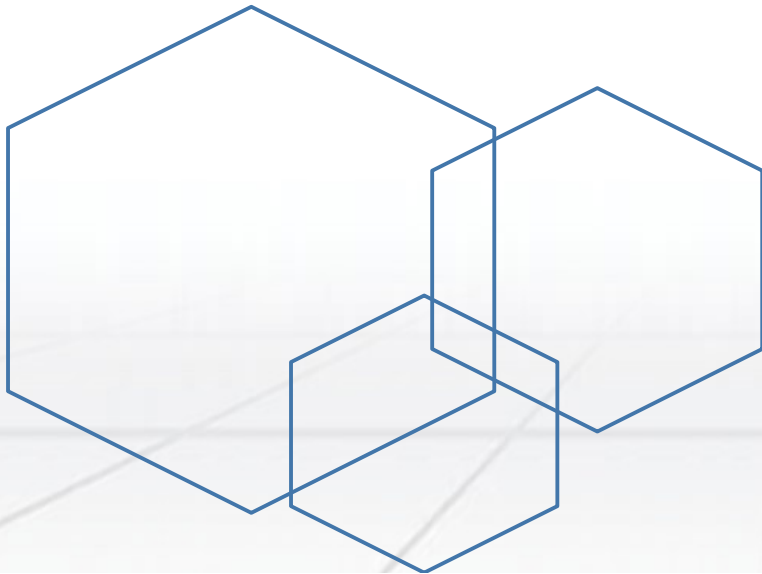




Jiangsu Sispread Semiconductor Materials Co., Ltd.





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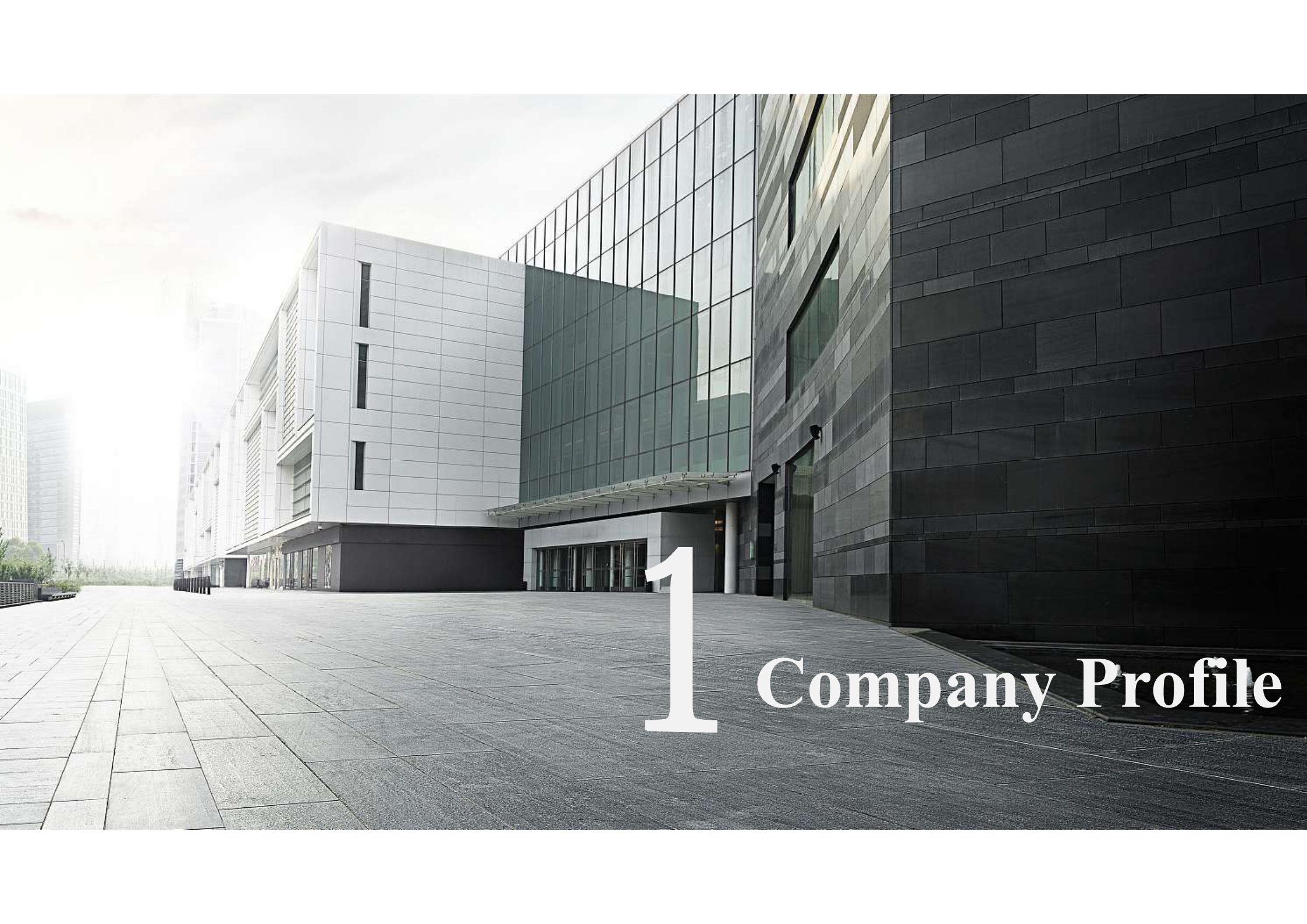
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1

