



Shuangliang Solar-Tech (Baotou) Co., Ltd.

www.shuangliangglobal.com

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01

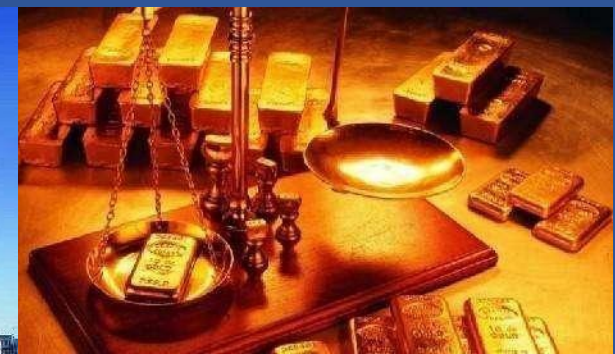
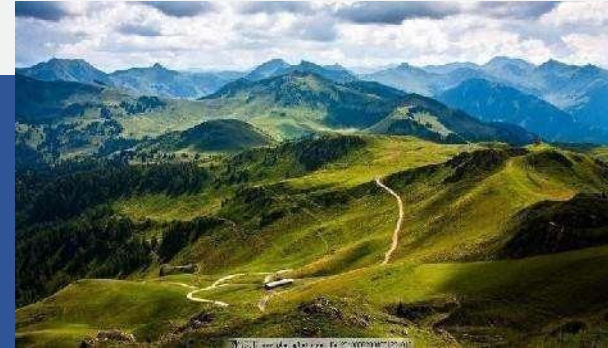
COMPANY PROFILE



ABOUT SHUANGLIANG GROUP



- Founded in **1982**.
- **40+** years experience in energy industry.
- China **Top500** company.
- **2** major manufacturing bases.
- **22** wholly and majority owned enterprises.
- **100+** sales & service stations over the world.
- **300+** clients out of World Top 500 enterprises.
- **9 Billion USD** turnover in 2022.



Shuangliang is a China TOP 10 private company in Photovoltaic Industry.



China's Top 500 Private Enterprises List in 2023 --Photovoltaic Industry			
Rank	Company Name	Province	Revenue (Billion Yuan)
28	Tongwei Group Co., Ltd.	Sichuan	214.88237
40	GCL Group Co., Ltd.	Jiangsu	181.90524
66	LONGi Green Energy Technology Co., Ltd.	Shaanxi	128.99811
70	CHINT Group Co., Ltd.	Zhejiang	123.71892
83	Jinko Solar Co., Ltd.	Jiangxi	111.06485
93	TBEA Group Co., Ltd.	Xinjiang	102.08457
107	Trina Solar Co., Ltd.	Jiangsu	85.05179
137	JA Solar Technology Co., Ltd.	Hebei	72.98940
197	Shuangliang Group Co., Ltd.	Jiangsu	55.09639
235	Canadian Solar Co., Ltd.	Jiangsu	50.18653
272	Daqo Group Co., Ltd.	Jiangsu	44.82279
304	Sungrow Power Supply Co., Ltd.	Anhui	40.25724
376	Jiangsu Guoqiang Galvanized Industrial Co., Ltd.	Jiangsu	33.23034
478	Risen Energy Co., Ltd.	Zhejiang	29.38472

