

Topaz Rayyan

70 M - 8160 BHP - FiFi 1 - DP 2 - AHTSV / MPSV

Vessel Specifications



Vessel Specifications

Registration	
Year built / Builder	2005, Fujian South East Shipyard
Flag	Marshall Islands
Class	ABS, +A1, Fire Fighting Vessel Class 1, Offshore Support Vessel, E, +AMS, +DPS-2, SPS Compliant
Call sign	ABLA9 / 9349112
Managers	Topaz Marine

Dimensions

Length overall	70 m
Breadth moulded	16.8 m
Depth moulded	7.5 m
Draft max	6.1 m
Deadweight	2364 mt
Registered tonnage	GRT 2679 t / NRT 803 t

Machinery

Main engines	8160 bhp – 2 x 4080 bhp @ 750 rpm Wartsila 6L32
Propulsion	2 x CPP type, Wartsila Lips
Rudders	2 x Becker rudders
Bow thrusters	2 x 680 kw electric-driven Kawasaki KT-88B3 tunnel type (CPP); 10 t thrust
Stern thruster	1 x 680 kw electric-driven Kawasaki KT-88B3 tunnel type (CPP); 10 t thrust
Main generators	2 x 410 kw @ 1800 rpm Caterpillar 3408 DITA c/w Leroy Somer LSAM 47.1L9 440V,3Ph,60Hz
Emergency generator	1 x 60 kw @ 1800 rpm Olympian GEP 65-3 c/w Leroy Somer LL2014 440V,3Ph,60Hz
Shaft alternators	2 x 2300 kw @ 1800 rpm ABB AMG 500L4, 440V, 3PH , 60 Hz
Oily water separator	1 m ³ per hr with 15 ppm alarm
Sewage treatment plant	1 x 50 man per day , make: Jiangshu Nanji ECB 50 1 x 20 man per day, make: RWO

DP equipment

DP system	DP Class II, Marine Technology (MT) , Bridge Mate
References	2 x DGPS, 1 x Fanbeam, 1 x HIPAP 351, 1 x Radarscan (1200 m)

Deck crane

Main crane (Starboard aft)	Sormec Marine Crane, M460/4S SWL: 20 t @ 12 m, 4.5 t @ 36.5 m (Certified for Manriding)
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Capacities

Fuel oil	1250 m ³
Fresh water	387 m ³
Ballast / drill water	443 m ³
Liquid mud	490 m ³
Bulk cement	226 m ³ (4 x 2000 ft ³)
Foam / detergent	21 m ³ each
Clear deck area	400 m ²
Deck cargo capacity	800 mt @ 7.5t per m ²
Freezer / chiller	12 m ³ each
Rig chain lockers	74 m ³ each side

Vessel Specifications

Transfer rates

Fuel oil	1 x 200 m ³ per hr @ 90 m head
Fresh water	1 x 120 m ³ per hr @ 90 m head
Water ballast / drill water	1 x 150 m ³ per hr @ 90 m head
Liquid mud	2 x 75 m ³ per hr @ 240 m head; (SG2.5)
Bulk cement	2 x 20 m ³ per min @ 80 psi air compressors

Performance

Maximum speed	13 knots
Service speed	11 knots
Bollard pull	102 tonnes

Navigation and communication

Inmarsat C	1 x Furuno Felcom 12
GMDSS	1 x Furuno RC-1800T (Area 3)
SSB	1 x Furuno FS-1582-25 with built-in DSC
Radars	1 x Furuno FR 2115 (X Band), FR 2135S (S Band)
AIS	1 x Furuno FA-100
Autopilot	1 x Anschuetz Pilotstar D
Navtex receiver	1 x Furuno NX 500
Gyro compass	1 x Anschuetz Standard 20
Magnetic compass	1 x Cassens & Plath Reflector 5
Communications: data/fax/phone	1 x Fleet 77
Echo sounder	1 x Furuno FE 700 plus repeater FE720
SART	2 x McMurdo RT9
Speed log	1 x Furuno DS-80
Weather fax	1 x Furuno FAX 207
EPIRB	1 x McMurdo E3A
VHF radio	2 x Furuno FM 8500 with built-in DSC
Portable VHF radios	3 x McMurdo R2
VSAT System	1 x Astra

