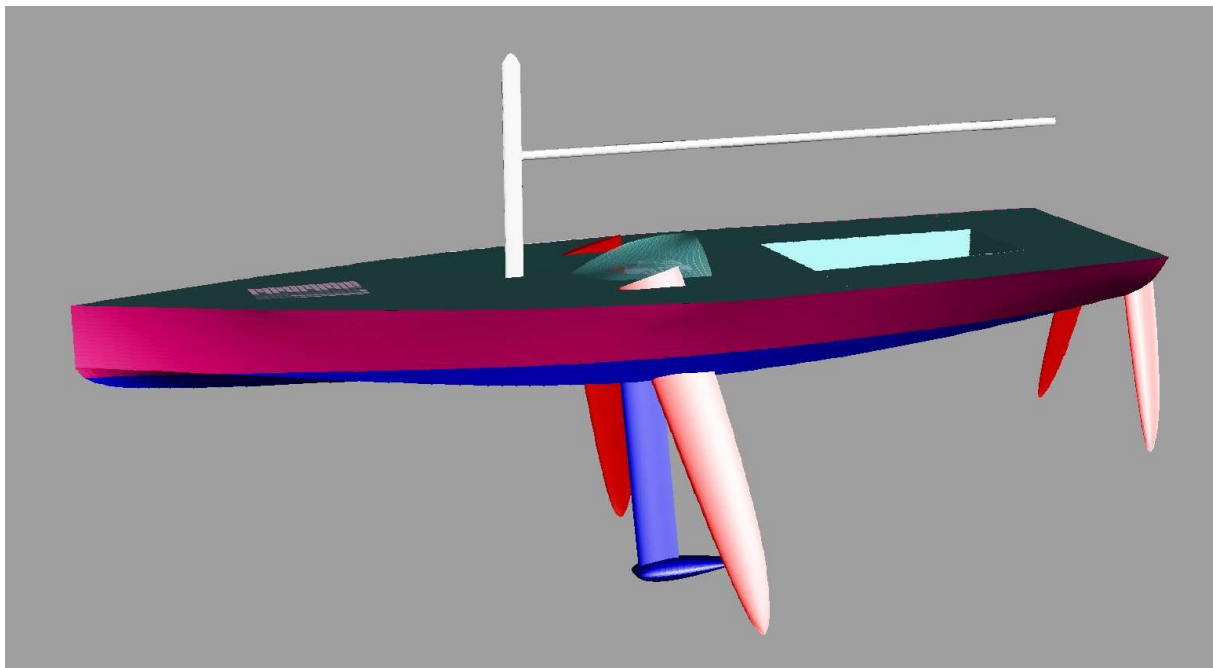
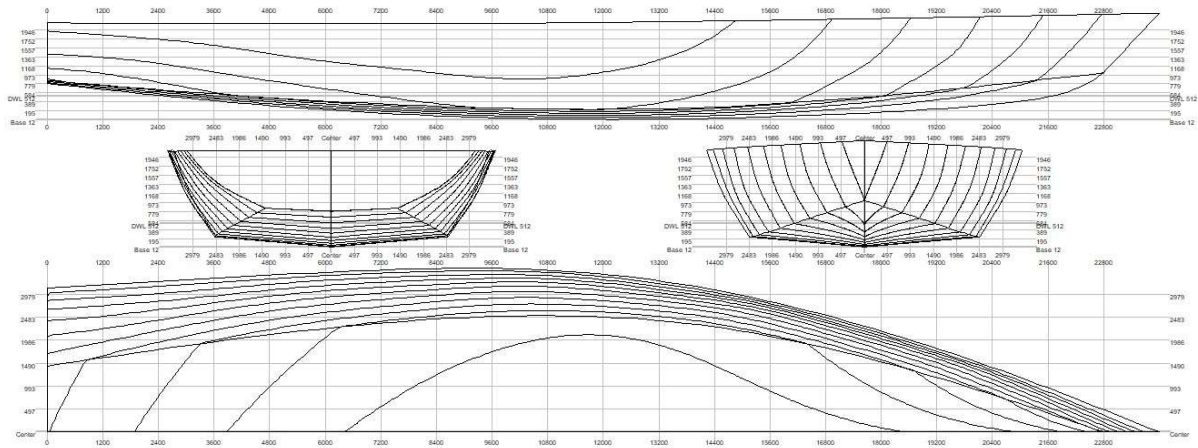


