

孚龙光伏

FLOATSOLA

精准漂浮系统提供商

Reliable Supplier for Floating Solar Industry

Floatsola (Xiamen) Co.,Ltd.

An aerial photograph of a vast landscape featuring a large body of water in the foreground. A massive array of dark blue solar panels is floating on the water's surface, arranged in a grid pattern. The surrounding land is green and hilly, with a winding river or stream. The sky is bright blue with some light clouds. On the right side of the image, a list of four menu items is displayed in white, bold, sans-serif font.

01. ONEfloat Introduction

02. Floating Solutions

03. Lists & Services

04. Project Cases



PART 01

ONEfloat Briefing

1. Material: food-grade HDPE

1. Eco-friendly material.
2. Super long weather resistant material,
3. 25 years design life.
4. Anti-photooxidative aging.
5. Anti damp heat aging.
6. Anti-UV aging.
7. Resistance to environmental stress cracking.
8. Acid and alkali resistance, hydrolysis resistance.



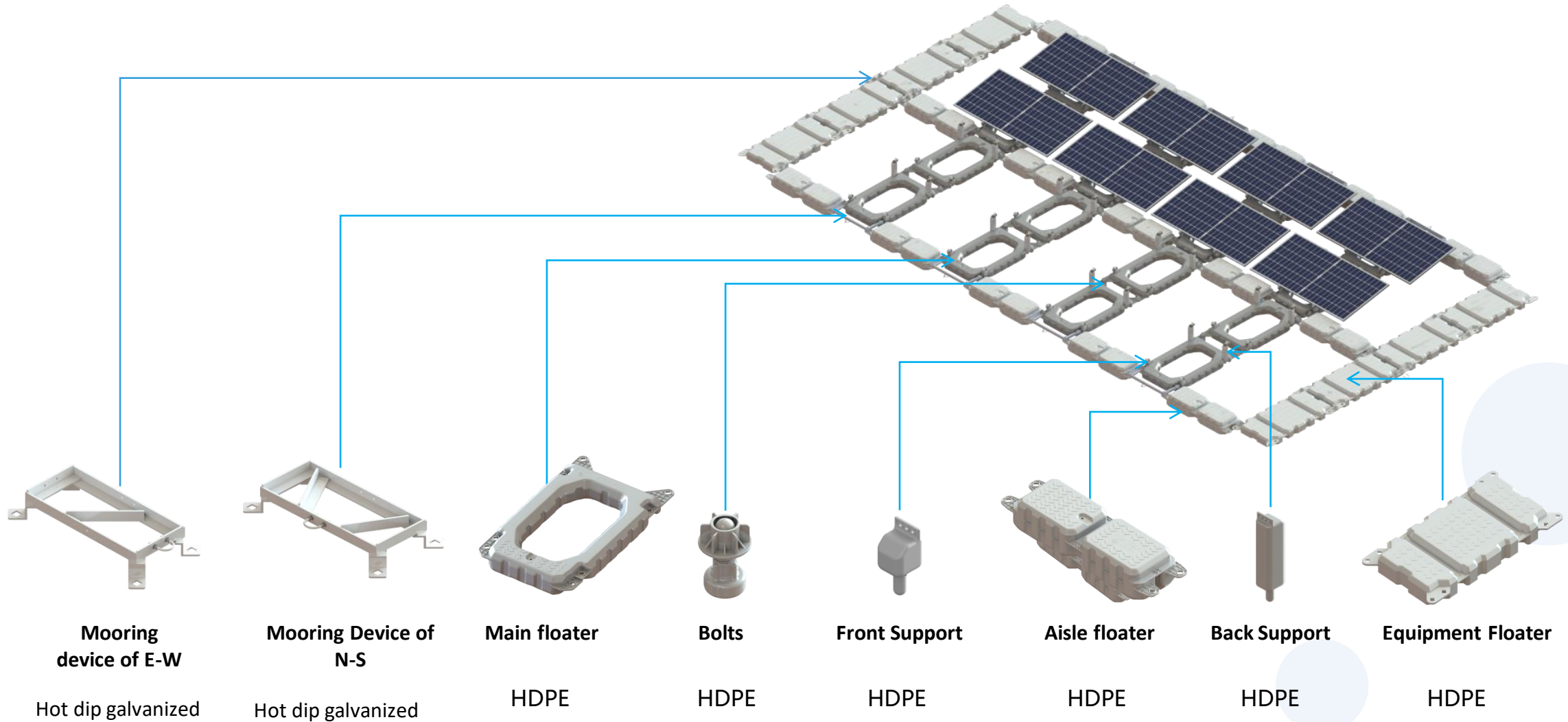
Lotrène[®]
POLYETHYLENE

CONSTAB[®]

سابك
sabic

中国石化茂名石化公司
Sinopec Maoming Petrochemical Company

2. ONEfloat-Main Components



3.1 Characteristic-Main Floater

1.Optimized connecting-plate design

Increased size for connecting plates, enhance ultimate tensile force.

2.Optimized spue line position

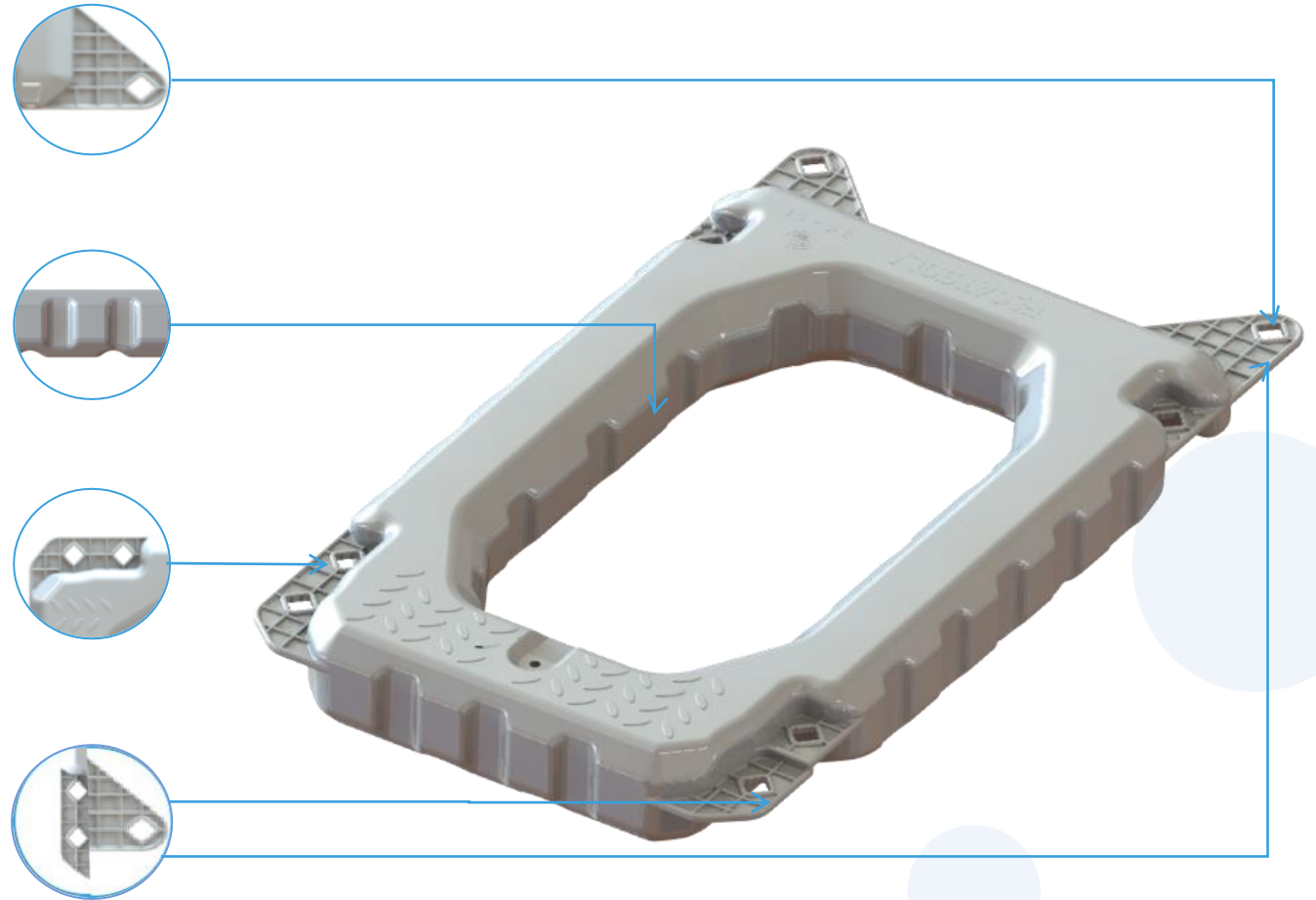
Upward spue line enhances floater surface strength.

