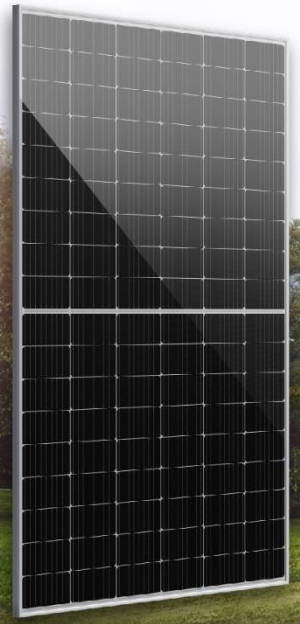
Product Introduction

LONGi

Hi-MO 5m 54c

Best Choice for Solar Rooftop Systems

on private, residential, commercial, and industrial buildings

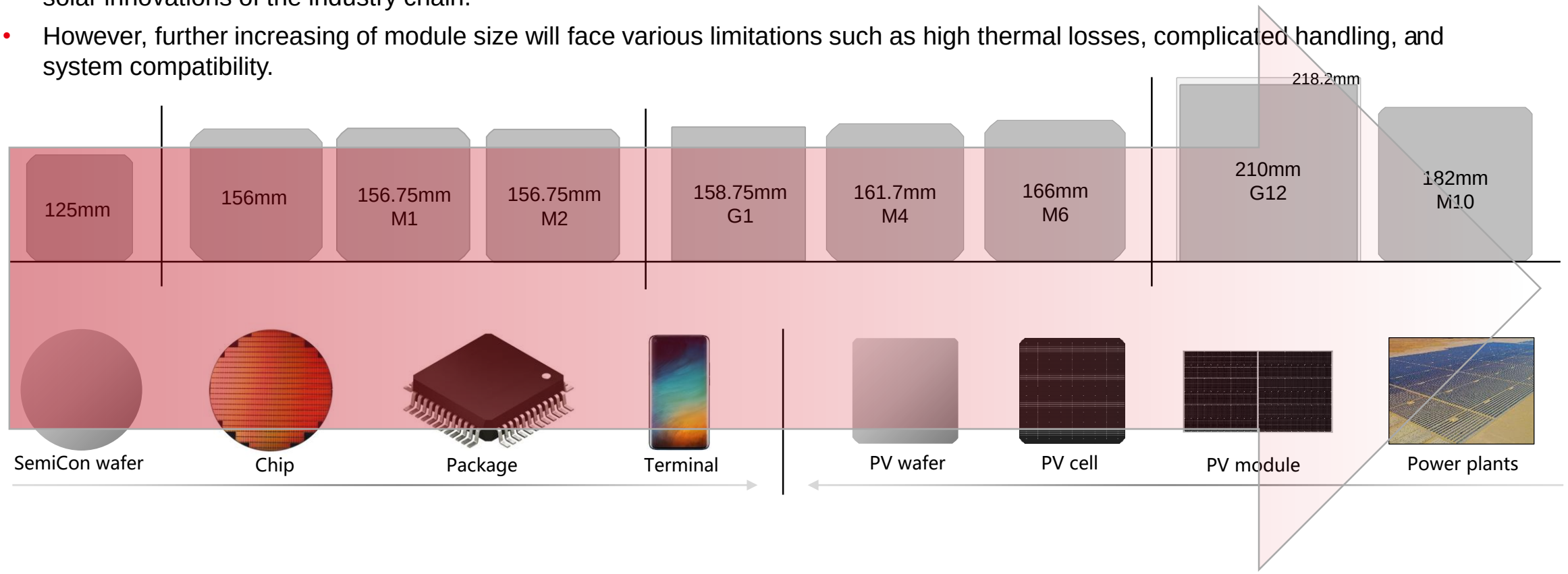


Version 1.02 March 2nd, 2022

Hi-MO 5

History of Wafer Size Development

- Manufacturing cost of semi-conductor chips and PV cells were high at the beginning. To produce 12inch chips, the wafer thickness increased to hundreds of microns. The larger chip size did not affect the packaging density and application.
- Emerging of G1 and M6 wafer is not only considering the cell manufacturing cost, but also savings on the module manufacturing, labor, cabling and racking cost. Actual cell manufacturing cost only accounts for 7% of total, no longer the key factor determining the solar innovations of the industry chain.
- However, further increasing of module size will face various limitations such as high thermal losses, complicated handling, and system compatibility.