# 80 FEET FLAT OUT RACER



**Project** : 80 feet flat out racer  
**Designer** : Delta Consultants/P.Visser  
**Length over all** : 24.000 m  
**Beam over all** : 7.220 m  
**Draft** : 6.025 m  
**Midship location** : 9.000 m  
**Water density** : 1.025 t/m<sup>3</sup>  
**Appendage coefficient** : 1.0000

**Volume properties:**

**Displaced volume** : 42.960 m<sup>3</sup>  
**Displacement** : 44.034 tns  
**Total length of submerged body** : 23.764 m

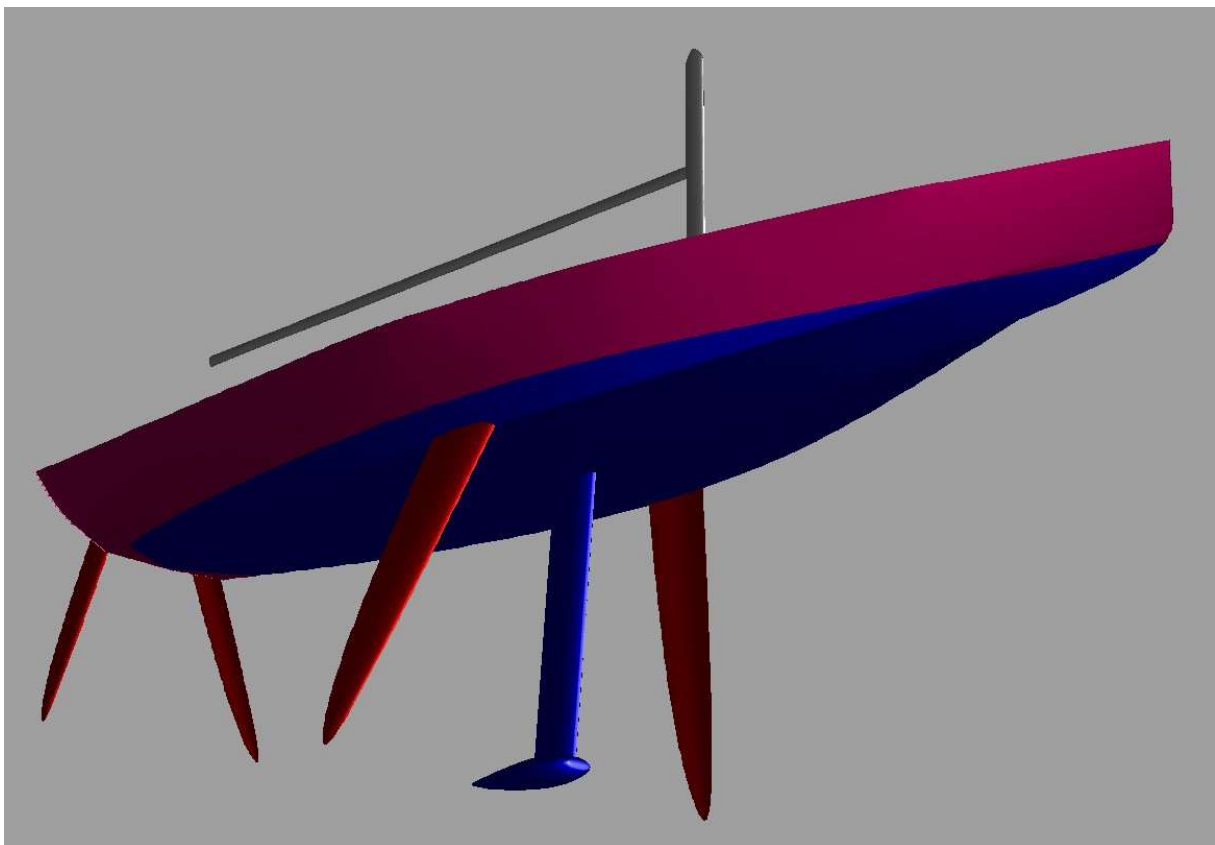
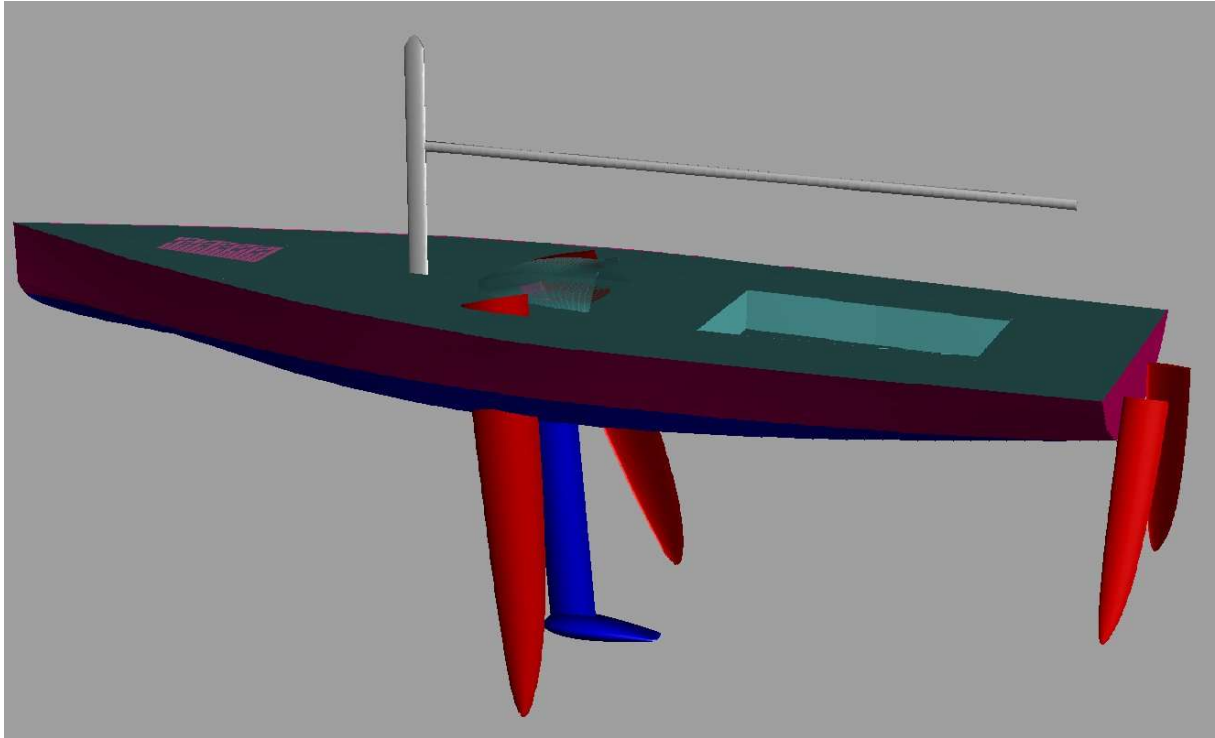
## 80 FEET FLAT OUT RACER

