

# Cruiser Racer in the IOR Quarter Ton Segment

Project : IOR Cruiser-Racer in the Quarter Ton Class  
Designer : Delta Consultants-Pim Visser  
Filename : I:\freeships\quartertonner03\qt#03.fbm

Length over all : 7.850 m  
Beam over all : 2.965 m  
Draft : 1.380 m  
Midship location : 2.750 m  
Water density : 1.025 t/m<sup>3</sup>  
Appendage coefficient : 1.0000

## Volume properties:

Displaced volume : 2.534 m<sup>3</sup>  
Displacement : 2.597 tonnes  
Total length of submerged body : 7.193 m  
Total beam of submerged body : 2.403 m  
Block coefficient : 0.1062  
Prismatic coefficient : 0.4276  
Vert. prismatic coefficient : 0.1723  
Wetted surface area : 14.227 m<sup>2</sup>  
Longitudinal center of buoyancy : 3.751 m  
Longitudinal center of buoyancy : 0.940 %  
Transverse center of buoyancy : 0.000 m  
Vertical center of buoyancy : 1.220 m

## Midship properties:

Midship section area : 0.824 m<sup>2</sup>  
Midship coefficient : 0.2484

## Waterplane properties:

Length on waterline : 7.016 m  
Beam on waterline : 2.403 m  
Waterplane area : 10.658 m<sup>2</sup>  
Waterplane coefficient : 0.6166

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Waterplane center of floatation : 3.594 m  
 Y coordinate of DWL area CoG : 0.000 m  
 Half entrance angle of DWL : 16.350 degr  
 Transverse moment of inertia : 3.591 m<sup>4</sup>  
 Longitudinal moment of inertia : 23.252 m<sup>4</sup>

Initial stability:

Vertical of transverse metacenter : 2.637 m  
 Tranverse metacentric radius : 1.417 m  
 Longitudinal transverse metacenter : 10.396 m  
 Longitudinal metacentric radius : 9.176 m

Lateral plane:

Lateral area : 2.914 m<sup>2</sup>  
 Longitudinal center of effort : 3.631 m  
 Vertical center of effort : 1.003 m

Hull characteristics above waterline:

Lateral wind area : 7.662 m<sup>2</sup>  
 Z coo. of wind area CoG above DWL : 0.579 m  
 Distance from bow to wind area CoG : 2.954 m

