrifugal
9.7.2	Delivery Pressure	[Bar]	10
9.7.3	Motive Power	[Text]	Electric
9.7.4	If Electrical, Indicate Power Required in kW	[kW]	
9.8	Steering Gear Type		Electro-hydraulic
9.8.1	kW to Steer the Vessel with One Pump Unit	[kW]	

1.10 POWER/SPEED INFORMATION

A10	POWER/SPEED INFORMATION	UNIT	CLIPPER EIRENE
10.1	Trial Data		
10.1.1	NCR	[kW]	5 595
10.1.2	MCR	[kW]	7 100
10.1.3	Speed	[kn]	16.8
10.1.4	Draught	[m]	6.1
10.2	Normal Service Speed		
10.2.1	NCR	[kW]	5595
10.2.2	MCR	[kW]	7100
10.2.3	Speed	[kn]	16
10.2.4	Draught	[m]	9

1.11 THRUSTERS

A11	THRUSTERS	UNIT	CLIPPER EIRENE
11.1	Make and Type	[Text]	N/A
11.2	No. Installed	[Pcs]	N/A
11.3	Location and Rated Bollard Pull or kW output	[kW]	N/A

1.12 FRESH WATER

A12	FRESH WATER	UNIT	CLIPPER EIRENE
12.1	Capacity of Distilled Tanks	[ton]	N/A
12.2	Capacity of F/D.W. Ts	[ton]	287.90
12.3	Daily Consumption	[ton/day]	7.00
12.4	Daily Evaporator Output	[ton/day]	15.00

1.13 BALLAST CAPACITIES AND PUMPS

A13	BALLAST CAPACITIES AND PUMPS	UNIT	CLIPPER EIRENE	
13.1	Tank Capacities		Capacity [m3]	Tanks [Pcs]
13.1.1	Forepeak	[Col]	478.10	1
13.1.2	Wing or Side tanks	[Col]	2615.2	10
13.1.3	Aft Peak	[Col]	760.3	1
13.1.4	Double bottom tanks	[Col]	5317	10
13.1.5	Other	[Col]	374	1
13.1.6	Total	[Col]	9 544.80	23
13.2	Ballast Pumps			
13.2.1	Capacity per pump	[m3/h]	370	
13.2.2	Model	[Text]	LN-VP 125-315 -FT	
13.2.3	Type	[Text]	Electric	
13.2.4	Setting	[Text]	Vertical Centrifugal	
13.3	No of Pumps	[Pcs]	2	
13.4	Total Capacity	[m3/h]	740	
13.5	Location	[Text]	Engine Room	
13.6	Control Location	[Text]	ECR/CCR/BRIDGE	

1.14 MOORING

A14	MOORING EQUIPMENT	UNIT	CLIPPER EIRENE			
14.1	Mooring wires (On drums)		FWD	FWD DECK	AFT DECK	POOP
14.1.1	Number	[Pcs]				
14.1.2	Diameter	[mm]				
14.1.3	Length	[m]				
14.1.4	Maximum Breaking Load	[ton]				
14.2	Mooring wire tails		FWD	FWD DECK	AFT DECK	POOP
14.2.1	Number	[Pcs]				
14.2.2	Type	[Text]				
14.2.3	Diameter	[mm]				
14.2.4	Length	[m]				
14.2.5	Maximum Breaking Load	[ton]				
14.3	Mooring ropes (On drums)		FWD	FWD DECK	AFT DECK	POOP
14.3.1	Number	[Pcs]		6	6	
14.3.2	Type	[Text]		New-D Flex Rope	New-D Flex Rope	
14.3.3	Diameter	[mm]		50	50	
14.3.4	Length	[m]		200	200	
14.3.5	Maximum Breaking Load	[ton]		49	49	
14.4	Mooring winches		FWD	FWD DECK	AFT DECK	POOP
14.4.1	Number	[Pcs]		3	3	
14.4.2	[S]ingle/[D]ouble drums	[S/D]		Double	Double	
14.4.3	Split drums	[Yes/No]		Yes	Yes	
14.4.4	Motive power	[Text]				
14.4.5	Heaving power	[ton]				
14.4.6	Brake capacity	[ton]		36.7	36.7	
14.4.7	Hauling speed	[m/s]		0 – 15 m/min (apprxm)	0 – 15 m/min (apprxm)	
14.5	Wires/ropes not on drums		WIRES	ROPES	EM'GENCY	
14.5.1	Number	[Pcs]		4		
14.5.2	Type	[Text]		New-D Flex Rope		
14.5.3	Diameter	[mm]		50		
14.5.4	Length	[m]		200		

14.5.5	Maximum Breaking Load	[ton]		49	
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A14	ANCHORS AND WINDLASSES	UNIT	CLIPPER EIRENE
14.5.1	Windlass Motive Power (e.g. Steam, Hydraulic)	[Text]	Hydraulic
14.5.2	Hauling Power	[ton]	207
14.5.3	Brake Holding Power	[ton]	49.3
14.5.4	Anchor Type	[Text]	Stockless HHP
14.5.5	Weight	[kg]	5 513
14.5.6	Is Spare Carried	[Yes/No]	NO
14.5.7	Cable Diameter	[mm]	66
14.5.8	No of Shackles Port	[Pcs]	11
14.5.9	No of Shackles Starboard	[Pcs]	11
14.6	TOWING EQUIPMENT		
14.6.1	Is Ship fitted with a Towing Bracket AFT(drum)	[Yes/No]	YES
14.6.2	If Yes, state SWL	[ton]	204
14.6.3	Is Towing Chain provided	[Yes/No]	YES
14.6.4	Dimensions of Towing Wire – Diameter	[mm]	57
14.6.5	Length	[m]	75
14.7	Windage on Ballast Draught		
14.7.1	End-on	[m2]	510
14.7.2	Lateral	[m2]	1230

Mooring diagram is provided in the appendix.

1.15 NAVIGATIONAL EQUIPMENT

A15	NAVIGATIONAL EQUIPMENT	UNIT	CLIPPER EIRENE
15.1	Magnetic Compass	[Yes/No]	YES
15.2	Off Course Alarm – Magnetic	[Yes/No]	YES
15.3	Gyro Compass	[Yes/No]	YES
15.3.1	Specify number	[Pcs]	2
15.4	Off Course Alarm – Gyro	[Yes/No]	YES
15.5	Bridge Repeaters	[Yes/No]	YES
15.5.1	Specify Number	[Pcs]	
15.6	Radar 3 GHz	[Yes/No]	YES
15.7	Radar 9 GHz	[Yes/No]	YES
15.8	Are Radars Gyro Stabilized	[Yes/No]	YES
15.9	Radar Plotting Equipment	[Yes/No]	YES
15.10	ARPA	[Yes/No]	YES
15.11	ECDIS (Electric Display and Information System)	[Yes/No]	YES
15.11.1	Make/Type	[Text]	Furuno
15.12	Depth Echo Sounder with Recorder	[Yes/No]	YES
15.13	Depth Echo Sounder without Recorder	[Yes/No]	NO
15.14	Speed/Distance Indicator	[Yes/No]	YES
15.15	Doppler Log	[Yes/No]	YES
15.16	Speed of Approach Doppler	[Yes/No]	YES
15.17	Rudder Angle Indicator	[Yes/No]	YES
15.18	Rudder Angle Indicator on Each Bridge Wing	[Yes/No]	YES
15.19	R.P.M Indicator	[Yes/No]	YES
15.20	R.P.M Indicator on Each Bridge Wing	[Yes/No]	YES
15.21	Controllable Propeller Pitch Indicator	[Yes/No]	N/A
15.22	Thruster (s) indicator	[Yes/No]	N/A
15.23	Rate of turn Indicator	[Yes/No]	YES
15.24	Radio Direction Finder	[Yes/No]	NO
15.25	NAVTEX Receiver	[Yes/No]	YES
15.26	GPS	[Yes/No]	YES
15.27	Transit SATNAV	[Yes/No]	NO
15.28	DECCA navigator	[Yes/No]	NO
15.29	Omega	[Yes/No]	NO
15.30	Loran C	[Yes/No]	NO
15.31	Weather Route System	[Yes/No]	YES
15.32	Sextant(s)	[Yes/No]	YES
15.33	Signal Lamp ALDIS	[Yes/No]	YES
15.34	Anemometer	[Yes/No]	YES
15.35	Engine Order Recorder	[Yes/No]	YES
15.36	Course Recorder	[Yes/No]	YES
15.37	Steering motor controls controls fitted on bridge wings	[Yes/No]	YES
15.38	Is bridge Equipped with a “Dead Man” Alarm Equipment	[Yes/No]	YES
15.39	What chart outfit coverage is provided	[Yes/No]	
15.39.1	Worldwide	[Yes/No]	YES
15.39.2	Limited	[Yes/No]	NO
15.39.3	If Limited Please Indicate	[Text]	N/A
15.40	Formal Chart Correction System in use	[Yes/No]	YES
15.41	Electronic Chart System in use	[Yes/No]	YES