Total beam of submerged body	:	5.612 m
Block coefficient	:	0.0535
Prismatic coefficient	:	0.5771
Vert. prismatic coefficient	:	0.0773
Wetted surface area	:	117.39 m <sup>2</sup>
Longitudinal center of buoyancy	:	11.155 m
Longitudinal center of buoyancy	:	-3.372 ‰
Transverse center of buoyancy	:	0.000 m
Vertical center of buoyancy	:	5.650 m
Midship properties:		
Midship section area	:	3.133 m <sup>2</sup>
Midship coefficient	:	0.0927
Waterplane properties:		
Length on waterline	:	23.764 m
Beam on waterline	:	5.612 m
Waterplane area	:	92.204 m <sup>2</sup>
Waterplane coefficient	:	0.6914
Waterplane center of floatation	:	10.440 m
Y coordinate of DWL area CoG	:	0.000 m
Half entrance angle of DWL	:	10.497 degr
Transverse moment of inertia	:	170.96 m <sup>4</sup>
Longitudinal moment of inertia	:	2735.3 m <sup>4</sup>
Initial stability:		
Vertical of transverse metacenter	:	9.630 m
Tranverse metacentric radius	:	3.980 m
Longitudinal transverse metacenter	:	69.322 m
Longitudinal metacentric radius	:	63.672 m
Lateral plane:		
Lateral area	:	18.537 m <sup>2</sup>
Longitudinal center of effort	:	12.205 m
Vertical center of effort	:	4.675 m

# 80 FEET FLAT OUT RACER

Hull characteristics above waterline:

Lateral wind area	:	28.389 m <sup>2</sup>
Z coordinate of wind area CoG above DWL	:	0.651 m
Distance from bow to wind area CoG	:	10.468 m



# 80 FEET FLAT OUT RACER

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

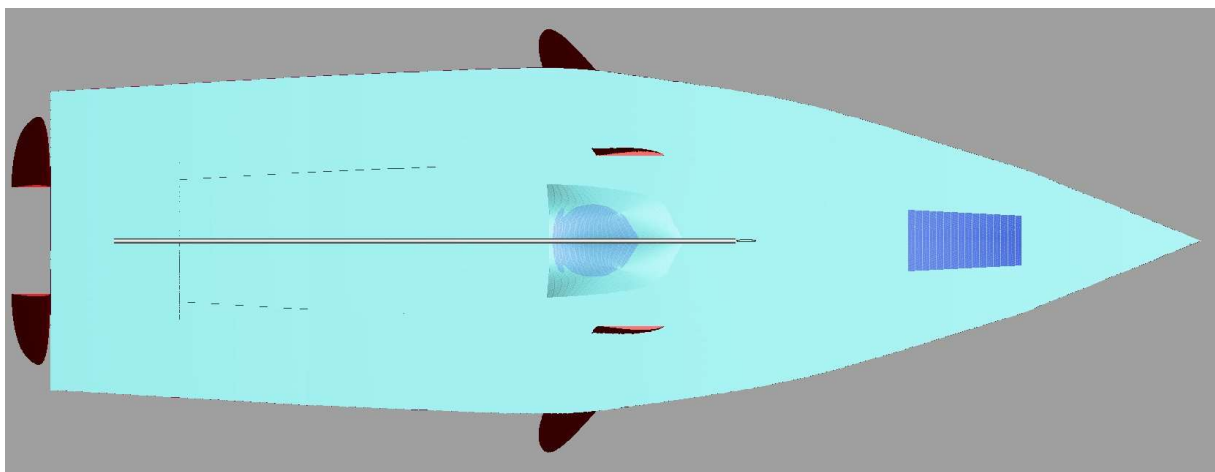
Layer	Area	Thickness	Weight	COG X	COG Y	COG Z
	m <sup>2</sup>	mm	tonnes	m	m	m
hull	188.61	90.000	11.882	10.664	0.000	6.097
daggerboards	18.811	30.000	0.282	11.304	0.000	4.432
Trapezoidal keel NACA63	10.507	10.000	1.671	11.360	0.000	2.749
Round wing_NACA0020	4.383	300.000	20.905	10.590	0.000	0.249
Straight quarter chord	5.806	30.000	0.087	-0.388	0.000	5.045
deck	140.56	70.000	6.887	9.300	0.000	7.230
hatch	4.974	0.000	0.000	15.599	0.000	7.407
canopy	7.287	10.000	0.036	11.703	0.000	7.602
mast	7.340	0.000	0.000	14.500	0.000	9.649
boom	12.553	0.000	0.000	7.800	0.000	10.000
<b>Total</b>	<b>400.83</b>		<b>41.750</b>	<b>10.412</b>	<b>0.000</b>	<b>3.210</b>