BUSINESS COVERAGE



Energy & Environment Conservation

Energy saving

Lithium Bromide absorption chiller, heat pump, condensation boiler

Water saving

Air-cooled condenser, heat exchanger

Water treatment



Clean Energy

PV Energy

Polysilicon reduction furnace
Silicon wafer,
PV module,

Hydrogen Energy

Hydrogen production equipment



Chemical Materials

EPS

Spandex

BOPP films



Bio Technology

Bio medicine

Organic fertilizer



Backed by 2 Manufacturing Base



**Machinery Building
Base**

Shuangliang Industrial Park

Backed by 2 Mega Manufacturing Base

Solar Manufacturing Base



Shuangliang Solar-Tech



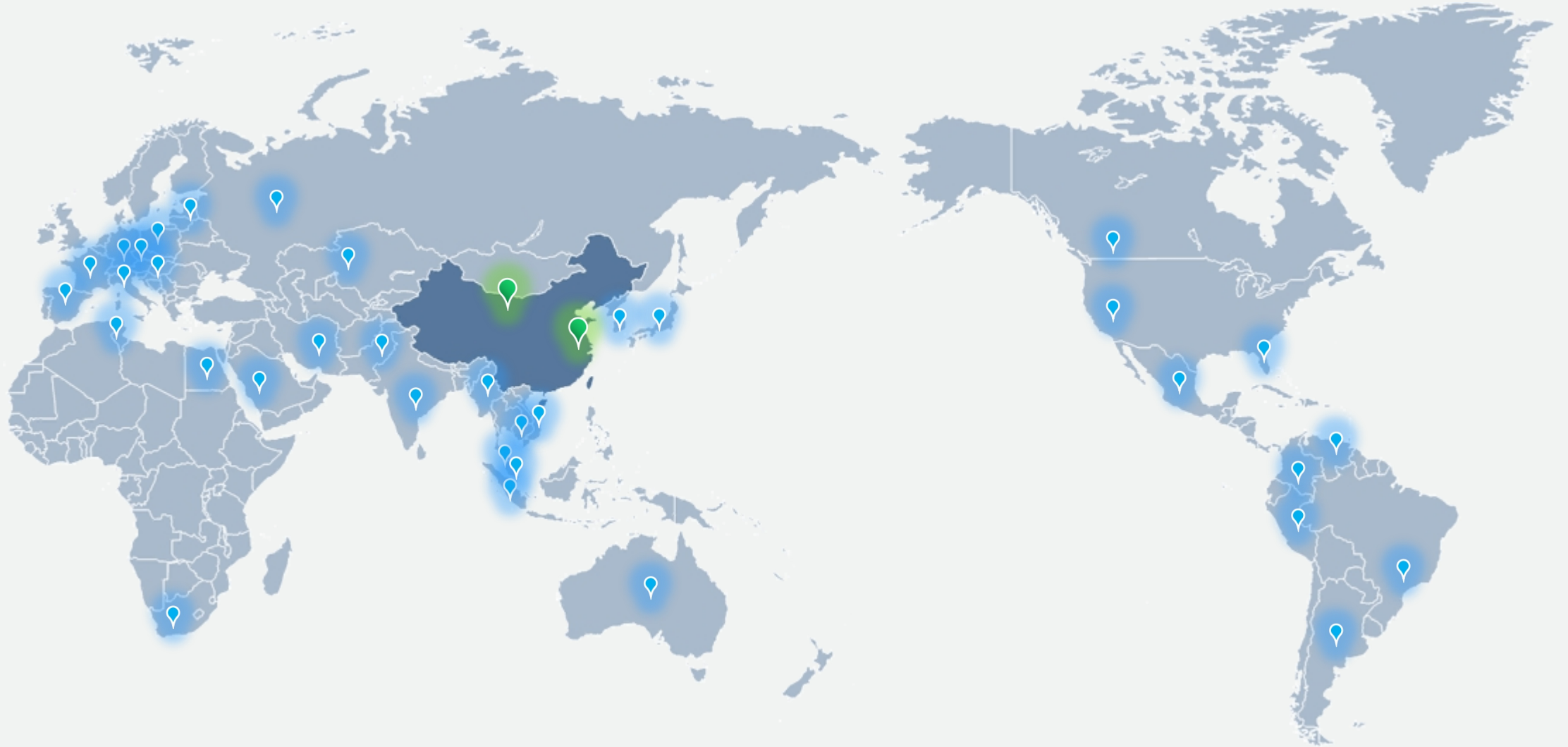
Sales Platform



Shuangliang
International
(Shanghai)



GLOBAL BUSINESS



30,000+ global customers in **100+** different countries and regions



02

Shuangliang PV Industry

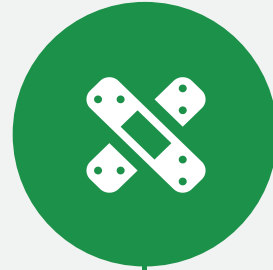


Why US?

1. Vertical Integrated Industrial Chain.

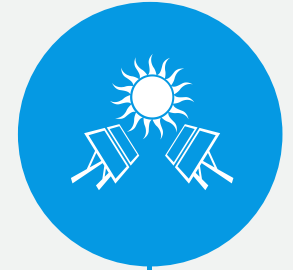
Polysilicon Reduction
Furnace

Shuangliang New Energy
Equipment Co., Ltd



PV Module

Shuangliang Solar-Tech
(Baotou) Co., Ltd.



