Highfield Boats Co., Ltd

PA860

Stabitlity calculation according to ISO 12217-1-2015 Small craft Stability and buoyancy assessment

By Xiamen DAWN DESIGN
Company: 厦门道恩建筑设计有限公司
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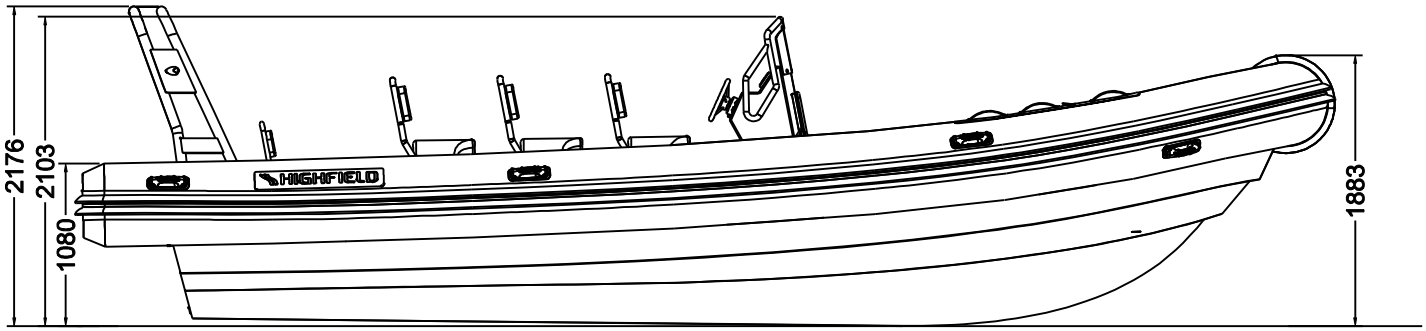
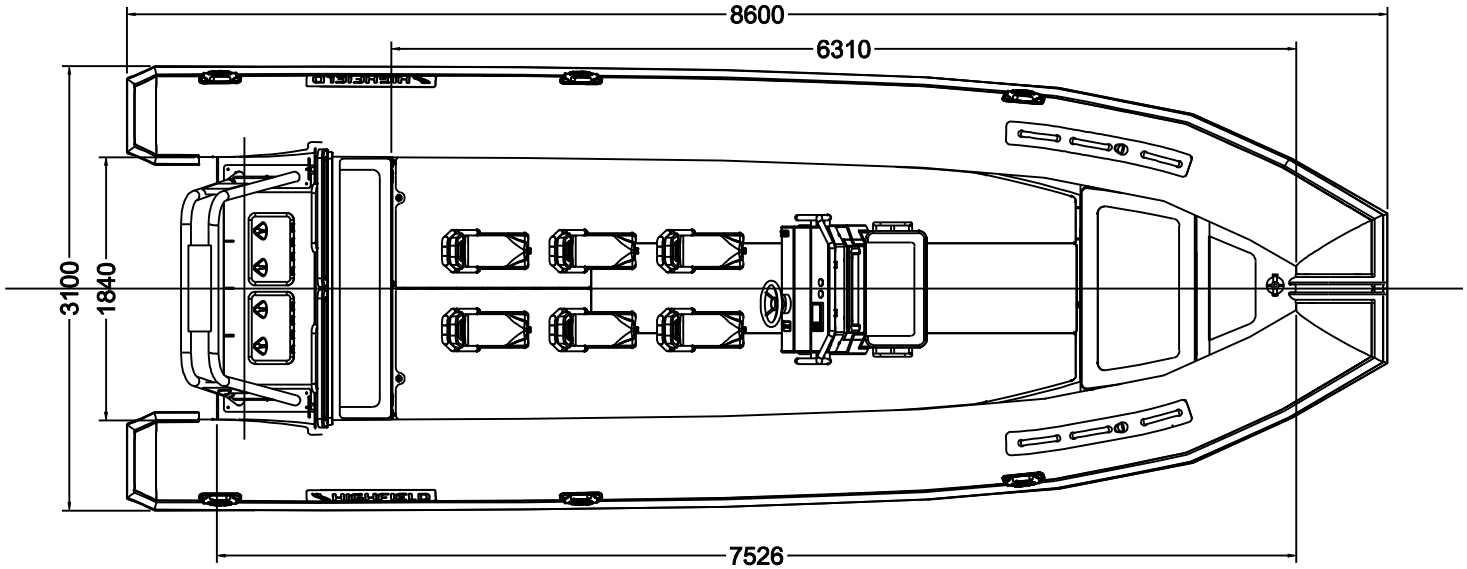
DND DAWN YACHT DESIGN 厦门道恩建筑设计有限公司			ITEM	PROJECT:	PA860
			PA860	Cat.	cat. C
	Signature			REV.	PAPER / SCALE
Design by			Stability calculations	0	A4
Checked by					
Technic by				sheet	1 of 17
Approved by		DATE 2018.07			

CONTENT





SPECIFICATION

Length	860cm
Beam	310cm
Inside Length	631cm
Inside Width	184cm
Weight	1395Kg
Deadrise	24°
Max Pax	19
Max Load (incl. motors)	2278Kg
Max HP	2*250hp
Shaft	XL
Tube ф	58cm
Airtight Chambers	6

DND
DAWN YACHT DESIGN

	Signature		
Design by	S.C		
Checked by			
Technic by			
Approved by		DATE	2018.07.10

Drawing Title

General Arrangement

Project Name: PA860

Drawing NO.: PA86-01-01

PAPER	SCALE
A4	1:50

SHEET 1 of 1

PA860 Weight estimation CAT.C

Loa(m) = 8.6 m
Lh(m) = 8.6 m
Bmax (m) = 3.1 m

XG:From #0;YG:STARTBOARD:+,PORT:-;ZG:From BL

HULL		Weight	XG (m)	YG(m)	ZG(m)	Mx	My	Mz	NOTE
Hull Plates		750	3.80	0.00	0.21	2850.00	0.00	157.50	
Structures		470	3.70	0.00	0.13	1739.00	0.00	61.10	
Console		59	4.40	0.00	1.30	259.60	0.00	76.70	
Seat		72	2.57	0.00	1.10	185.04	0.00	79.20	
Rollbar		20	0.05	0.00	1.59	1.00	0.00	31.80	
Inflatable tube		24	3.66	0.00	1.08	87.84	0.00	25.92	
TOT.	**1395**		**3.67**	**0.00**	**0.31**	**5122.48**	**0.00**	**432.22**	

