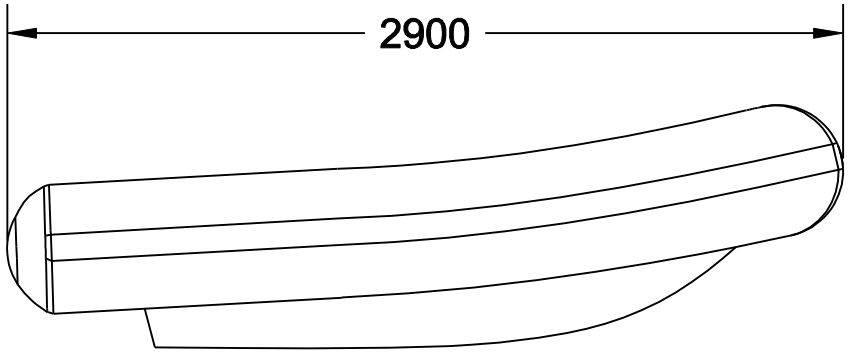
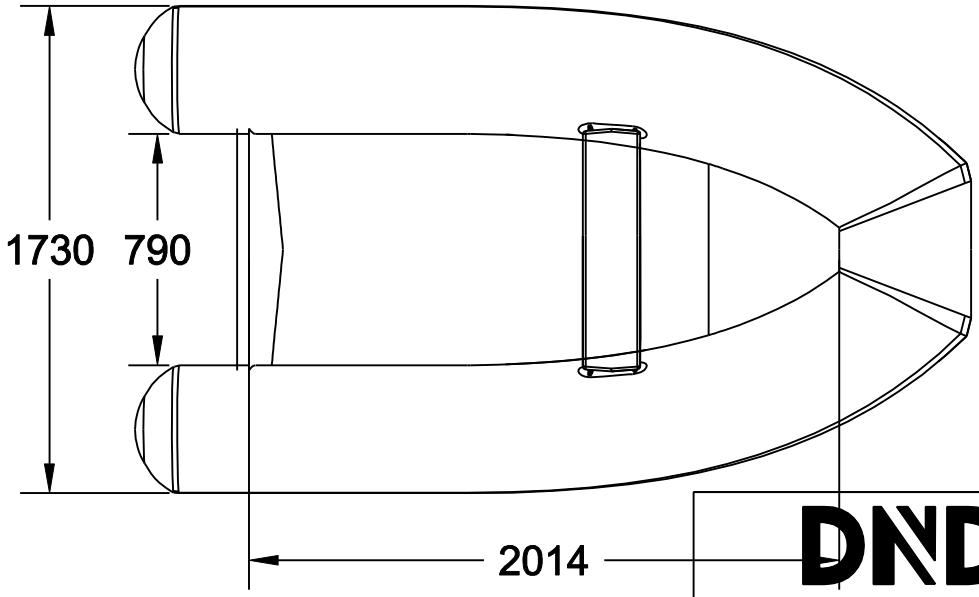
Stabitlity calculation according to ISO 6185-2 and ISO 12217-3-2017

By Xiamen DAWN DESIGN
Company: 厦门道恩建筑设计有限公司
Address: 中国(福建)自由贸易试验区厦门片区翔云一路95号运通中心604B单元之五八八
604B-588 Yuntong Center,No.95 Xiangyunyilu road,Xiamen area of China(Fujian) Pilot Free Trade Zone
Owner: 王弘涛

DND DAWN YACHT DESIGN 厦门道恩建筑设计有限公司			ITEM	PROJECT:	CL 290
			CL290	Cat.	cat. C
	Signature			PAPER	SCALE
Design by			Stability calculations	A4	
Checked by				sheet	1 of 8
Technic by					
Approved by		DATE 2018.07			

CONTENT





SPECIFICATION

Loa	2900mm
Beam	1730mm
Inside Length	2014mm
Inside Width	790mm
Weight	57Kg
Max Pax	4
Max Load	480Kg
Max HP	15
Shaft	Short
Tube	44cm
Airtight Chambers	3

DND
DAWN YACHT DESIGN

	Signature		
Design by	S.C/L		
Checked by			
Technic by			
Approved by		DATE	2017.04.19

Drawing Title

General Arrangement

Project Name: CL290

Drawing NO cl29-01-01

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R2

CL290 Weight			
Weight of the boat	57	kg	
Weight of the motor	60	kg	
test load	201.00	kg	4 passengers
TOTAL test mass:	**318.00**	kg	

The total test load m_t, in kilograms, shall be calculated using the following formula:

$m_t = (0{,}67 \times n \times 75) + (0{,}67 \times 37{,}5)$ for a child, if applicable

n is the maximum permissible number of adults determined by the manufacturer (see 6.1), i.e. 75 kg for each permissible adult and 37,5 kg for a child, if applicable.