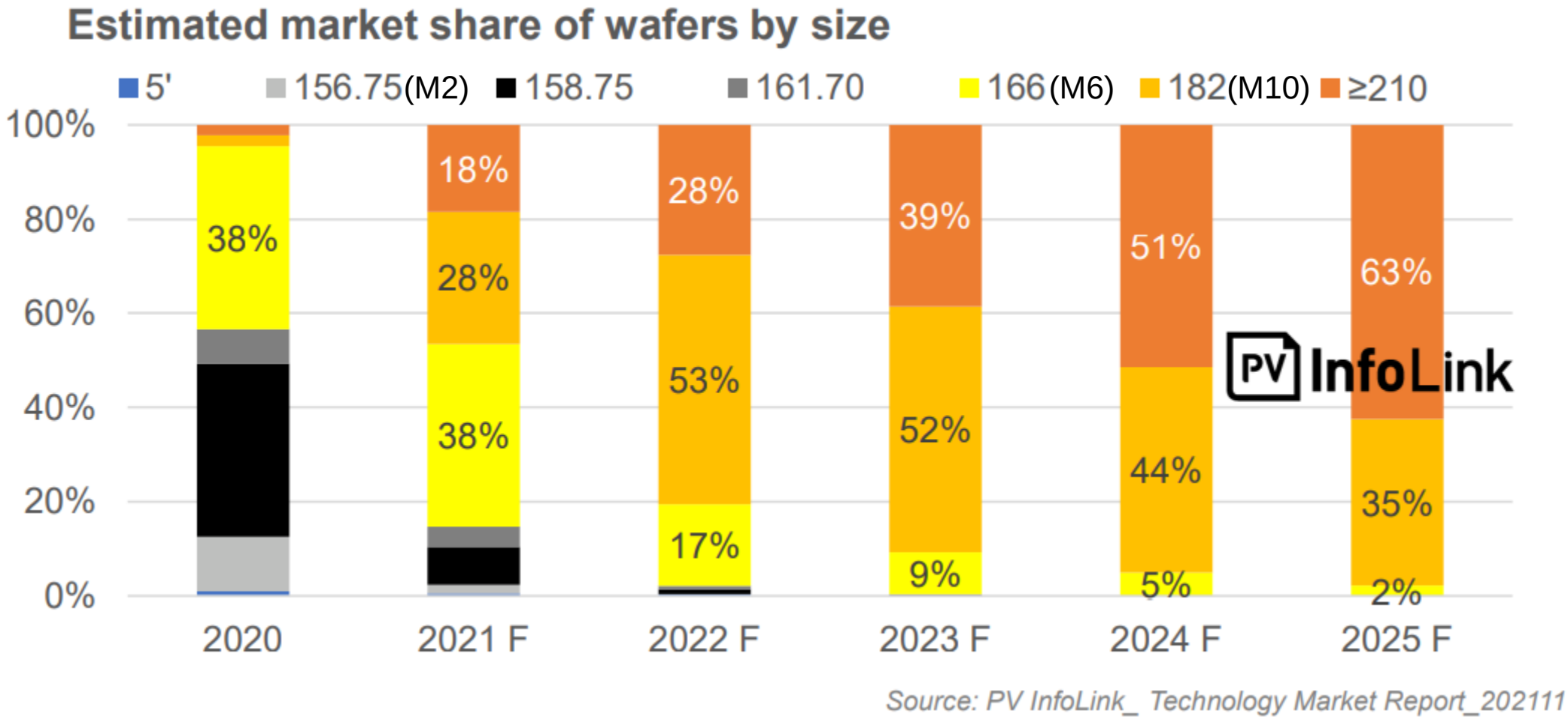


Hi-MO 5

Wafer Sizes shifting towards larger Formats

LONGi

Propelling the transformation

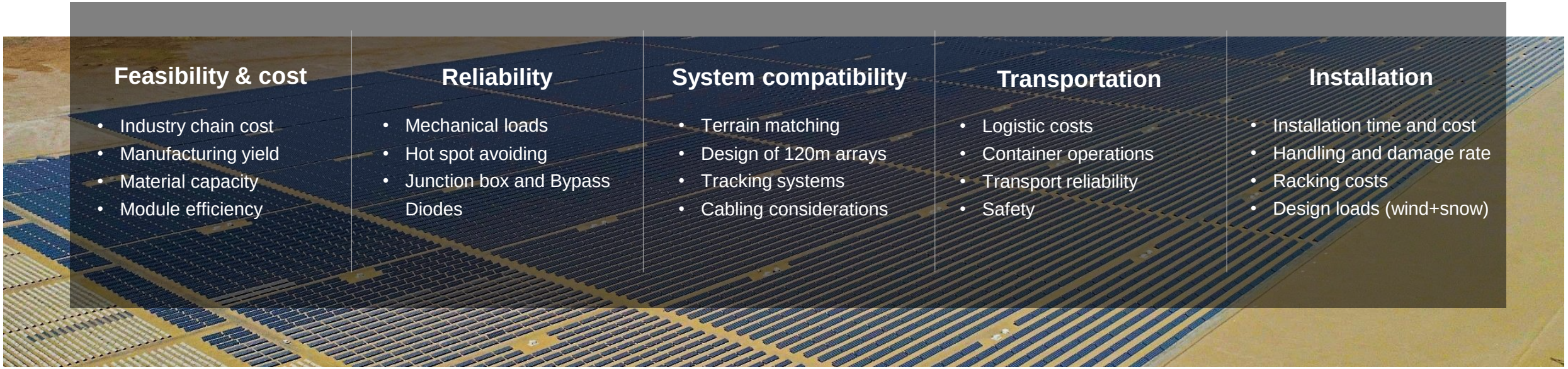


Source: PV InfoLink_ Technology Market Report_202111

Hi-MO 5

Finding the Optimum Size

- M10 wafer size was introduced to realize the standardization of the manufacturing and application system. It also realizes the reduction of module manufacturing and system BOS costs.
- Deep analysis of module manufacturing and deployment processes, optimal module dimension has been determined, and corresponding wafer/cell size deducted.
- Further increase of module size does not bring additional value butt result in significant increase of reliability risks.
- Future innovation should focus again on efficiency improvements and higher power generation.



Feasibility & cost

- Industry chain cost
- Manufacturing yield
- Material capacity
- Module efficiency

Reliability

- Mechanical loads
- Hot spot avoiding
- Junction box and Bypass Diodes

System compatibility

- Terrain matching
- Design of 120m arrays
- Tracking systems
- Cabling considerations

Transportation

- Logistic costs
- Container operations
- Transport reliability
- Safety

Installation

- Installation time and cost
- Handling and damage rate
- Racking costs
- Design loads (wind+snow)

Hi-MO 5 Intersolar Award Winner 2021

Hi-MO 5 product family is already successful!
Bifacial large scale 72C version has already won Intersolar Award 2021

"Hi-MO5 is a high-power bifacial module for large solar parks. It is made using gallium-doped wafers in a **182-millimeter** format with PERC technology. Modules with half-cut cells, double glass, and a frame have a 30-year power warranty.