Fixed MACHINERY									
Steering system		15	3.30	0.10	0.55	49.50	1.50	8.25	
Fuel tank		15	4.16	0.00	0.36	62.40	0.00	5.40	
batteries		40.9	0.70	0.00	0.50	28.63	0.00	20.45	
Cables		5	2.00	0.00	0.50	10.00	0.00	2.50	
TOT.	**76**		**1.98**	**0.02**	**0.48**	**150.53**	**1.50**	**36.60**	

Tot. Empty Craft		**1470.9**	**3.58**	**0.00**	**0.32**	**5273.01**	**1.50**	**468.82**	

Standard Equipment									
Outboard		624.9	-0.40	0.00	0.90	-249.96	0.00	562.41	**2*250 hp**
Dry bag		2	6.05	0.00	0.80	12.10	0.00	1.60	
Foot pump		1	6.05	0.00	0.80	6.05	0.00	0.80	
Paddles		3	2.30	0.00	1.00	6.90	0.00	3.00	
Repair kit		3	4.40	0.00	0.75	13.20	0.00	2.25	
TOT.	**633.9**		**-0.33**	**0.00**	**0.90**	**-211.71**	**0.00**	**570.06**	

Additional eq.									
LIFEJACKETS		5	6.60	0.00	1.20	33.00	0.00	6.00	
SAFETY EQUIPMENT IN DASHBOARD		5	4.50	0.00	1.20	22.50	0.00	6.00	
Others not in standard equipment		5	4.00	0.00	1.10	20.00	0.00	5.50	
TOT. Addition	**15**		**5.03**	**0.00**	**1.17**	**75.50**	**0.00**	**17.50**	

Liferaft		103	0.20	0.00	1.25	20.60	0.00	128.75	

Light Craft									
	EmptyCraft	**1471**	**3.58**	**0.00**	**0.32**	**5273.01**	**1.50**	**468.82**	
	standard eq.	634	-0.33	0.00	0.90	-211.71	0.00	570.06	
Light Craft	**Tot.**	**2104.8**	**2.40**	**0.00**	**0.49**	5061.30	1.50	1038.88	

Minimum Operating condition									
	Light craft	**2105**	**2.40**	**0.00**	**0.49**	**5061.30**	**1.50**	**1038.88**	
	additonal eq	15	5.03	0.00	1.17	75.50	0.00	17.50	
	liferaft	103	6.30	0.00	1.25	648.90	0.00	128.75	
1	passengers+crews	75	3.50	0.00	1.35	262.50	0.00	101.25	
Minimum Operating condition	**Tot.**	**2297.8**	**2.63**	**0.00**	**0.56**	6048.20	1.50	1286.38	
					0.05				
					0.61				

FULL LOAD									
	light craft	**2105**	**2.40**	**0.00**	**0.49**	**5061.30**	**1.50**	**1038.88**	
485	FUEL	345.6	4.16	0.00	0.36	1437.54	0.00	124.40	
20	drinking water	19.0	4.50	0.00	1.10	85.50	0.00	20.90	

	personal prov.	50	6.05	0.00	1.20	302.50	0.00	60.00	
	additonal eq	15	5.03	0.00	1.17	75.50	0.00	17.50	
	liferaft	103	6.30	0.00	1.25	648.90	0.00	128.75	
19	passengers+crews	1425	2.95	0.00	1.35	4203.75	0.00	1923.75	
FULL LOAD	**Tot.**	**4062.4**	**2.91**	**0.00**	**0.82**	11814.99	1.50	3314.18	
					0.05				
					0.86				
Loaded Arrival									
	light craft	**2105**	**2.40**	**0.00**	**0.49**	**5061.30**	**1.50**	**1038.88**	
485	FUEL	36.375	4.16	0.00	0.36	151.32	0.00	13.10	
20	drinking water	2.0	4.50	0.00	1.10	9.00	0.00	2.20	
	personal prov.	50	6.05	0.00	0.45	302.50	0.00	22.50	
	additonal eq	15	5.03	0.00	1.17	75.50	0.00	17.50	
	liferaft	103	6.30	0.00	1.25	648.90	0.00	128.75	
19	passengers+crews	1425	2.95	0.00	1.35	4203.75	0.00	1923.75	
Loaded Arrival	**Tot.**	**3736.2**	**2.80**	**0.00**	**0.84**	10452.27	1.50	3146.68	
					0.05				
					0.89				
Crews	crew no.								
	1	85	0.89	-0.95	1.20	75.65	-80.75	102.00	
	2	85	0.89	-0.42	1.20	75.65	-35.70	102.00	
	3	85	1.39	-0.89	1.20	118.15	-75.65	102.00	
	4	85	1.89	-0.89	1.20	160.65	-75.65	102.00	
	5	85	1.81	-0.38	1.20	153.85	-32.30	102.00	
	6	85	2.39	-0.88	1.20	203.15	-74.80	102.00	
	7	85	2.54	-0.38	1.20	215.90	-32.30	102.00	
	8	85	2.89	-0.67	1.20	245.65	-56.95	102.00	
	9	85	3.39	-0.87	1.20	288.15	-73.95	102.00	
	10	85	3.28	-0.38	1.20	278.80	-32.30	102.00	
	11	85	3.89	-0.86	1.20	330.65	-73.10	102.00	
	12	85	4.39	-0.84	1.20	373.15	-71.40	102.00	
	13	85	4.89	-0.82	1.20	415.65	-69.70	102.00	
	14	85	5.39	-0.78	1.20	458.15	-66.30	102.00	
	15	85	5.88	-0.72	1.20	499.80	-61.20	102.00	
	16	85	6.38	-0.58	1.20	542.30	-49.30	102.00	
	17	85	6.87	-0.38	1.20	583.95	-32.30	102.00	
	18	85	5.00	-0.32	1.20	425.00	-27.20	102.00	
	19	85	5.52	-0.27	1.20	469.20	-22.95	102.00	
Tot. Crews		1615	3.66	-0.65	1.20	5913.45	-1043.80	1938.00	

