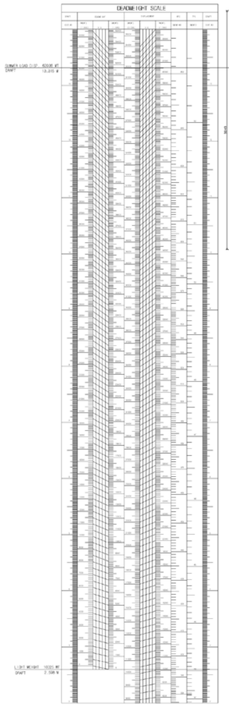
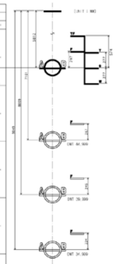
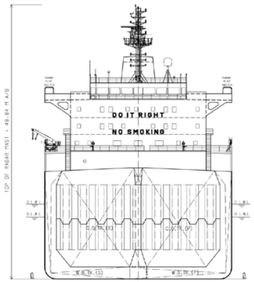
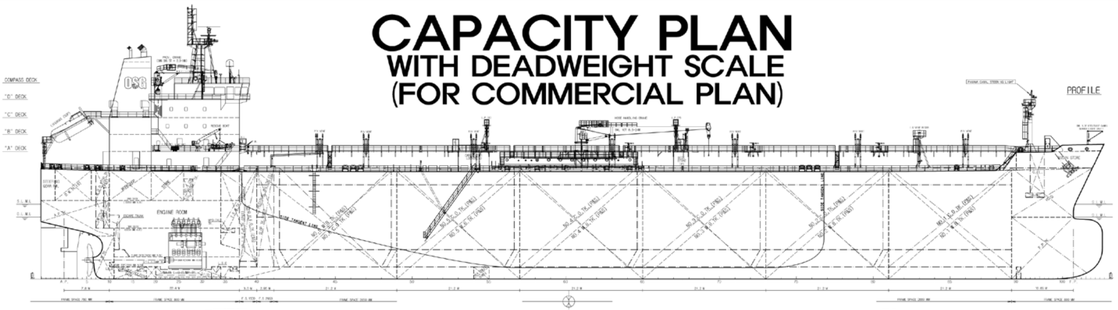
CAPACITY PLAN
WITH DEADWEIGHT SCALE
(FOR COMMERCIAL PLAN)