3.Optimized support point position

Accurate positioning of supporting points to strengthen its fastening.

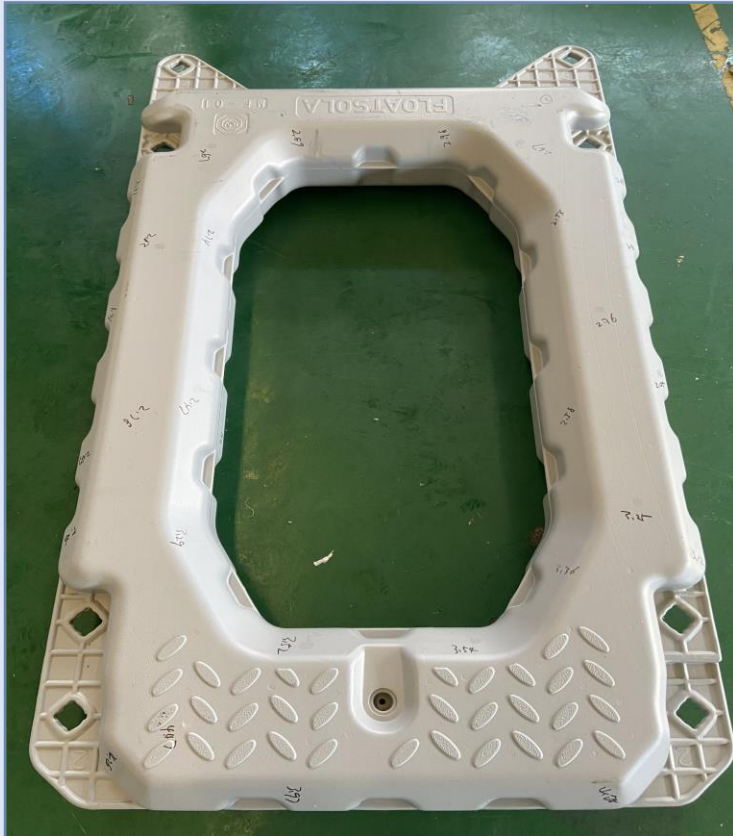
4.Unique floater design

Asymmetrical design, no need to check direction mark, increase installation efficiency.



3.2 Parameter – Main Floater

Main Floater



Technical Parameter:

Material:	HDPE
Size:	924*1625*180mm
Wall thickness:	Ave. 2.5mm
Max. Buoyancy	Up to 100Kg/m ²
Tensile force	≥8000N

3.3 Characteristic-Sidewalk Floater

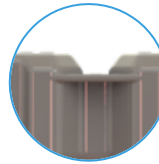
1. Optimized connecting-plate design

Optimized design for connecting plates, enhance ultimate tensile force.



2. Optimized spue line position

Optimized position of the spue line to improve the strength of the floater.



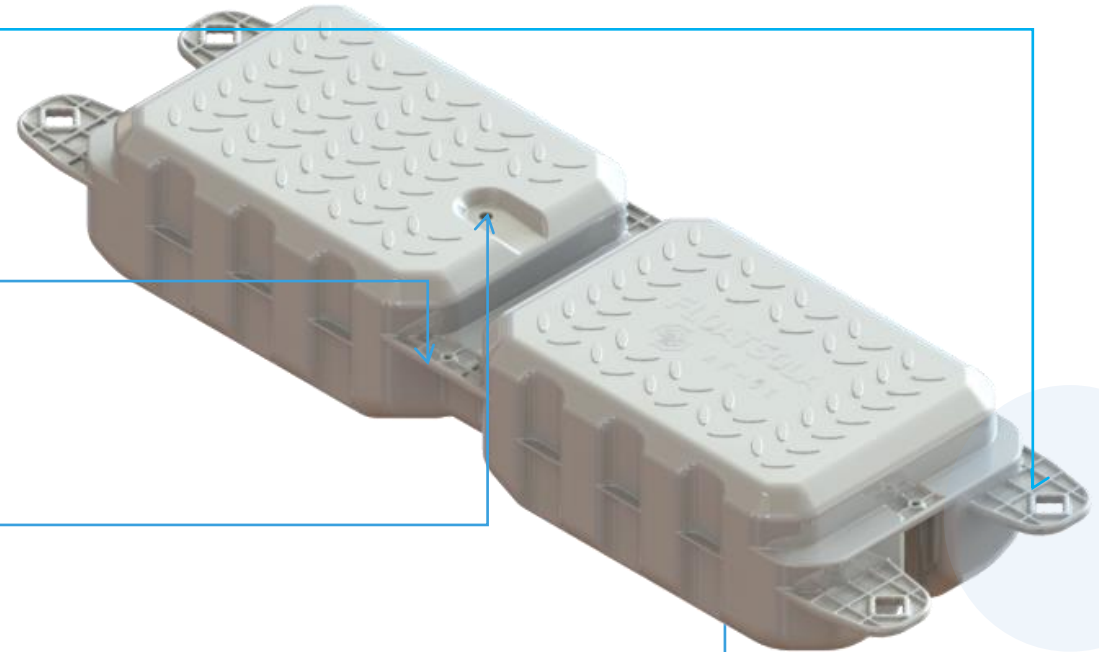
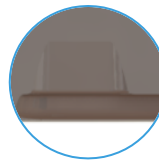
3. Optimized airhole design

Air hole Air designed on upper surface of the floater to reduce the risk of water leakage into floater.