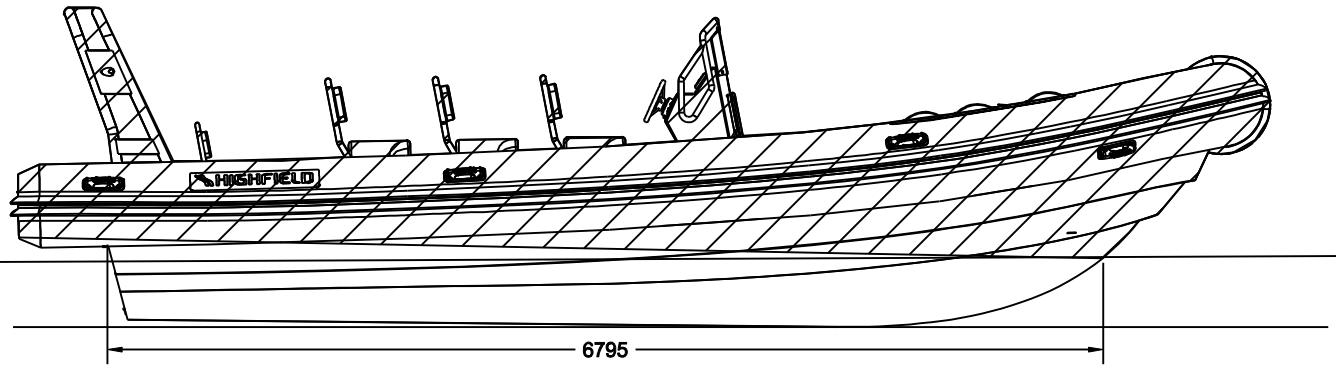
Crew offset test condition									
	light craft	**2105**	**2.40**	**0.00**	**0.49**	**5061.30**	**1.50**	**1038.88**	
485	FUEL	345.6	4.16	0.00	0.36	1437.54	0.00	124.40	
20	drinking water	19.0	4.50	0.00	1.10	85.50	0.00	20.90	
	personal prov.	50	6.05	0.00	0.45	302.50	0.00	22.50	
	additonal eq	15	5.03	0.00	1.17	75.50	0.00	17.50	
	liferaft	103	6.30	0.00	1.25	648.90	0.00	128.75	
19	passengers+crews	1615	3.66	-0.65	1.20	5913.45	-1043.80	1938.00	
Crew offset test condition	**Tot.**	**4252.4**	**3.18**	**-0.25**	**0.77**	13524.69	-1042.30	3290.93	
					0.05				
					0.82				

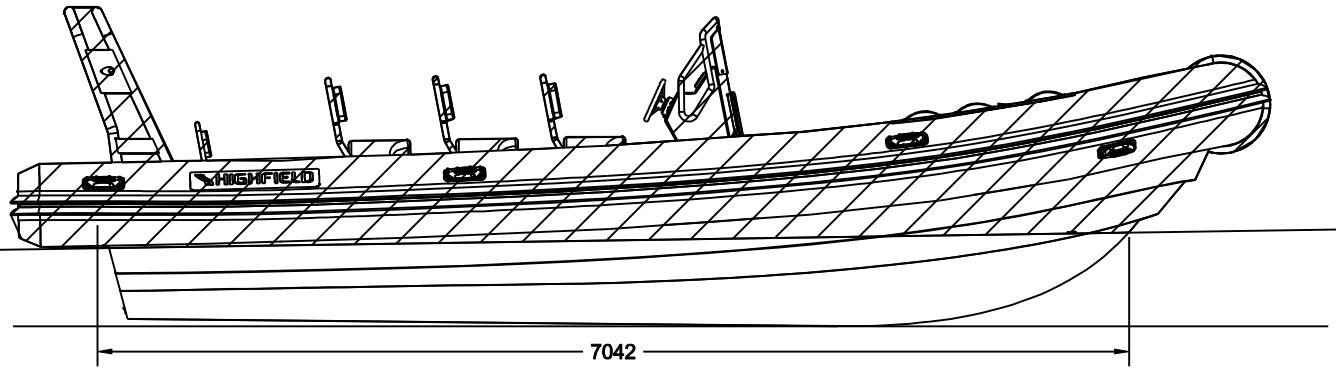
ISO 12217-1 NON-SAILING BOATS OF LENGTH GREATER THAN OR EQUAL TO 6m
CALCULATION WORKSHEET No. 1

Highfield Boats Co., Ltd PA860

Design Category intended: C	**Monohull / multihull:** Monohull			
Item	**Symbol**	**Unit**	**Value**	**Ref.**
Length of hull as in ISO 8666	L_H	m	8.60	3.3.1
Length of waterline in loaded arrival condition	L_{wl}	m	7.09	3.3.2
Empty Craft condition mass	m_{EC}	kg	1470.9	3.4.1
standard equipment		kg	634.0	3.5.12
water ballast in tanks which are notified in the owner's manual to be filled when the boat is afloat		kg	0.0	3.4.2
Light craft condition mass	m_{LC}	kg	2104.9	3.4.2
Mass of:				
Desired crew limit	CL	----	19	3.5.3
Mass of:				
desired crew limit at 75 kg each		kg	1425.0	
provisions + personal effects		kg	50.0	3.4.4
drinking water		kg	19.0	3.4.4
fuel		kg	345.6	3.4.4
lubricating and hydraulic oils		kg	0.0	3.4.4
black water		kg	0.0	3.4.4
grey water		kg	0.0	3.4.4
water ballast		kg	0.0	3.4.4
other fluids carried aboard		kg	0.0	3.4.4
stores, spare gear and cargo (if any)		kg	0.0	3.4.4
optional equipment and fittings not included in basic outfit		kg	15.0	3.4.4
inflatable life raft(s) in excess of essential safety equipment		kg	103.0	3.4.4
other small boats carried aboard		kg	0.0	3.4.4
margin for future additions		kg	0.0	3.4.4
Maximum load = sum of above masses	m_L	kg	1957.6	3.4.4
Maximum Load condition mass	m_{LDC}	kg	4062.5	3.4.5
mass to be removed for loaded arrival condition		kg	326.2	3.4.6
Loaded Arrival condition mass	m_{LA}	kg	3736.3	3.4.6
Mass of:				
minimum number of crew according to 3.4.3		kg	75.0	3.4.3a)
non-consumable stores and equipment normally aboard		kg	15.0	3.4.3b)
inflatable life raft		kg	103.0	3.4.3
Load to be included in Minimum Operating Condition	m'_L	kg	193.0	3.4.3
Light craft condition mass	m_{LC}	kg	2104.9	3.4.2
Mass in the Minimum Operating Condition	m_{MO}	kg	2297.9	3.4.3
Is boat sail or non-sail?				3.1.2
nominal sail area	A_S	m^2	0.0	3.3.8
sail area / displacement ratio = A_S / $(m_{LDC})^{2/3}$		-----	0.0000	3.1.2
CLASSIFIED AS [non-sail if AS / (mLDC)2/3 < 0.07]	SAIL/NON-SAIL ?		**NON-SAIL**	3.1.2