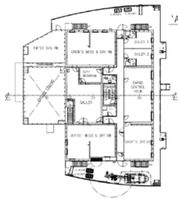


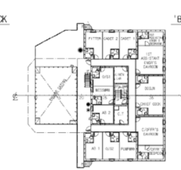


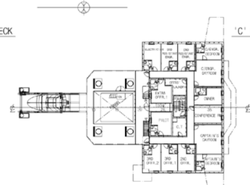


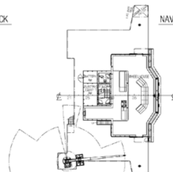
MIDSHIP SECTION

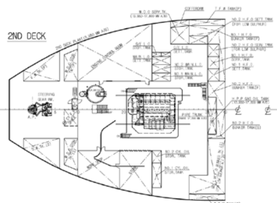


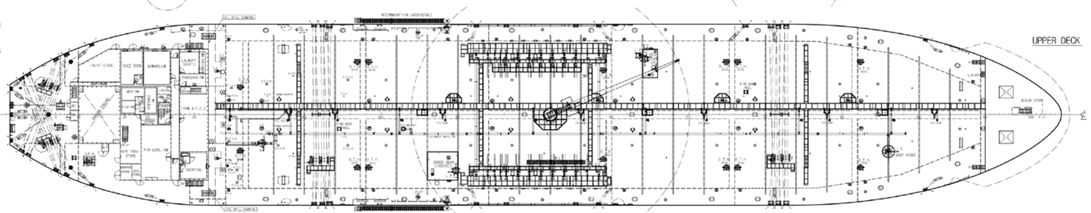


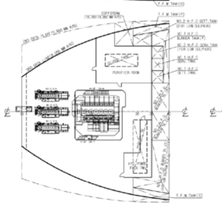


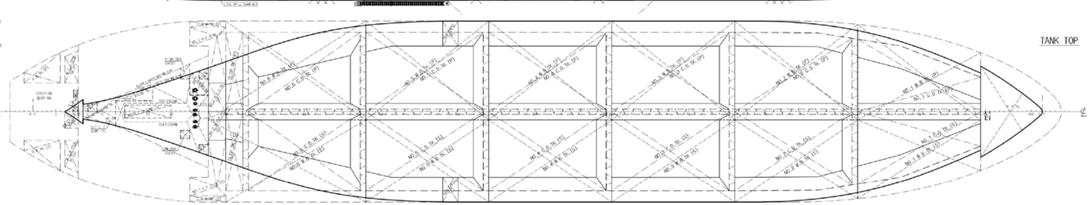












SEASONAL FREEBOARD	FREEBOARD (M)	DRAFT EXIST (M)	DISPLACEMENT (MT)	DEADWEIGHT (MT)
TF	8.258	13.889	83454	53129
F	8.516	13.710	82039	51714
T	9.326	13.502	80485	50160
S	9.512	13.316	80036	50711
W	9.709	13.038	80059	51284

INTERNATIONAL TONNAGE	
GROSS TONNAGE	79,483
NET TONNAGE	14,187

• 44,999 MT DEADWEIGHT

SEASONAL FREEBOARD	FREEBOARD (M)	DRAFT EXIST (M)	DISPLACEMENT (MT)	DEADWEIGHT (MT)
F	8.804	12.250	55034	44999
S	7.101	10.596	55034	44999

• 39,999 MT DEADWEIGHT

SEASONAL FREEBOARD	FREEBOARD (M)	DRAFT EXIST (M)	DISPLACEMENT (MT)	DEADWEIGHT (MT)
F	7.824	11.302	50034	39999
S	9.069	11.058	50034	39999

• 34,999 MT DEADWEIGHT

SEASONAL FREEBOARD	FREEBOARD (M)	DRAFT EXIST (M)	DISPLACEMENT (MT)	DEADWEIGHT (MT)
F	8.405	10.302	45034	34999
S	9.049	10.178	45034	34999

CARGO TANKS

(S.G. = FULL RATIO = 1.025 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	VOLUME 98% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
No.1 C.O.T.(P)	91.0 ~ 99.5	3446.0	3377.1	2734	94.176	1.274	15.787	1929
No.1 C.O.T.(S)	91.0 ~ 99.5	3447.1	3378.2	2735	94.176	1.274	15.787	1929
No.2 C.O.T.(P)	82.0 ~ 91.0	4984.5	4884.8	3955	86.500	1.222	15.787	2790
No.2 C.O.T.(S)	82.0 ~ 91.0	4984.5	4884.8	3955	86.500	1.222	15.787	2790
No.3 C.O.T.(P)	73.0 ~ 82.0	4984.5	4884.8	3955	78.000	1.222	15.787	2790
No.3 C.O.T.(S)	73.0 ~ 82.0	4984.5	4884.8	3955	78.000	1.222	15.787	2790
No.4 C.O.T.(P)	64.0 ~ 73.0	4984.5	4884.8	3955	69.500	1.222	15.787	2790
No.4 C.O.T.(S)	64.0 ~ 73.0	4984.5	4884.8	3955	69.500	1.222	15.787	2790
No.5 C.O.T.(P)	55.0 ~ 64.0	4984.5	4884.8	3955	60.000	1.222	15.787	2790
No.5 C.O.T.(S)	55.0 ~ 64.0	4984.5	4884.8	3955	60.000	1.222	15.787	2790
No.6 C.O.T.(P)	46.0 ~ 55.0	4984.5	4884.8	3955	51.000	1.222	15.787	2790
No.6 C.O.T.(S)	46.0 ~ 55.0	4984.5	4884.8	3955	51.000	1.222	15.787	2790
SLOP T.K.(P)	40.0 ~ 46.0	1815.4	1779.1	1440	42.500	1.222	15.787	1016
SLOP T.K.(S)	40.0 ~ 46.0	1815.4	1779.1	1440	42.500	1.222	15.787	1016
TOTAL		49,000.1	48,020.1	38,864	69.000	1.222	15.787	27,400