Company Profile

Sispread Semiconductor

Founded in November 2022, the company is located in the Rudong Economic Development Zone on the shores of the Yellow Sea, on the north bank of the Yangtze River estuary, within a one-hour commute of Shanghai. Its main product is a project for the production and manufacturing of large silicon wafers for chips. Market demand-driven, the company focuses on key materials essential to the development of China's electronic information materials industry. By actively leveraging its industrial strengths and through continuous technological innovation, the company aims to contribute to the overall progress of the national electronic materials industry and to break the foreign companies' dominance and monopoly over core technologies and high-end products in the semiconductor materials sector. Upon full-scale production, the company is projected to have an annual production capacity of 205 metric tons with an output value exceeding 100 million yuan. The company has established an independent New Product Development Office. It actively collaborates with certain national universities and other institutions of higher education to conduct product research and development and introduce new projects. Driven by the principle of "Technology for Good" and guided by the goal of mutual benefit and win-win cooperation, the company prioritizes quality for survival and integrity for development. It strictly maintains a robust quality management system, continuously introduces new technologies and equipment to enhance product quality, and refines its service system to meet customer needs.



Main Production Equipment

Name

JingSheng 95 and 100 furnace types

Quantity

32 units

Single-Crystal Furnace Control System

Fully Automatic



Preheating Specifications

20/22/24-inch

- The 32 single-crystal furnaces have an annual production capacity of approximately 205 metric tons.
- It is one of the companies in China's semiconductor industry with relatively mature monocrystalline silicon growth technology and excellent, consistent product quality.
- We have obtained quality system certification and use a variety of precision instruments to control quality.
- We can provide products in a variety of specifications, sizes, and resistivities to meet customer needs.
- A professional customer service team that provides end-to-end sales support.



Ingredients

Connect the seed crystal

Crystal pulling

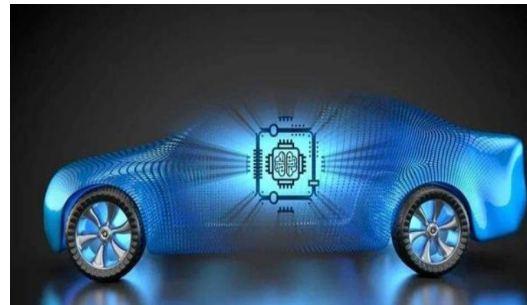
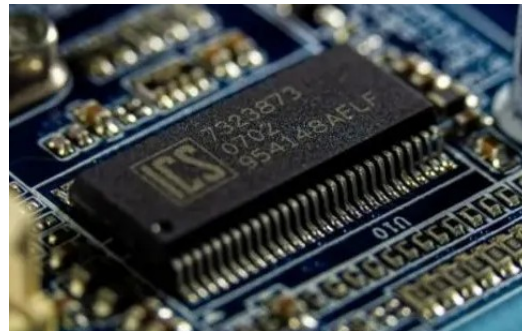
Monocrystalline Ingot

Truncate

Rolling

Finished product

Product Applications



IP+EDA Chips

Smart Mobile Device Chips

• Computing chips

Communication chips

• Analog chips

Memory chips

• Photonics, optoelectronic, and quantum chips

Multimedia processing chips

IoT chips

• Automotive chips



2 Product Type

Core Technology

一、In-house Development:

- Process Technology for Growing 8-Inch Heavy-As-Doped and Heavy-Sb-Doped Silicon Single Crystals
- Single-crystal silicon pulling technology for lightly doped semiconductor silicon with a diameter of 8 inches or larger.