4. Optimized support structure.

Strengthened support structure to improve the walking stability.



3.4 Parameter - Sidewalk Floater

Sidewalk Floater	Parameter	
	Material	HDPE
	Size	450*1644*280mm
	Wall thickness:	Ave. 2.5mm
	Max. Buoyancy	Up to 180Kg/m ²
	Tensile force	≥8000N

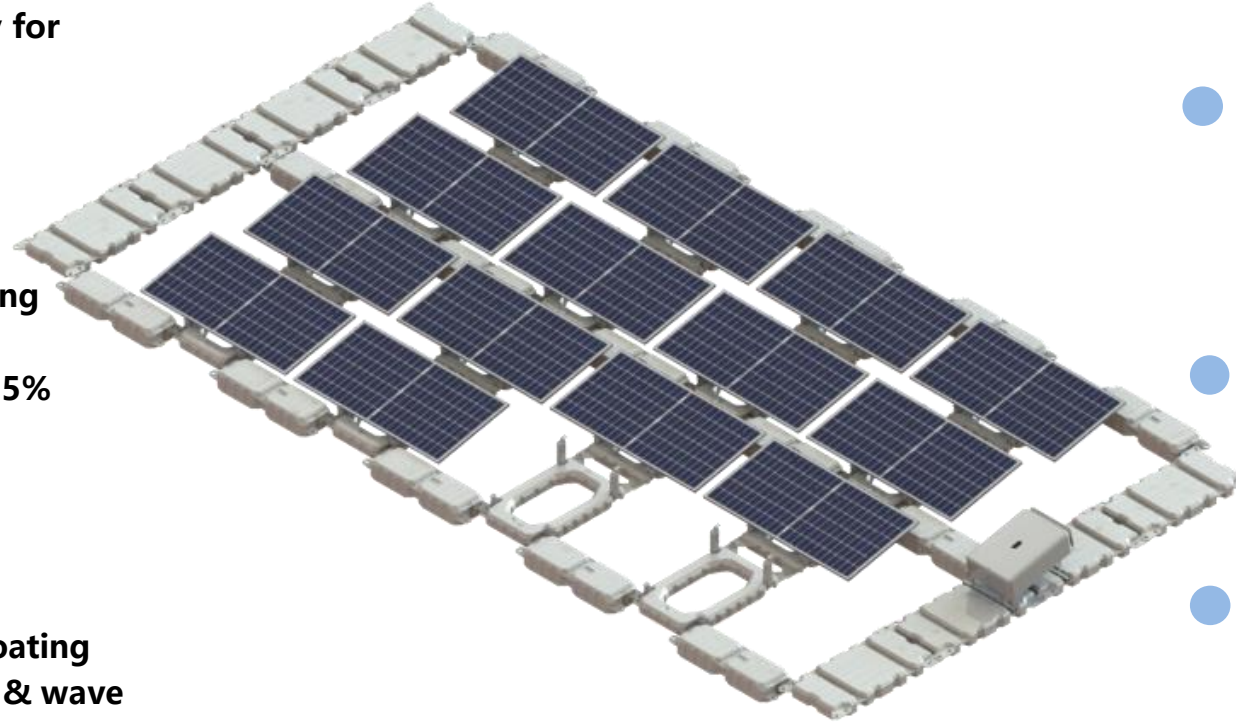
4. Technical Parameters

Technical Parameters/Performance

Module Type Compatible	Most brands, and can suit for large power module such as 540+W & 600+W	Water Quality Detection	Comply with "Standard for Hygienic Safety Evaluation of Equipment and Protective Materials in Drinking Water" (2001), " Standard Examination Methods for Drinking Water" GB/T 5750
Module Array	Landscape	UV-Irradiation Aging	Pass 1800kW·h/m ² cumulative UV-irradiation (test acc. to IEC 61215: 2005)
Module Tilt	5~15° (customized)	Damp-Heat Aging	Pass Damp heat 1500h(85°C,85%RH) (test acc. to IEC 61215, 10. 13)
Environmental Conditions	Adapt to various conditions	Antifatigue	Pass 100,000 cycles of dynamic load test
Clearance Above Water	≥200mm	Environmental Stress Crack Resistance	Pass Environmental Stress-Crack Resistance of Ethylene Plastics, F ₁₀ =1000 (test acc. to ASTM D 1693/GB/T 1842)
Temperature Tolerance	-40~80°C	Container Loading	about 11*40HQ/MW (540W Module)
Material	Main material: HDPE Clamp: aluminum alloy Fastener: 304 stainless steel	Design Standard	ISO 527-1/ ISO 178/ISO 974/IEC 60695-11-10/ISO 175/IEC 61215/ISO 4892.3

5. Advantages of FLOATSOLA floating solar system

- **Modular design that is easy for installation with simple installation tools**
- **Good ventilation and cooling effect, increasing power generation capacity by 3~5%**
- **Strengthened design for connection points, thus to improve stability of the floating system to withstand wind & wave**

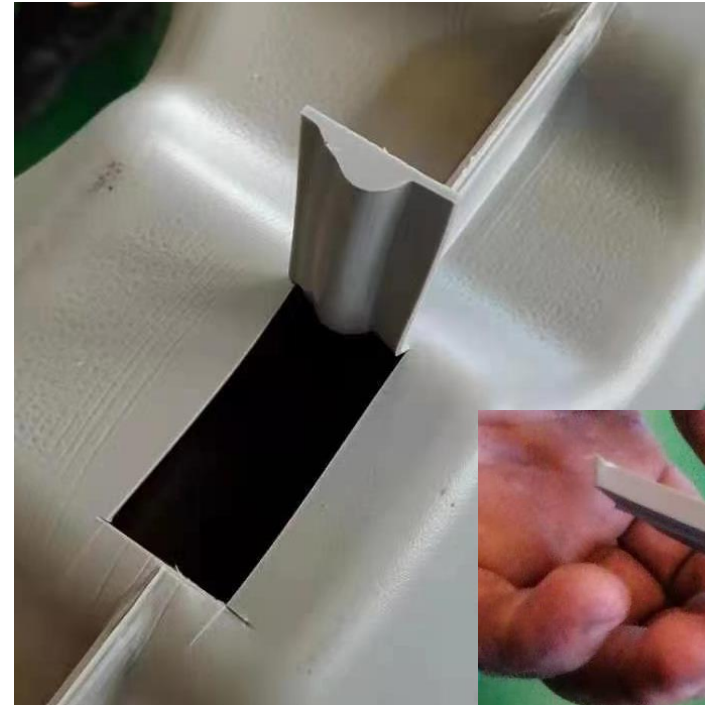


- **100% HDPE structure, which can adapt to various water conditions for long time usage (25 years' design life span)**
- **Compatible with most brands of modules and can adapt to large power module such as 540+W/600+W modules**
- **Various module layout designs, increase installed capacity by 5-10%**