NB If NON_SAIL, continue using these worksheets, if SAIL, use ISO 12217-2





mMo

1.Calculation AT mMo

Item	Symbol	Unit	Value
Windage area	A_{LV}	m^2	7.33
Waterline length of hull	L_{WL}	m	6.80
Beam of hull	B_H	m	3.10
Ratio of $A_{LV}/(0.5L_{WL}*B_H)$		-	≈0. 70 <1

mLA

2.Calculation AT mLA

Item	Symbol	Unit	Value
Windage area	A_{LV}	m^2	6.33
Waterline length of hull	L_{WL}	m	7.04
Beam of hull	B_H	m	3.10
Ratio of $A_{LV}/(0.5L_{WL}*B_H)$		-	≈0. 58 <1

It is not necessary to perform the heel to wind resistance test

DND
DAWN YACHT DESIGN

	Signature		
Design by	S.C/L		
Checked by			
Technic by			
Approved by		DATE	2018.07

Drawing Title

Windage Area

Project Name:PA860

Drawing NO.:PA86-01-04

	PAPER	SCALE
SHEET	A4	1:50
	1 of 1	

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...\007 PL860 windage area.dwg 10/07/2018 13:37:08

PA860 Hydrostatic tables

Draft	Displ.	LCB	TCB	VCB	Wet Area	Awp	LCF	TCF	VCF	BMt	BMl	Cb	Cwp	Cws	Cvp
m	kg	m	m	m	m²	m²	m	m	m	m	m	-	-	-	-
0.100	84.875	2.638	0.00	0.071	2.116	1.834	2.534	0.00	0.100	0.211	55.100	0.350	0.778	3.005	0.450
0.120	126.400	2.606	0.00	0.084	2.576	2.214	2.548	0.00	0.120	0.245	45.638	0.355	0.767	2.977	0.463
0.140	175.750	2.592	0.00	0.097	3.042	2.597	2.560	0.00	0.140	0.280	39.252	0.356	0.758	2.963	0.470
0.160	232.993	2.585	0.00	0.110	3.513	2.983	2.572	0.00	0.160	0.315	34.607	0.357	0.751	2.956	0.475
0.180	298.192	2.584	0.00	0.123	3.991	3.372	2.582	0.00	0.180	0.351	31.058	0.356	0.745	2.953	0.478
0.200	371.405	2.584	0.00	0.136	4.473	3.764	2.592	0.00	0.200	0.387	28.246	0.355	0.740	2.952	0.480
0.220	452.689	2.587	0.00	0.150	4.961	4.159	2.601	0.00	0.220	0.424	25.958	0.354	0.735	2.953	0.482
0.240	542.096	2.590	0.00	0.163	5.453	4.556	2.610	0.00	0.240	0.460	24.053	0.353	0.731	2.954	0.483
0.260	640.141	2.592	0.00	0.176	6.045	5.048	2.574	0.00	0.260	0.543	23.262	0.303	0.637	3.003	0.475
0.280	749.953	2.585	0.00	0.190	6.758	5.658	2.528	0.00	0.280	0.668	22.347	0.303	0.658	3.090	0.461
0.300	872.723	2.576	0.00	0.204	7.515	6.312	2.526	0.00	0.300	0.796	20.951	0.305	0.680	3.175	0.449
0.320	1008.309	2.571	0.00	0.218	8.203	6.895	2.543	0.00	0.320	0.885	19.724	0.308	0.691	3.214	0.445
0.340	1155.391	2.568	0.00	0.233	8.855	7.440	2.560	0.00	0.340	0.955	18.677	0.310	0.697	3.232	0.445
0.360	1313.444	2.568	0.00	0.247	9.491	7.967	2.576	0.00	0.360	1.015	17.767	0.312	0.701	3.240	0.446
0.380	1482.667	2.569	0.00	0.261	10.245	8.596	2.558	0.00	0.380	1.149	17.405	0.270	0.610	3.283	0.442
0.400	1666.874	2.566	0.00	0.275	11.162	9.349	2.527	0.00	0.400	1.334	17.045	0.285	0.657	3.364	0.434
0.420	1864.751	2.563	0.00	0.289	11.923	9.928	2.546	0.00	0.420	1.400	16.110	0.301	0.692	3.389	0.436
0.440	2073.413	2.563	0.00	0.304	12.595	10.405	2.581	0.00	0.440	1.409	15.176	0.317	0.719	3.387	0.441
0.460	2291.149	2.567	0.00	0.318	13.208	10.813	2.621	0.00	0.460	1.390	14.343	0.333	0.741	3.371	0.449
0.480	2516.782	2.573	0.00	0.331	13.783	11.174	2.662	0.00	0.480	1.356	13.619	0.347	0.760	3.349	0.457
0.500	2749.418	2.583	0.00	0.345	14.325	11.496	2.703	0.00	0.500	1.315	12.991	0.361	0.775	3.324	0.466
0.520	2988.338	2.594	0.00	0.358	14.843	11.787	2.742	0.00	0.520	1.271	12.441	0.375	0.789	3.296	0.475
0.540	3232.970	2.606	0.00	0.371	15.341	12.053	2.778	0.00	0.540	1.225	11.954	0.387	0.800	3.269	0.484
0.560	3482.944	2.620	0.00	0.384	15.869	12.343	2.801	0.00	0.560	1.200	11.667	0.319	0.650	3.142	0.491
0.580	3741.970	2.631	0.00	0.397	16.809	12.854	2.760	0.00	0.580	1.295	12.047	0.313	0.640	3.197	0.489
0.600	3987.840	2.645	0.00	0.409	20.222	11.114	2.927	0.00	0.600	1.235	11.539	0.311	0.534	3.709	0.583
0.620	4198.268	2.658	0.00	0.419	23.625	9.406	2.852	0.00	0.620	1.206	11.746	0.308	0.439	4.206	0.701
0.640	4373.910	2.659	0.00	0.427	26.896	7.727	2.408	0.00	0.640	1.190	10.468	0.305	0.354	4.686	0.862
0.660	4518.239	2.639	0.00	0.434	29.411	6.759	1.775	0.00	0.660	1.234	7.085	0.301	0.305	5.036	0.987
0.680	4662.292	2.613	0.00	0.442	30.442	7.281	1.857	0.00	0.680	1.344	7.469	0.298	0.325	5.125	0.918
0.700	4816.652	2.590	0.00	0.449	31.424	7.753	1.935	0.00	0.700	1.432	7.797	0.296	0.342	5.200	0.865
0.720	4979.507	2.570	0.00	0.458	32.458	8.097	2.029	0.00	0.720	1.497	7.997	0.295	0.354	5.277	0.832
0.740	5148.667	2.554	0.00	0.467	33.512	8.390	2.128	0.00	0.740	1.548	8.133	0.294	0.364	5.353	0.808
0.760	5323.688	2.542	0.00	0.476	34.560	8.672	2.227	0.00	0.760	1.592	8.243	0.292	0.372	5.408	0.787
0.780	5504.463	2.533	0.00	0.486	35.608	8.951	2.324	0.00	0.780	1.628	8.339	0.291	0.379	5.459	0.768
0.800	5690.680	2.528	0.00	0.496	36.623	9.194	2.413	0.00	0.800	1.652	8.370	0.292	0.387	5.512	0.754