The panel of experts was impressed by the nominal **power and efficiency** at 540 watts and 21.1 percent respectively. In line with the general trend toward larger-sized wafers in the industry, this product combines other **intelligent features,** such as smart logistics and handling. According to the panel of experts, the **interconnection technique** and cost-minimizing potential together with a **smart soldering technology** that saves resources represent a developmental step in the PV industry."

Source: InterSolar Europe (www.intersolar.de)

Hi-MO5 Proven Track Record

Since market introduction early 2021 of the 72C monofacial and bifacial products,
Hi-MO5 series hit sales milestone of 10 GW sold already on November 4th, 2021

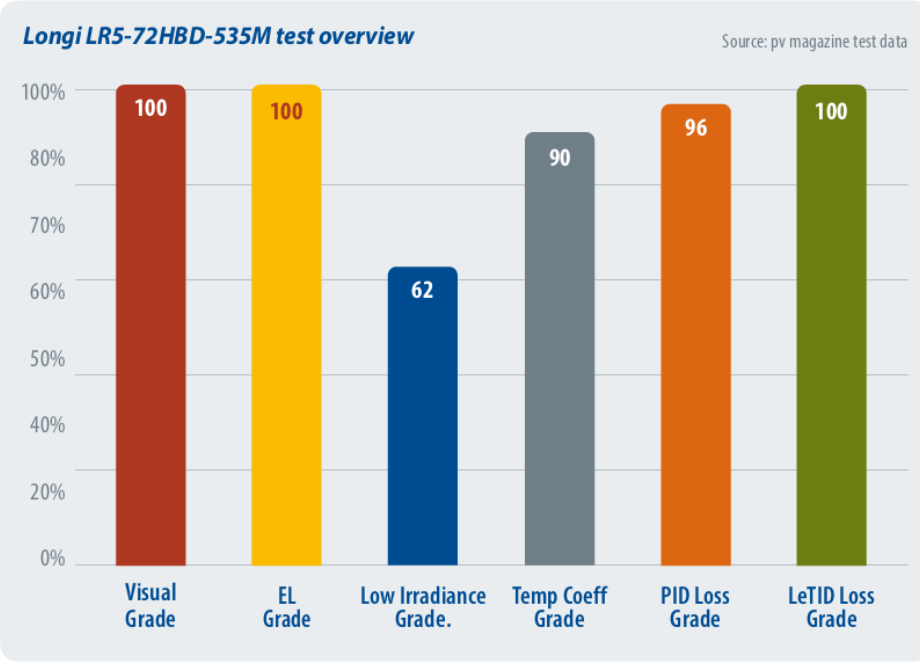
Shipments have been made to 600 customers in 57 countries.

“Since its listing last year, the sales of the module made by the company has created great fortune. It is the optimal size module (module area < 2.6 m²) created after in-depth analysis of various factors such as industrial chain, product value and life cycle reliability, and it is suitable for super large ground power station.

Source: Solarbe (https://en.solarbe.com/home/article/info/catId/49/id/5124.html)

Hi-MO5 Quality Tested: VERY GOOD!

Product Quality has been tested by PV Magazine and received VERY GOOD rating!



Hi-MO5 products have virtually no light aging not even at high temperatures (LeTID loss). Thanks to LONGi low LID technology, full score of 100 was reached!