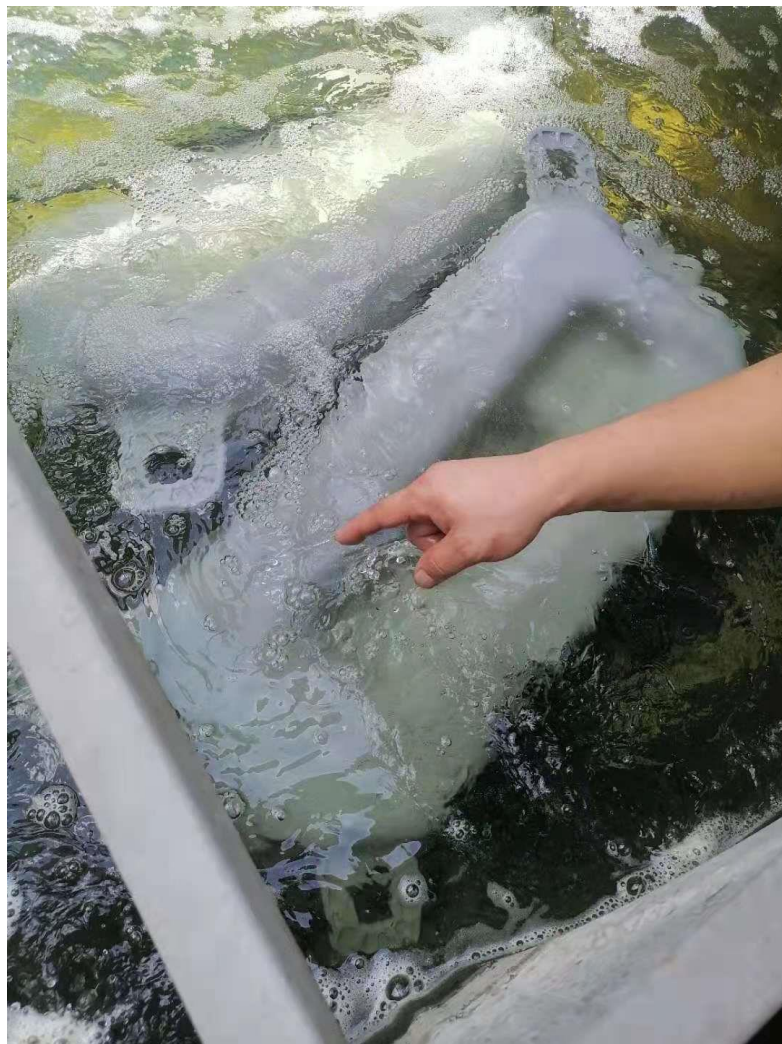
6. Quality Inspection



Inspection for wall thickness of floater body



Inspection for the wall thickness of joint line



Air tightness inspection

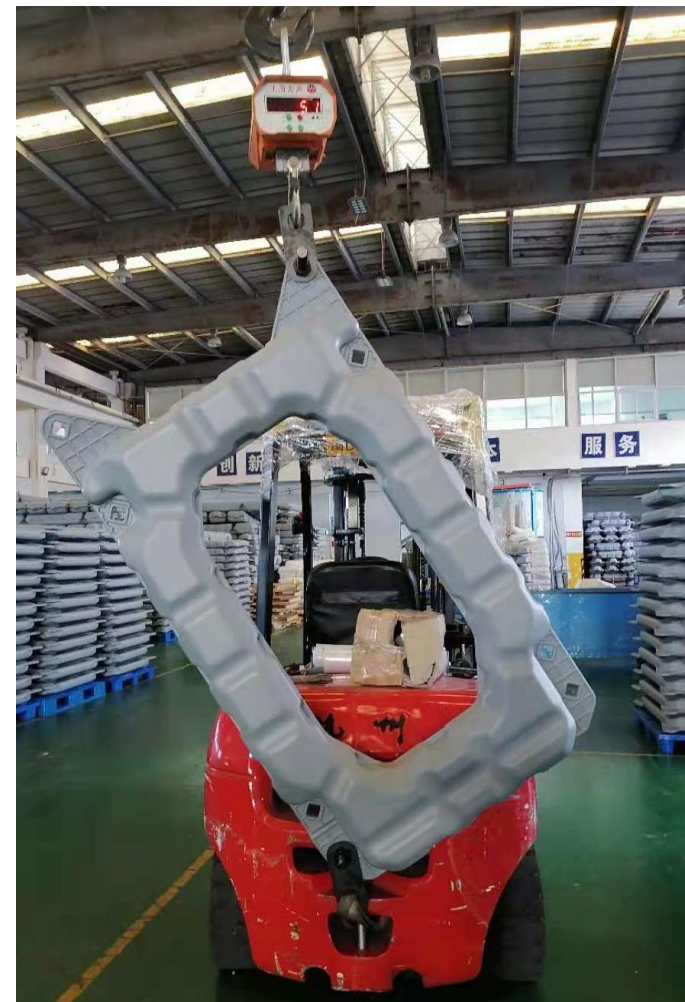


Floater weight inspection



Floater outlook and dimension inspection

Drop test



Tensile force inspection



PART 02

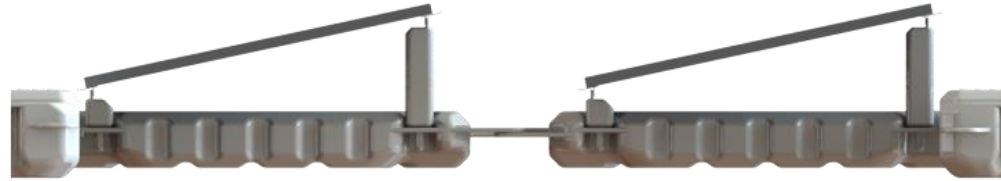
Floating Solutions

1. Module Layout

Module Orientation:

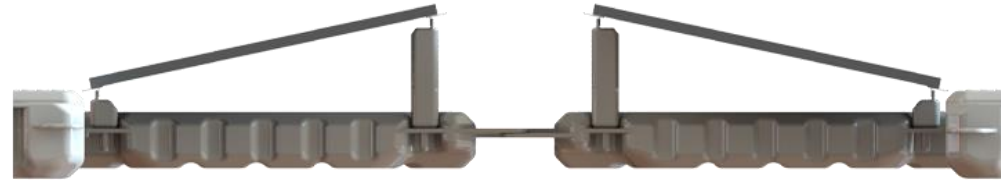
One-way direction Type

1. Modules face one direction, conventional arrangement.
2. Suitable for most regions.

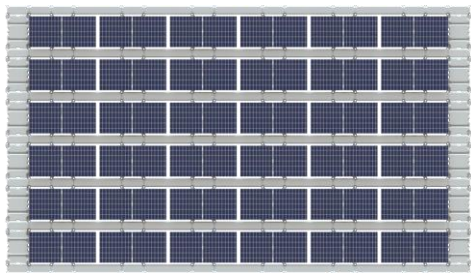


Face-to-face Type

1. Can reduce wind load by 30-50%.
2. Increase installation capacity by 5-10% .
3. Suitable for Southeast Asia and European region.