二、Independent Innovation:

- An 8-inch heavily doped monocrystalline silicon pulling system that reduces power consumption by at least 20% compared to other systems in the industry producing the same type of monocrystalline silicon.
- Oxygen-control technology for 8-inch heavily doped silicon single crystals. Research and development of high-oxygen, heavily doped silicon single crystals to reduce the longitudinal oxygen gradient in silicon single crystals.
- Techniques for Controlling the Longitudinal Distribution of Charge Carriers in Highly Doped Single-Crystal Silicon. Reducing the Longitudinal Gradient of Charge Carrier Distribution in Single-Crystal Silicon .
- Techniques for Reducing Internal Stress in Single-Crystal Silicon (Large single crystals have high internal stress).
- Exhaust Gas Treatment Technologies for the Drawing of Heavily As-Doped and Heavily Sb-Doped Silicon Single Crystals.

Single-Crystal Semiconductor Specifications

No.	Parameters	Specifications
1	Growing Methods	CZ/MCZ
2	Conductivity Type	P/N
3	Doping Agent	B、 Ph、 As、 Sb
4	Crystal Orientation	<111>/<100>
5	Diameter	2"、 4"、 5"、 6"、 8" Customizable to meet customer needs
6	Resistivity ($\Omega\cdot\text{cm}$)	> 0.001
7	Radial Inhomogeneity of Resistivity(%)	Customizable to meet customer needs
8	Boron content (atoms/cm^3)	$\leq 2\text{E}+14$
9	Phosphorus content (atoms/cm^3)	$\leq 2\text{E}+14$
10	Oxygen content (atoms/cm^3)	3-8E17 Customizable to meet customer needs
11	Carbon content (atoms/cm^3)	$\leq 2.5\text{E}16$ Customizable to meet customer needs

Monocrystalline Silicon Wafers for Semiconductors

Chip Size			4 Inch	5 Inch	6 Inch	8 Inch
Oxygen content			8~18ppma			
Resistance Uniformity	100	P	<5%	<5%	<5%	<5%
		N	<8%	<8%	<10%	<12%
	111	P	<8%	<8%	<8%	<8%
		N	<25%	<25%	<25%	<26%
Oxygen Content Uniformity	100		<8%			
	111		<10%			
Damage to the Back Side	Severe damage		OISF>4x5E ea/cm2			
	Minor damage		OISF>1x3E~5x4E ea/cm2			
Back-side polycrystalline thickness			4000~12000 A			
Thickness of the Back-Side Oxide Layer			3500~10000 A			
Wafer Thickness			220~1200um	230~1200um	270~1200um	450~1200um
TTV			<3um	<4um	<4um	<5um
TIR/STIR/SFQR(15*15mm)			<2.5um/<1um/<0.5um	<3um/<1.2um/<0.6um	<3um/<1.2um/<0.6um	<3um/<1.5um/<0.7um
BOW(Yes poly/ NO poly)			15um/25um	30um/60um	30um/60um	30um/60um
WARP(Yes poly/ NO poly)			20um/60um	30um/60um	30um/60um	30um/60um
Surface particles(0.3um/0.2um)			<8/<6	<8/<6	<8/<6	<8/<6
Thickness Tolerance			+/- <10um	+/- <10um	+/- <10um	+/- <10um
Surface Metal			<3E10 atoms/cm2	<3E10 atoms/cm2	<3E10 atoms/cm2	<3E10 atoms/cm2

Semiconductor Monocrystalline Silicon Epitaxial Wafers

Product Dimensions	Doping Type	Thickness Range of the Epitaxial Layer	Thickness Uniformity	Resistivity Range	Resistance Uniformity
4 Inch	N	1~150um	1.50%	0.01~500Ω.cm	1.50%
	P	1~150um	1.50%	0.01~500Ω.cm	1.50%
5Inch	N	1~150um	1.50%	0.01~500Ω.cm	1.50%
	P	1~150um	1.50%	0.01~500Ω.cm	1.50%
6 Inch	N	1~150um	1.50%	0.01~500Ω.cm	1.50%
	P	1~150um	1.50%	0.01~500Ω.cm	1.50%
8 Inch	N	1.5~150um	1.50%	0.015~50Ω.cm	1.50%
	P	1.5~150um	1.50%	0.015~50Ω.cm	1.50%
12 Inch	N	1.5~150um	1.50%	0.015~100Ω.cm	1.50%
	P	1.5~150um	1.50%	0.015~100Ω.cm	1.50%

Master Alloy Product Specifications

4–8-inch N-type master alloy (0.002~0.005)

Based on N-type semiconductor products, we produce master alloys that meet the needs of the solar industry. These products have already been validated at 10 leading solar manufacturing plants. Production capacity is expected to reach 10 metric tons per month.