## Parameters of ship sinkage:

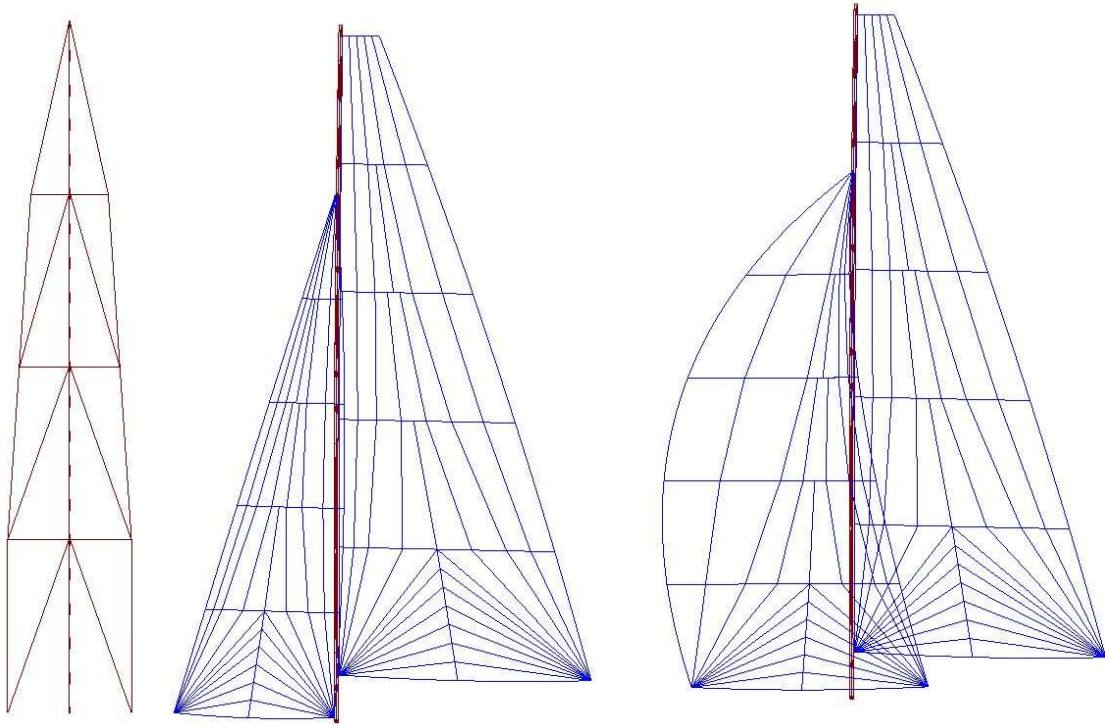
Difference of midship draft	:	-0.024 m
Midship draft	:	6.001 m
Initial transverse metacentric height $h_0$	:	6.420 m
Initial longitudinal metacentric height $H_0$	:	66.112 m
Angle of heel $\Psi$	:	0.000 de
Angle of trim	:	-0.644 de

NOTE 1: Draft (and all other vertical heights) is measured above the lowest point of the hull! (Z= 0.000)

NOTE 2: All calculated coefficients based on actual dimensions of submerged body.



# 80 FEET FLAT OUT RACER



Main 264m<sup>2</sup> High aspect 128m<sup>2</sup> Code Zero 264m<sup>2</sup>