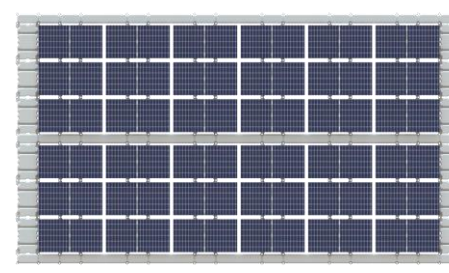
Module Layout (4 ways to choose)



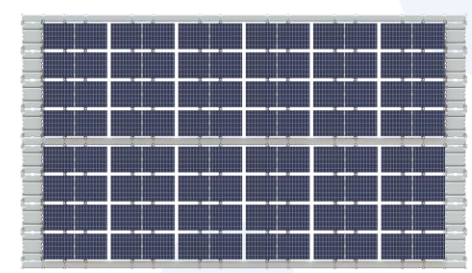
1-IN-A-ROW



2-IN-A-ROW



3-IN-A-ROW



4-IN-A-ROW

2. Floater for Cable



Equipment floater for cable inside island



Equipment floater for cable from island to the shore



Sidewalk floater for cable inside island

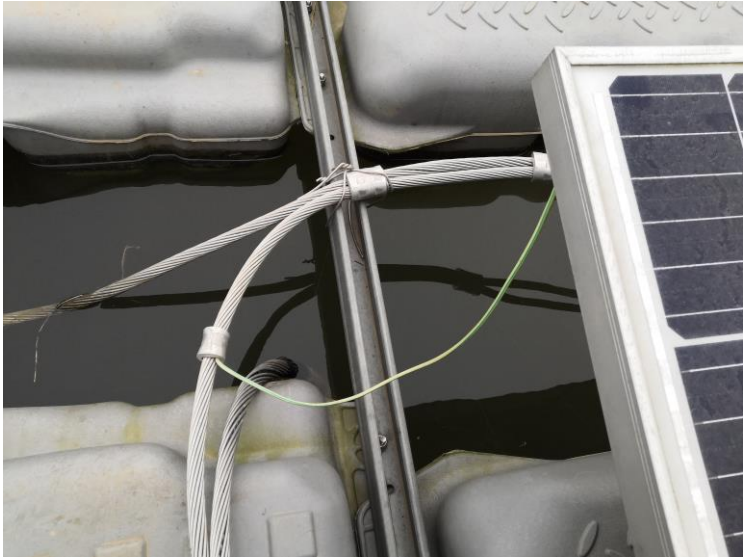


Cable floater for cable from island to the shore

3. Mounting structure for Inverter/combiner box