The background is a complex, light gray abstract design. It features a stylized world map on the left, composed of a grid of dots. To the right of the map are various geometric and data-related elements: a series of concentric, semi-circular lines resembling a radar or sonar scan; a network of interconnected nodes and lines; and a large, circular structure on the far right that looks like a stylized gear or a data visualization. The overall aesthetic is technical and modern.

3 Quality Control

Testing Equipment



X-ray Crystal Orientation Meter
(Crystal Orientation Meter)

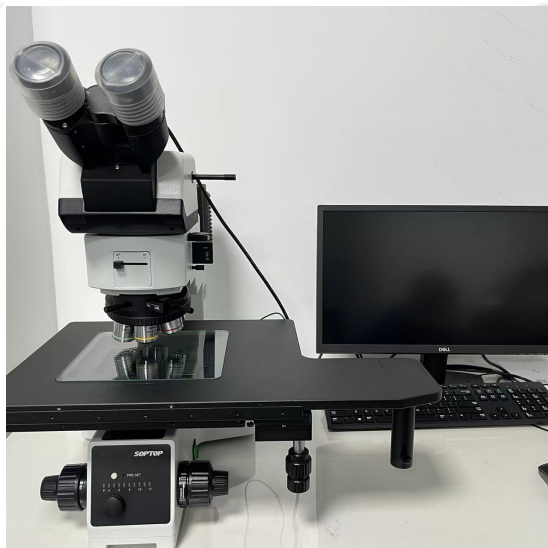


Resistivity/Sheet Resistance Tester



Digital Silicon Crystal Minor Carrier Lifetime Tester

Testing Equipment



Metallographic microscope



Smart Fourier-Transform Infrared Spectrometer
(Oxygen-Carbon Analyzer)



Redox Furnace
(High-Temperature Annealing Furnace)



CUSTOMER Always Right

4 Partners

主要客户



ZHONGJING SEMI CONDUCTOR

众 晶 半 导 体



CETC Semiconductor Materials Co., Ltd.

中 电 科 半 导 体 材 料 有 限 公 司



CanadianSolar



ZHEJIANG HAINA SEMICONDUCTOR CO., LTD

浙 江 海 纳 半 导 体 有 限 公 司



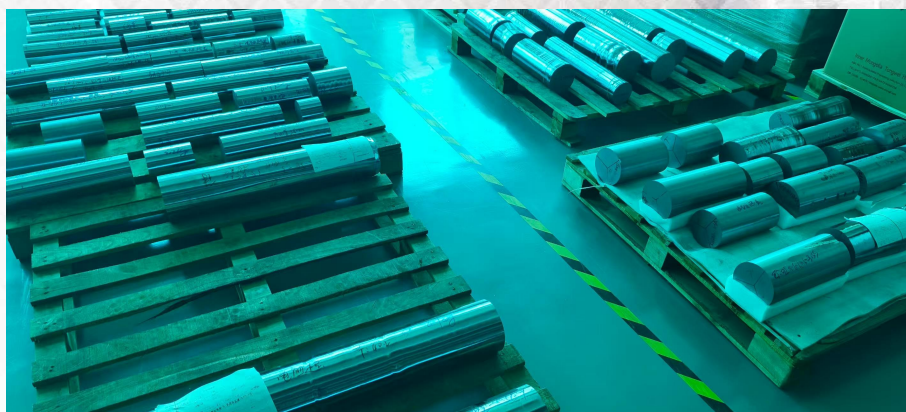
Sichuan Jingmei Silicon Industry Technology Co., Ltd.

A close-up photograph of a business meeting. Several people are seated around a table, their hands visible as they interact with documents. The documents feature various charts, including bar graphs and pie charts. One person is pointing at a pie chart, while others hold pens. The scene is brightly lit, and the focus is on the collaborative work and data analysis.

5 Blueprint Planning

Phase II Project

- The annual production capacity of 30 monocrystallization furnaces is approximately 230 metric tons.
- The company primarily produces 12- to 18-inch large-diameter single crystals, 2- to 8-inch standard semiconductor products, and 4- to 8-inch N-type master alloys.



Equipment Name	FT-CZ2208AE Single Crystal Furnace
Quantity	25 units
Single-Crystal Furnace Control System	Fully Automatic
Preheating Specifications	18–26 inches

Equipment Name	CL-260 Single Crystal Furnace / CL-260T Single Crystal Furnace
Quantity	5 units
Single-Crystal Furnace Control System	Fully Automatic
Preheating Specifications	128-32 inches



Thanks

Thank you for your support and interest in Jiangsu Sispread.