PA860 Offset load test -cat. C

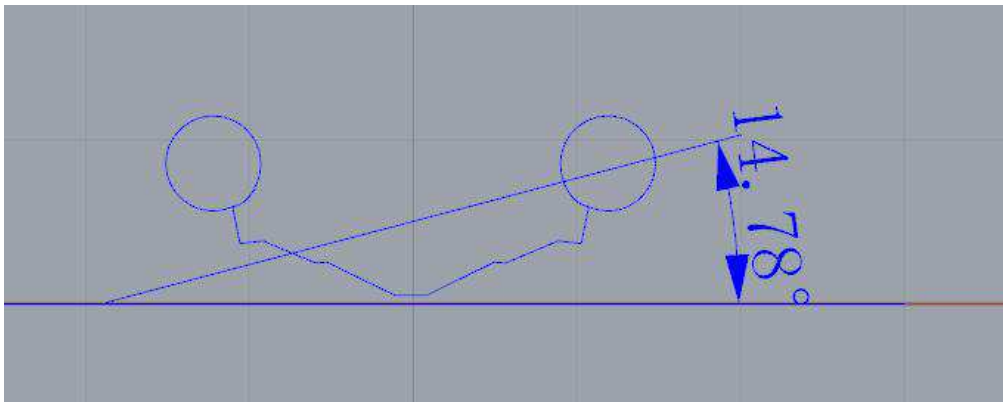
1.General

Length Overall, LOA	8.6	m
L_H=	8.6	m
Beam Overall, Boa	3.10	m
Depth Overall, D	1.840	m
Waterline Length, Lwl	8.023	m
Waterline Beam, Bwl	2.313	m
Navigational Draft, T	0.707	m
Displacement Weight	4252.4	kgf
Volume	4.145	m³
LCG	3.180	m
TCG	0.250	m
VCG	0.820	m
Fluid Density	1025.0	kg/m³
LCB	3.201	m
TCB	0.34	m
VCB	0.487	m
Wetted Surface Area	25.856	m²
Waterplane Area, Awp	10.848	m²
LCF	2.968	m
TCF	0.381	m
Weight To Immerse	111.29	kgf/cm
Cb	0.316	
Cvp	0.541	
Cwp	0.585	
Cws	4.484	
I(transverse)	5.731	m^4
I(longitudinal)	52.107	m^4
BMt	1.383	m
BMl	12.571	m
GMt	1.037	m
GMl	12.225	m
Heel angle	14.78°	°
Freeboard	0.33	m

2.Heel angle requirement

During the test , the heel angle Φ_o shall be not greater than

$$11.5 + \frac{(24 - L_H)^3}{520}$$ 18.52 °



As shown from the graph , the real heel angle Φ_O= 14.78° < 18.52°

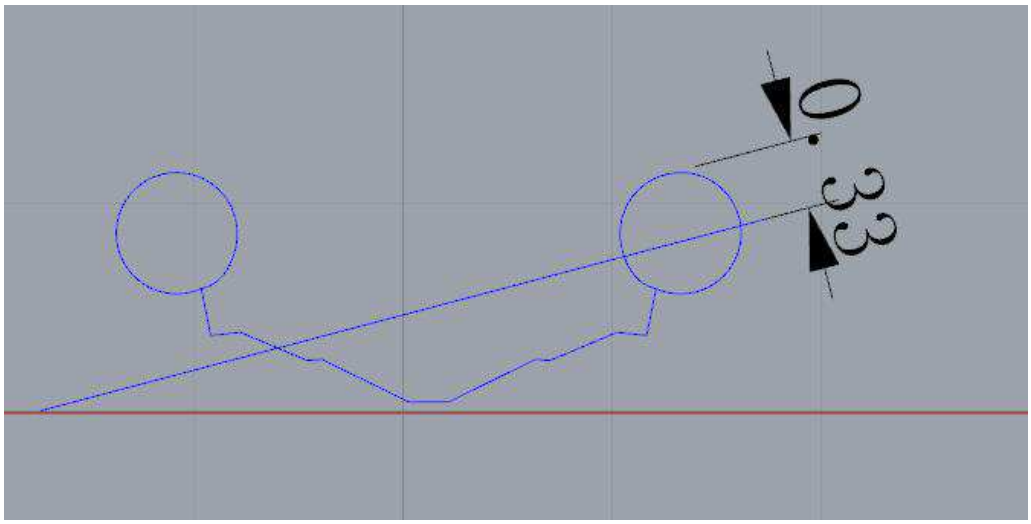
Result: **PASS**

3.Freeboard margin to downflooding requirement

During the test , the freeboard margin to downflooding shall not be less than

$0.014L_H$= 0.12 m

0.1 m



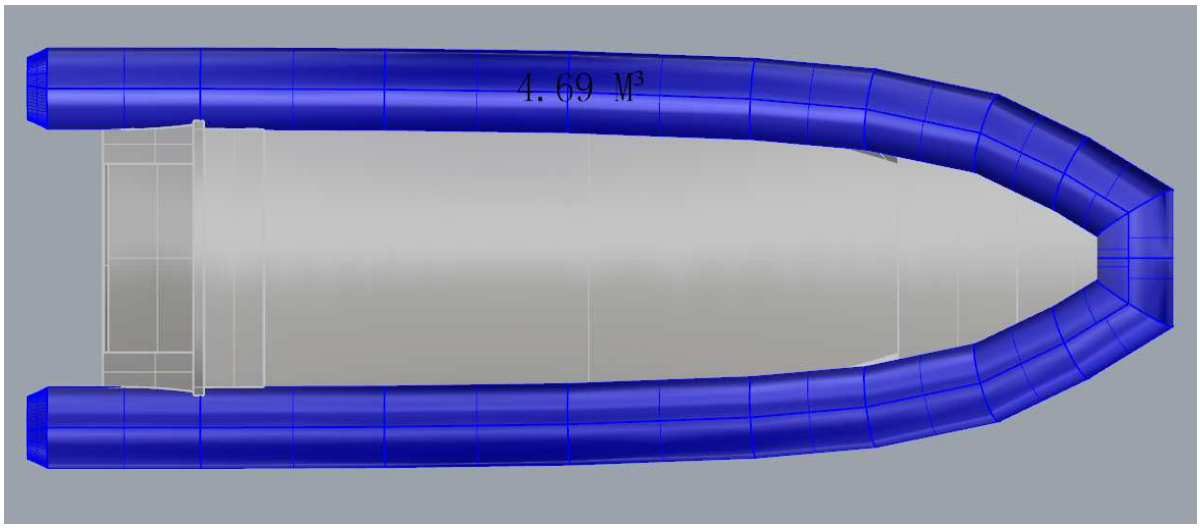
As shown above,the minimum freeboard to the downflooding is =