4. Grounding for Lightning



Grounding net: using stainless steel rope or flat iron

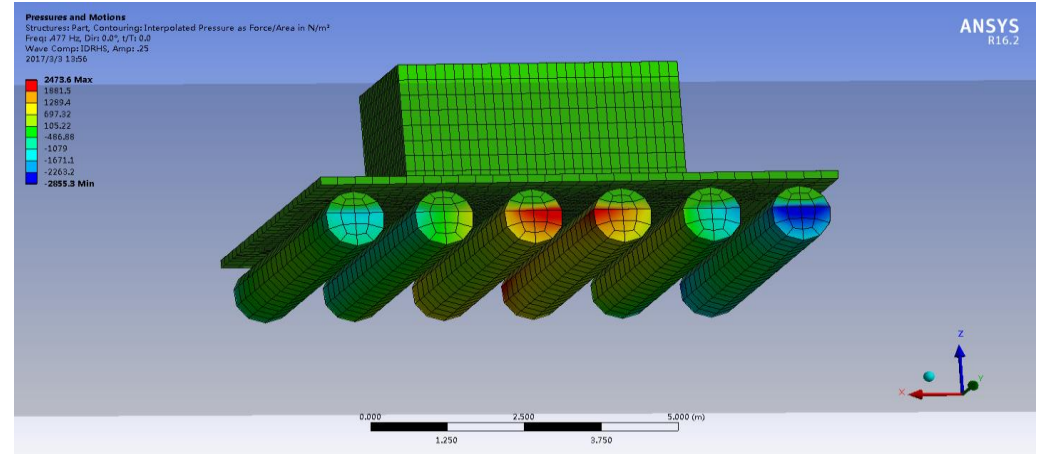


Module Grounding: using common ground wire

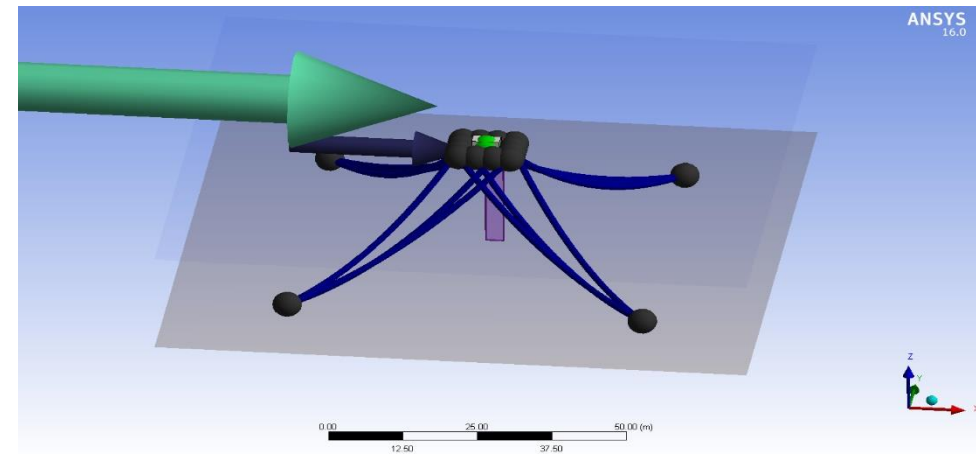
5. Inverter / Booster Floating Platform



Refer to the ship design standard and production process



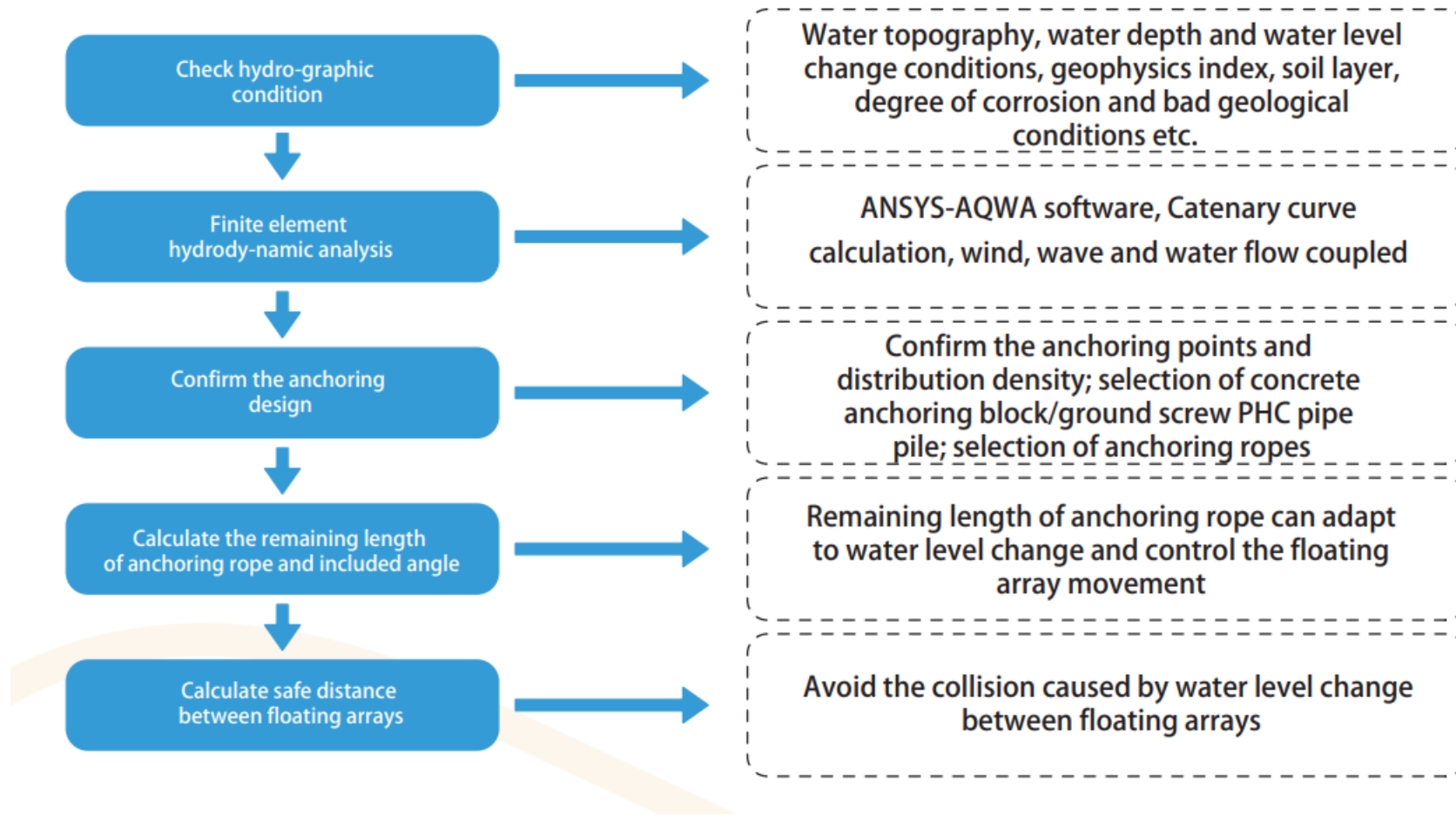
Anti-tip stability analysis



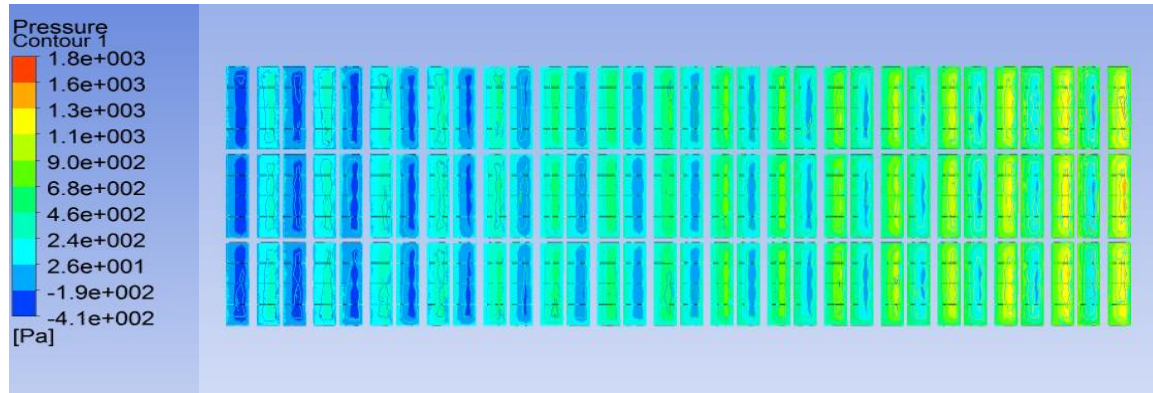