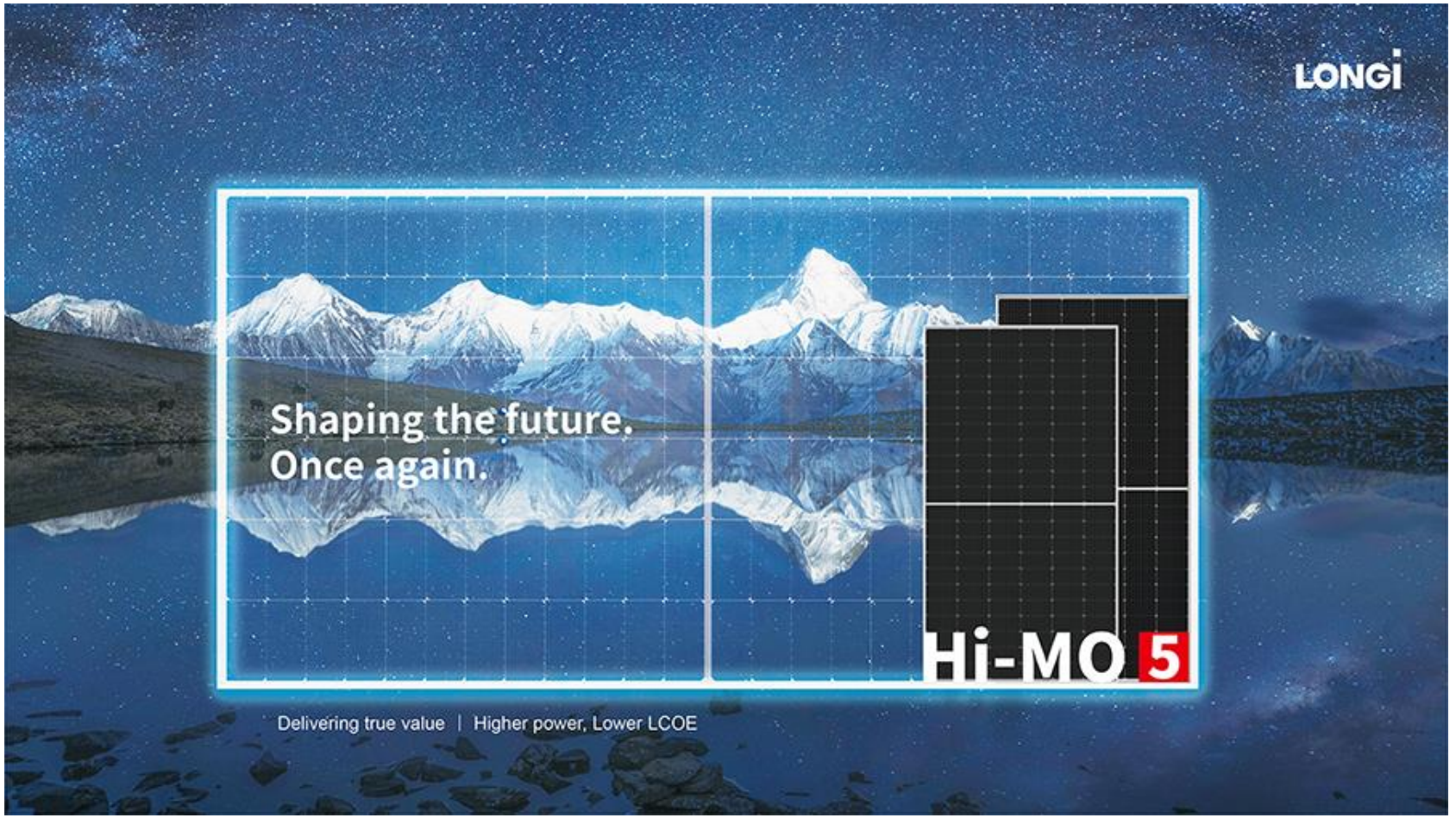
Full score as well for visual appearance and EL grade (electro-lumenescense) testing for hidden potential micro-cracks.

High scores could be achieved for low temperature dependency and performance under weak light e.g. in the morning and evening hours.