WATER BALLAST TANKS

(S.G. = FULL RATIO = 1.025 • 100.0)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
F.P.T.(S)	99.0 ~ F.P.	1355.7	1390.6	108.000	9.470	14.400	1920
No.1 S.B.T.(P)	91.0 ~ 99.0	1736.1	1780.5	1.143	15.100	4157	
No.1 S.B.T.(S)	91.0 ~ 99.0	1736.1	1780.5	1.143	15.100	4157	
No.2 W.B.T.(P)	82.0 ~ 91.0	3469.4	3556.6	86.500	0.000	15.787	0
No.2 W.B.T.(S)	82.0 ~ 91.0	3469.4	3556.6	86.500	0.000	15.787	0
No.3 W.B.T.(P)	73.0 ~ 82.0	3469.4	3556.6	78.000	0.000	15.787	0
No.3 W.B.T.(S)	73.0 ~ 82.0	3469.4	3556.6	78.000	0.000	15.787	0
No.4 W.B.T.(P)	64.0 ~ 73.0	3469.4	3556.6	69.500	0.000	15.787	0
No.4 W.B.T.(S)	64.0 ~ 73.0	3469.4	3556.6	69.500	0.000	15.787	0
No.5 W.B.T.(P)	55.0 ~ 64.0	3469.4	3556.6	60.000	0.000	15.787	0
No.5 W.B.T.(S)	55.0 ~ 64.0	3469.4	3556.6	60.000	0.000	15.787	0
No.6 W.B.T.(P)	46.0 ~ 55.0	3469.4	3556.6	51.000	0.000	15.787	0
No.6 W.B.T.(S)	46.0 ~ 55.0	3469.4	3556.6	51.000	0.000	15.787	0
A.P.T.	~ 10.0	1815.4	1861.3	5.000	9.470	14.400	1920
TOTAL		36,000.0	36,900.0	69.000	0.000	15.787	0

FUEL OIL TANKS

(S.G. = FULL RATIO = 0.900 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
No.1 F.O.T.(P)	91.0 ~ 99.5	1.442	1.298	94.176	1.274	15.787	1929
No.1 F.O.T.(S)	91.0 ~ 99.5	1.442	1.298	94.176	1.274	15.787	1929
No.2 F.O.T.(P)	82.0 ~ 91.0	2.087	1.878	86.500	1.222	15.787	2790
No.2 F.O.T.(S)	82.0 ~ 91.0	2.087	1.878	86.500	1.222	15.787	2790
No.3 F.O.T.(P)	73.0 ~ 82.0	2.087	1.878	78.000	1.222	15.787	2790
No.3 F.O.T.(S)	73.0 ~ 82.0	2.087	1.878	78.000	1.222	15.787	2790
No.4 F.O.T.(P)	64.0 ~ 73.0	2.087	1.878	69.500	1.222	15.787	2790
No.4 F.O.T.(S)	64.0 ~ 73.0	2.087	1.878	69.500	1.222	15.787	2790
No.5 F.O.T.(P)	55.0 ~ 64.0	2.087	1.878	60.000	1.222	15.787	2790
No.5 F.O.T.(S)	55.0 ~ 64.0	2.087	1.878	60.000	1.222	15.787	2790
No.6 F.O.T.(P)	46.0 ~ 55.0	2.087	1.878	51.000	1.222	15.787	2790
No.6 F.O.T.(S)	46.0 ~ 55.0	2.087	1.878	51.000	1.222	15.787	2790
SLOP T.K.(P)	40.0 ~ 46.0	1.815	1.633	42.500	1.222	15.787	1016
SLOP T.K.(S)	40.0 ~ 46.0	1.815	1.633	42.500	1.222	15.787	1016
TOTAL		30.0	27.0	69.000	1.222	15.787	27,400