Maximum power

6.2 Maximum motor power

This is applicable to Type V boats only.

The motor maximum power, in kilowatts, shall be determined by the manufacturer and shall not exceed that calculated using the following formula:

$$P_{max} = 10 \times F(d) - 33$$

where

P_{max} is the maximum motor power rating, in kilowatts, determined in accordance with ISO 8665;

$F(d)$ is the dimensional factor = $l \times b$

where

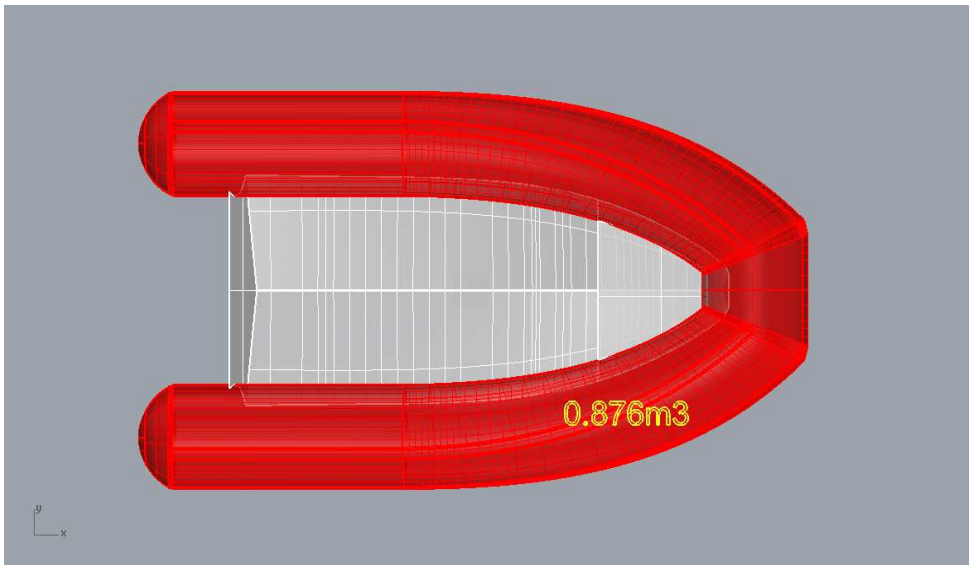
l is the overall length of the boat, in metres, from the bow to the extremity of the rear float (excluding handholds or other fittings);

b is the overall beam of the boat, in metres (excluding handholds or other fittings).

	l(m)	b(m)	Pmax Kw	Pmax HP
CL 290	2.9	1.730	17.17	**23.03**

CL290 Buoyancy

Inflatable Buoyancy tube: **0.876** m^3



Maximum Load

The maximum load which may be carried by the boat shall be determined by the manufacturer and shall not exceed that calculated using the following formula:

$$m = (0{,}75 \times V \times 1\,000) - m_b$$

where

m is the maximum load capacity, in kilograms (total mass on board including persons, equipment, motor(s) and fuel);

V is the volume, in cubic metres, of the buoyancy of the boat;

m_b is the total mass, in kilograms, of the boat as supplied by the manufacturer [inclusive of all permanently installed equipment supplied with the boat: hull, fittings and similar items but without motor(s) and fuel]. Permanently installed engine(s) and drive systems shall also be included.

Buoyancy volume (m3)	M (kg)	m (kg)	Max load reccomended by manufacturer:
m^3	kg	kg	kg
0.876	57	600	480

Maximum number of passengers

$$n = \frac{l_i}{0{,}38} - 1$$

where l_i is the inboard length, in metres.

Under no circumstances shall the value, n, expressed in body mass, exceed the maximum load capacity (see 6.4).

The value n shall always be rounded down to the nearest integer but, if the first decimal place is greater than 5, a child may be added, or if greater than 7, an adult may be added.

For calculations, the body mass of a child is defined as 37,5 kg and the body mass of an adult as 75 kg.