1.16 COMMUNICATIONS EQUIPMENT

A16	COMMUNICATIONS EQUIPMENT	UNIT	CLIPPER EIRENE
16.1	Main Transmitted Including Radio Telephone Distress Frequency	[Yes/No]	YES
16.2	Main Receiver Including Radio Telephone Distress Frequency	[Yes/No]	YES
16.3	Radio Telephone Distress Frequency Watch Receiver	[Yes/No]	NO
16.4	Main Radio Antenna	[Yes/No]	YES
16.5	Reserve Radio Antenna	[Yes/No]	NO
16.6	Main and Reserve Installations Electrically Separate and Independent	[Yes/No]	YES
16.7	2182 kHz Bridge auto Alarm	[Yes/No]	NO
16.8	Alarm Signal Generating Device	[Yes/No]	NO
16.9	VHF Radio (s)	[Yes/No]	YES
16.9.1	Specify Number	[Pcs]	3
16.10	Portable VHF/UHF Radios	[Yes/No]	YES
16.10.1	Specify Type and Number	[Pcs]	VHF[3PCS], UHF[10PCS]
16.11	Are Sets Intrinsically Safe	[Yes/No]	VHF[NO], UHF[YES]
16.12	Inmarsat Satellite System	[Yes/No]	YES
16.13	Specify System Type A, B, C, F or VSAT	[Text]	FBB, VSAT
16.14	Is the ship equipped as per GMDSS Requirements	[Yes/No]	YES
16.15	If Yes, which area of operation is vessel certified to operate in	[Text]	A1, A2, A3
16.15.1	EPIRB	[Yes/No]	YES
16.15.2	SARTS	[Yes/No]	YES
16.16	Emergency Lifeboat Transceiver	[Yes/No]	Incl. EPIRB
16.17	At least Three Survival craft Two-way Radio Telephone Apparatus	[Yes/No]	YES
16.18	Full Set of Publications	[Yes/No]	YES

2. SECTION B – CARGO SYSTEMS

2.1 GENERAL INFORMATION

B1	CARGO - GENERAL INFORMATION		CLIPPER EIRENE	
1.1	List Products Which the Ship is Certified to Carry			
1.1.1	1.	Ethylene		
1.1.2	2.	Ethane		
1.1.3	3.	Ammonia		
1.1.4	4.	Butadiene		
1.1.5	5.	i-Butane		
1.1.6	6.	Butane-propane		
1.1.7	7.	Butylene		
1.1.8	8.	Propane		
1.1.9	9.	Propylene		
1.1.10	10.	Dimethylamine		
1.1.11	11.	Diethyl Ether		
1.1.12	12.	Isoprene monomer		
1.1.13	13.	Isopropylamine		
1.1.14	14.	Commercial Propane		
1.1.15	15.	Vinyl Ethyl Ether		
1.1.16	16.			
1.1.17	17.			
1.1.18	18.			
1.1.19	19.			
1.1.20	20.			
1.1.21	21.			
1.1.22	22.			
1.1.23	23.			
1.1.24	24.			
1.2	Transport and Carriage Condition		UNIT	
1.3	Minimum Allowable Tank Temperature		[Celsius]	-104
1.3.1	Maximum Allowable Tank Pressure (Seagoing setting)		[bar g]	3.9
1.3.2	Maximum Allowable Tank Pressure (Harbour setting)		[bar g]	3.9
1.4	Grades which can be Loaded or Discharged Simultaneously		[Pcs]	2
1.5	Grades which can be Transported Simultaneously		[Pcs]	2
1.6	Number of Products Re-liquefied Simultaneously		[Pcs]	2
1.7	State Natural Tank Segregations (Possible combinations)		UNIT	
1.7.1	1.		[Tank]	1 & 2+3
1.7.2	2.		[Tank]	2 & 1+3
1.7.3	3.		[Tank]	

2.2 CARGO TANKS

B2	CARGO TANKS	UNIT	CLIPPER EIRENE
2.1	Cargo Tanks		
2.1.1	Type	[Text]	Independent type C
2.1.2	Material	[Text]	NV 5 Ni
2.2	Maximum Allowable Relief Valve setting	[bar g]	3.9
2.3	Safety Valve Set Pressure – If Variable Give Range of Pilot Valves		
2.3.1	Seagoing setting	[bar g]	3.9
2.3.2	Harbour setting	[bar g]	3.9
2.4	Maximum Vacuum	[bar g]	0.25
2.5	Maximum Cargo Density (98% full)	[kg/m3]	680
2.6	Maximum Rate of Cool-Down	[C/h]	10

2.7	State any Limitations regarding Partially Filled Tanks	[Text]	
2.7.1	Cont.	[Text]	
2.8	State Allowable Combinations of Filled and Empty Tanks	[Text]	
2.8.1	Cont.	[Text]	

2.3 CARGO TANK CAPACITIES

B3	CARGO TANK CAPACITIES	UNIT	CLIPPER EIRENE				
3.1	Capacity	Tank	1	2	3	4	Total
3.1.1	100 %	[m3]	5905	7658	7657		21220
3.1.2	98 %	[m3]	5787	7505	7504		20796
3.2	Cargo						
3.2.1	iso-butane	[ton]	3433	4449	4449		12331
3.2.2	Propane	[ton]	3356	4349	4349		12054
3.2.3	Butadiene	[ton]	3764	4877	4878		13518
3.2.4	Propylene	[ton]	3517	4557	4557		12631
3.2.5	Ammonia	[ton]	3934	5097	5098		14129
3.2.6	Butylene/Butenes	[ton]	3450	4470	4471		12391
3.2.7	n-butane	[ton]	3508	4545	4546		12598
3.2.8	Ethylene	[ton]	3273	4241	4242		11756

- Cargoes may not be applicable for vessel. Check which cargoes the vessel is certified to carry.