Monocrystalline
Silicon Wafer

Shuangliang Silicon Material
(Baotou) Co., Ltd

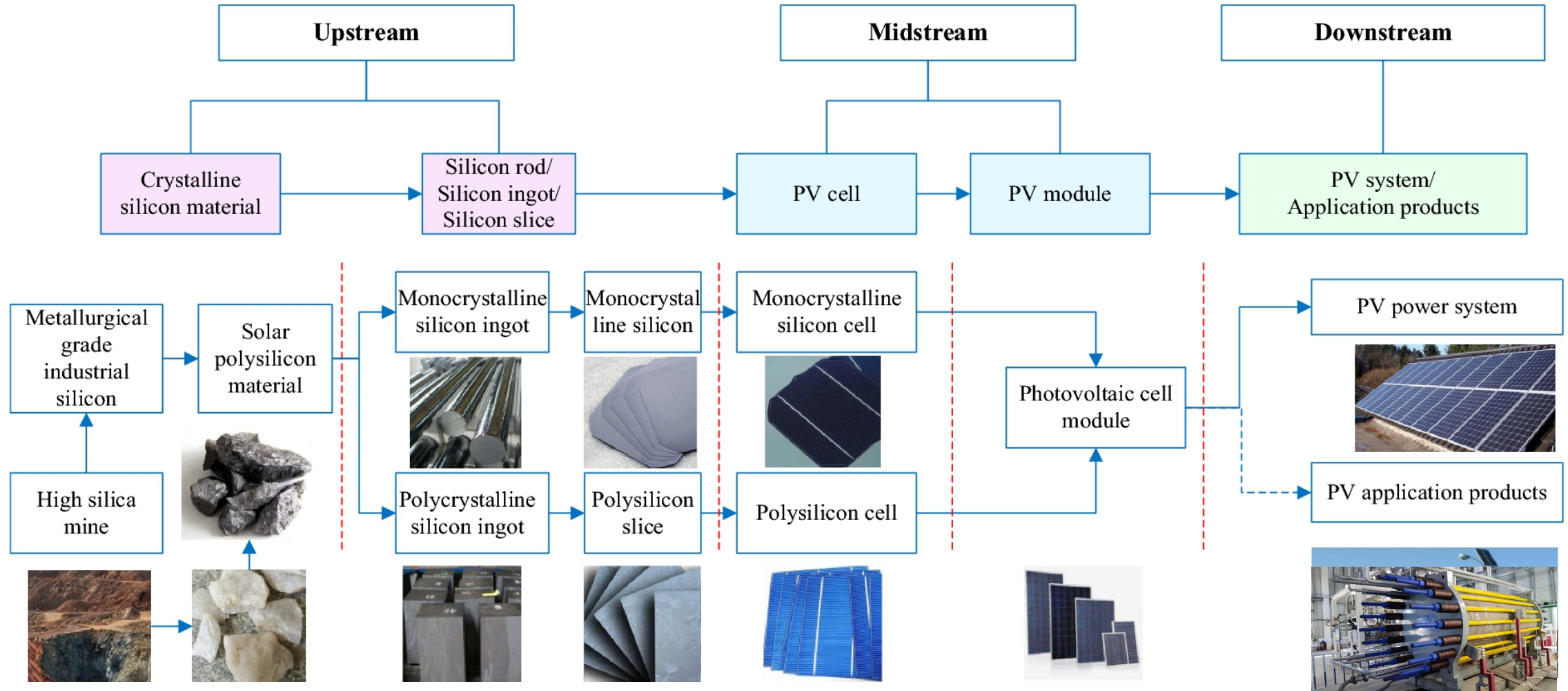


Distributed
Photovoltaic

Shuangliang Hundun
Energy Technology Co.,
Ltd



Shuangliang Vertical Integrated Industrial Chain



70% market share
(Polysilicon
reduction furnace)

53GW + 50GW
(Monocrystalline
wafer/ingot)

5GW + 5GW + 30GW
(Solar module)

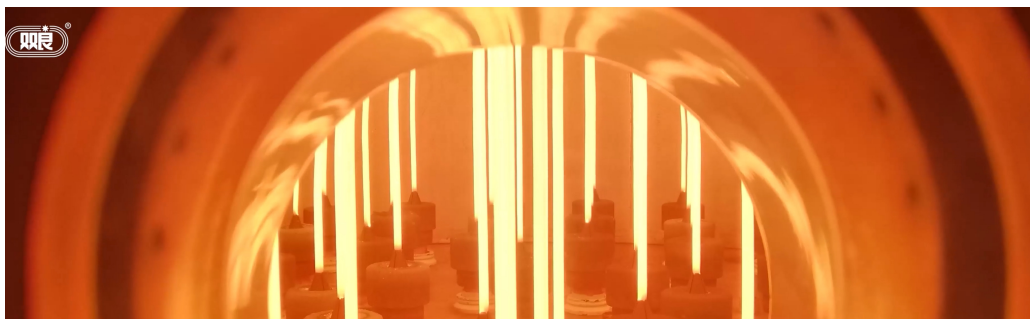
Green H2
(1.5GW capacity)

Shuangliang Vertical Integrated Industrial Chain- Reduction Furnace



Shuangliang is a global leading manufacturer of polysilicon reduction furnace.

When most of the manufacturers only can produce 48 pair rod furnace, Shuangliang already developed 72 pair rod technology in year of 2018, helped customer greatly improve production efficiency and reduce the cost.



By year of 2022, Shuangliang polysilicon reduction furnace already taken over 70% market share in China.