LUBRICATING OIL TANKS

(S.G. = FULL RATIO = 0.900 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
M/E L.O.SUMP T.K.(S)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.STOR.T.K.(S)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.SUMP T.K.(C)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.STOR.T.K.(C)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.SUMP T.K.(P)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.STOR.T.K.(P)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.SUMP T.K.(P)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
M/E L.O.STOR.T.K.(P)	24.0 ~ 40.0	34.6	31.1	0.470	45.500	1	
TOTAL		276.8	249.1	0.470	45.500	1	

FRESH WATER TANKS

(S.G. = FULL RATIO = 1.000 • 100.0)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
F.W.T.(P)	~ 9.0	25.1	25.1	4.500	20.000	7.000	57
F.W.T.(S)	~ 9.0	25.1	25.1	4.500	20.000	7.000	57
TOTAL		50.2	50.2	4.500	20.000	7.000	114

TECH. FRESH WATER TANKS

(S.G. = FULL RATIO = 1.000 • 100.0)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
F.W.H.TK.(P)	91.0 ~ 99.0	119.5	119.5	94.500	18.000	15.787	23
F.W.H.TK.(S)	91.0 ~ 99.0	119.5	119.5	94.500	18.000	15.787	23
TOTAL		239.0	239.0	94.500	18.000	15.787	46

COOLING WATER TANK

(S.G. = FULL RATIO = 1.000 • 100.0)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
C.W.T.(P)	91.0 ~ 99.0	27.5	27.5	94.500	18.000	15.787	5
C.W.T.(S)	91.0 ~ 99.0	27.5	27.5	94.500	18.000	15.787	5
TOTAL		55.0	55.0	94.500	18.000	15.787	10

DIESEL OIL TANKS

(S.G. = FULL RATIO = 0.900 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	VOLUME 98% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
D.O.S.TK.(P)	91.0 ~ 99.0	38.0	38.0	32.5	0.470	40.500	14	
D.O.S.TK.(S)	91.0 ~ 99.0	38.0	38.0	32.5	0.470	40.500	14	
D.O.S.TK.(C)	91.0 ~ 99.0	38.0	38.0	32.5	0.470	40.500	14	
TOTAL		114.0	114.0	97.5	0.470	40.500	42	

F.O. OVERFLOW TANK

(S.G. = FULL RATIO = 0.900 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	VOLUME 98% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
F.O.O.F.TK.(P)	91.0 ~ 99.0	6.0	6.0	5.4	94.500	18.000	15.787	1
TOTAL		12.0	12.0	10.8	94.500	18.000	15.787	2

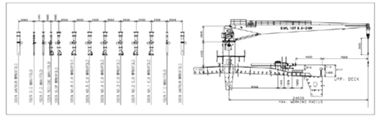
MISCELLANEOUS TANKS

(S.G. = FULL RATIO = 0.900 • 98.0 %)

COMPARTMENTS	LOCATION (FRAME)	VOLUME 100% (M3)	VOLUME 98% (M3)	WEIGHT (MT)	CENTER OF GRAVITY LCG (M) FROM MIDSHIP	CENTER OF GRAVITY VCG (M) FROM BASE	CENTER OF GRAVITY TCG (M) FROM C/L	FREE SURFACE MOMENT (MT-M)
M/E LUB.OIL DRAIN T.K.(P)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E LUB.OIL DRAIN T.K.(S)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E LUB.OIL SUMP T.K.(C)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E LUB.OIL DRAIN T.K.(C)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E L.O.SUMP T.K.(P)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E L.O.DRAIN T.K.(P)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E L.O.SUMP T.K.(P)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
M/E L.O.DRAIN T.K.(P)	24.0 ~ 40.0	19.0	19.0	17.1	0.470	45.500	1	
TOTAL		152.0	152.0	136.8	0.470	45.500	8	