Towing, anchor-handling and mooring equipment

Anchor handling towing winch	1 x double drum waterfall type electro-hydraulic, make: Brattvaag
Upper drum wire capacity	1400 m (length) x 58 m (dia)
Lower drum wire capacity	1400 m (length) x 58 m (dia)
Rated pull (1st layer)	225 mt at 0-46 m/min
Brake holding	275 mt static at 1st layer for both drums
Shark jaws	1 set electro-hydraulic Kamfork SWL 400 mt
Towing pins	2 x electro-hydraulic with turn table top flaps
Tugger winch	2 x 10 mt at 0-24 m/min electro-hydraulic, make: Brattvaag
Rope reel for spare tow wire	1 x electro-hydraulic Make: Brattvaag Wire capacity: 1500 m (length) of 76 mm (dia)
Anchor windlass	1 x electro-hydraulic, make: Brattvaag suit for 230 m (length) x 60 m (dia)
Capstan	2 x 10 mt @ 0-25 m/min electro-hydraulic Brattvaag CM4110
Bow anchors	2 x 1980 kg anchors AC14
Chains	467.5 m x 48 mm (Ø) Grade U2 (each side)
Stern roller	5.00 m (L) x 2.50 m (dia); SWL 300 mt

Vessel Specifications

Fire-fighting and anti-pollution equipment

External

Fifi system	Class 1 with water curtain all around
Monitors – water / foam	1 x 300-1200 m3 per hr
– water	1 x 1200 m3 per hr
	Throw length / height: 120 m / 45 m
Fire pump	2 x 1700 m3 per hr @ 13 bar driven by front PTO of M/E
Oil dispersant system	1 set Unitor c/w 2 spray booms of 6 nozzles each

Internal

Emergency fire pump	1 x 35 m3 per hr @ 50 m head
BA recharging compressor	1 x 260 ltrs per min @ 300 bar
CO2 system	In engine room
Fire detection & alarm system	In living spaces & engine room

Safety equipment

Workboat FRC	1 x 13 men capacity
	Make: Noreq, with its own luffing davit and inboard Diesel engine
Rescue boat	6 persons c/w outboard petrol engine Mercury (40 ML) / 0N057874
Search lights	3 x 2000 w
Flood lights	5 x 1500 w
Liferafts	8 x 25 men (Solus approved)
Fixed gas detection system	Provided

Accommodation (72 bunks)

	1 x 2 = 2
	11 x 2 = 22
	12 x 4 = 48
Total	72
Hospital	1 x 1 berth cabin

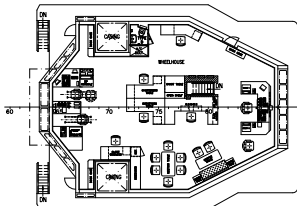
All cabins fully air-conditioned & c/w attached toilets.

Last revision January 2017

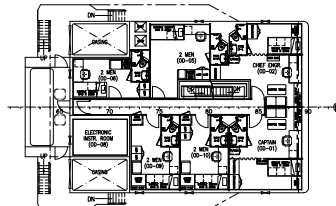
Tank Capacities

Tanks	SG	Fuel oil	Pot water	Drill water	Ballast water	Liquid mud	Brine M ³	Base oil	Glycol	Dry bulk	Oil recovery
	M ³	0.850	1.000	1.000	1.025	2.500	2.500	0.830	1.120	1.380	1.000
W.B./D.W. AP TK. (C)	51.73				53.03						
W.B./D.W. AP TK. (P)	27.81				28.50						
W.B./D.W. AP TK. (S)	27.81				28.50						
W.B./D.W. WING TK. (P)	39.64				40.63						
W.B./D.W. WING TK. (S)	39.64				40.63						
D.W./W.B. TK. (C)	105.76				108.4						
W.B. FP. TK. (C)	151.41				155.19						
No 1 F.W. WING TK. (P)	78.81			78.81							
No 1 F.W. WING TK. (S)	78.81			78.81							
No 2 FW. DB TK. (C)	49.14			49.14							
No 3 F.W. WING TK. (P)	55.48			55.48							
No 3 F.W. WING TK. (S)	55.48			55.48							
No 4 F.W. DB TK. (P)	34.97			34.79							
No 4 F.W. DB TK. (S)	34.97			34.79							
No. 1 F.O. DB TK. (P)	73.40	62.39									
No. 1 F.O. DB TK. (S)	73.40	62.39									
No. 2 F.O. DB TK. (P)	75.96	64.57									
No. 2 F.O. DB TK. (S)	76.90	65.36									
No. 3 F.O. WING. TK. (P)	230.40	195.84									
No. 3 F.O. WING. TK. (S)	230.40	195.84									
No 4 F.O. DB TK. (P)	31.28	26.59									
No 4 F.O. DB TK. (S)	31.28	26.59									
No 5 F.O. WING. TK. (P)	112.15	95.33									
No 5 F.O. WING. TK. (S)	112.15	95.33									
No 6 F.O. DB TK. (P)	33.56	28.52									
No 6 F.O. DB TK. (S)	33.56	28.52									
No 7 F.O. DB TK. (C)	54.43	46.26									
F.O. DAY TK. (S)	40.87	34.74									
F.O. DAY TK. (P)	40.87	34.74									
No 1 MUD TK. (P)	81.60					204.00					
No 1 MUD TK. (S)	81.60					204.00					
No 2 MUD TK. (P)	81.60					204.00					
No 2 MUD TK. (S)	81.60					204.00					
No 3 MUD TK. (P)	81.47					203.67					
No 3 MUD TK. (S)	81.47					203.67					
No. 1 CEMENT TK. (C)	56.50									77.97	
No. 2 CEMENT TK. (C)	56.50									77.97	
No. 3 CEMENT TK. (C)	56.50									77.97	
No. 4 CEMENT TK. (C)	56.50									77.97	
BILGE HOLDING TK. (S)	6.78										
DIRTY OIL TK. (P)	6.78										
FOAM TK. (P)	21.51										
DETERGENT TK. (S)	21.51										
No 1 HYD. OIL TK. (S)	5.29										
No 2 HYD. OIL TK. (S)	3.81										
No 3 HYD. OIL TK. (S)	9.05										
No 1 LUBE OIL TK. (P)	8.99										
No 1 LUBE OIL TK. (S)	8.99										
No 2 LUBE OIL TK. (P)	9.05										
RIG LKR. (P)	74.08										
RIG LKR. (S)	74.08										
Weight in Tons		1063.03		387.66	454.88	1223.35				311.88	
Volume in m³		1250.61		387.66	443.80	489.34				226.00	