Shuangliang Vertical Integrated Industrial Chain- Green Hydrogen

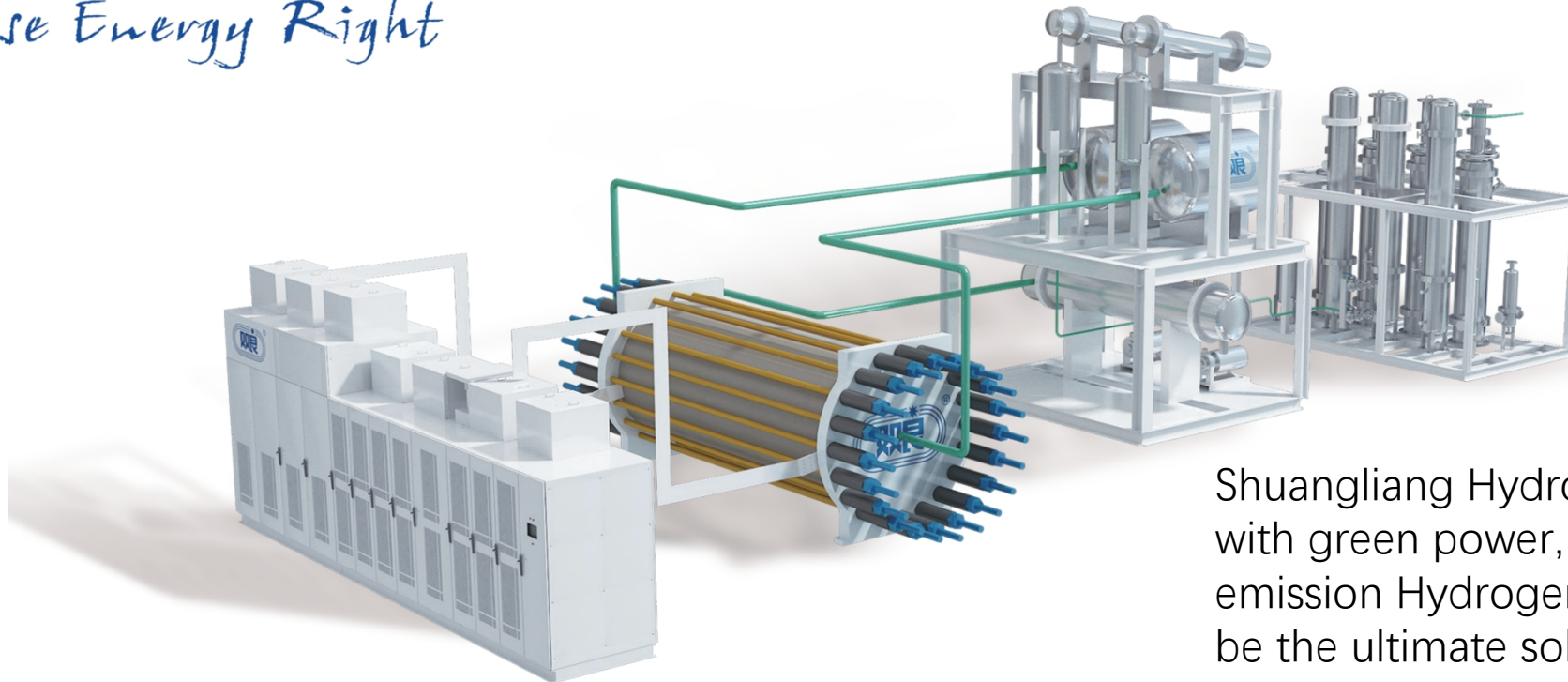


China power sources in national grade(expected in 2030):

1. Coal fired power source: Drop from 49% to 28%.
2. Solar power: Increase from 11% to 27%
3. Wind power: Increase from 13% to 21%

SHUANGLIANG

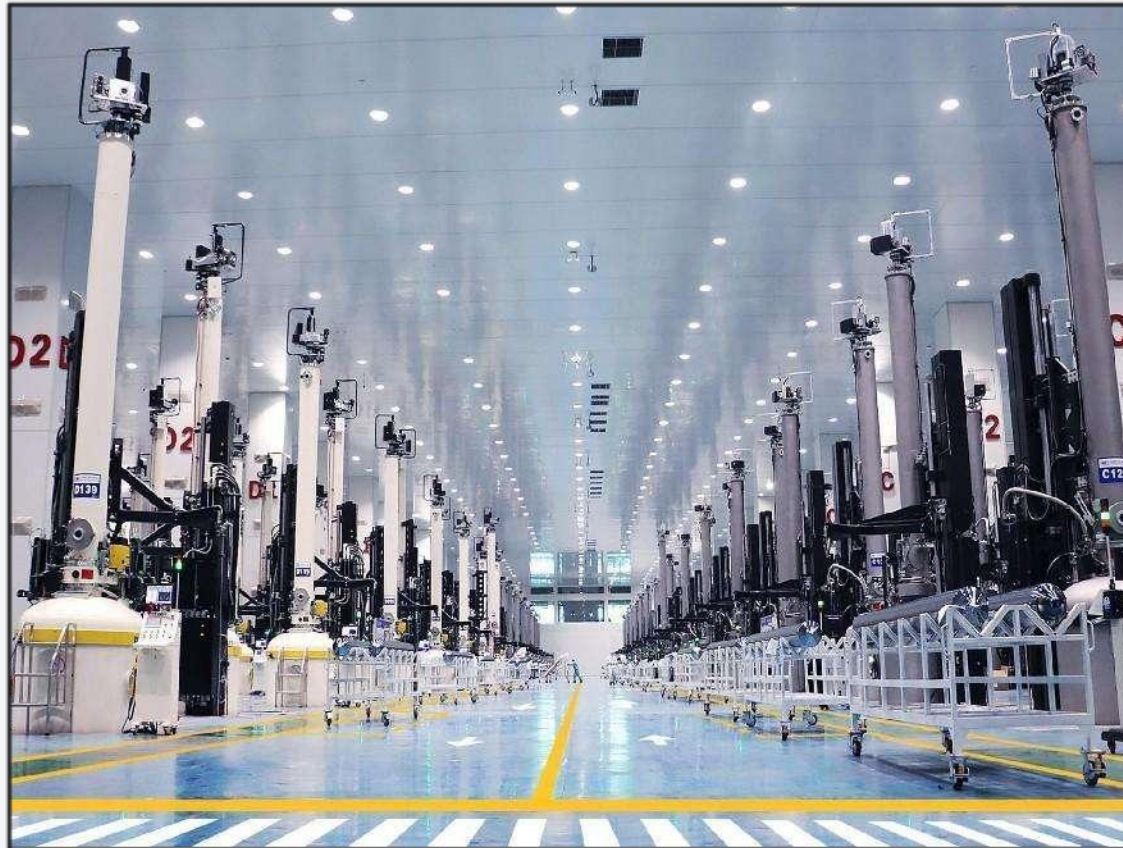
Use Energy Right



Shuangliang Hydrogen system is compatible with green power, and produce zero carbon emission Hydrogen, which is considered to be the ultimate solution for future energy.

Why US?

2. Leading Technology for Silicon Wafer & Ingot Development



Production Capacity

53+50 GW

- Compatible with 182-230 sizes
- P/N type thin wafer
- Maximum charge of single furnace 4000kg



Leading Technology for Silicon Wafer & Ingot Development

Shuangliang works together with key strategy partner, develops the new 210R silicon wafer, in order to improve Solar module efficiency and reduce the LCOE.



Shuangliang sales director Mr. Wang Qiuwen participate the summit of China Solar Form, introduce the new standard of silicon wafer.