Analysis of anchoring solutions

6.1 Mooring System-Design Process

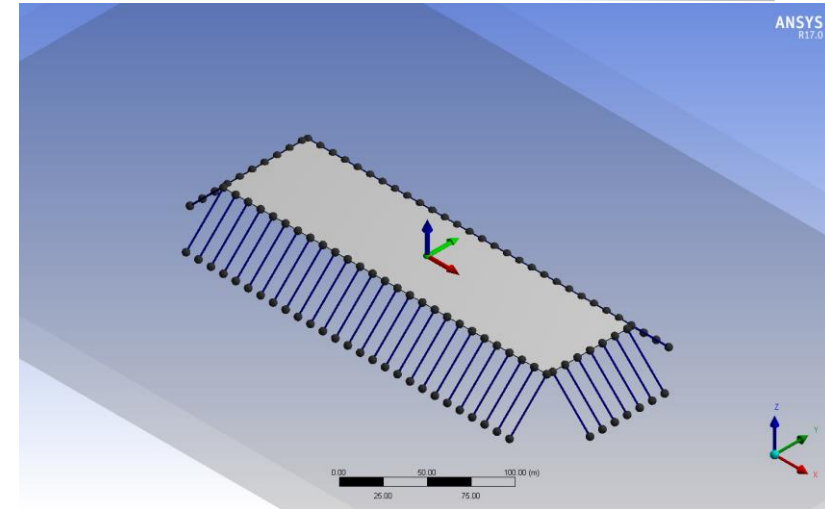
Anchoring system design flowchart



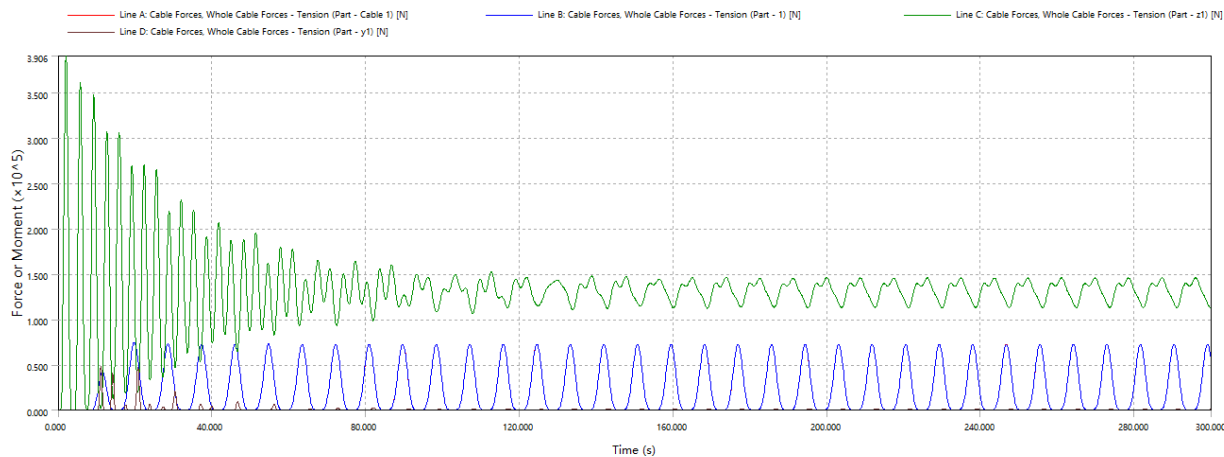
6. Mooring System-Calculation



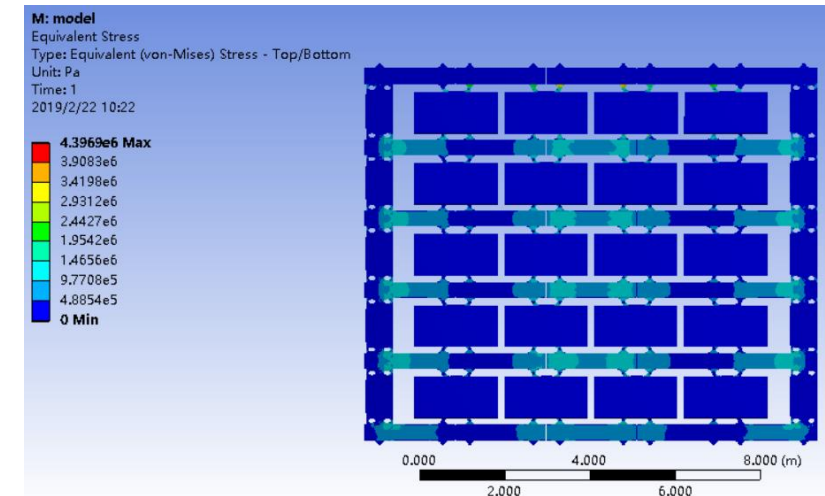
CFD- Wind load body type factor and shading factor analysis



AQWA- Time domain analysis of
Wind, wave and current coupling

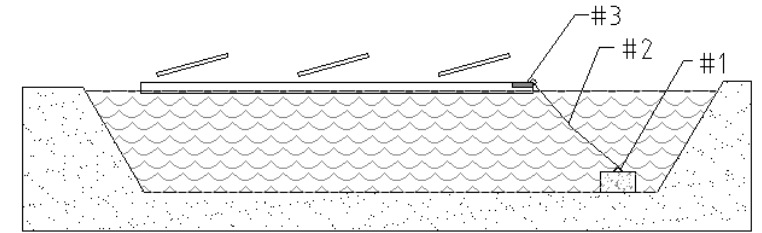
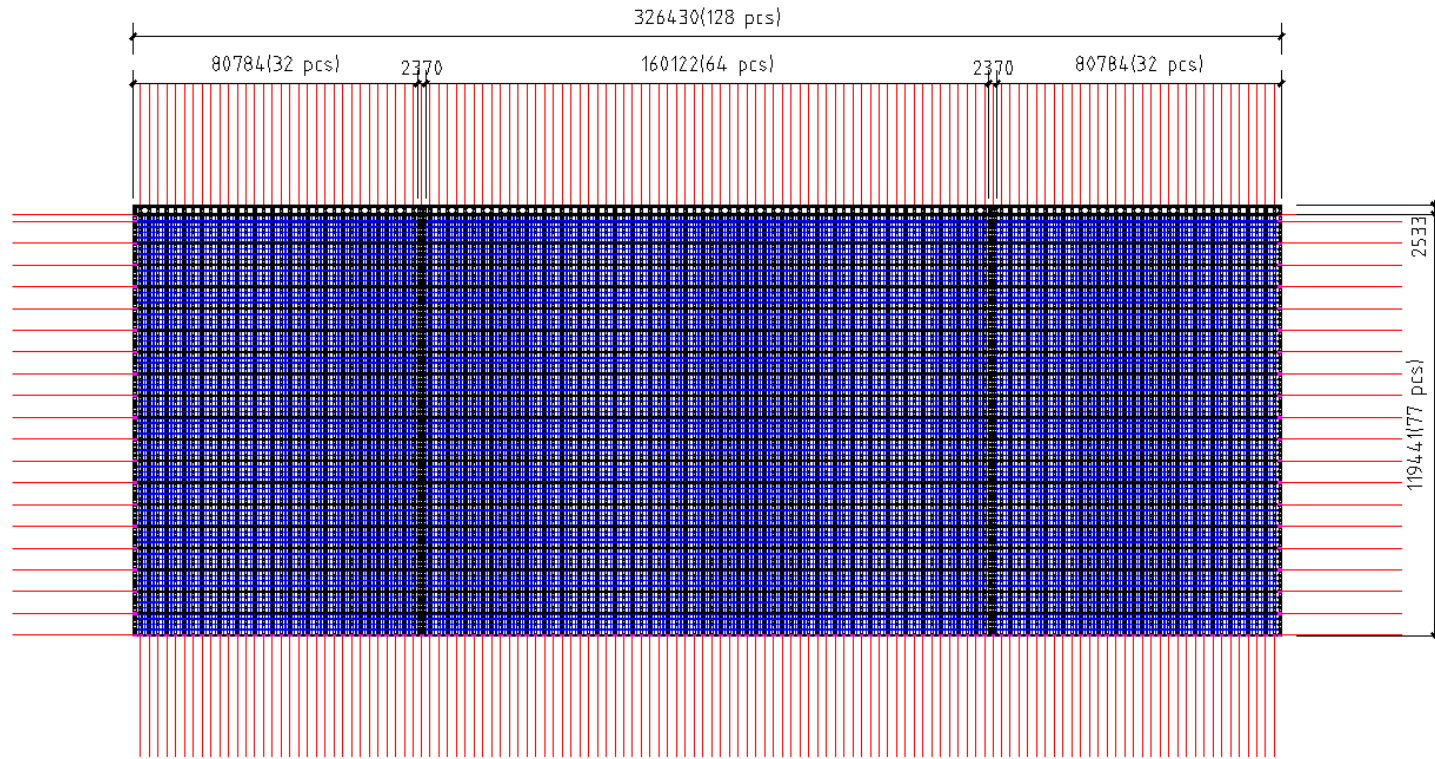


