

Design hydrostatics report.

COSTA CONCORDIA II

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Created by Your Name:

Comment 290.2x 35.5 x 8.2 m, 51180 t, 8.2 m

Filename C:\Documents and Settings\HP_Administrator\Desktop\COSTA CONCORDIA2\GOOD HULL\Costa Concordia r4a.fbm

Design length	290.20 m	Midship location	184.51 m
Length over all	290.86 m	Relative water density	1.025
Design beam	35.500 m	Mean shell thickness	0.0000 m
Beam over all	35.761 m	Appendage coefficient	1.0000
Design draft	8.200 m		

Volume properties		Waterplane properties	
Displaced volume	54623 m ³	Length on waterline	284.44 m
Displacement	55989 tonnes	Beam on waterline	35.753 m
Total length of submerged body	288.99 m	Waterplane area	8417.0 m ²
Total beam of submerged body	35.753 m	Waterplane area	8417.0 m ²
Block coefficient	0.6447	Waterplane coefficient	0.8146
Prismatic coefficient	0.7070	Waterplane center of floatation	128.68 m
Vert. prismatic coefficient	0.7914	Entrance angle	36.633 Degr.
Wetted surface area	11336 m ²	Transverse moment of inertia	791539 m ⁴
Longitudinal center of buoyancy	139.98 m	Longitudinal moment of inertia	41332672 m ⁴
Longitudinal center of buoyancy	-15.657 %		
Vertical center of buoyancy	4.530 m		

Midship properties		Initial stability	
Midship section area	267.34 m ²	Transverse metacentric height	19.021 m
Midship coefficient	0.9119	Longitudinal metacentric height	761.22 m

Lateral plane	
Lateral area	2293.1 m ²
Longitudinal center of effort	148.67 m
Vertical center of effort	4.104 m

The following layer properties are calculated for both sides of the ship

Layer	Area m ²	Thickness	Weight tonnes	VCG m	LCG m	TCG m
TRHUSTER	18.508	0.000	0.000	1.580	33.451	0.000 (CL)
SKEG	364.45	0.000	0.000	1.416	32.008	0.000 (CL)
SHELL	18829	0.000	0.000	7.274	141.886	0.000 (CL)
Total	19212		0.000	0.000	0.000	0.000 (CL)

Sectional areas									
Location m	Area m ²	Location m	Area m ²	Location m	Area m ²	Location m	Area m ²	Location m	Area m ²
0.000	0.000	60.000	215.565	120.000	276.044	180.000	271.469	240.000	128.880
2.000	0.073	62.000	222.018	122.000	276.629	182.000	269.830	242.000	121.911
4.000	2.389	64.000	227.081	124.000	277.212	184.000	267.850	244.000	114.974
6.000	6.561	66.000	232.486	126.000	277.797	186.000	265.870	246.000	108.059
8.000	15.939	68.000	238.010	128.000	278.383	188.000	263.799	248.000	101.143
10.000	32.369	70.000	242.838	130.000	278.968	190.000	261.207	250.000	94.417