Leading Technology for Silicon Wafer & Ingot Development



HOME ECONOMY ▾ FINANCE ▾ BUSINESS ▾ TECH ▾ STARTUP ▾ PEOPLE ▾



China's Shuangliang Bags Another Solar Wafer Order, Inks USD1.9 Billion of Deals in Past Month

TANG SHIHUA 

DATE: APR 04 2023 / SOURCE: YICAI

2.6 Billion Yuan! Shuangliang to Supply 7,800 MT of Silicon Materials to DAH Solar

MARCH 23, 2023 BY [ALEINA IN NEWS](#)

PVTIME – Shuangliang Eco-Energy Co., Ltd. (Shuangliang)(600481.SH), a subsidiary of Shuangliang Group, announced on 22 March that Shuangliang Silicon Materials (Baotou) Co., Ltd, a wholly-owned subsidiary of the Company, recently signed a silicon ingot purchase and sales agreement with DAH Solar Co., Ltd.(DAH Solar), a China-based PV product manufacturer.

Information source:

<https://www.yicaiglobal.com/news/china-shuangliang-bags-another-solar-wafer-order-inks-usd19-billion-of-deals-in-past-month>

PVTIME

HOME | NEWS | FINANCE | PROJECTS | TECHNOLOGY | OBSERVATION | EXHIBITIONS | POLICIES

BREAKING NEWS

3 days ago - 5.9 Billion Yuan! Gree Participates in Hongjun's High-Efficiency Solar Cell Project -

2.009 Billion Yuan! Shuangliang to Supply Millions of Silicon Wafers to Yingfa

APRIL 3, 2023 BY [ALEINA IN NEWS](#)

PVTIME – Shuangliang Eco-Energy Co., Ltd. (Shuangliang) (600481.SH), a subsidiary of Shuangliang Group, announced on 31 March that Shuangliang Silicon Materials (Baotou) Co., Ltd, a wholly-owned subsidiary of the Company, recently signed a silicon wafer purchase and sales agreement with three subsidiaries of Yingfa Group, a solar cell supplier, developer and manufacturer.

Why US?

3. Top 10 manufacturing capacity of large size modules in China.

Top 10 In Scale

Top10 PV module manufacturing capacity.
5GW in phase I, 40GW by 2024.



182 module

210 module

Compatible with

SMBB



PERC

TOPCon

HJT



Why US?

4. State-of-The-Art Facilities and Process



Automatic Production:
Fully automatic,
intelligent, digital and
efficient production line,
integrated by TOP 2
brand suppliers in the
industry, achieving
super process precision
and high production
efficiency of 16
second/piece.

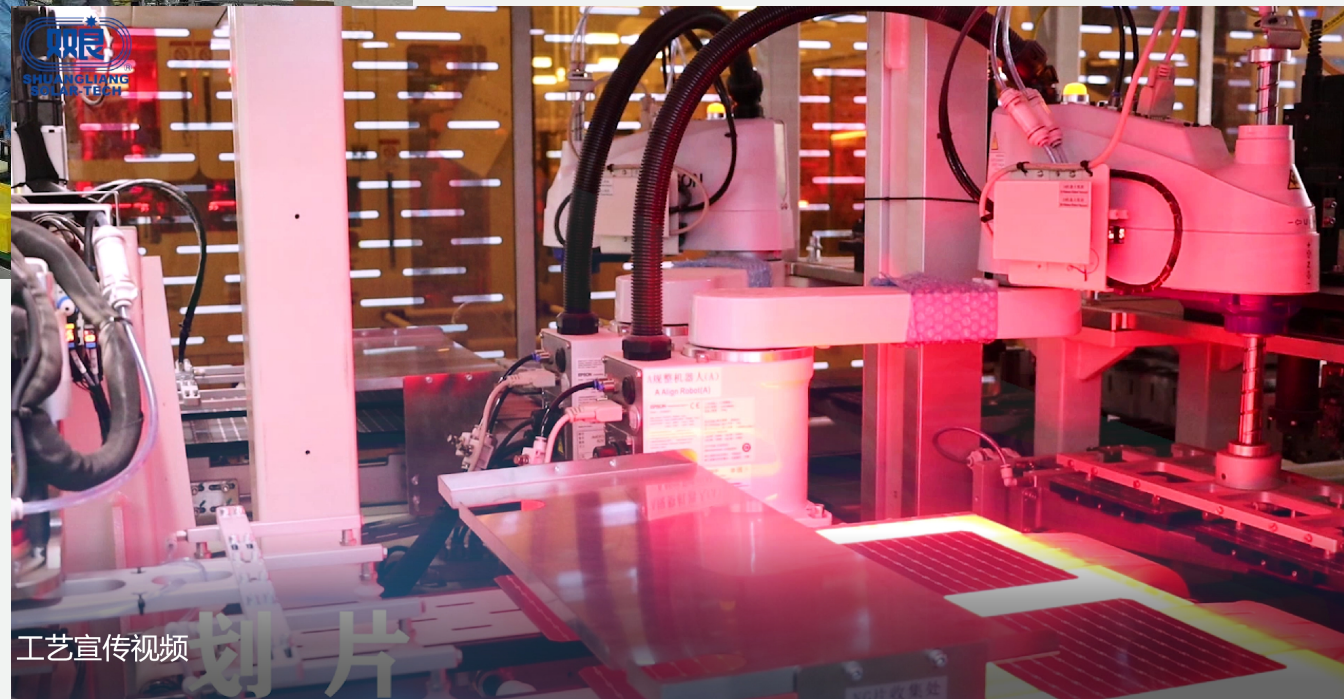
Why US?