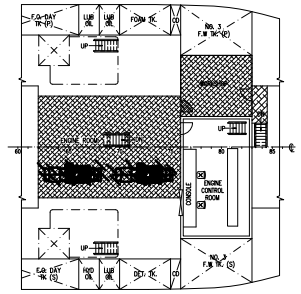
GA Specifications



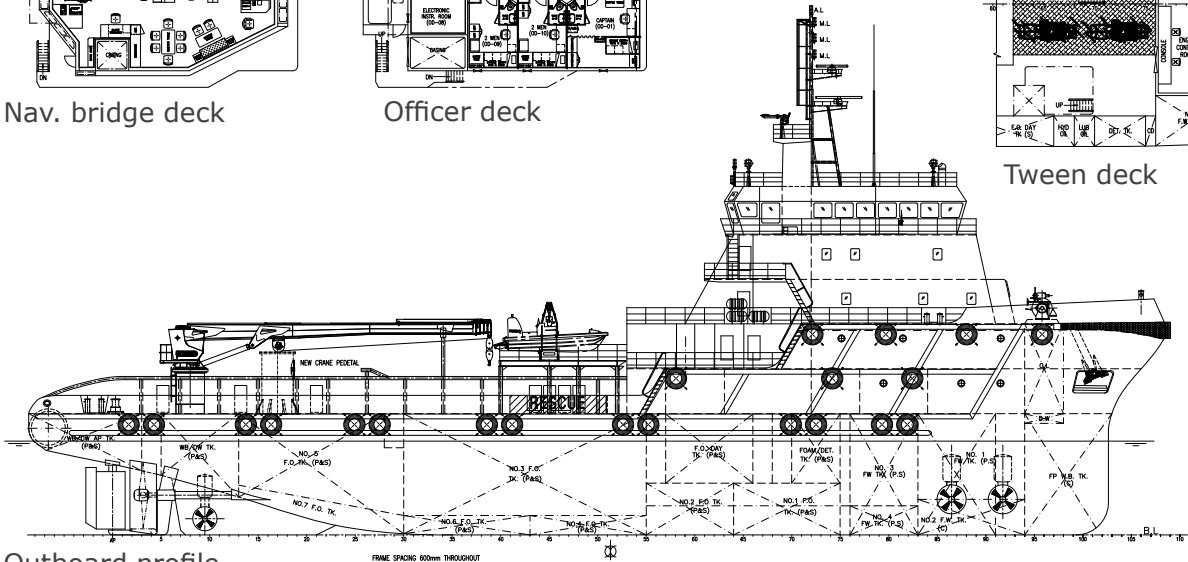
Nav. bridge deck



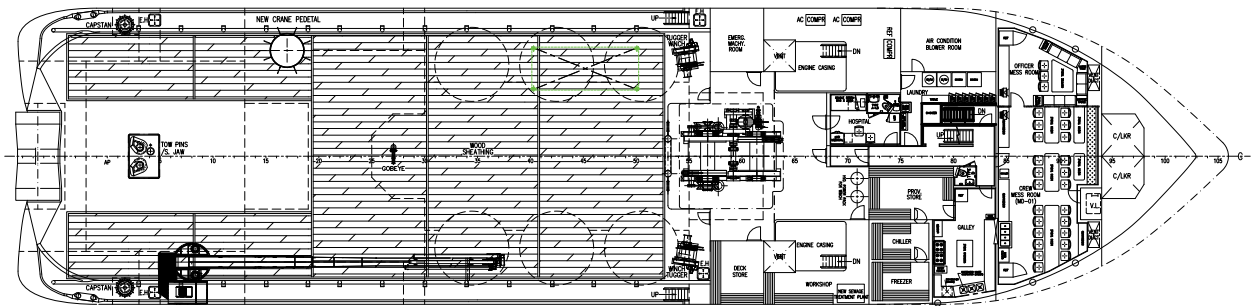
Officer deck



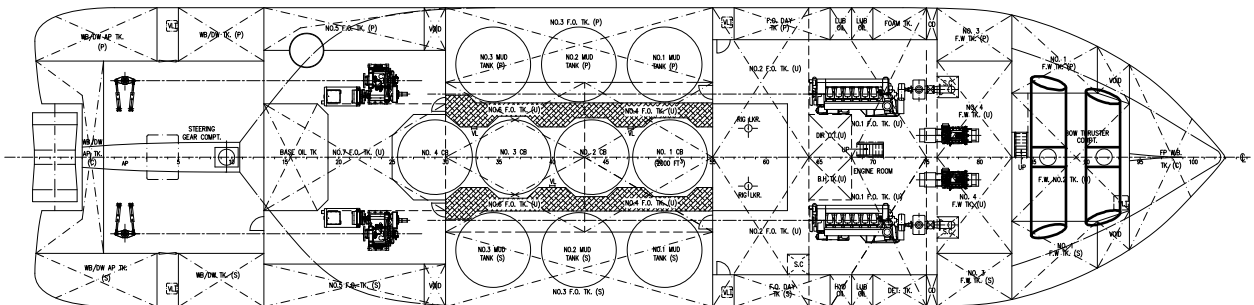
Tween deck



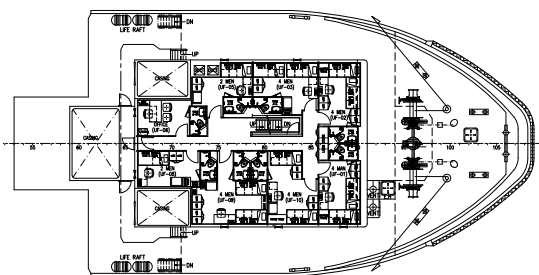
Outboard profile