2.4 LOADING RATES

VR = Vapour Return, W/O VPR = Without Vapour Return

B4	LOADING RATES		UNIT	CLIPPER EIRENE			
				REFRIGERATED		PRESSURE	
4.1	Cargo		[m3/h]	VR	W/O VR	VR	W/O VR
4.1.1	1	Propylene	[m3/h]	1400	1400		
4.1.2	2	Propane	[m3/h]	1400	1400		
4.1.3	3	Ammonia	[m3/h]	1400	1400		
4.1.4	4	Butane	[m3/h]	1400	1400		
4.1.5	5	Butadiene	[m3/h]	1400	1400		
4.1.6	6	Ethylene	[m3/h]	1400	1400		
4.1.7	7	Propylene Oxide	[m3/h]	1400	1400		
4.1.8	8	VCM	[m3/h]	1400	1400		
4.1.9	9	Ethylene (-80°C)	[m3/h]				
4.1.10	10	Ethylene (-95°C)	[m3/h]				
4.1.11	11	Propane (+10°C)	[m3/h]				200
4.1.12	12	Propane (+5°C)	[m3/h]				280
4.1.13	13	Propane (0°C)	[m3/h]				500
4.1.14	14	Propane (-10°C)	[m3/h]				
4.1.15	15	Propane (-20°C)	[m3/h]				
4.1.16	16	Ammonia (10°C)	[m3/h]				40
4.1.17	17	Ammonia (0°C)	[m3/h]				60
4.1.18	18	Ammonia (-10°C)	[m3/h]				130
4.1.19	19	Propylene (10°C)	[m3/h]				180
4.1.20	20	Propylene (5°C)	[m3/h]				240

2.5 DISCHARGING – GENERAL

Pumping curves for cargo main pumps and booster pumps are given in the appendix.

B5	DISCHARGING – GENERAL	UNIT	CLIPPER EIRENE
5.1	Cargo Pumps	[Text]	Deepwell
5.1.1	Type of Pumps	[Text]	Centrifugal
5.1.2	Number per Tank	[Pcs]	2
5.1.3	Rate (per pump)	[m3/h]	350
5.1.4	Delivery Head	[mlc]	120
5.1.5	Maximum Density	[kg/m3]	734
5.2	Booster Pumps		
5.2.1	Type of Pumps	[Text]	Centrifugal
5.2.2	Number	[Pcs]	2
5.2.3	Rate (per pump)	[m3/h]	350
5.2.4	Delivery Head	[mlc]	120
5.2.5	Maximum Density	[kg/m3]	680

2.6 DISCHARGE PRESSURE

B6	DISCHARGE PERFORMANCE	UNIT	CLIPPER EIRENE
6.1	Fully Refrigerated, Full Cargo Discharge Times (all pumps):		VR W/O VR
6.1.1	Manifold Back Pressure (1 kg/cm2) x	[h]	10 10
6.1.2	Manifold Back Pressure (5 kg/cm2) x	[h]	10 10
6.1.3	Manifold Back Pressure (10 kg/cm2) ^	[h]	
6.2	Pressurized, Full Cargo Discharge Times (all pumps):		VR W/O VR
6.2.1	Manifold Back Pressure (1 kg/cm2) ^	[h]	10 10
6.2.2	Manifold Back Pressure (5 kg/cm2) ^	[h]	10 10
6.2.3	Manifold Back Pressure (10 kg/cm2) ^	[h]	

x = Based on largest single tank volume

^ = Based on discharging tanks one at a time

2.7 UNPUMPABLES

B7	UNPUMPABLES	UNIT	CLIPPER EIRENE
7.1	Unpumpables, liquid		
7.1.1	Tank 1	[m3]	2
7.1.2	Tank 2	[m3]	2
7.1.3	Tank 3	[m3]	2
7.1.4	Tank 4	[m3]	N/A
7.1.5	Total	[m3]	6

2.8 VAPORISING UNMPUMPABLES

B8	VAPORISING UNPUMPABLES	UNIT	CLIPPER EIRENE
8.1	Process Used	[Text]	Hotgas
8.2	Time to Vaporize Liquid Unpumpables After Discharge:		
8.2.1	Propane	[h]	4
8.2.2	iso-Butane	[h]	4
8.2.3	n-Butane	[h]	4
8.2.4	Butadiene	[h]	4

8.2.5	Ethylene	[h]	3
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2.9 RELIQUEFACTION PLANT

B9	RELIQUEFACTION PLANT	UNIT	CLIPPER EIRENE
9.1	Plant Design Conditions		
9.1.1	Air Temperature	[°C]	45
9.1.2	Sea Temperature	[°C]	32
9.2	Plant Type		
9.2.1	Single Stage/Direct	[Yes/No]	YES
9.2.2	Two Stage / Direct	[Yes/No]	YES
9.2.3	Three Stage / Direct	[Yes/No]	
9.2.4	Coolant Type	[Text]	water/glycol/PPL
9.3	Compressors		
9.3.1	Type	[Text]	Burckhardt
9.3.2	Model	[Text]	2K160-2Q
9.3.3	Number	[Psc]	3
9.3.4	Capacity (per unit)	[m3/h]	Varies
9.3.5	Are they oil free?	[Yes/No]	YES

2.11 CARGO TEMP. LOWERING CAPABILITY

B11	CARGO TEMPERATURE LOWERING CAPABILITY	UNIT	CLIPPER EIRENE	CLIPPER EIRENE
11.0	Time taken to lower the temp of:		SW 32 [°C]	SW 20 [°C]
11.1	Propane from ...0 [°C] to -42 [°C]	[h]		
11.2	-37[°C]to -42[°C]	[h]	88	66
11.3	-40[°C] to -42[°C]	[h]	36	30
11.4	Propylene from -5 [°C] to -47[°C]	[h]		
11.5	-10[°C] to -47[°C]	[h]		
11.6	-40[°C] to -47[°C]	[h]	111	87
11.7	Ethane from -84 [°C] to -88[°C]	[h]	60	58
11.8	-86[°C] to -88[°C]	[h]	30	29
11.9	Ethylene from -96[°C] to -103.5[°C]	[h]	132	126
11.10	-100[°C] to -103.5[°C]	[h]	70	67
11.11		[h]		

2.12 INERT GAS

B12	INERT GAS	UNIT	CLIPPER EIRENE
12.1	Main IG Plant		
12.1.1	Type of System	[Text]	Nitrogen Plant – PSA Unit
12.1.2	Capacity	[m3/h]	1500
12.1.3	Type of Fuel Used	[Text]	HFO/MDO
12.1.4	Composition of I.G.		
12.1.5	Max O2	[%]	0.1
12.1.6	Max CO2	[%]	
12.1.7	Max Nox	[%]	
12.1.8	Max N2	[%]	99.9

12.2	Lowest Dewpoint Achievable	[°C]	-60
12.3	Used for	[Text]	Purging cargo tanks
12.4	Auxiliary IG or Nitrogen Plant		N/A
12.4.1	Type of System	[Text]	N/A
12.4.2	Capacity	[m3/h]	N/A
12.5	Lowest Dewpoint Achievable	[°C]	N/A
12.6	Used for	[Text]	N/A
12.7	Nitrogen generator installed?	[Yes/No]	YES
12.7.1	Liquid storage Capacity	[m3]	N/A
12.7.2	Daily Boil-Off Loss	[m3]	N/A
12.7.3	Maximum Supply Pressure	[Bar]	5
12.7.4	Supply Capacity	[m3/h]	1500
12.7.5	Used For	[Text]	Purge CT & VS
12.7.6	HP Nitrogen	[Nm3]	N/A

2.13 CARGO TANK INERTING/DE-INERTING

B13	CARGO TANK INERTING/DE-INERTING	UNIT	CLIPPER EIRENE
13.1	Time Taken From Fresh Air to Under 5% O2 at -25oC Dewpoint	[h]	20
13.2	Time taken from cargo Vapor to Fully Inert at - 25oC Dewpoint when:		
13.2.1	IG density less than product	[h]	40
13.2.2	IG density greater than product	[h]	40

2.14 GAS FREEING TO FRESH AIR

B14	GAS FREEING TO FRESH AIR	UNIT	CLIPPER EIRENE
14.1	Plant Used	[Text]	PSA
14.1.1	Number of fans	[Pcs]	1
14.1.2	Total capacity	[m3/h]	1500
14.2	Time taken from Fully Inert Condition to Fully Breathable Air	[h]	31

2.15 CHANGING CARGO GRADES

The table below show the number of hours needed to change grades from the removal of unpumpables to tanks fit to load. The quantity of inert gas consumed during the operation is also indicated.

