

# UL 260



Stability calculation according to ISO 12217-3-2017 Small craft Stability and buoyancy assessment

By Xiamen DAWN DESIGN

Company: 厦门道恩建筑设计有限公司

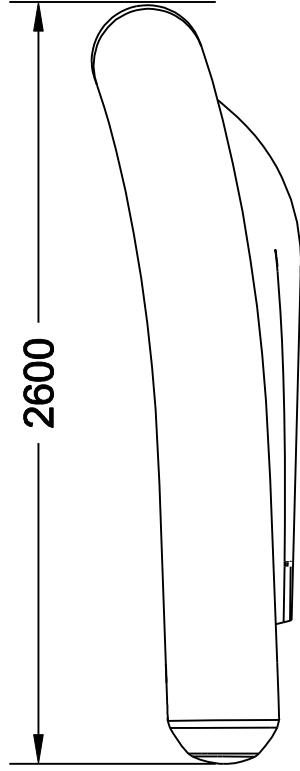
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604B-588 Yuntong Center, No.95 Xiangyunyilu road, Xiamen area of  
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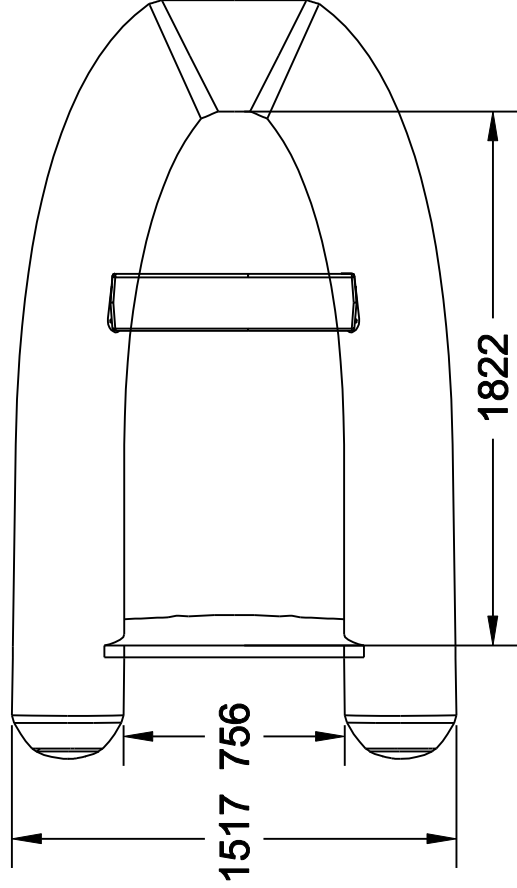
 DAWN YACHT DESIGN 厦门道恩建筑设计有限公司	<b>ITEM</b>		PROJECT:	UL 260	
	<b>UL 260</b>		Cat.	cat. C	
Signature			REV.	PAPER	SCALE
Design by			R2	A4	
Checked by			sheet 1 of 8		
Technic by					
Approved by		DATE	2018.05		

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2600



1517 756

1822

**SPECIFICATION**

Loa 2600mm  
 Beam 1520mm  
 Inside Length 1822mm  
 Inside Width 756mm  
 Weight 31Kg  
 Max Pax 3  
 Max Load 340Kg  
 Max HP 6  
 Shaft Short  
 Tube 38cm  
 Airtight Chambers 3

<b>DND</b> DAWN YACHT DESIGN		Signature		
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	Checked by			
	Technic by			
	Approved by			
	DATE	2017.04.19		

<b>Drawing Title</b>  <b>General Arrangement</b>	Project Name: UL260		
	Drawing NO:UL26-01-01		
	PAPER	SCALE	
	A4	1:25	
	SHEET	1	of 1

UL260 Weight			
Weight of the boat	31	kg	
Weight of the motor	40.9	kg	
test load	150.75	kg	3 passengers
TOTAL test mass:	<b>222.65</b>	kg	

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

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

$n$  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

This is applicable to Type II boats only.

— For boats without a transom:  $P_{\max} = 0,8F(d)$

— For boats with a transom:  $P_{\max} = 1,2F(d)$

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);

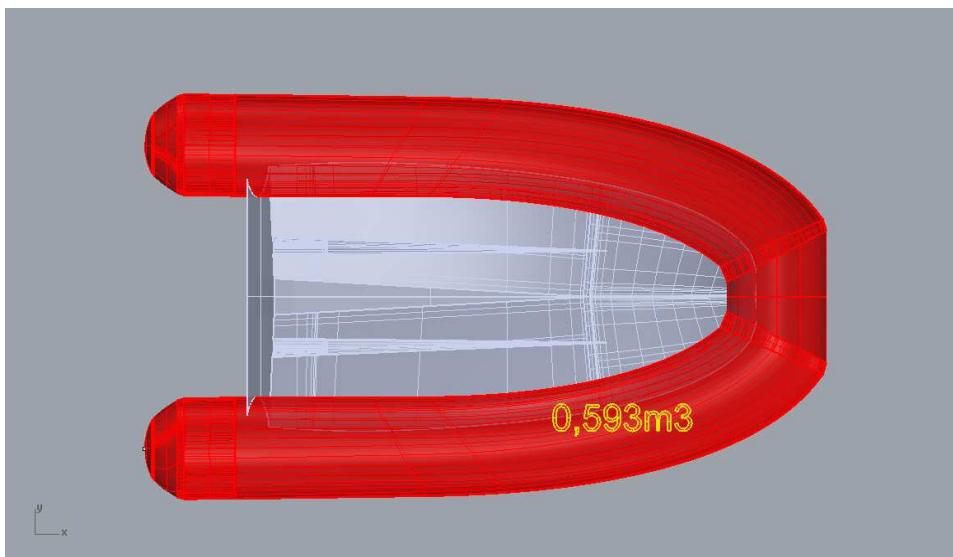
$b$  is the overall beam of the boat, in metres (excluding handholds or other fittings).

	l(m)	b(m)	Pmax Kw	Pmax HP
UL 260	2.6	1.530	4.77	<b>6.40</b>

# UL260 Buoyancy

Inflatable Buoyancy tube:

**0.593 m<sup>3</sup>**



# Maximum Load

- For Types I and III:  $m = (0,5 \times V \times 1\,000) - M$
- For Types II and IV:  $m = (0,75 \times V \times 1\,000) - M$

where

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

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

$M$  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 outboard motor(s) and fuel). Permanently installed engine(s) and drive systems shall also be included.