0.33 m > 0.12 m

Result: **PASS**

PA860 Buoyancy

Inflatable Buoyancy tube: 4.69 m3 (3.5)
Permanent sealed buoyancy: 0 m3 (3.8)



Inherent buoyancy of the rigind parts of the boat:

0.517 m3
0.208 m3
Total 0.725 m3

Alluminium mass: 1395 Kg
outboard engine mass: 625 Kg

Table 4 — Material densities

Material	Density kg/m³
Aluminium alloys	2 700

$$v = \frac{m}{\rho}$$

v is the volume of an element, expressed in m³;

m is the mass of that element, expressed in kg;

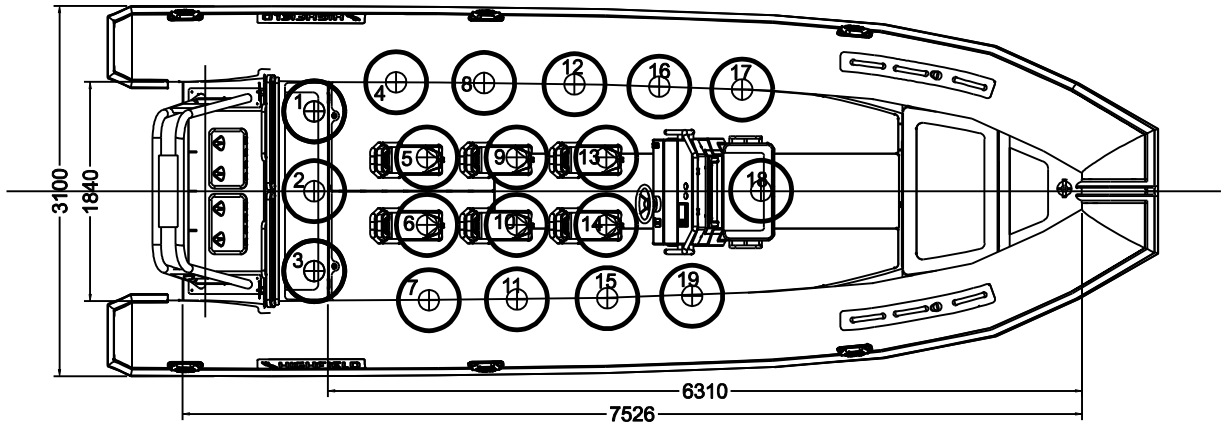
ρ is the density of that element, expressed in kg/m³, as given in Table 4.

TOTAL BUOYANCY: 5.415 m3

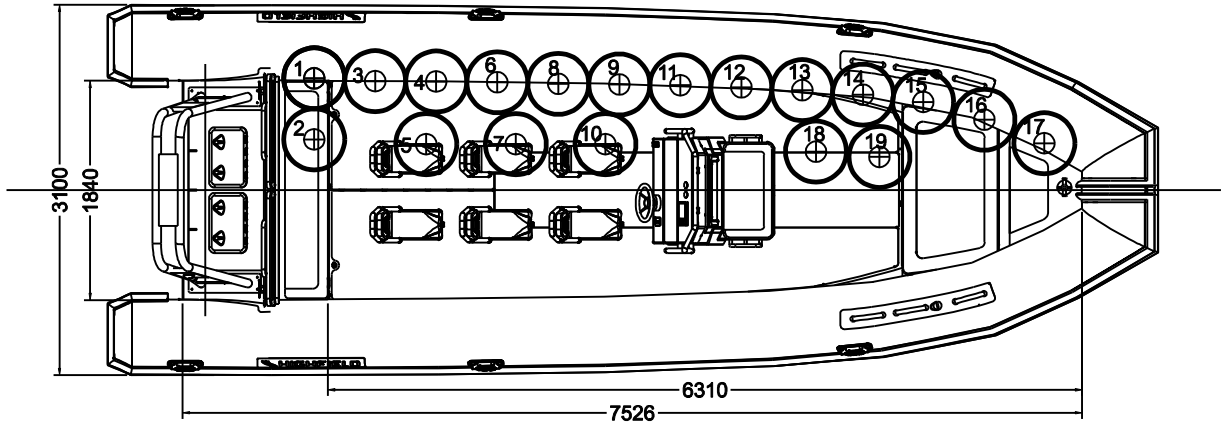
The total buoyant volume of the RIB (V), in cubic metres, shall be as follows:

$$V > \frac{1{,}33 \times m_{LDC}}{1\,000}.$$

cat C mLDC= 4062 Kg 1,33xmLDC/1000= 5.402 < 5.415 OK



NAVIGATION SEATS



CREW OFFSET TEST

SPECIFICATION

Crew Area	10.15 m²
Max Pax	19

DND
DAWN YACHT DESIGN

	Signature		
Design by	S.C		
Checked by			
Technic by			
Approved by		DATE	2018.07