B15	CHANGING CARGO GRADES	UNIT	CLIPPER EIRENE
15.1	From propane to:		[h] [m3]
15.1.1	Iso-butane	[COL]	
15.1.2	Ammonia	[COL]	132
15.2	From Iso-butane to:		[h] [m3]
15.2.1	Propane	[COL]	
15.2.2	Ammonia	[COL]	132
15.3	From ammonia to:		[h] [m3]
15.3.1	Propane	[COL]	132
15.3.2	Iso-butane	[COL]	132

2.16 DECK TANK CAPACITIES

B16	DECK TANK CAPACITIES	UNIT	CLIPPER EIRENE
16.1	Deck tank	[Yes/No]	YES
16.2	Deck tank capacities		
16.2.1	1 Propane	[ton]	99
16.2.2	2 Ammonia	[ton]	116
16.2.3	3 Ethylene	[ton]	96
16.3	Maximum Allowable Relief Valve Setting	[bar g]	18
16.4	Lowest Permissible Temperature	[°C]	-104
16.5	Materials	[Text]	NV 5Ni

2.17 PRE-LOADING CONDITIONS

The table below indicates time and quantity of coolant required to cool down cargo tanks from ambient temperature and fully gassed up state sufficient to allow loading to commence.

B17	PRE-LOADING CONDITIONS	UNIT	CLIPPER EIRENE		
17.1	Product		Quantity [ton]	VPR [h]	W/O VPR [h]
17.1.1	Propane	[COL]	250	9.9	12.5
17.1.2	Butane	[COL]	200	9.9	12.5
17.1.3	Butadiene	[COL]	200	9.9	12.5
17.1.4	Propylene	[COL]	200	9.9	12.5
17.1.5	Ammonia	[COL]	250	9.9	12.5
17.1.6	VCM	[COL]			

2.18 VAPORISER

B18	VAPORISER	UNIT	CLIPPER EIRENE
18.1	Type of Vaporizer	[Text]	Shell and Tube
18.2	Number Fitted	[Pcs]	1
18.3	Capacity (per unit) – Propane	[Nm3/h]	2100
18.3.1	Liquid Supply rate	[m3/h]	10
18.3.2	Delivery temperature	[°C]	>0
18.4	Capacity (per unit) – Ammonia	[Nm3/h]	2100
18.4.1	Liquid Supply rate	[m3/h]	10
18.4.2	Delivery temperature	[°C]	>0
18.5	Capacity (per unit) – Ethylene [-50°C]	[Nm3/h]	2100
18.5.1	Liquid Supply rate	[m3/h]	5
18.5.2	Delivery temperature	[°C]	-50

2.19 BLOWER

B19	BLOWER	UNIT	CLIPPER EIRENE
19.1	Type of Blower	[Text]	
19.2	Number fitted	[Pcs]	
19.3	Rated Capacity (per unit)	[Nm3/h]	
19.4	Delivery Pressure	[Bar]	

2.20 CARGO RE-HEATER

Cargo re-heater capacities are given in the appendix.

B20	CARGO RE-HEATER	UNIT	CLIPPER EIRENE
20.1	Type of re-heater	[Text]	Shell and Tube
20.2	Number Fitted	[Pcs]	1
20.3	Heating Medium	[Medium]	SW
20.4	Discharge rates, SW = 15[°C], to raise product temperature:		
20.4.1	Propane from -42[°C] to 0[°C]	[ton/h]	224
20.4.2	Ammonia from -33[°C] to 0[°C]	[ton/h]	230
20.5	Cargo Heater Curve:	[Yes/No]	Yes

2.21 HYDRATE CONTROL

B21	HYDRATE CONTROL	UNIT	CLIPPER EIRENE
21.1	Type of Depressant	[Medium]	Ethanol
21.2	Depressant Freezing Point Temperature	[°C]	-114
21.3	Max capacity of depressant	[Liter]	400
21.4	Means of Injection	[Text]	Pump
21.5	Any other system used	[Text]	NO

2.22 CARGO MEASUREMENT

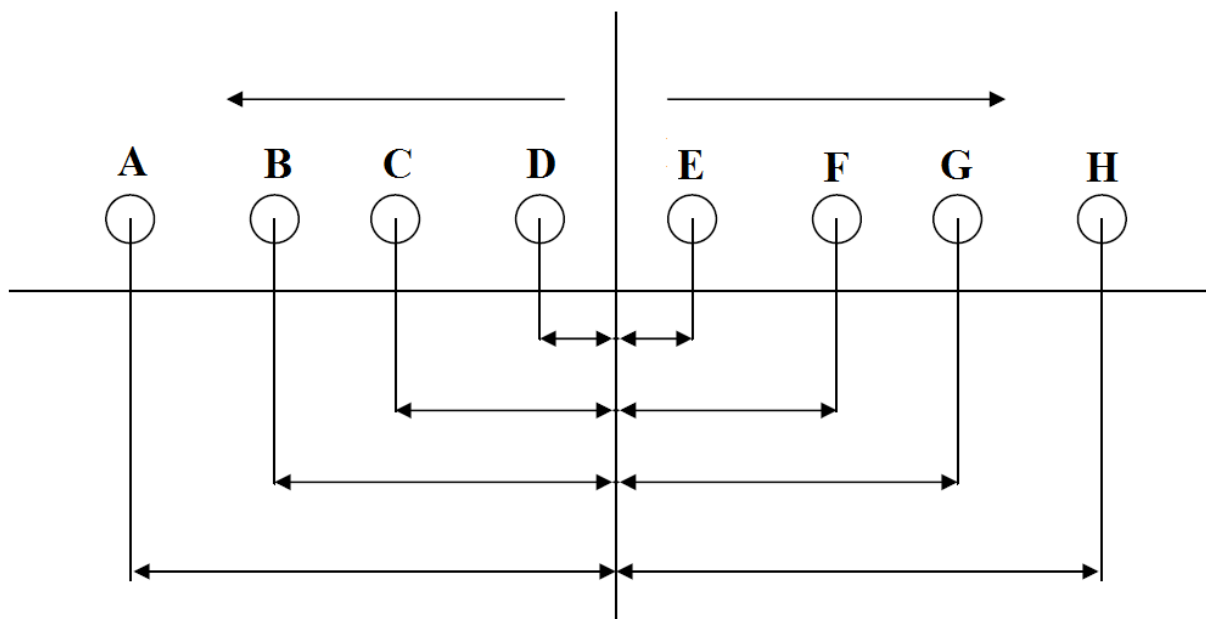
B22	CARGO MEASUREMENT	UNIT	CLIPPER EIRENE
22.1	Level Gauges		
22.1.1	Are level gauges Local or Remote	[Text]	Both
22.1.2	Manufacturer	[Text]	Henri Systems Holland BV
22.1.3	Type	[Text]	Float
22.1.4	Rated Accuracy	[-]	± 5 mm
22.1.5	Certifying Authority	[Text]	Intertek
22.2	Temperature Transmitter		
22.2.1	Manufacturer	[Text]	Yokogawa
22.2.2	Type	[Text]	PT-100
22.2.3	Rated Accuracy	[-]	1 +/-
22.2.4	Certifying Authority	[Text]	Intertek
22.3	Pressure Transmitter		
22.3.1	Manufacturer	[Text]	Yokogawa
22.3.2	Type	[Text]	EJA530E
22.3.3	Rated Accuracy	[-]	0.05
22.3.4	Certifying Authority	[Text]	Intertek
22.4	Oxygen Analyzer		
22.4.1	Manufacturer	[Text]	Riken
22.4.2	Type	[Text]	GX -8000
22.4.3	Lowest Level Measurable		
22.5	Fixed Gas Analyzer		
22.5.1	Manufacturer	[Text]	Riken
22.5.2	Type	[Text]	RKK-2002K
22.6	Cargo Tank Calibration Tables		
22.6.1	Are Cargo Tank Calibration tables available	[Yes/No]	YES
22.6.2	Measuring Company	[Text]	NKKK
22.6.3	Certifying Authority	[Text]	DNV-GL
22.6.4	Calibration calculated tocm ½ cm.....	[Yes/No]	YES