Anchor rope maximum tension chart



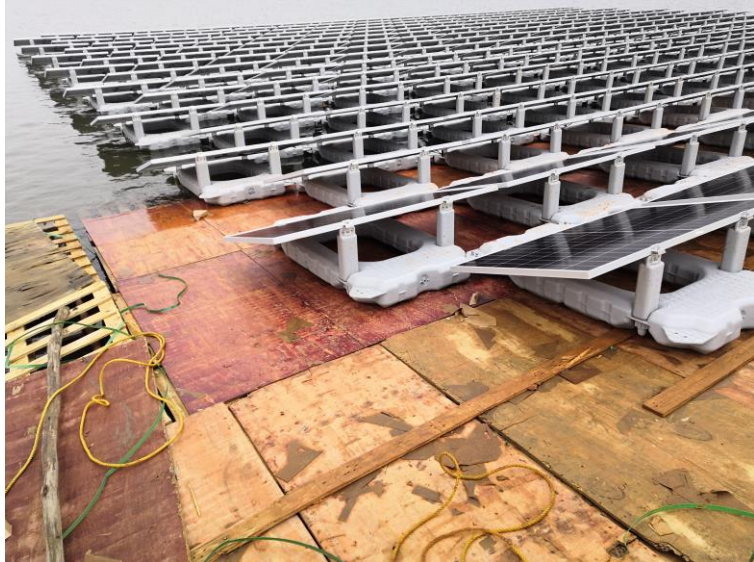
Stress cloud chart among the floating array

6. Mooring System-Layout



#1 Gravity anchor	#2 Steel cable	#3 Mooring device
		

7. Installation-Platform&Tools



Platform

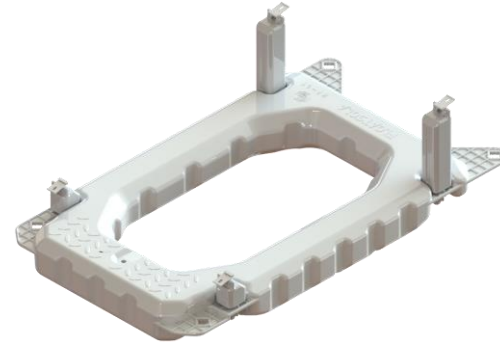


Tools

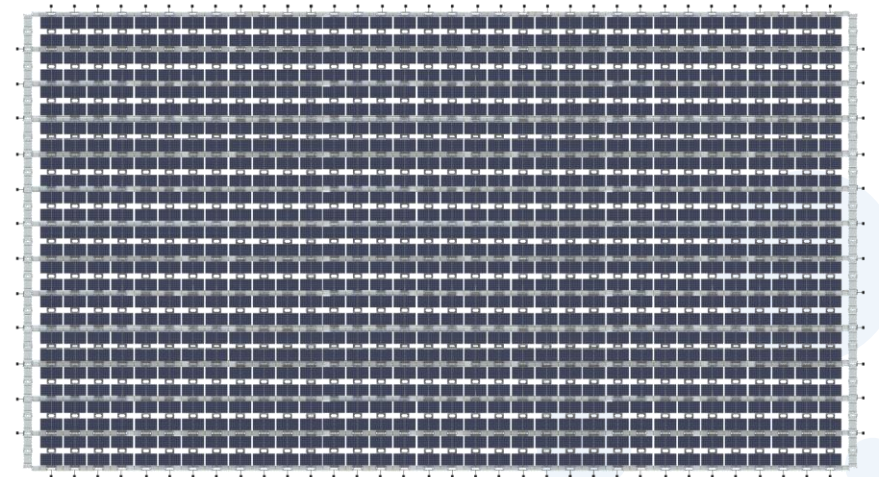
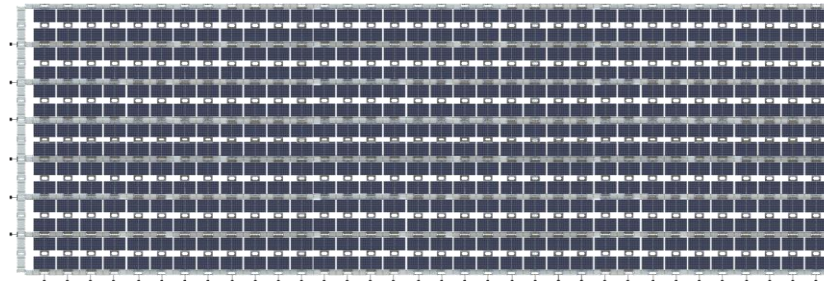
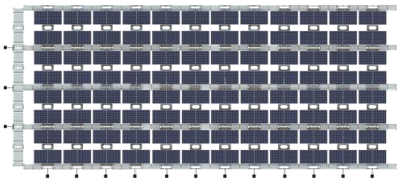
7. Installation Steps



Step 1: Anchor Block Sinking



Step 2: Floater, PV module Installation



Step 3: Floating Array put in water, connection, anchoring and mooring



PART 03

Bill of Materials

1. Floater

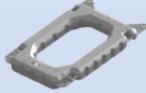
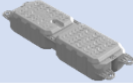




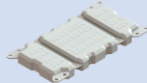

2. Inverter Mounting Structure

3. Cable Floater

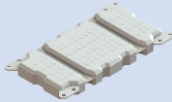


4. Inverter-Booster Floating Platform

5. Mooring System

Bill of Materials (BOM)

Item	No.	Components	Pic	Material
Floater	1.1.1	Main Floater		HDPE
	1.1.2	Sidewalk Floater		HDPE
	1.1.3	Front Support		HDPE
	1.1.4	Back Support		HDPE
	1.1.5	Bolts		HDPE
	1.1.6	Clamps Kits	/	Aluminum Alloy
	1.1.7	Mooring Device		Hot dip galvanized
	1.1.8	Equipment Floater		HDPE
Inverter mounting structure	2.1.1	Connecting Rack		Zn-Al-Mg Coating steel
	2.1.2	Mounting bracket	/	Zn-Al-Mg Coating steel

Bill of Materials (BOM)

Item	No.	Component	Pic	Material
Cable Floater	3.1.1	Equipment Floater		HDPE
Inverter-Booster Floating Platform	4.1.1	/	/	/
Mooring System	5.1.1	Anchor Rope		Stainless steel
	5.1.2	Anchoring Device		Stainless steel
	5.2.1	Anchor	/	/



PART 04

Project References



Project

Date	2017
Max Depth	15m
Water level change	5~8m
Water Quality	reservoir water

1.8MW Floating Solar Power Station at Zhejiang



Project

Date	2019
Max Depth	3m
Water Level Change	1~2m
Water Quality	reservoir water

10MW Floating pv power plant at Hunan,China



Project

Date	2019
Max Depth	10~15m
Water Level Change	1~3m
Anchoring system	Concrete sinking anchor

50KW and 100KW Offshore Pilot Project

50kW Offshore Waters Floating Solar Power Station at Fujian



Project

Date	2021
Max Depth	5m
Water Level Change	5m
Water Quality	Sea water

100kW Offshore Aquaculture Net cage-complementary Floating Solar Power Station at Fujian



Project

Date	2021
Max Depth	30m
Water Level Change	5~18m
Water Quality	Sea water

25kW hydroelectric station-complementary Floating Solar Power Station at Sri Lanka



Project

Date	2021
Max Depth	3.5m
Water level change	1~2.5m
Water Quality	reservoir water



Project

Date	2021
Max Depth	89m
Water level change	15~50m
Water Quality	reservoir water

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One Water, ONEfloat



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