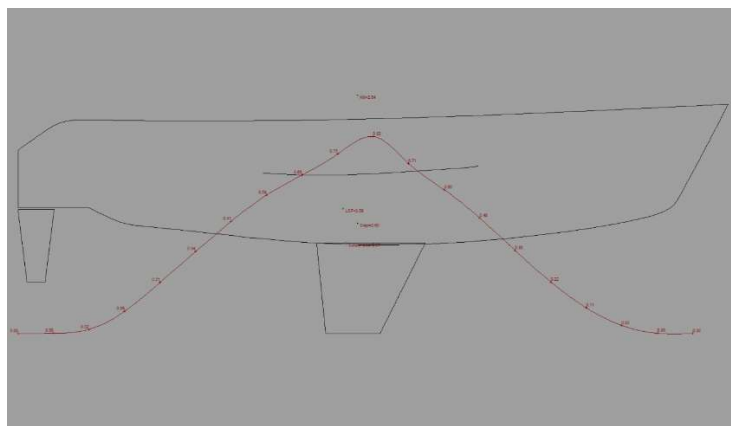
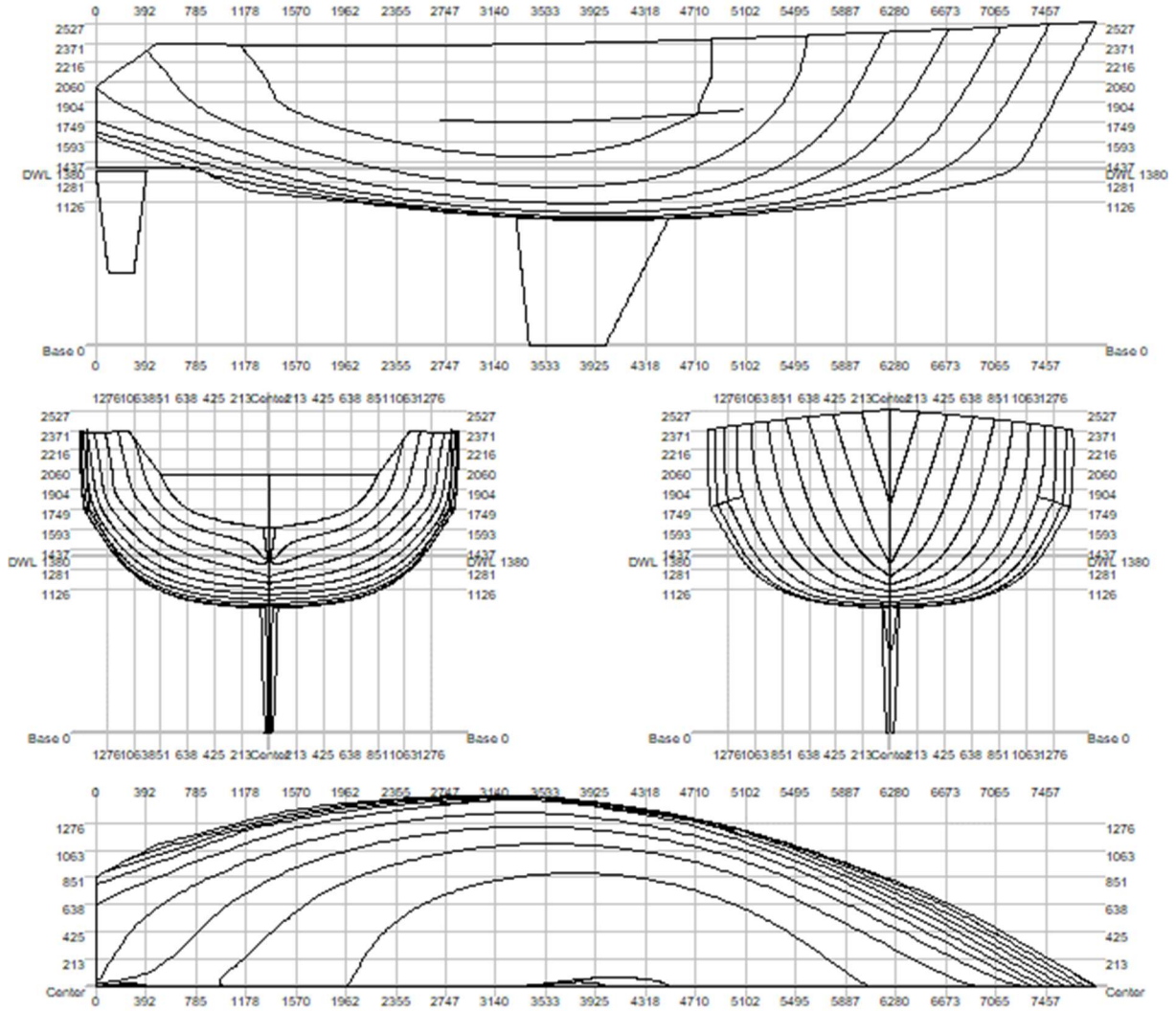
Layer	Area	Thickness	Weight	COG X	COG Y	COG Z
	m <sup>2</sup>	mm	tonnes	m	m	m
Hull	30.705	20.000	0.614	3.628	0.000	1.589
Deck + Cabin	20.010	20.000	0.400	3.175	0.000	2.417
Trapezoidal keel NACA63	1.964	30.000	0.884	3.825	0.000	0.572
Trapezoidal rudder NACA	0.502	20.000	0.010	0.202	0.000	1.020
Engine, interior, rig & sails			0.600			
<b>Total</b>	<b>55.901</b>		<b>2.508</b>	<b>3.606</b>	<b>0.000</b>	<b>1.289</b>