22.6.5	Tables established tocmcm.....mm	[Yes/No]	MM
22.6.6	Trim and List corrections Available	[YES/NO]	YES
22.6.7	Temperature Corrections available	[YES/NO]	YES
22.6.8	Float Gauge Tape Corrections Available	[YES/NO]	YES

2.23 CARGO SAMPLING

B23	CARGO SAMPLING	UNIT	CLIPPER EIRENE			
23.1	Cargo tank sample level	[Tank]	1	2	3	4
23.1.1	Top	[Yes/No]	Yes	Yes	Yes	N/A
23.1.2	Middle	[Yes/No]	Yes	Yes	Yes	N/A
23.1.3	Bottom	[Yes/No]	Yes	Yes	Yes	N/A
23.2	Can sample be drawn from?					
23.2.1	Tank Vapor Outlet	[Yes/No]	YES			
23.2.2	Manifold Liquid Line	[Yes/No]	YES			
23.2.3	Manifold Vapor Line	[Yes/No]	YES			
23.2.4	Pump Discharge Line	[Yes/No]	YES			
23.3	State connection					
23.3.1	Type	[Text]	Closed loop			
23.3.2	Size	[Inch]				

2.24 CARGO MANIFOLD



B24	CARGO MANIFOLD	UNIT	CLIPPER EIRENE			
24.1	Distance from center of manifold to:					
24.1.1	Stern	[m]	83.99			
24.1.2	Bow	[m]	75.87			
24.1.3	A	[mm]	N/A			
24.1.4	B	[mm]	3750			
24.1.5	C	[mm]	2250			
24.1.6	D	[mm]	750			
24.1.7	E	[mm]	750			
24.1.8	F	[mm]	2250			
24.1.9	G	[mm]	3500			
24.1.10	H	[mm]	4250			
24.2	Flange		Duty [Bar]	ASA	Size ["]	[R]aised/[F]lat
24.2.1	A	[COL]	N/A			
24.2.2	B	[COL]	HFO [18]	150	6	Raised
24.2.3	C	[COL]	Liquid [25]	300	10	Raised
24.2.4	D	[COL]	Vapour [18]	150	8	Raised
24.2.5	E	[COL]	Vapour [18]	150	8	Raised
24.2.6	F	[COL]	Liquid [25]	300	10	Raised
24.2.7	G	[COL]	DO [6]	150	4	Raised
24.2.8	H	[COL]	HFO [6]	150	6	Raised
24.3	Manifold height above uppermost continuous deck	[mm]	1940			
24.4	Distance from ship side	[mm]	4000			
24.5	Manifold height above waterline loaded	[mm]	9320			
24.6	Manifold height above waterline normal ballast	[mm]	12240			
24.7	Manifold height above waterline 100% ballast and bunker	[mm]	11350			
24.8	Manifold height above waterline 100% ballast and 50% bunker	[mm]	11640			

2.25 CARGO REDUCERS

B25	CARGO REDUCERS	CLIPPER EIRENE
25.0	ANSI 300	ANSI 300 -150
25.1	2 off 10" ANSI#300 WNRF 12" ANSI#300	2 off 10" ANSI#300 WNRF 12" ANSI#150
25.2	2 off 10" ANSI#300 WNRF 10" ANSI#300	2 off 10" ANSI#300 WNRF 10" ANSI#150
25.3	2 10" ANSI#300 WNRF 8" ANSI#300	2 off 10" ANSI#300 WNRF 8" ANSI#150
25.4	2 off 10" ANSI#300 WNRF 6" ANSI#300	2 off 10" ANSI#300 WNRF 6" ANSI#150
25.5		
25.6		
25.7		
25.8		
25.9		
25.0	ANSI 150	FUEL
25.1	2 off 8" ANSI#150 WNRF 10" ANSI#150	2 pcs 6" x 8"
25.2	2 off 8" ANSI#150 WNRF 8" ANSI#150	4 pcs 6"X 6"
25.3	2 off 8" ANSI#150 WNRF 6" ANSI#150	1 pcs 4" x 6"
25.4	2 off 8" ANSI#150 WNRF 4" ANSI#150	2 pcs 4" x 4"
25.5		1 pcs 4" x 3"
25.6		
25.7		
25.8		
25.9		

2.26 CONNECTION TO SHORE FOR ESD/COM SYSTEMS

B26	CONNECTIONS TO SHORE FOR ESD AND COM. SYSTEMS	UNIT	CLIPPER EIRENE
26.1	Is ESD connection to Shore available?	[Yes/No]	YES
26.1.1	System	[Text]	
26.1.2	Type of plug	[Text]	SIGTTO
26.3	Is Hose or cables Available on Board	[Yes/No]	YES
26.3.1	Specify Length	[m]	25
26.3.2	Specify type	[Text]	Umbilical cable

2.27 MANIFOLD DERRICK/CRANE

B27	MANIFOLD DERRICK/CRANE	UNIT	CLIPPER EIRENE
27.1	Is Manifold Derrick Provided?	[Yes/No]	NO
27.2	Is Manifold Crane Provided?	[Yes/No]	YES
27.3	Is Lifting equipment Same P&SB?	[Yes/No]	NO
27.3.1	If NO, give details	[Text]	Center
27.3.2	Maximum outreach	[m]	23.4
27.3.3	Capacity at max. Outreach	[ton]	5

2.28 STORES HANDLING

B28	STORES HANDLING	UNIT	CLIPPER EIRENE
28.1	Number of cranes	[Pcs]	1
28.1.1	Location(s)	[Text]	Aft STB

