

Design hydrostatics report

123.0ft (37.5m) Planing Hull Project

Designer	Jeffry Fontaine		
Created by	Jeffry Fontaine		
Comment	Based on an enlarged Tjeld or Nasty Class hull design		
Filename	Trimaran.fbm		
Design length	88.102 (m)	Midship location	44.051 (m)
Length over all	90.648 (m)	Relative water density	1.0250
Design beam	12.116 (m)	Mean shell thickness	0.0000 (m)
Maximum beam	29.870 (m)	Appendage coefficient	1.0000
Design draft	2.560 (m)		

Volume properties		Waterplane properties	
Moulded volume	494.36 (m ³)	Length on waterline	85.016 (m)
Total displaced volume	494.36 (m ³)	Beam on waterline	29.670 (m)
Displacement	506.72 (tonnes)	Entrance angle	13.816 (Degr.)
Block coefficient	0.1809	Waterplane area	456.7 (m ²)
Prismatic coefficient	1.2838	Waterplane coefficient	0.4279
Vert. prismatic coefficient	0.4228	Waterplane center of floatation	28.933 (m)
Wetted surface area	838.0 (m ²)	Transverse moment of inertia	29663 (m ⁴)
Longitudinal center of buoyancy	29.815 (m)	Longitudinal moment of inertia	214803 (m ⁴)
Longitudinal center of buoyancy	-16.746 %		
Vertical center of buoyancy	1.838 (m)		

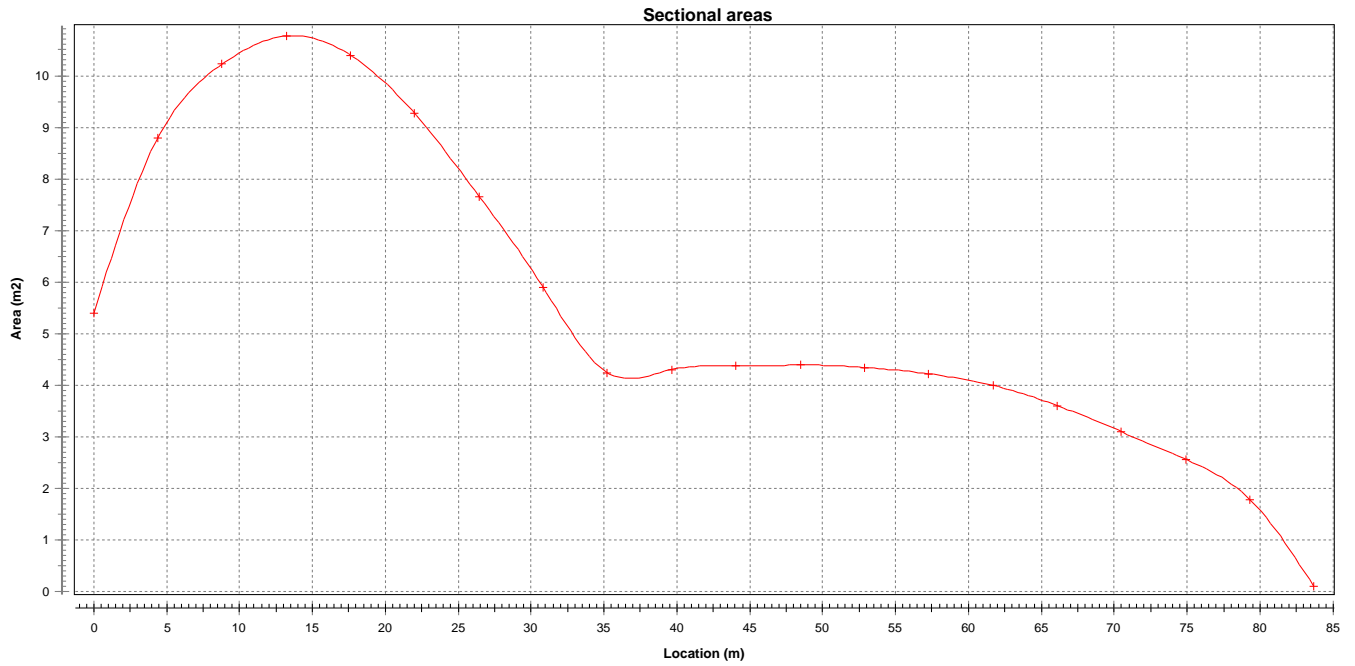
Midship properties		Initial stability	
Midship section area	4.4 (m ²)	Transverse metacentric height	61.840 (m)
Midship coefficient	0.1409	Longitudinal metacentric height	436.35 (m)

Lateral plane	
Lateral area	214.8 (m ²)
Longitudinal center of effort	41.174 (m)
Vertical center of effort	1.289 (m)

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

Location	Area	Thickness	Weight	LCG	TCG	VCG
	(m ²)	(m)	(tonnes)	(m)	(m)	(m)
Layer 3	7554.9	0.000	0.00	32.703	0.000 (CL)	6.517

Sectional areas									
Location	Area	Location	Area	Location	Area	Location	Area	Location	Area
(m)	(m ²)	(m)	(m ²)	(m)	(m ²)	(m)	(m ²)	(m)	(m ²)
0.000	5.4	17.621	10.4	35.241	4.2	52.862	4.3	70.482	3.1
4.405	8.8	22.026	9.3	39.646	4.3	57.267	4.2	74.887	2.6
8.810	10.2	26.431	7.7	44.051	4.4	61.672	4.0	79.292	1.8
13.215	10.8	30.836	5.9	48.457	4.4	66.077	3.6	83.698	0.1



NOTE 1: Draft (and all other vertical heights) is measured from base Z=0.000
NOTE 2: All calculated coefficients based on project length, draft and beam.