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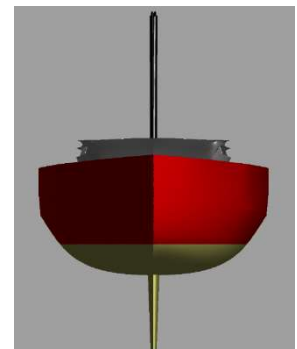
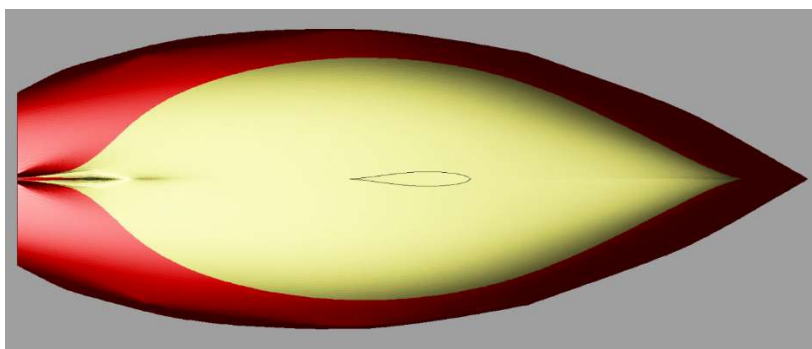
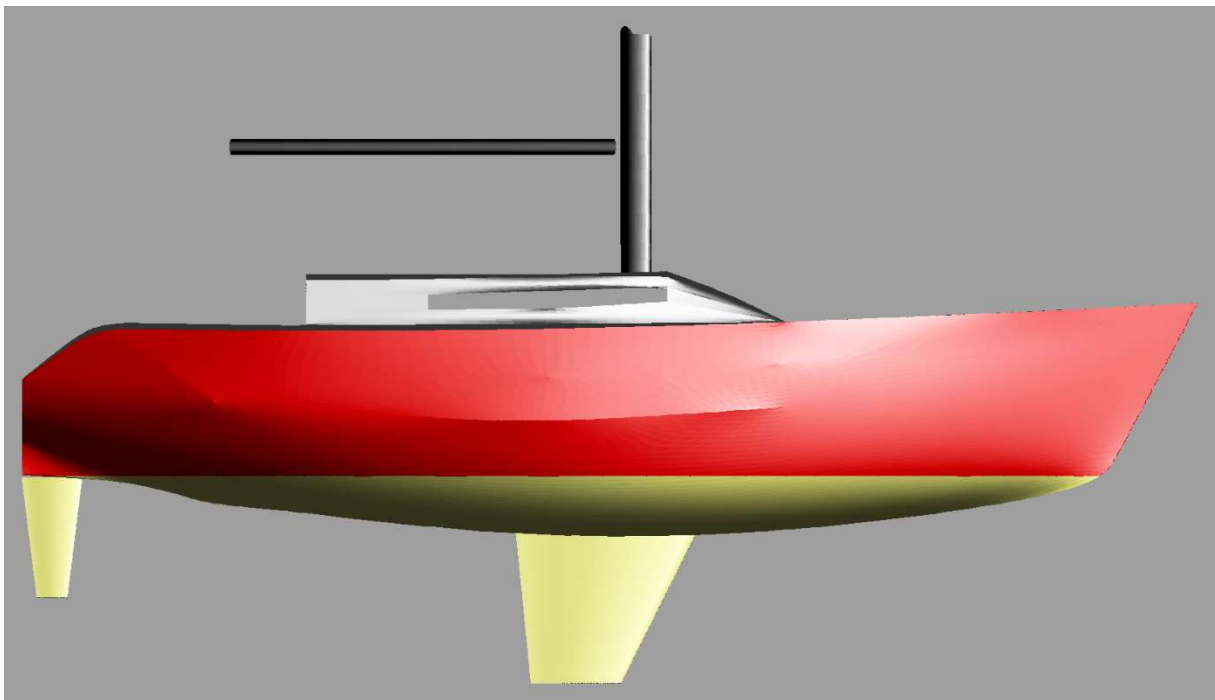
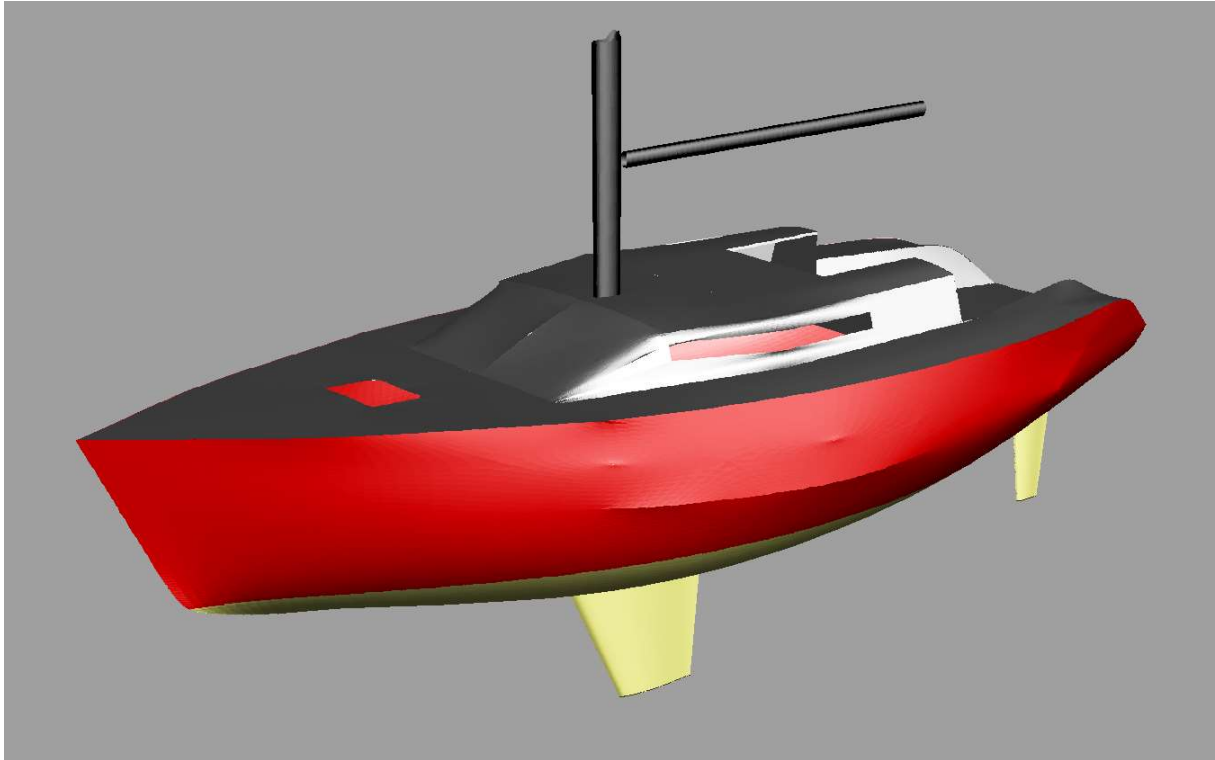
NOTE 1: Draft (and all other vertical heights) is measured above the lowest point of the hull! (Z= 0.000)