3 SECTION C – Machinery

3.11 NOX FACTOR TIER II

C1.1	NOx factor	UNIT	CLIPPER EIRENE
1.1.1.0	Main engine		Tier II
1.1.1.1	Power	[kW]	7100
1.1.1.2	RPM	[RPM]	112.7
1.1.1.3	NOx limit	[g/kWh]	14.4
1.1.1.4	NOx factor	[g/kWh]	13
1.1.1.5	EIAPP	[Ref]	EIAPP-G-173411-0004
1.1.1.6	Issued	[Date]	03.07.2019
1.1.2.0	Auxiliary engine 1		Tier II
1.1.2.1	Power	[kW]	1400
1.1.2.2	RPM	[RPM]	720
1.1.2.3	NOx limit	[g/kWh]	9.7
1.1.2.4	NOx factor	[g/kWh]	8.9
1.1.2.5	EIAPP	[Ref]	EIAPP-G-173337-0008
1.1.2.6	Issued	[Date]	31.01.2019
1.1.3.0	Auxiliary engine 2		Tier II
1.1.3.1	Power	[kW]	1400
1.1.3.2	RPM	[RPM]	720
1.1.3.3	NOx limit	[g/kWh]	9.7
1.1.3.4	NOx factor	[g/kWh]	8.9
1.1.3.5	EIAPP	[Ref]	EIAPP-G-173337-0009
1.1.3.6	Issued	[Date]	31.01.2019
1.1.4.0	Auxiliary engine 3		Tier II
1.1.4.1	Power	[kW]	1400
1.1.4.2	RPM	[RPM]	720
1.1.4.3	NOx limit	[g/kWh]	9.7
1.1.4.4	NOx factor	[g/kWh]	8.9
1.1.4.5	EIAPP	[Ref]	EIAPP-G-173337-0010
1.1.4.6	Issued	[Date]	31.01.2019
1.1.5.0	Auxiliary engine 4		Tier II
1.1.5.1	Power	[kW]	
1.1.5.2	RPM	[RPM]	
1.1.5.3	NOx limit	[g/kWh]	
1.1.5.4	NOx factor	[g/kWh]	
1.1.5.5	EIAPP	[Ref]	
1.1.5.6	Issued	[Date]	

3.12 NOX FACTOR TIER III

C1.2	NOx factor	UNIT	CLIPPER EIRENE
1.2.1.0	Main engine		Tier III
1.2.1.1	Power	[kW]	7100
1.2.1.2	RPM	[RPM]	112.7
1.2.1.3	NOx limit	[g/kWh]	3.4
1.2.1.4	NOx factor	[g/kWh]	3.4
1.2.1.5	EIAPP	[Ref]	EIAPP-G-173411-0004
1.2.1.6	Issued	[Date]	03.07.2019
1.2.2.0	Auxiliary engine 1		Tier III
1.2.2.1	Power	[kW]	1400
1.2.2.2	RPM	[RPM]	720
1.2.2.3	NOx limit	[g/kWh]	2.4
1.2.2.4	NOx factor	[g/kWh]	2
1.2.2.5	EIAPP	[Ref]	EIAPP-G-173337-0008
1.2.2.6	Issued	[Date]	31.01.2019
1.2.3.0	Auxiliary engine 2		Tier III
1.2.3.1	Power	[kW]	1400
1.2.3.2	RPM	[RPM]	720
1.2.3.3	NOx limit	[g/kWh]	2.4
1.2.3.4	NOx factor	[g/kWh]	2
1.2.3.5	EIAPP	[Ref]	EIAPP-G-173337-0009
1.2.3.6	Issued	[Date]	31.01.2019
1.2.4.0	Auxiliary engine 3		Tier III
1.2.4.1	Power	[kW]	1400
1.2.4.2	RPM	[RPM]	720
1.2.4.3	NOx limit	[g/kWh]	2.4
1.2.4.4	NOx factor	[g/kWh]	2
1.2.4.5	EIAPP	[Ref]	EIAPP-G-173337-0010
1.2.4.6	Issued	[Date]	31.01.2019
1.2.5.0	Auxiliary engine 4		Tier III
1.2.5.1	Power	[kW]	
1.2.5.2	RPM	[RPM]	
1.2.5.3	NOx limit	[g/kWh]	
1.2.5.4	NOx factor	[g/kWh]	
1.2.5.5	EIAPP	[Ref]	
1.2.5.6	Issued	[Date]	

3.13 EGCS/SCRUBBER

C2	EGCS/SCRUBBER	UNIT	CLIPPER EIRENE
2.1.0	Main engine		
2.1.1	Scrubber installed	[Yes/No]	YES
2.1.2	Maker	[Text]	Wartsila
2.1.3	Type	[Text]	Hybrid
2.1.4	VGP compliant	[Yes/No]	YES
2.2.0	Auxiliary engines		
2.2.1	Scrubber installed	[Yes/No]	YES
2.2.2	Maker	[Text]	Wartsila
2.2.3	Type	[Text]	Hybrid
2.2.4	VGP compliant	[Yes/No]	YES
2.3.0	Tank capacity closed loop		
2.3.1	NaOH tank	[Days]	10
2.3.2	NaOH tank	[m³]	46.2
2.3.3	Sludge tank	[Days]	10
2.3.4	Sludge tank	[m³]	17.4
2.3.5	Scrubbing water holding tank	[Days]	2
2.3.6	Scrubbing water holding tank	[m³]	123.4

3.14 HEAT RECOVERY

C3	HEAT RECOVERY	UNIT	CLIPPER EIRENE
3.1.0	Main engine		
3.1.1	Economizer installed	[Yes/No]	YES
3.1.2	Type	[Text]	Fire tube
3.1.3	Capacity	[kW]	0
3.1.4	Auxiliary engines		
3.1.5	Economizer installed	[Yes/No]	YES
3.1.6	Type	[Text]	Fire tube
3.1.7	Capacity	[kW]	0

3.15 OTHER RELEVANT TECHNICAL INFORMATION

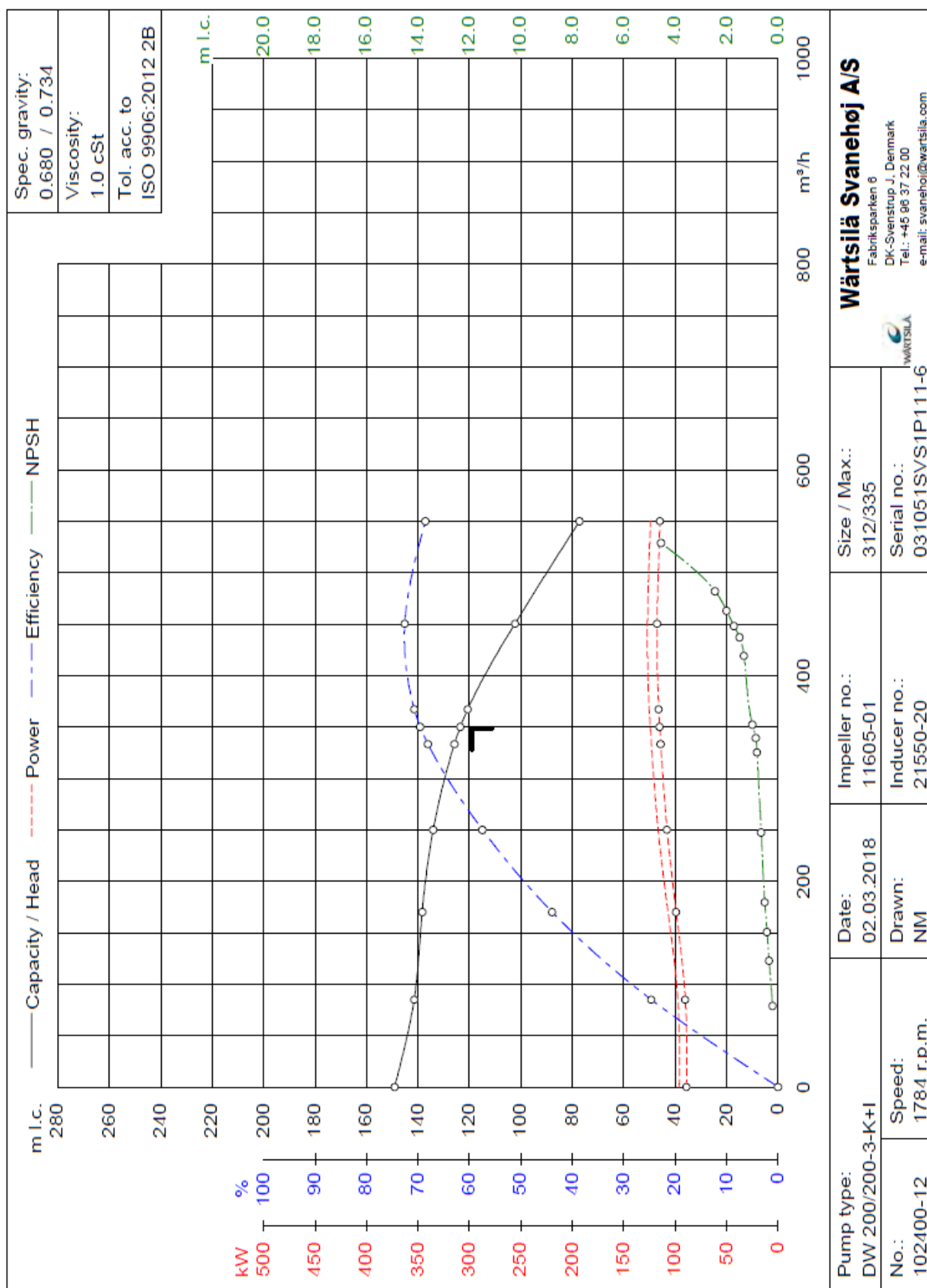
C4	OTHER RELEVANT TECHNICAL INFORMATION	UNIT	CLIPPER EIRENE
4.0	Rudder type	[Text]	Spade rudder with flap (Becker)
4.0.1	Number of rudders	[Pcs]	1
4.1	Type of propeller	[Text]	Fixed Pitch
4.1.1	Blades	[Pcs]	4
4.2	Mewis Duct	[Yes/No]	YES
4.3	Ballast Water Treatment System	[Yes/No]	YES
4.3.1	Type	[Text]	Techcross (Electrolysis)
4.4	Oily Water Separator	[Yes/No]	YES
4.4.1	Type	[Text]	Centrifugal
4.4.2	Concentration	[ppm]	5