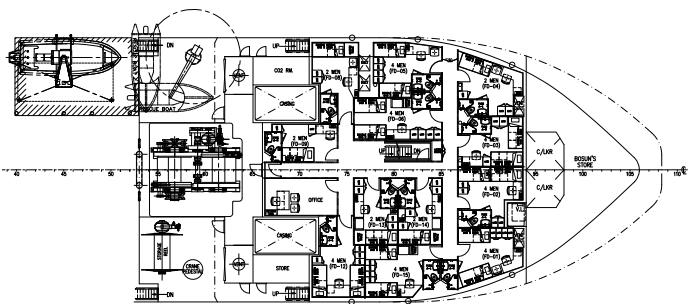
Main deck



Below main deck



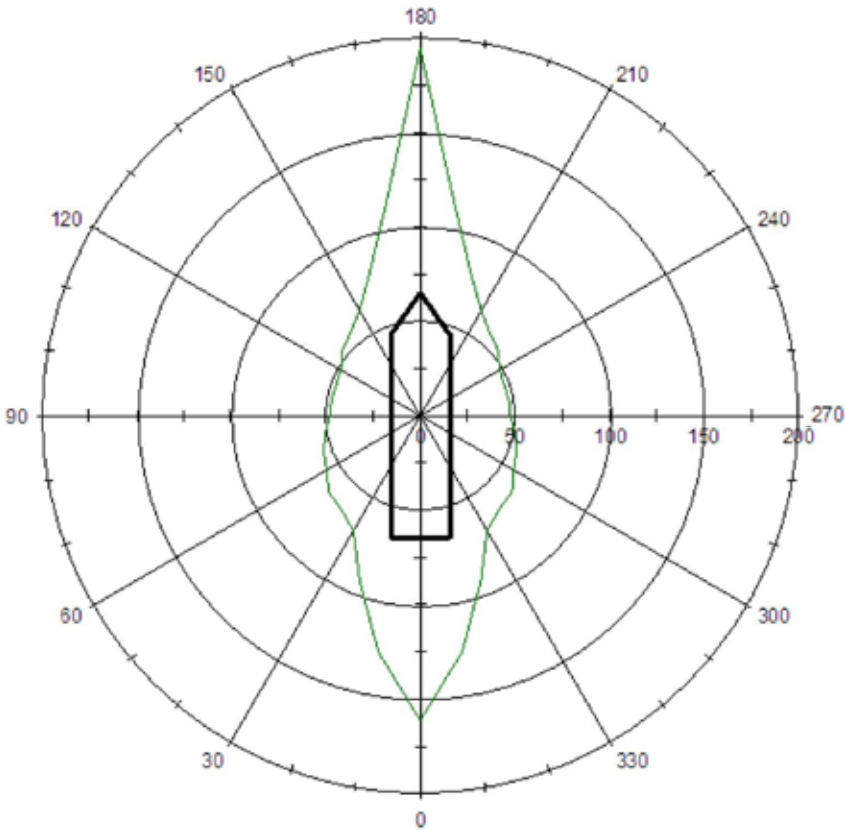
Upper forecastle deck



Forecastle deck

Capability Plots

1.0 knot of current, all thrusters online



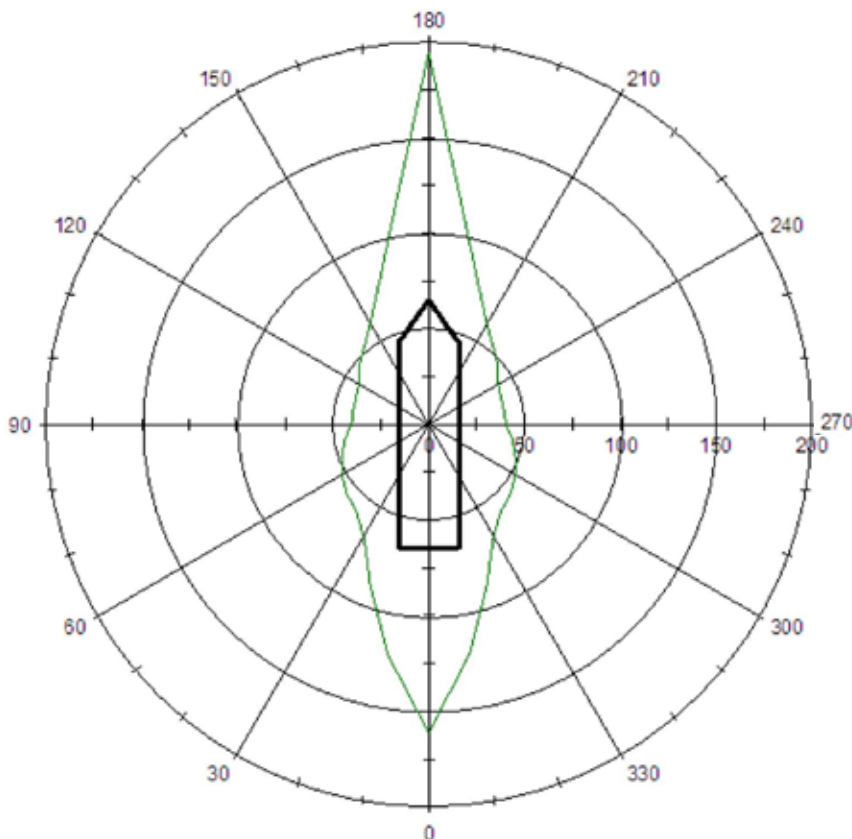
Bow tunnel 1	Online
Bow tunnel 2	Online
Aft tunnel	Online
Port main	Online
STBD main	Online

Max thruster utilization: 100%

Worst case is the environmental forces on the beam:

Current	1 knot
Wind speed	47.6 knots
Wave height	9.5 m
Peak period	14.5 s

2.0 knots of current, all thrusters online



Bow tunnel 1	Online
Bow tunnel 2	Online
Aft tunnel	Online
Port main	Online
STBD main	Online