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

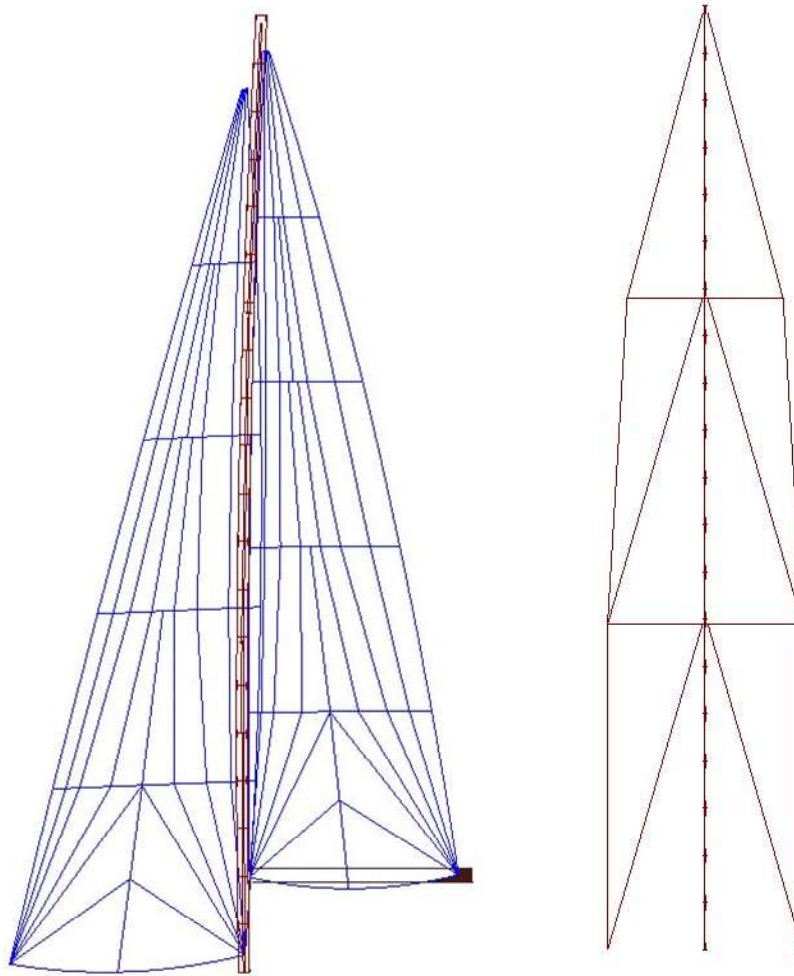
Note 3: The bulb characteristics is calcs right, if F.P. is through point of intersection forward line with DWL.



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High aspect  $19\text{m}^2$  Main  $16.4\text{m}^2$