4. State-of-The-Art Facilities and Process



Non-Destructive Cutting:

Cells non-destructive laser cutting, minimize mechanical crack and contamination, maximize the production efficiency.



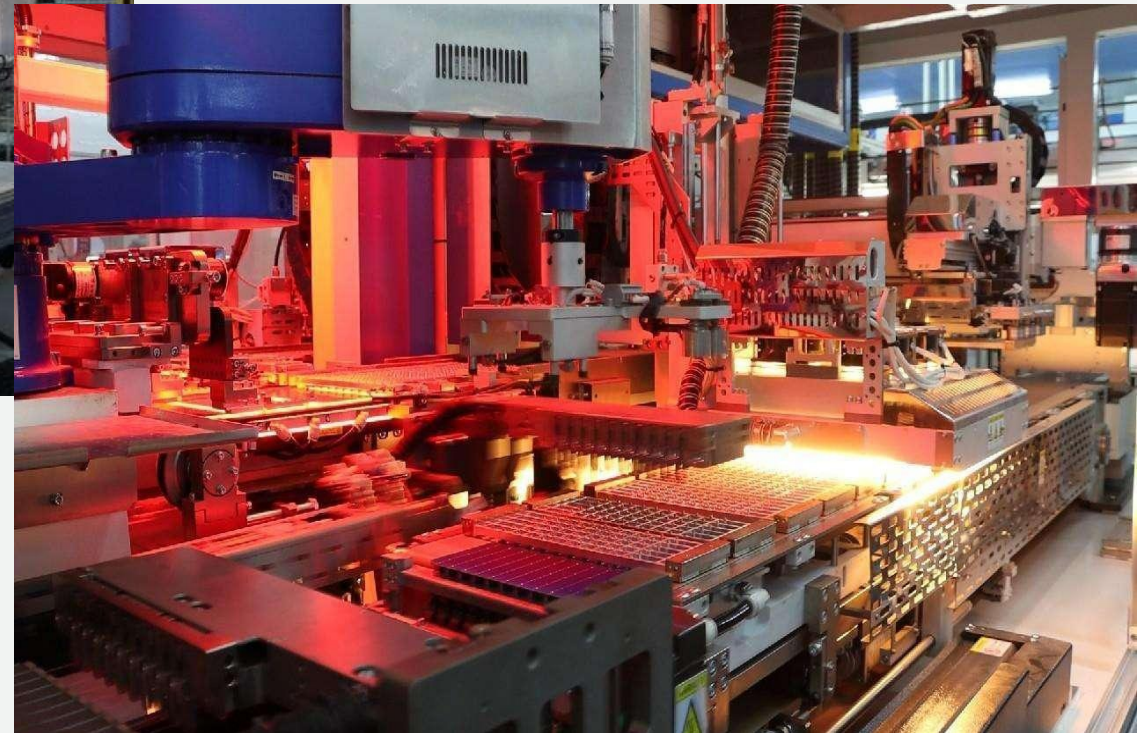
Why US?

4. State-of-The-Art Facilities and Process



Advanced String Welding:

Automatic string welding of different cell size and number.



Why US?

4. State-of-The-Art Facilities and Process

Multiple EL Inspection:
Four EL Inspection (AI) in the complete manufacturing process (String welding, Pre & after Lamination, finish inspection) to ensure high quality and long service life.



Why US?

4. State-of-The-Art Facilities and Process



Automatic Lamination:

Automatic once-through lamination under constant temperature and high vacuum conditions, guarantee high quality of modules



Why US?

4. State-of-The-Art Facilities and Process



Most Reliable J-Box:
The Junction box used by Shuangliang made of best quality chips with better heat radiation, which saves 1.1% power loss.



Why US?

5. Strongest partners & supply chain management

Open innovation and mutual development, combine the strength of industrial chain partners to open up the links of R & D, manufacturing and application, so as to accelerate the industrialization and harmonious development of high-efficiency photovoltaic modules.

Silicon Material
+
Wafer



Cell

Auxiliary Material



Why US?

6. Customer value orient sales & service

High Customer Values

- Lower system investment cost;
- The maximum power can reach 670W(P-type), 700W(N-type);
- PV panel conversion efficiency **21.6%**(P-type)-**22.5%**(N-type);
- Lower decay values;
- Excellent bifacial rate, high compatibility to the tracking system of the power station due to the framed design and maximize output power;
- Positive Power Tolerance
- 12 year quality warranty and 30 years performance warranty
- Tailor made features according to different markets



QUALITY CERTIFICATION



ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ СЕРТИФИКАТ ◆ 認證證書

CERTIFICATE

No. Z2 116996 0001 Rev. 00

Holder of Certificate: Shuangliang Solar-tech (Baotou) Co., Ltd

No. 35, Cuihu Road,
Rare Earth High-tech Zone,
014030 Baotou City, Inner Mongolia
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:



Product: Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Mono-Crystalline Silicon Photovoltaic module

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TUV SUD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704062239601-00

Valid until: 2027-09-26

截图(Alt + A)

Date: 2022-09-30

Zhulih Zhang
(Zhulih Zhang)

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TUV SUD Product Service GmbH • Certification Body • Rödlerstraße 65 • 80339 München • Germany.



ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ СЕРТИФИКАТ ◆ 認證證書

CERTIFICATE

No. Z2 116996 0001 Rev. 00

Model(s):

182 cell modules:
144 cells
Gigalumi SL-xxxW-M10 (xxx=630 to 666 In step of 6)
120 cells
Gigalumi SL-xxxW-M10 (xxx=440 to 466 In step of 6)
108 cells
Gigalumi SL-xxxW-M10 (xxx=386 to 416 In step of 6)

210 cell modules:
182 cells
Gigalumi SL-xxxW-G12 (xxx=636 to 670 In step of 6)
120 cells
Gigalumi SL-xxxW-G12 (xxx=686 to 696 In step of 6)

xxx stands for rated output power at STC

Parameters:

Construction:	Framed, with Junction box, Cable and Connectors.
Safety Class:	Class B
Maximum System Voltage:	1500 V DC
Fire Safety Class:	Class C according to UL 790
Test Laboratory:	Changzhou HuaYang Inspection and Testing Technology Co., Ltd. No.8 Lanxiang Road, Wujin Economic Development Zone, Changzhou, Jiangsu, P.R.China

Tested according to:

IEC 61215-1:2015
IEC 61215-1-1:2016
IEC 61215-2:2016
IEC 61730-1:2016
IEC 61730-2:2016
EN 61215-1:2016
EN 61215-1-1:2016
EN 61215-2:2017
EN IEC 61730-1:2018
EN IEC 61730-1:2018/AC:2018-06
EN IEC 61730-2:2018
EN IEC 61730-2:2018/AC:2018-06

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	Test Report issued under the responsibility of: NCB TÜV SÜD Product Service GmbH Rödlerstrasse 65, D-80339 München Germany	
TEST REPORT IEC 61215 Series: 2016 Terrestrial photovoltaic (PV) modules – Design qualification and type approval		
Report Number.....	704062239601-00 part 1 of 4	
Date of Issue.....	2022-09-28	
Total number of pages.....	57	
TÜV SÜD Branch.....	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch	
Applicant's name.....	Shuangliang Solar-tech (Baotou) Co., Ltd.	
Address.....	No.35, Cuihu Road, Rare Earth High-tech Zone, Baotou City, Inner Mongolia, China	
Test specification:		
Standard.....	IEC 61215-1:2016, IEC 61215-2:2016, IEC 61215-1-1:2016,	
Test procedure.....	TÜV SÜD Mark	
Non-standard test method.....	N/A	
TRF template used.....	IECEE OD-2020-F1:2020, Ed.1.3	
Test Report Form No.....	IEC61215E_SE	
Test Report Form(s) Originator.....	TÜV SÜD Product Service GmbH	
Master TRF.....	2021-03-12	
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General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.		

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ISO14001



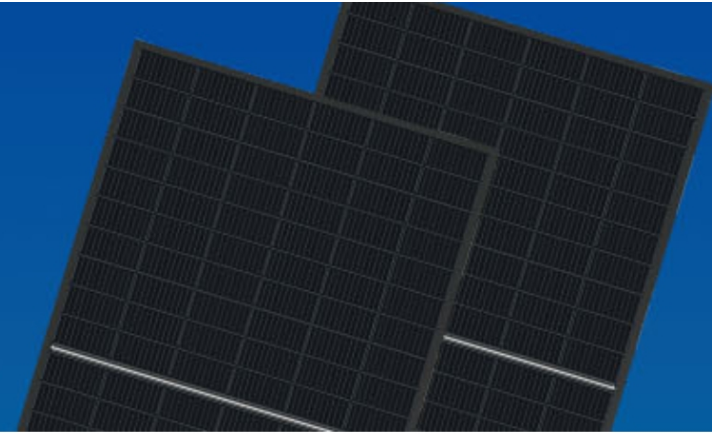
03

PRODUCT
PORTFOLIO



Gigalumi

Solar Module



P-Type Solar Module

M10-108 Module:

395W~415W

M10-120 Module:

440W~460W

M10-144 Module:

530W~555W

(Bifacial available)

G12-120 Module:

585W~605W

(Bifacial available)

G12-132 Module:

645W~670W

(Bifacial available)

N-Type Solar Module

M10-108 Module:

395W~430W

M10-144 Module:

545W~585W

(Bifacial available)