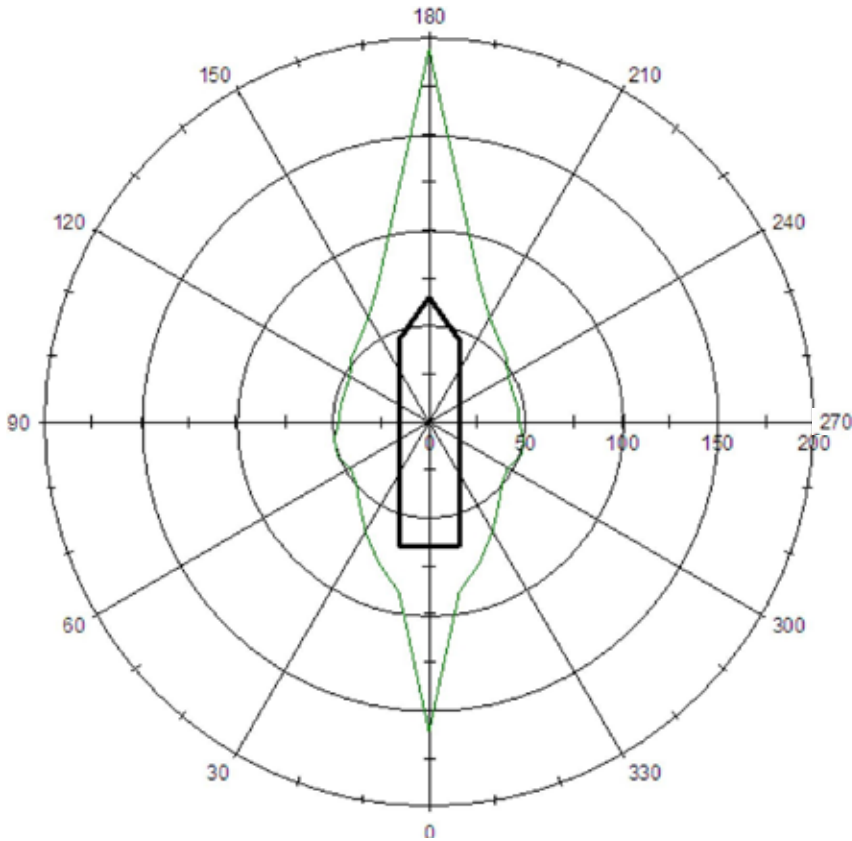
Max thruster utilization: 100%

Worst case is the environmental forces on the beam:

Current	2 knots
Wind speed	39.9 knots
Wave height	7.5 m
Peak period	12.9 s

Capability Plots

1.0 knot of current, aft tunnel online



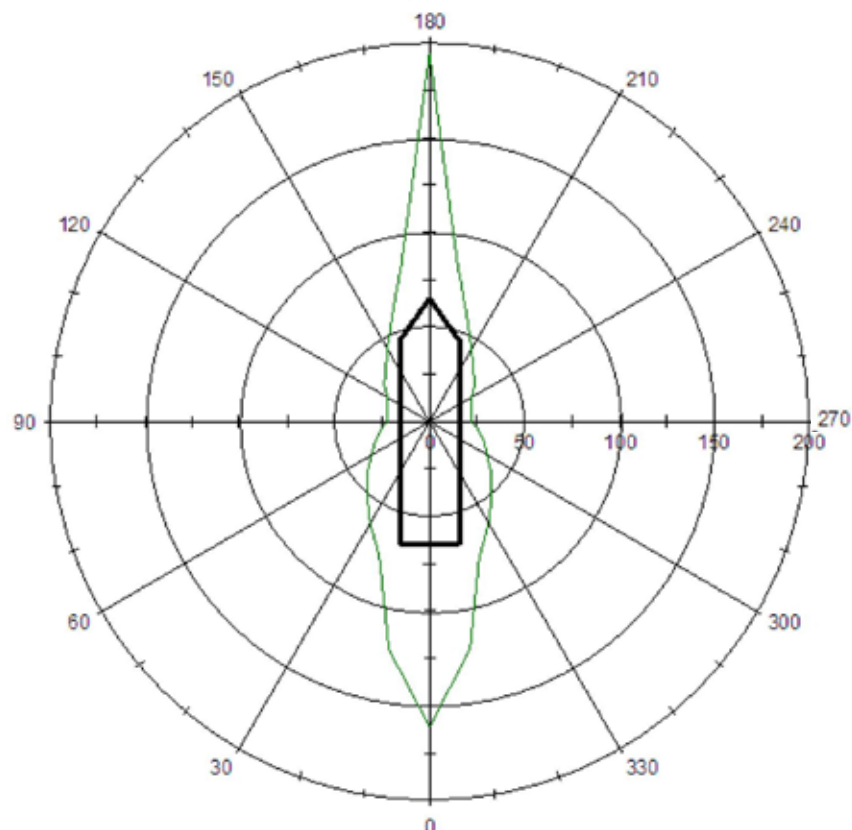
Bow tunnel 1	Online
Bow tunnel 2	Online
Aft tunnel	Offline
Port main	Online
STBD main	Online

Max thruster utilization: 100%

Worst case is the environmental forces on the beam:

Current	1 knot
Wind speed	46.5 knots
Wave height	9.2 m
Peak period	14.3 s

2.0 knots of current, bow tunnel 1 offline



Bow tunnel 1	Offline
Bow tunnel 2	Online
Aft tunnel	Online
Port main	Offline
STBD main	Online