3.16 ENVIRONMENTAL/PERFORMANCE TECHNOLOGIES INSTALLED

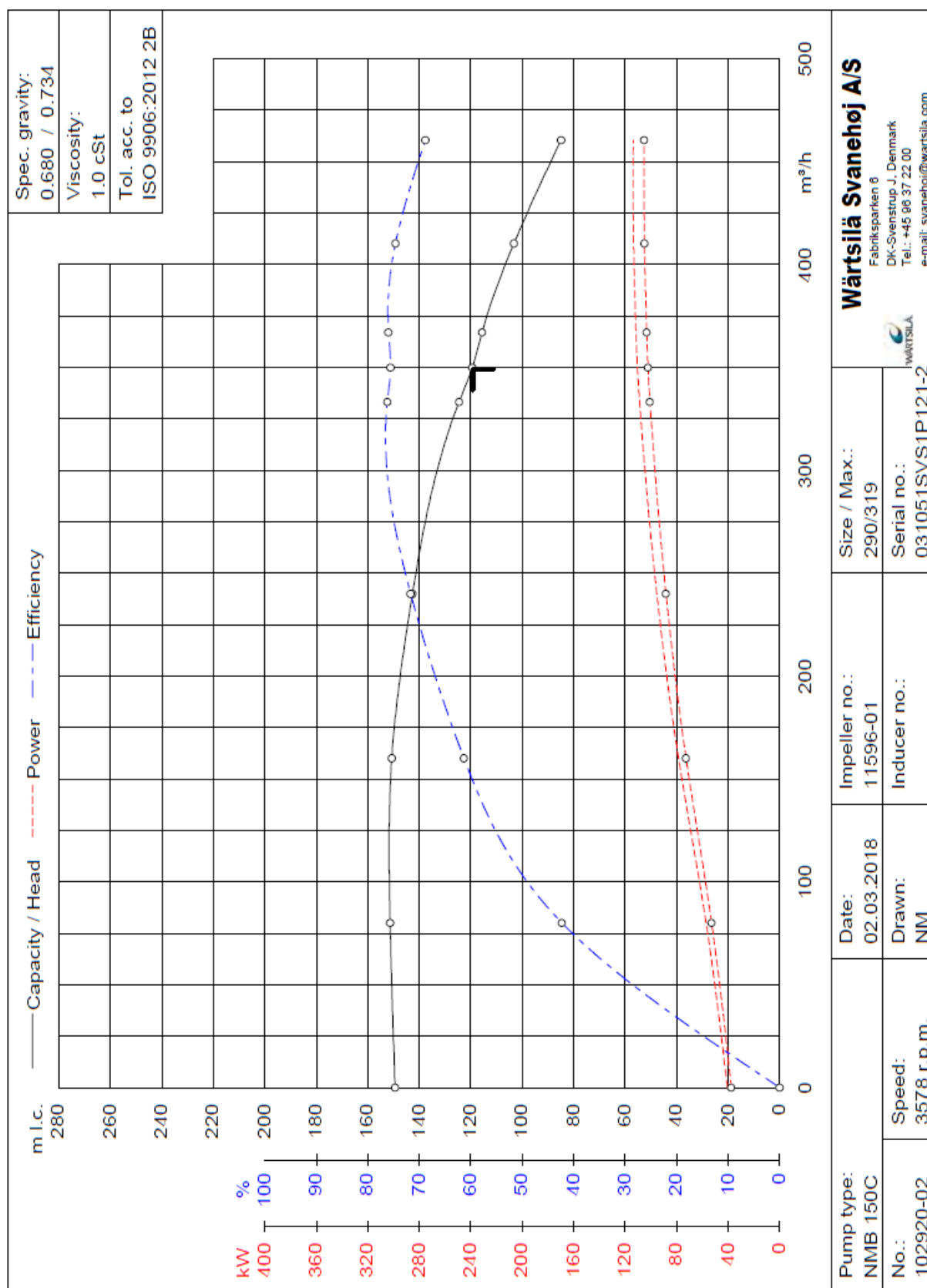
CODE	C5 ENVIRONMENTAL/PERFORMANCE TECHNOLOGIES INSTALLED	UNIT	CLIPPER EIRENE
5.0	EEDI (Energy Efficiency Design Index)	[-]	10.60
5.1	ESI (Environmental Ship Index)	[-]	91.70
5.2	Electronic Vessel Performance Monitoring	[Yes/No]	YES
5.3	Exhaust Gas Recirculation	[Yes/No]	YES
5.4	Selective Catalytic Reduction	[Days]	YES
5.4.1	Urea Storage Tank Capacity	[m³]	7
5.4.2	Urea Storage Tank Capacity	[Yes/No]	5
5.5	Trim optimization tests	[Text]	YES
5.6	Antifouling	[Text]	HIGH-END