High Power Output



PID Resistance



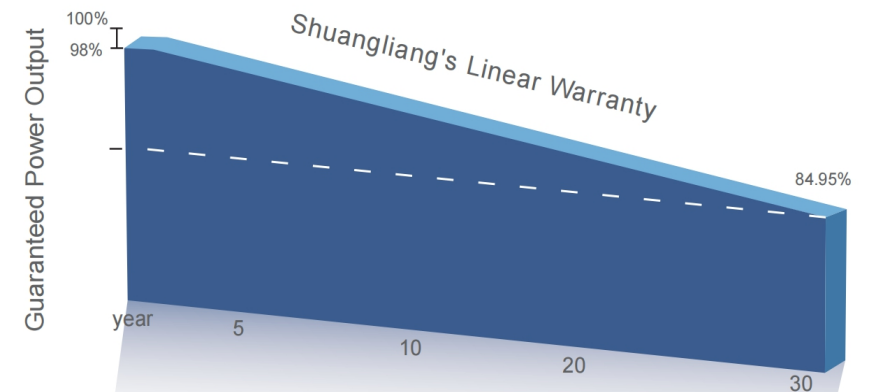
Longer Service Life



Double Side
Power Generation

LINEAR PERFORMANCE WARRANTY

- 12 Year Product Warranty
- 30 Year Linear Power Warranty



PRODUCT

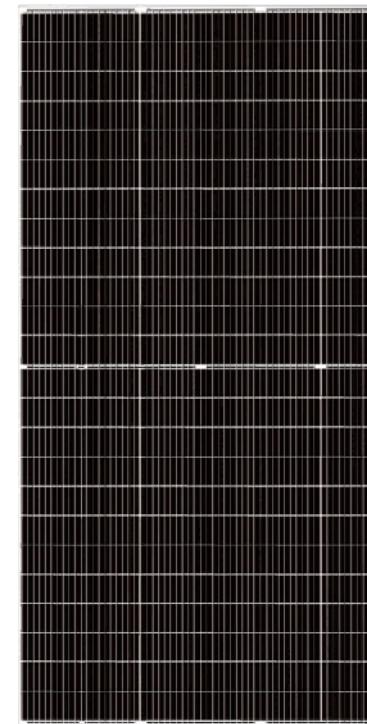
Gigalumi SL-M10 395-550W



400 | 405 | 410 W
108 pieces | 22kg
1722*1134*30mm



445 | 450 | 455 W
120pieces | 24.2kg
1903*1134*30mm



540 | 545 | 550 W
144pieces | 28kg
2278*1134*30mm



—
PRODUCT



Gigalumi SL-M10S
540-550W

—
540 | 545 | 550 W
144 pieces | 32kg
2278*1134*30mm



Gigalumi SL-M10NS
560-570W

—
560 | 565 | 570 W
144 pieces | 32kg
2278*1134*30mm

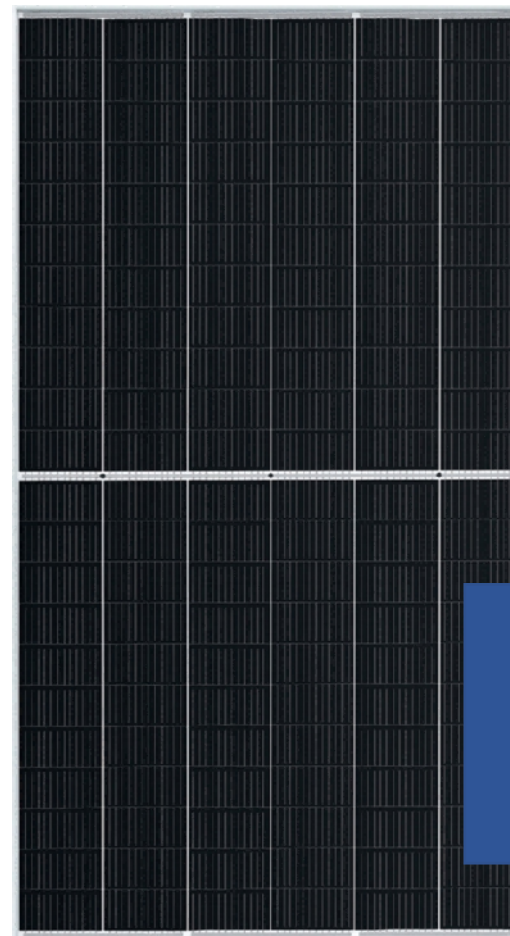


PRODUCT

Gigalumi SL-G12 590-660W



590 | 595 | 600 W
120 pieces | 31kg
2172*1303*35mm



650 | 655 | 660 W
132 pieces | 38.5kg
2384*1303*35mm



—
PRODUCT

Gigalumi SL-G12S 650-670W

—

650 | 655 | 660 W

132 pieces | 33.9kg

2384*1303*35mm



—
PRODUCT



Gigalumi SL-M10B

—

390W-410W

525W-545W

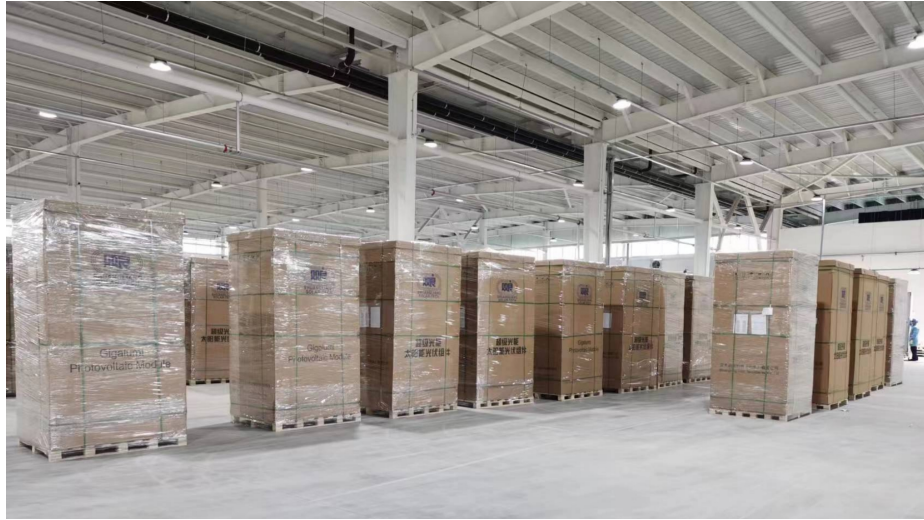
108 pieces | 22kg
1722*1134*30mm

144pieces | 28kg
2278*1134*30mm



← Gigalumi Brand

OEM Service for Tier 1 Brands, Akcome, Chint, DAsolar, Trina, and etc..



04

Installation
Reference



Installation Reference: Residential





Installation Reference:
Utility & Commercial



THANK YOU