• REMARKS
1. AS FOR S.G.0.... "-" DENOTE USING BRAND "WATER WEIGHT"
2. W.W.(100%) S.G. MEANS "STANDARD WEIGHT"
3. L.T. = LONG TON
4. M = METER

DETAIL OF MANIFOLD



MANIFOLD DIMENSIONS

CARGO MANIFOLD REDUCER

SIZE	SKETCH	MATERIAL	REMARK
12" X 8"		ASTM A106 GR.B	FOR MANIFOLD VALVE
10" X 8"			
8" X 6"			
12" X 6"		ASTM A106 GR.B	WELDING ENDS
10" X 6"			
8" X 6"			
6" X 4"			

BUNKER MANIFOLD REDUCER(EXCENTRIC)

SIZE	SKETCH	MATERIAL	REMARK
6" X 4"		MILD STEEL	FOR MANIFOLD VALVE
4" X 3"			
6" X 4"		MILD STEEL	WELDING ENDS
4" X 3"			

KATSUR MANIFOLD REDUCER

SIZE	SKETCH	MATERIAL	REMARK
12" X 10"		MILD STEEL	FOR MANIFOLD VALVE
12" X 10"			WELDING ENDS

MACHINERY EQUIPMENT

EQUIPMENT		Q'TY	SPECIFICATION	MAKER
MAIN ENGINE		1	TYPE : HYUNDAI-SMP DOUBLE-ACTING 2-STROKE, SINGLE ACTING MCR : 9,480 kW x 127.0 RPM NCR : 8,530 kW x 122.8 RPM	HHI
PROPELLER		1	TYPE : AEROFOIL, SOLID KEYLESS PROPELLER MATERIAL : NICKEL ALUMINUM BRONZE, 5.0M DIA. X 4 BLADE	HHI
AUXILIARY BOILER		1	TYPE : AUTO., VERTICAL, FORCED DRAFT, F.O.FIRED/GAS EVAPORATION : 10,000 KG/H STEAM : 7 KG/CM2G, SATURATED	KANGRIM
EXHAUST GAS BOILER		1	TYPE : VERTICAL, FORCED CIRCULATING, SMOKE TUBE TYPE EVAPORATION : 1,100 KG/H STEAM : 7 KG/CM2G, SATURATED	KANGRIM
AUX. GENERATOR	DIESEL ENGINE	3	TYPE : FOUR STROKE, TRUNK PISTON, IN-LINE TYPE CAPACITY : 787.5KW @ 720 RPM	HHI
	GENERATOR	3	TYPE : REVOLVING FIELD, SELF VENTILATED, BRUSHLESS CAPACITY : 730 KW @ 720 RPM	HHI
EMERGENCY GENERATOR	DIESEL ENGINE	1	TYPE : FOUR STROKE, TRUNK PISTON, IN-LINE TYPE CAPACITY : ABT. 195 KW @ 1,800 RPM	HHI
	GENERATOR	1	TYPE : REVOLVING FIELD, SELF VENTILATED, BRUSHLESS CAPACITY : 180 KW @ 1,800 RPM	STX
M.F.O. PURIFIER		2	TYPE : AUTO., SELF-CLEANING, TOTAL DISCHARGE CAPACITY : 2,500 L/H (380 KST AT 50°C BWE, S.G.0.991)	ALFA-LAVAL
L.O. PURIFIER		2	TYPE : AUTO., SELF-CLEANING, TOTAL DISCHARGE CAPACITY : 1,600 L/H (DETERGENT OIL OF SAE #30 AT 40 C)	ALFA-LAVAL
STEERING GEAR		1	TYPE : ELECTRO-HYDRAULIC ROTARY VANE TYPE WORKING TORQUE : 656 t/m RUDDER ANGLE : 2x35 DEG.	Rolls-Royce Marine