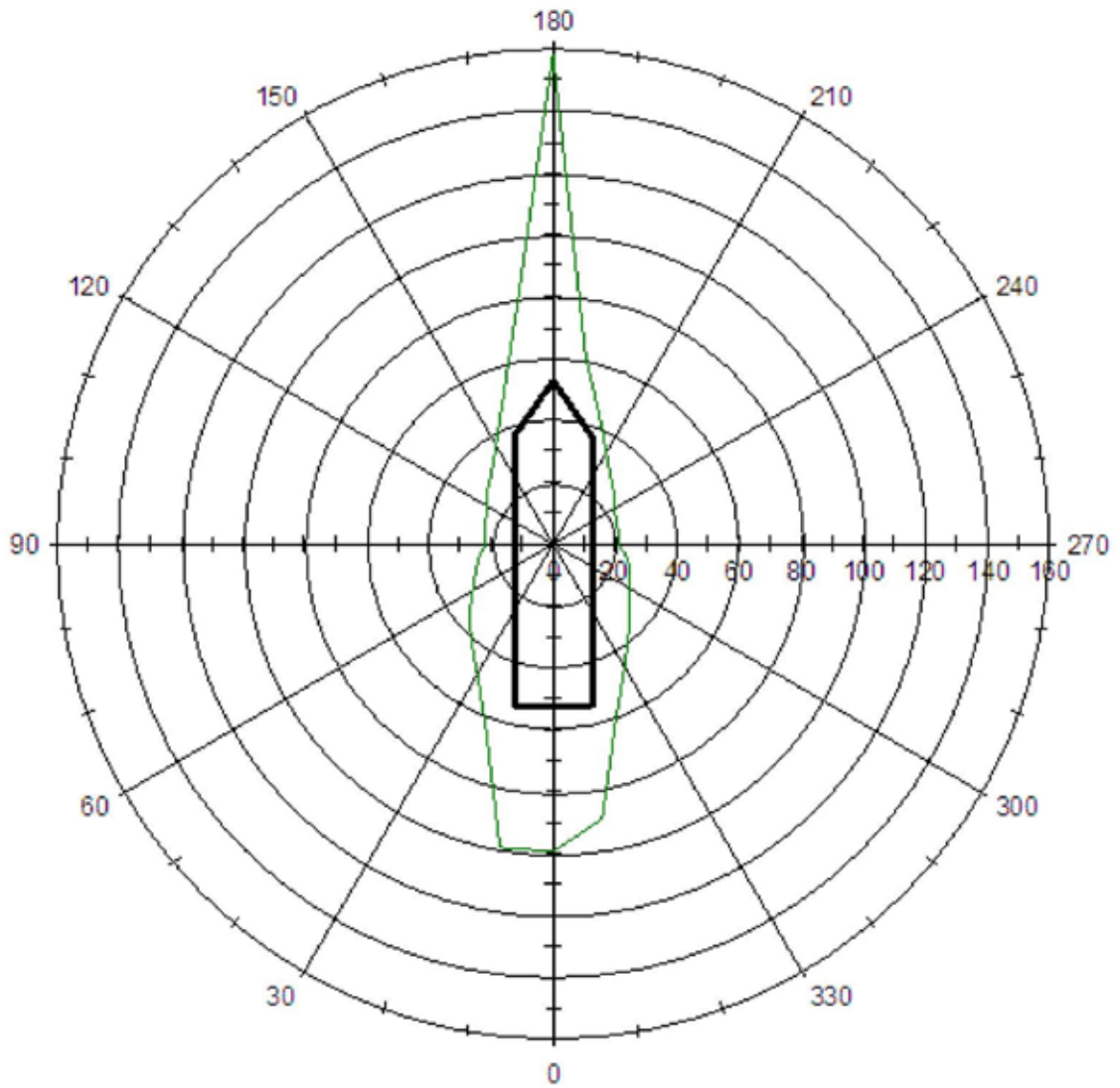
Max thruster utilization: 100%

Worst case is the environmental forces on the beam:

Current	2 knots
Wind speed	22.3 knots
Wave height	3.7 m
Peak period	9.1 s

Capability Plots

1.0 knot of current, loss of 1 bus



Bow tunnel 1	Online
Bow tunnel 2	Online
Aft tunnel	Online
Port main	Offline
STBD main	Online

Max thruster utilization: 100%

Worst case is the environmental forces on the beam:

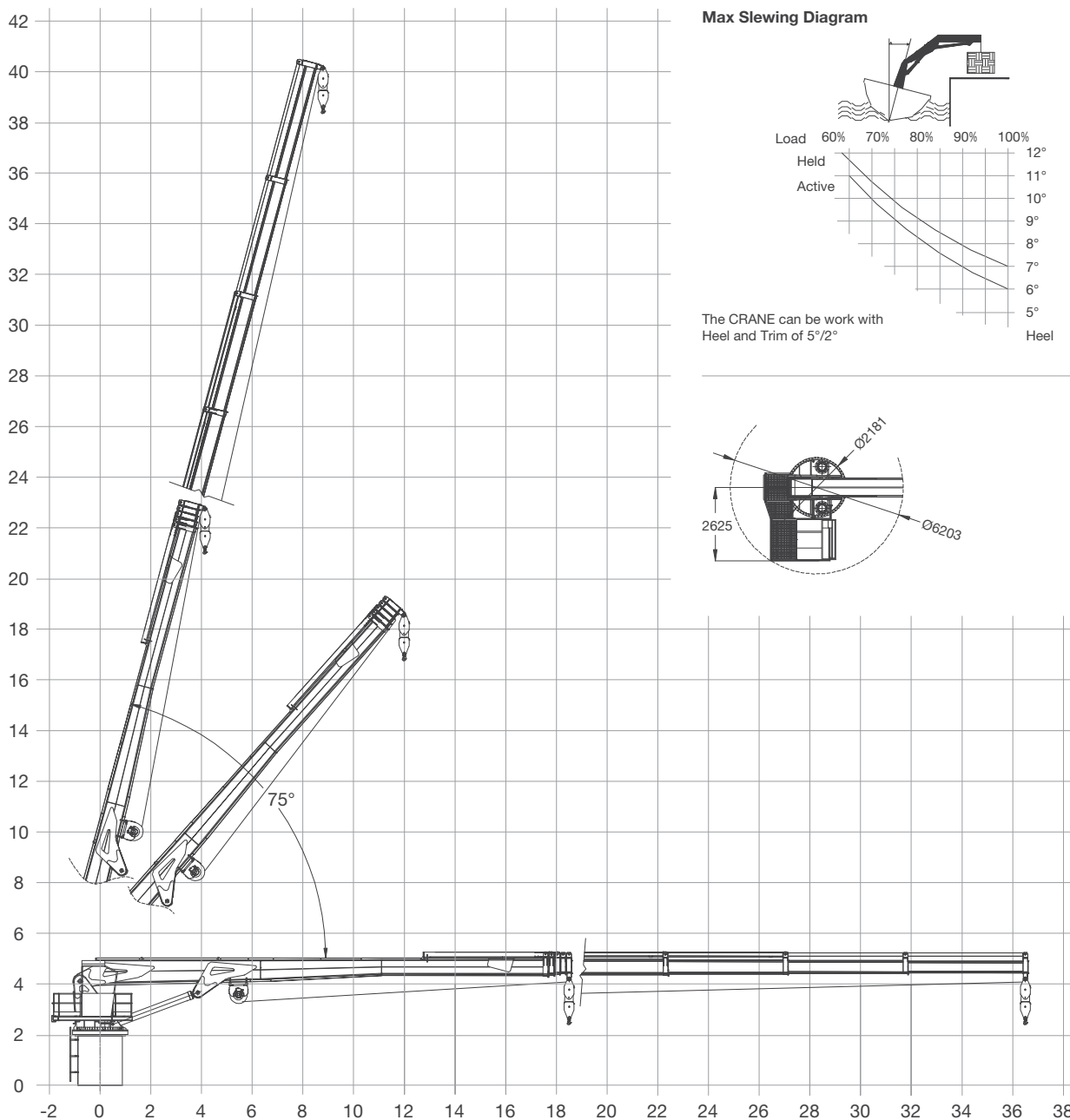
Current	1 knot
Wind speed	21.4 knots
Wave height	3.5 m
Peak period	8.9 s

SORMEC Marine Cranes - M460/4S

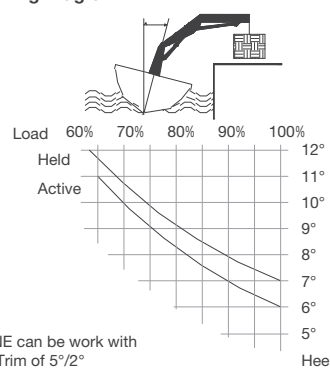
Technical Data

Max. Outreach	(m)	36.5
Min. Outreach	(m)	4.15
Slewing angle		Continuous
Rotating velocity	(Rpm)	0.6
Max. working pressure	(bar)	280
Recommended pump delivery	(l/min)	230
Oil tank capacity	(l)	1200

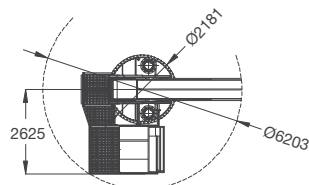
SORMEC Marine Crane is designed according to the German Crane Code DIN 15018.



Max Slewing Diagram



The CRANE can be work with Heel and Trim of 5°/2°



HARBOUR	mm 12000	mm 18500	mm 23000	mm 27500	mm 32000	mm 36500
	kg 20000	kg 12000	kg 8800	kg 6500	kg 5200	kg 4500
SEA STATE 2-3	mm 12000	mm 18500	mm 23000	mm 27500	mm 32000	mm 36500
	kg 13000	kg 7800	kg 5720	kg 4225	kg 3380	kg 2925

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