Drawing Title

Crew Area

Project Name: PA860

Drawing NO.: PA86-01-08

PAPER	SCALE
A4	1:60
SHEET	1 of 1

PA860 Righting Arm (mMo)-cat. C

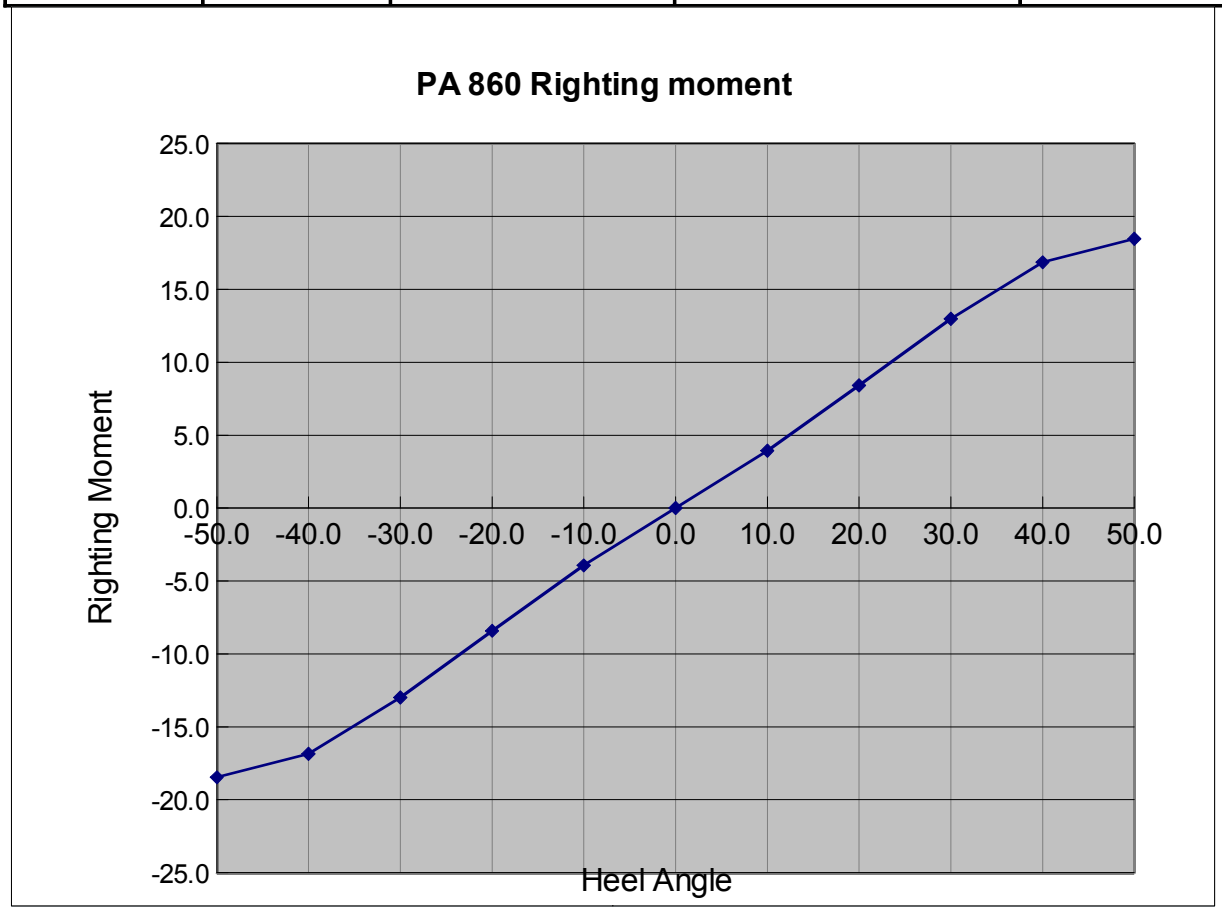
1.General

L_{OA}=	8.6 m
L_H=	8.6 m
Displacement=	2297.8 Kg
Design Category	C
Condition	mMo

2.Righting arm

The righting moment curve plot on the same graph , as below:

Heel(deg)	Trim(deg)	Righting Arm (m)	Righting Moment (N*m)	
-50.0	1.9	-0.8	-18.5	
-40.0	1.8	-0.7	-16.9	
-30.0	1.6	-0.6	-13.0	
-20.0	1.1	-0.4	-8.4	
-10.0	0.4	-0.2	-3.9	
0.0	0.3	0.0	0.0	
10.0	0.4	0.2	3.9	
20.0	1.1	0.4	8.4	
30.0	1.6	0.6	13.0	
40.0	1.8	0.7	16.9	
50.0	1.9	0.8	18.5	