Buoyancy volume (m <sup>3</sup> )	M (kg)	m (kg)	Max load recommended by manufacturer:
m <sup>3</sup>	kg	kg	kg
0.593	31	413.75	340

## 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
UL 260	1.82	3.789		3

# Hydrostatics Report

Length Overall, LOA	2.60	m
$L_H =$	2.60	m
Beam Overall, Boa	1.51	m
Waterline Length, Lwl	2.15	m
Waterline Beam, Bwl	1.50	m
Navigational Draft, T	0.17	m
Displacement Weight	222.65	kgf
Volume	0.22	m <sup>3</sup>
LCG	0.47	m
TCG	0.00	m
VCG	0.40	m
Fluid Density	1025.00	kg/m <sup>3</sup>
LCB	0.46	m
TCB	0.00	m
VCB	0.13	m
Wetted Surface Area	2.63	m <sup>2</sup>
Waterplane Area, Awp	2.25	m <sup>2</sup>
LCF	0.53	m
TCF	0.25	m
Weight To Immerse	23.04	kgf/cm
I(transverse)	0.39	m <sup>4</sup>
I(longitudinal)	0.56	m <sup>4</sup>
BMt	1.79	m
BMI	2.58	m
GMt	1.53	m
GMI	2.31	m
Mt	1.73	m
MI	2.52	m
Heel Angle	0.00	deg
Trim Angle	-1.49	deg
Cb	0.39	
Cwp	0.70	
Cvp	0.56	
Cws	3.86	

# Offset load test simulation

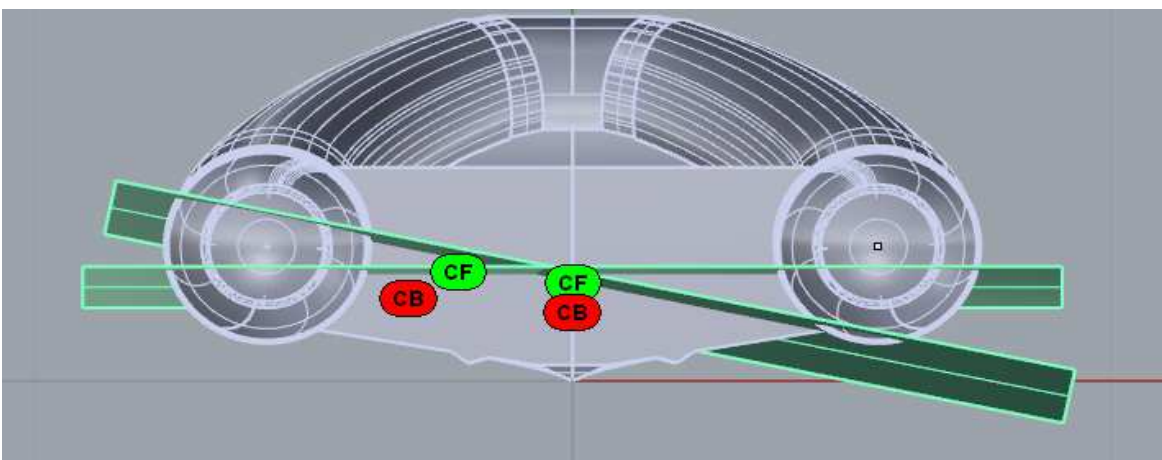
## 1. Test condition

	weight(kg)	x (mm)	y(mm)	z(mm)	Mx	My	Mz
boat	71.9	470	0	206	33793	0	14811.4
load	150.75	470	375	490	70852.5	56531.3	73867.5
	<b>222.65</b>	470.0	253.9	398.3	<b>104646</b>	<b>56531.3</b>	<b>88678.9</b>

## 1. General

Length Overall, LOA	2.600	m
$L_H =$	2.600	m
Beam Overall, Boa	1.520	m
Waterline Length, Lwl	2.107	m
Waterline Beam, Bwl	1.517	m
Navigational Draft, T	0.713	m
Displacement Weight	222.652	kgf
Volume	0.217	m <sup>3</sup>
LCG	0.470	m
TCG	0.254	m
VCG	0.398	m
Fluid Density	1025.000	kg/m <sup>3</sup>
LCB	0.462	m
TCB	0.303	m
VCB	0.161	m
Wetted Surface Area	2.318	m <sup>2</sup>
Waterplane Area, Awp	1.828	m <sup>2</sup>
LCF	0.595	m
TCF	0.213	m
Weight To Immerse	18.752	kgf/cm
I(transverse)	0.197	m <sup>4</sup>
I(longitudinal)	0.464	m <sup>4</sup>
BMt	0.909	m
BMI	2.136	m
GMt	0.667	m
GMI	1.894	m
Mt	0.836	m
MI	2.062	m
Heel Angle	-11.717	deg
Trim Angle	-1.973	deg

## 2. Test



Water does not enter into the boat.