PUMP

EQUIPMENT	Q'TY	SPECIFICATION	MAKER
CARGO TANK PUMP	12	TYPE : SUBMERGED, CENTRIFUGAL, IMO MOTOR, TOTLON CAPACITY : 600 M3/H X 125 MTH	FRANK MOHN
SLOP TANK PUMP	2	TYPE : SUBMERGED, CENTRIFUGAL, IMO MOTOR, TOTLON CAPACITY : 300 M3/H X 125 MTH	FRANK MOHN
WATER BALLAST PUMP	2	TYPE : SUBMERGED, CENTRIFUGAL, IMO MOTOR CAPACITY : 750 M3/H X 25 MTH	FRANK MOHN
F.W.E. BILGE & G.S. PUMP	2	TYPE : ELECTRIC MOTOR, VERTICAL CENTRIFUGAL CAPACITY : 115/280 M3/H @ 30/90 MTH	TAIHO KIKAI

PARALLEL BODY LENGTH

[UNIT : M]

CONDITION	TO AFT	TO FWD	TOTAL
LIGHT SHIP COND. (Cb= 0.05 M, DF.: 0.45 M)	19.420	28.379	47.818
NORMAL BALLAST DEP. COND. (Cb= 7.27 M, DF.: 6.38 M)	35.928	43.959	79.887
DESIGN DRAFT (Cb= 11.00 M, DF.: 11.00 M)	50.465	44.000	94.465
SCANTLING DRAFT (Cb= 13.30 M, DF.: 13.30 M)	56.061	44.000	100.061

PAINT AREA

[UNIT : M2]

ZONE		PAINT COLOR	PAINTING AREA
SIDE SHELL	FLAT BOTTOM	RED	3700
	SIDE BOTTOM	RED	4600
	TOP SIDE & BULWARK	BLACK	3500
UPP.DECK & F'CLE DECK	EXPOSED DECK	GREEN	10250
DECK HOUSE & ENGINE CASING	OUTSIDE	WHITE	2950

PANAMA VISIBILITY

DECK EQUIPMENT

EQUIPMENT	Q'TY	SPECIFICATION	MAKER
ANCHOR	2	STOCKLESS HHP TYPE BOW ANCHOR 6,500 KG/SET	HUN HWA
ANCHOR CHAIN CABLE	1	FLASH BUTT WELDED STUD LINK CHAIN, DIA.73MM X 632.5M	DAI HWA ANCHOR CHAIN
LIFE BOAT	1	FREE-FALL TYPE(CHUTE) DAVIT), CAPACITY : 32 PERSONS	HYUNDAI LIFEBOAT
HOSE HANDLING CRANE	1	10 MT S.W.L., MAX.21M OUTREACH	SHIPBUILDING DIVISION & ENGINEERING
PROVISION CRANE	1	5 MT S.W.L., MAX.15M OUTREACH	DONGHWA MARINE CRANE
WINDLASS COMBINED BENCH	2	1 CABLE LIFTER, 2 MOORING DRUMS, 1 WARPING HEAD	AKER KVAERNER PUSNES AS
MOORING WINCH	4	16 TON X 15 M/MIN. (2 MOORING DRUM, 1 WARPING HEAD)	AKER KVAERNER PUSNES AS

NAVIGATION & COMMUNICATION EQUIPMENT

EQUIPMENT	Q'TY	MODEL	MAKER
MAGNETIC COMPASS	1	MC-1817(MZ)	SAMJOM
GYRO COMPASS	1	GM27005	YOKOGAWA
AUTO PILOT	1	PT500A-2-RE	YOKOGAWA
ECHO SOUNDER	1	FE-700	FURUNO
SPEED LOG	1	DS-80	FURUNO
RADAR	2	FAR-2827, FAR-2827	FURUNO
GNPS NAVIGATOR	2	GPS-150	FURUNO
VDR	1	SVDR-3000	SAMSUNG
NAVTEX RECEIVER	1	NX-700A	FURUNO
INMARSAT BROADBAND	1	FELCOM 500	FURUNO
PORTABLE VHF TRANSCEIVER	3	RYOM TR210	FURUNO
UHF TRANCEIVER	6	SP320	FURUNO
GMDSS RADIO STATION	1	RC-1900F	FURUNO
WEATHER FAX RECEIVER	1	FAX-410	FURUNO