The data displayed on the builder's plate(s), see clause 8 e), shall include at least one adult and not more than one child.

	l_i	n		N. persons
CL 290	2	4.263		4

Hydrostatics Report

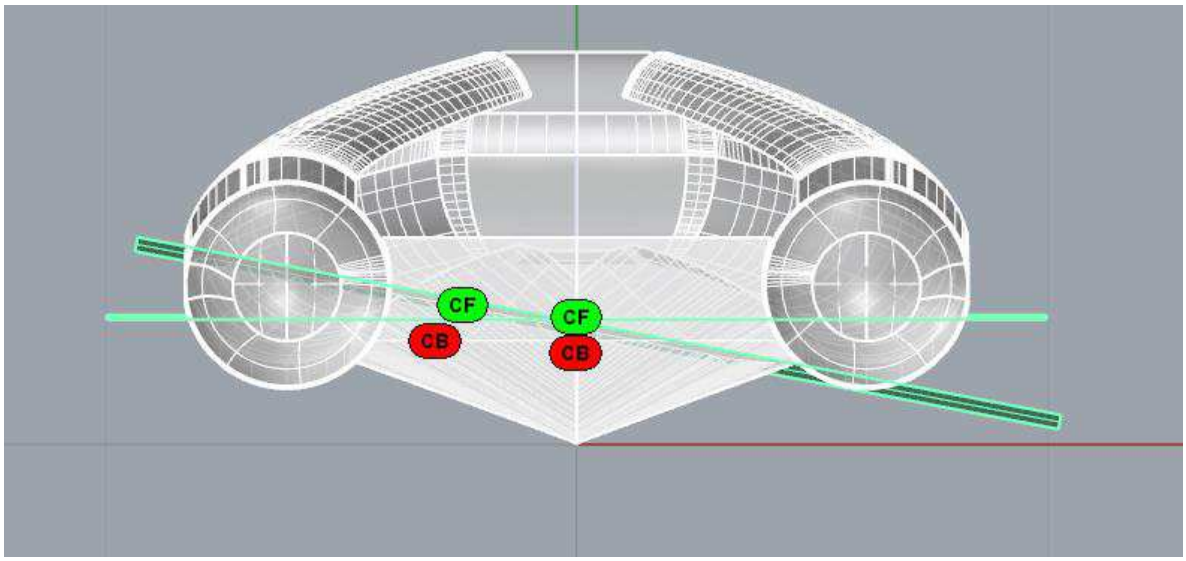
Length Overall, LOA	2.900	m
L_H=	2.900	m
Beam Overall, Boa	1.730	m
Waterline Length, Lwl	2.386	m
Waterline Beam, Bwl	1.251	m
Navigational Draft, T	0.268	m
Displacement Weight	318.000	kgf
Volume	0.310	m³
LCG	0.549	m
TCG	0.000	m
VCG	0.462	m
Fluid Density	1025.000	kg/m³
LCB	0.550	m
TCB	0.325	m
VCB	0.193	m
Wetted Surface Area	3.396	m²
Waterplane Area, Awp	2.813	m²
LCF	0.614	m
TCF	0.000	m
Weight To Immerse	28.863	kgf/cm
I(transverse)	0.601	m^4
I(longitudinal)	0.851	m^4
BMt	1.938	m
BMl	2.745	m
GMt	1.670	m
GMl	2.476	m
Mt	1.863	m
Ml	2.670	m
Heel Angle	0.000	deg
Trim Angle	0.165	deg
Cb	0.294	
Cwp	0.717	
Cvp	0.411	
Cws	3.948	

Offset load test simulation

1.General

Length Overall, LOA	2.900	m
L_H=	2.900	m
Beam Overall, Boa	1.730	m
Waterline Length, Lwl	2.348	m
Waterline Beam, Bwl	1.531	m
Navigational Draft, T	0.255	m
Displacement Weight	318.000	kgf
Volume	0.310	m³
LCG	0.549	m
TCG	0.253	m
VCG	0.462	m
Fluid Density	1025.000	kg/m³
LCB	0.547	m
TCB	0.300	m
VCB	0.219	m
Wetted Surface Area	2.935	m²
Waterplane Area, Awp	2.268	m²
LCF	0.667	m
TCF	0.244	m
Weight To Immerse	23.272	kgf/cm
I(transverse)	0.298	m^4
I(longitudinal)	0.740	m^4
BMt	0.963	m
BMl	2.388	m
GMt	0.715	m
GMl	2.140	m
Mt	0.877	m
Ml	2.303	m
Heel Angle	-10.873	deg
Trim Angle	-0.510	deg

2.Test



Water does not enter into the boat.