4 APPENDIX/DRAWINGS

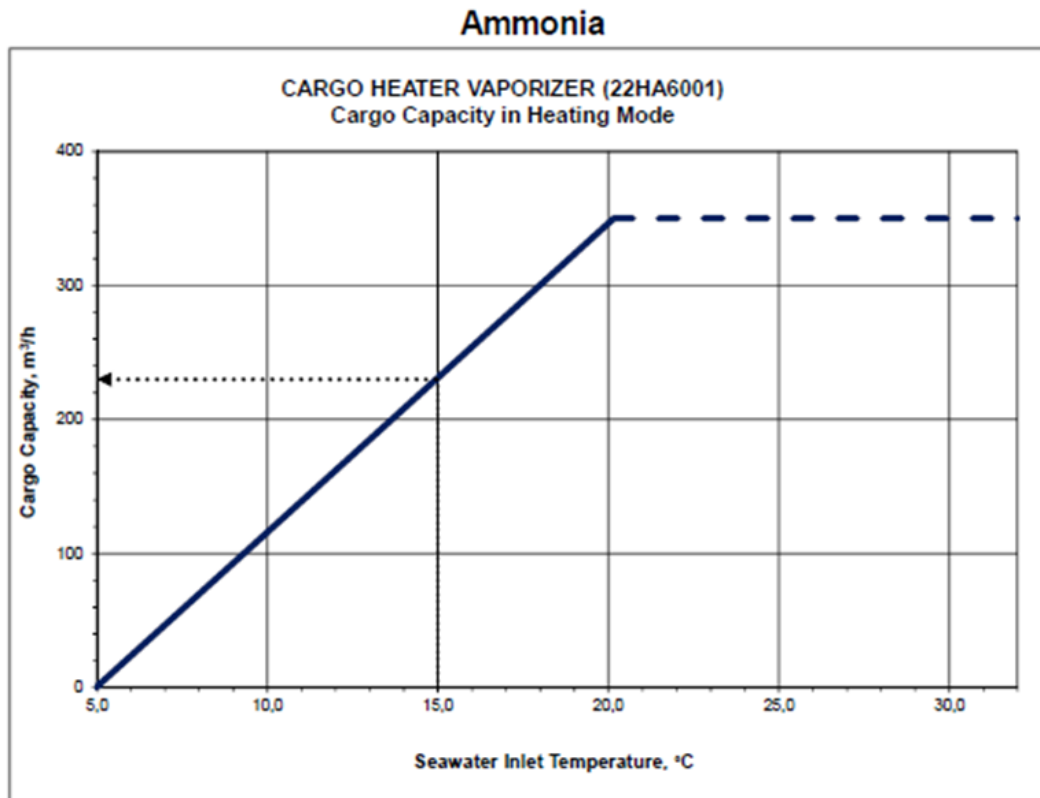
4.11 CARGO PUMPS



4.12 BOOSTER PUMPS



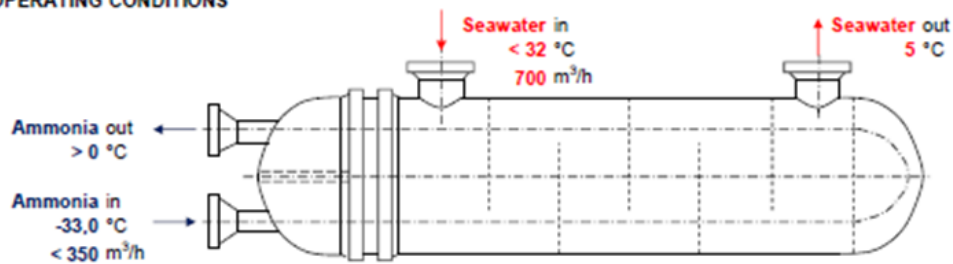
4.13 RE-HEATER CAPACITY, AMMONIA



CARGO HEATER / VAPORIZER

TAG	22HA6001
Design	Wärtsilä Gas Solutions AS
Make	Wuxi Chemical Equipment Co. Ltd.
Type	Shell & Tube (BEU)

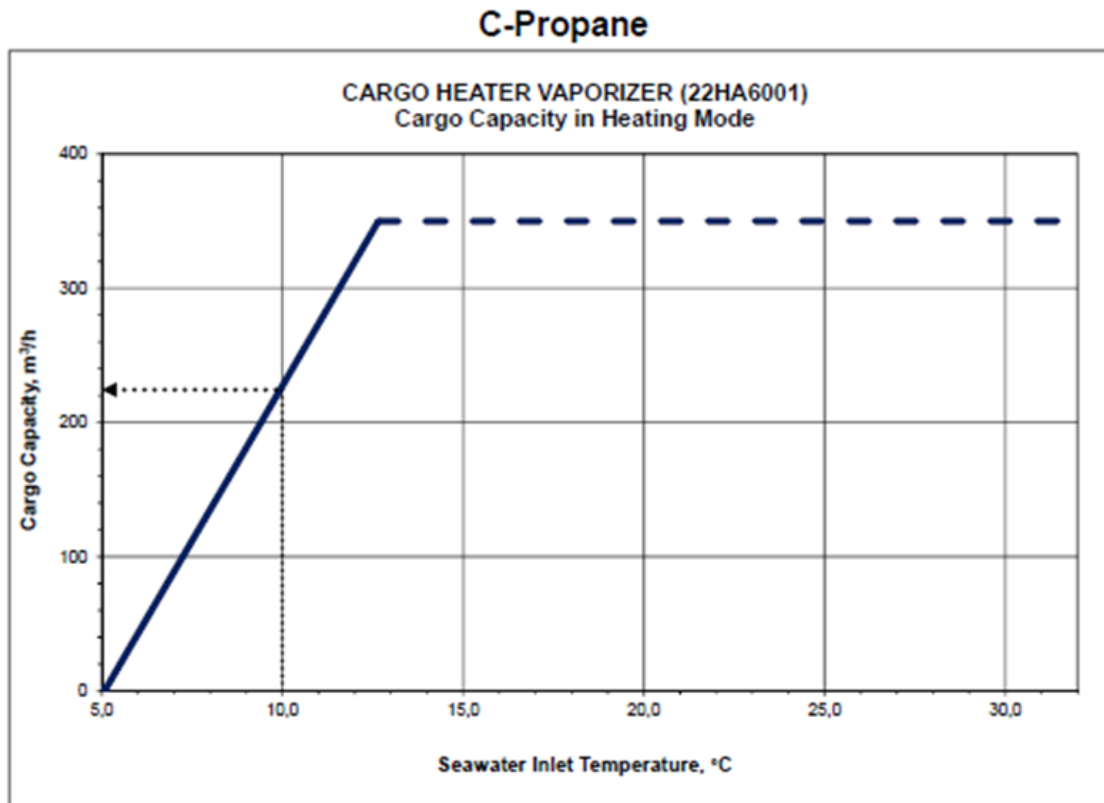
OPERATING CONDITIONS



EXAMPLE

Given:	Seawater Inlet Temperature	15 °C
Found:	Cargo Capacity	230 m³/h

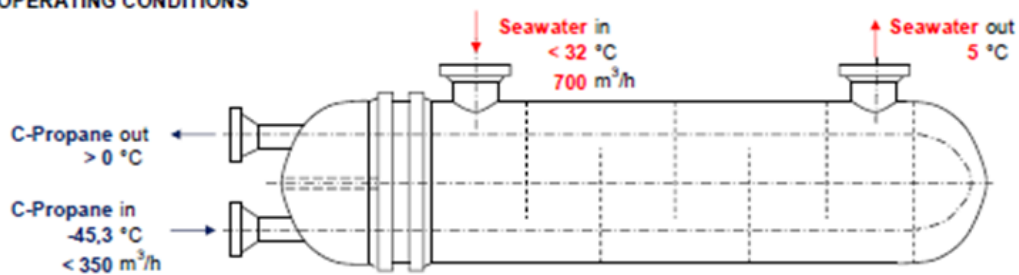
4.14 RE-HEATER CAPACITY, PROPANE



CARGO HEATER / VAPORIZER

TAG	22HA6001
Design	Wärtsilä Gas Solutions AS
Make	Wuxi Chemical Equipment Co. Ltd.
Type	Shell & Tube (BEU)

OPERATING CONDITIONS



EXAMPLE

Given:	Seawater Inlet Temperature	10 °C
Found:	Cargo Capacity	224 m³/h

4.15 MOORING DIAGRAM