PA860 Righting Arm (Loaded Arrival)-cat. C

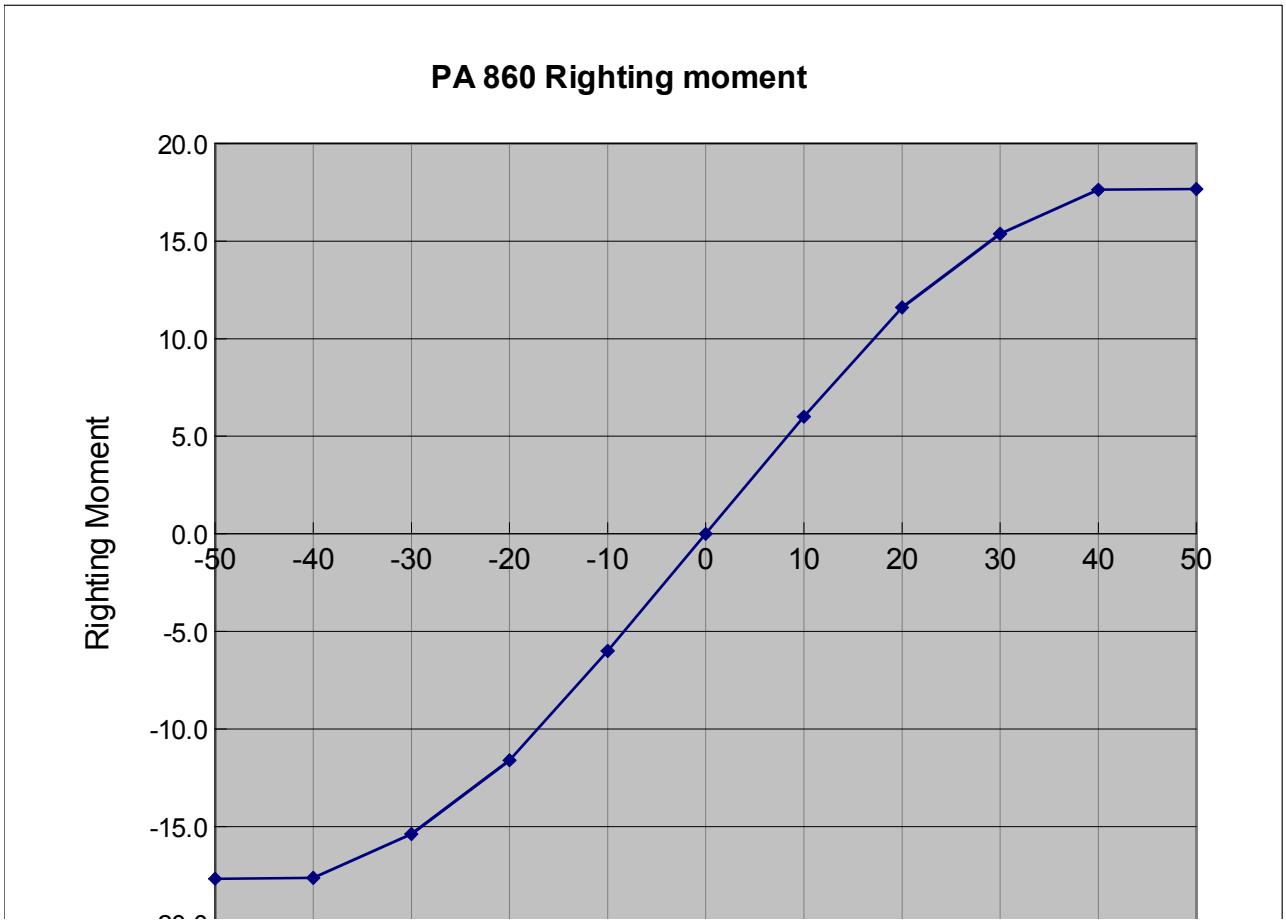
1.General

L_{OA}=	8.6 m
L_H=	8.6 m
Displacement=	3736.2 Kg
Design Category	C
Condition	Loaded Arrival

2.Righting arm

The righting moment curve plot on the same graph , as below:

Heel(deg)	Trim(deg)	Righting Arm (m)	Righting Moment (N*m)	
-50	1.5	-0.5	-17.7	
-40	1.8	-0.5	-17.6	
-30	1.8	-0.4	-15.4	
-20	1.6	-0.3	-11.6	
-10	1.2	-0.2	-6.0	
0	0.9	0.0	0.0	
10	1.2	0.2	6.0	
20	1.6	0.3	11.6	
30	1.8	0.4	15.4	
40	1.8	0.5	17.6	
50	1.5	0.5	17.7	



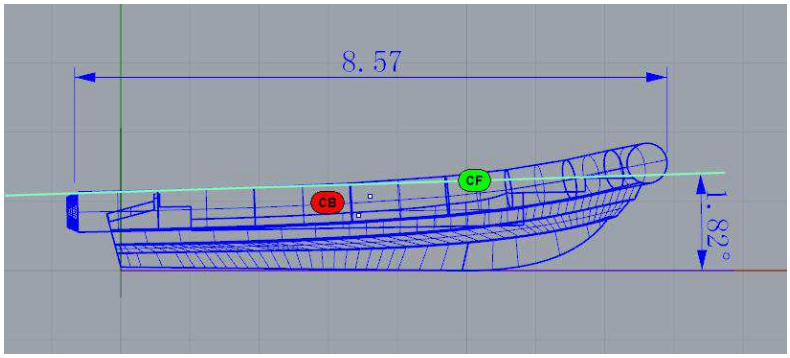
PA860 Swamped stability

1.General

Length Overall, LOA	8.6	m
L_H=	8.6	m
Beam Overall, Boa	3.10	m
Depth Overall, D	1.88	m
Waterline Length, Lwl	8.52	m
Waterline Beam, Bwl	2.65	m
Navigational Draft, T	0.58	m
Displacement Weight	3951.8	kgf
Volume	2.65	m³
LCG	3	m
TCG	0	m
VCG	0.86	m
Fluid Density	1025.0	kg/m³
LCB	3.00	m
TCB	0	m
VCB	0.984	m
Wetted Surface Area	25.099	m²
Waterplane Area, Awp	5.262	m²
LCF	5.112	m
TCF	0	m
Weight To Immerse	53.98	kgf/cm
Cb	0.294	
Cvp	1.263	
Cwp	0.233	
Cws	4.38	
I(transverse)	5.062	m^4
I(longitudinal)	24.415	m^4
BMt	1.314	m
BMl	6.338	m
GMt	1.438	m
GMl	6.462	m
Mt	1.066	m
Ml	6.09	m
Design Category	C	

2.Trim angle requirement

When the boat in the fully loaded condition is filled to overflowing with water , it shall float with not more than 10°from the unswamped fully loaded waterline

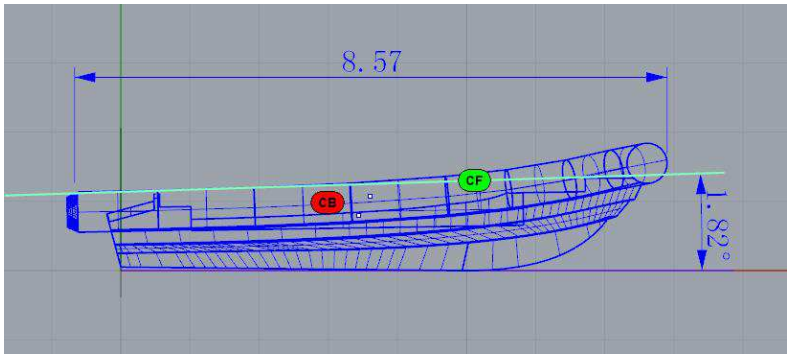


As shown from above , the trim angle Φ= 1.82 °<10°

Result: PASS

3.L_H requirement

When the boat in the fully loaded condition is filled to overflowing with water , it shall be more than 2/3 of L_H above the water



As shown from above , L_H'= 8.57 m

L_H'/L_H= 1.00 >2/3 L_H= 0.667

Result: PASS

PA860 Maximum power for initial testing

The maximum power for initial testing of outboard powered craft is determined based on the following:

— factor λ, calculated as follows:

$$\lambda = L_H \times B_T$$

where

L_H is the length of hull, in metres, as defined in ISO 8666;

B_T is the transom width, in metres, at or below the sheer, as defined in ISO 8666;

For craft with a factor λ greater than 5,1, the value of the maximum power for initial testing, expressed in kilowatts, is taken as the following (see Figure C.3):

— without remote wheel steering, deadrise angle $\alpha < 5$: $4{,}2\lambda - 11$;

— without remote wheel steering, deadrise angle $\alpha \geqslant 5$: $6{,}4\lambda - 19$;

— with remote wheel steering: $16\lambda - 67$.

Lh 8.6 m
Bt 3.1 m
λ 26.66 **λ>5**
Deadrise >5 deg.

With steering wheel
359.56 KW 481.8104 HP

$7\sqrt{L_H}$ 20.52803 Kn

Vmax> $7\sqrt{L_H}$

The test has to be performed with the maximum power.