Source: PV Magazine (Global Edition February 2022)

Hi-MO 5m Welcome new Family Member! 54C Series

“Little brother” with 54C uses same integrated advanced technologies, like



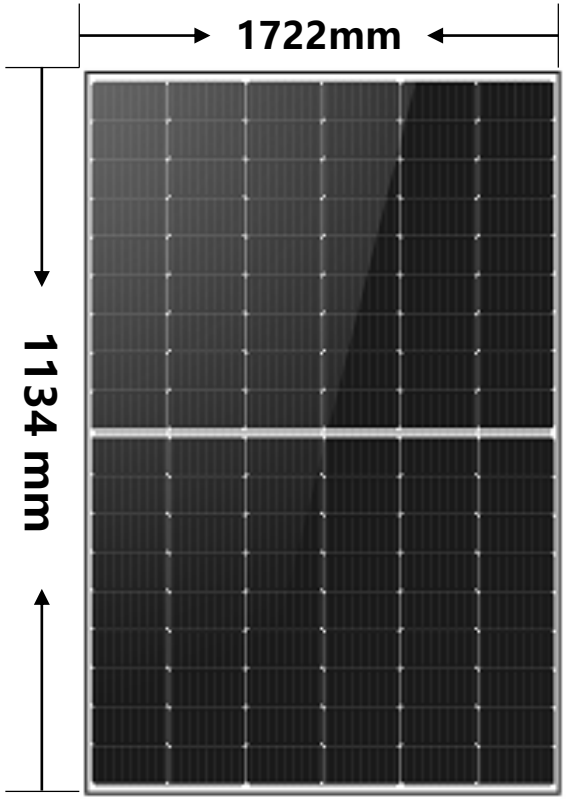
Hi-MO 5m Welcome new Family Member! 54C Series

“Little brother” with 54C uses same integrated advanced technologies, like

- M10 182 industry standard wafer size
- Gallium-doped for lowest light aging (LID, LeTID)
- Module efficiency exceeding 21%
- 9 bus bars, mature p-type PERC technology
- Standardized module width of 1134 mm
- 1.200 mm cable length (DG version)
- MC4 EVO2 (DG) or LONGi LR5 connectors
- Mechanical loads up to +5.400 / -2.400 Pa

Hi-MO 5m 54C Series: Product Variants

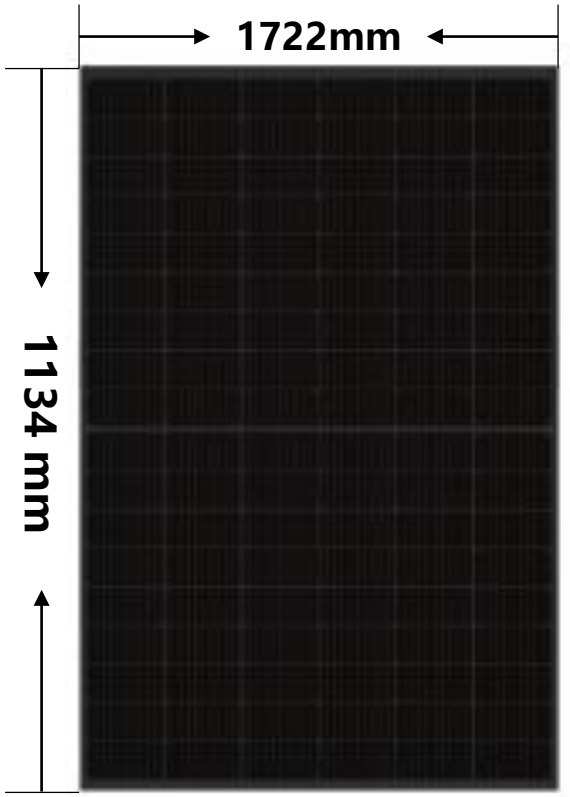
Two different versions available:



Standard

405~415W
20,7%~21,3%
1722×1134 mm
(1.95 m²)
21,5 kg

Residential C&I



All Black

400~410W
20,5%~21,0%
1722×1134 mm
(1.95 m²)
21.5kg

Residential C&I

Hi-MO 5m 54C Series Highlights

Key features:

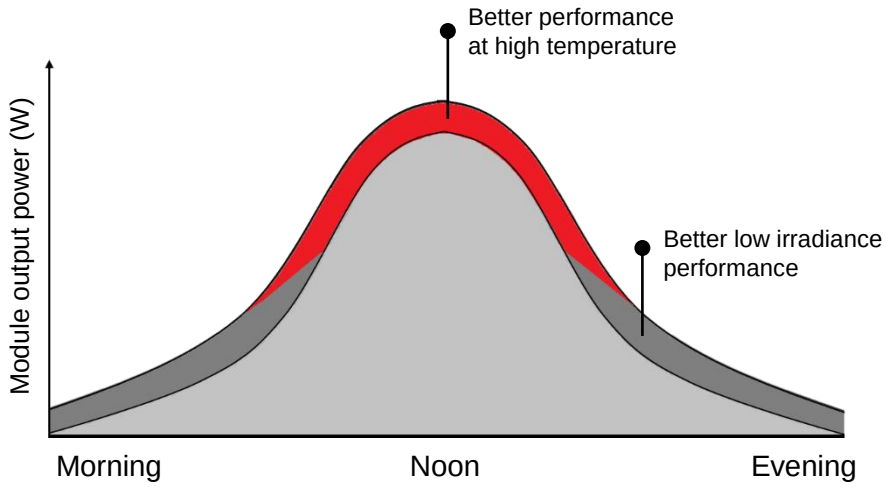
Hi-MO5m 54c
Product Advantages

- **Better performance**
  - Excellent Energy Yield
  - Integrated Segmented Ribbon
  - Low Degradation (LID, LeTID, PID)
- **The most reasonable rooftop product size**
  - Compatible with most standard mounting systems
  - Compatible with mainstream inverters
  - Easy installation and handling
- **Guaranteed quality for customer benefit**
  - Independent Product Quality Verification
  - LONGi life-cycle quality system

Hi-MO 5m Excellent Energy Yield

Propelling the transformation

Power generation:

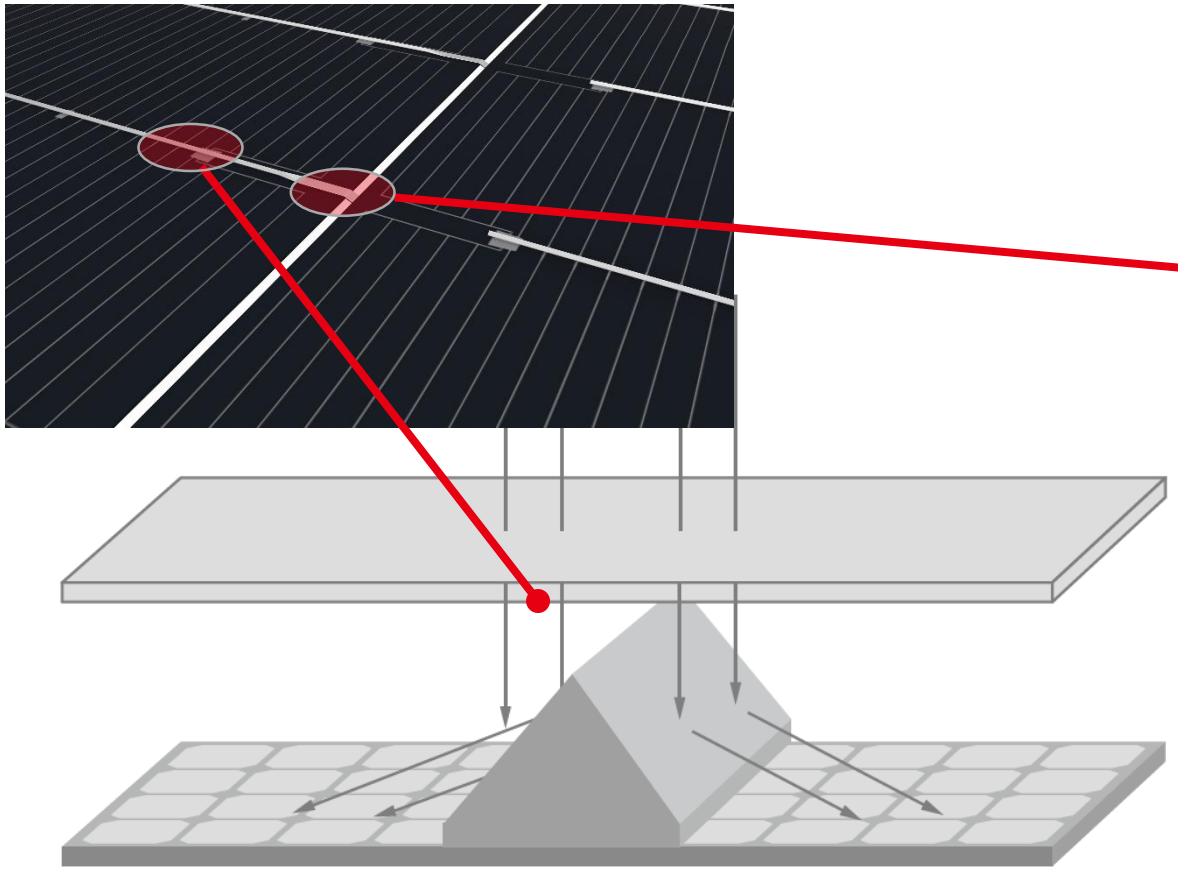


Complete in-house supply and industry chain from ingot, wafer, and cell to module combined with highest level quality control, LONGi Hi-MO5 series PERC modules provide excellent energy yield and great resistance against degradation such as LID and LeTID

Low irradiance performance | Temperature coefficient | IAM | + | Low degradation

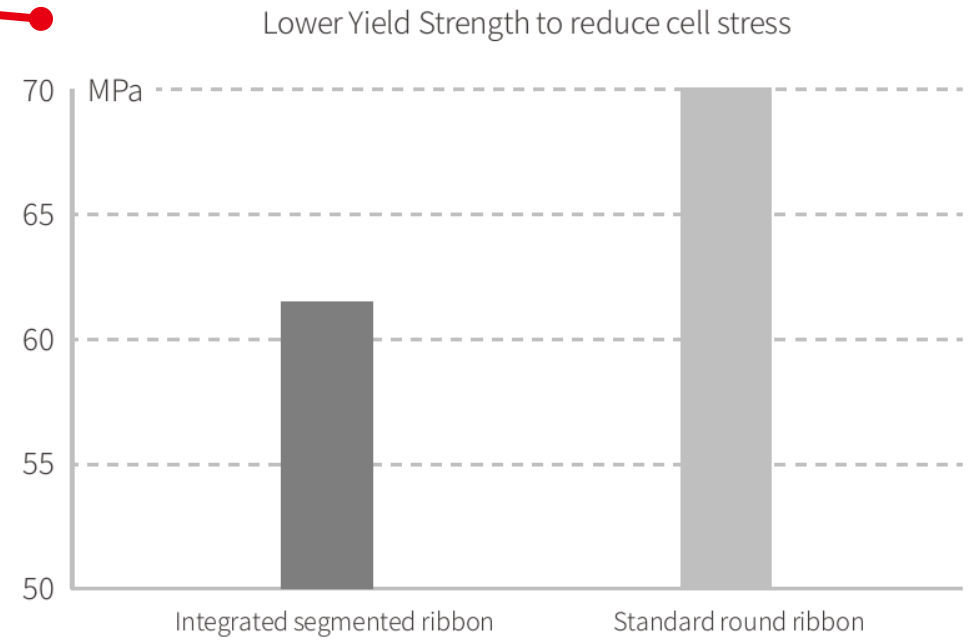
Hi-MO 5m Integrated Segmented Ribbon Technology

Advanced technology benefits:



Triangular section on the cell:
- maximum light trapping, more energy
- lowest reflections, less glare

Flat section between the cells:
- low cell stress, highest longevity



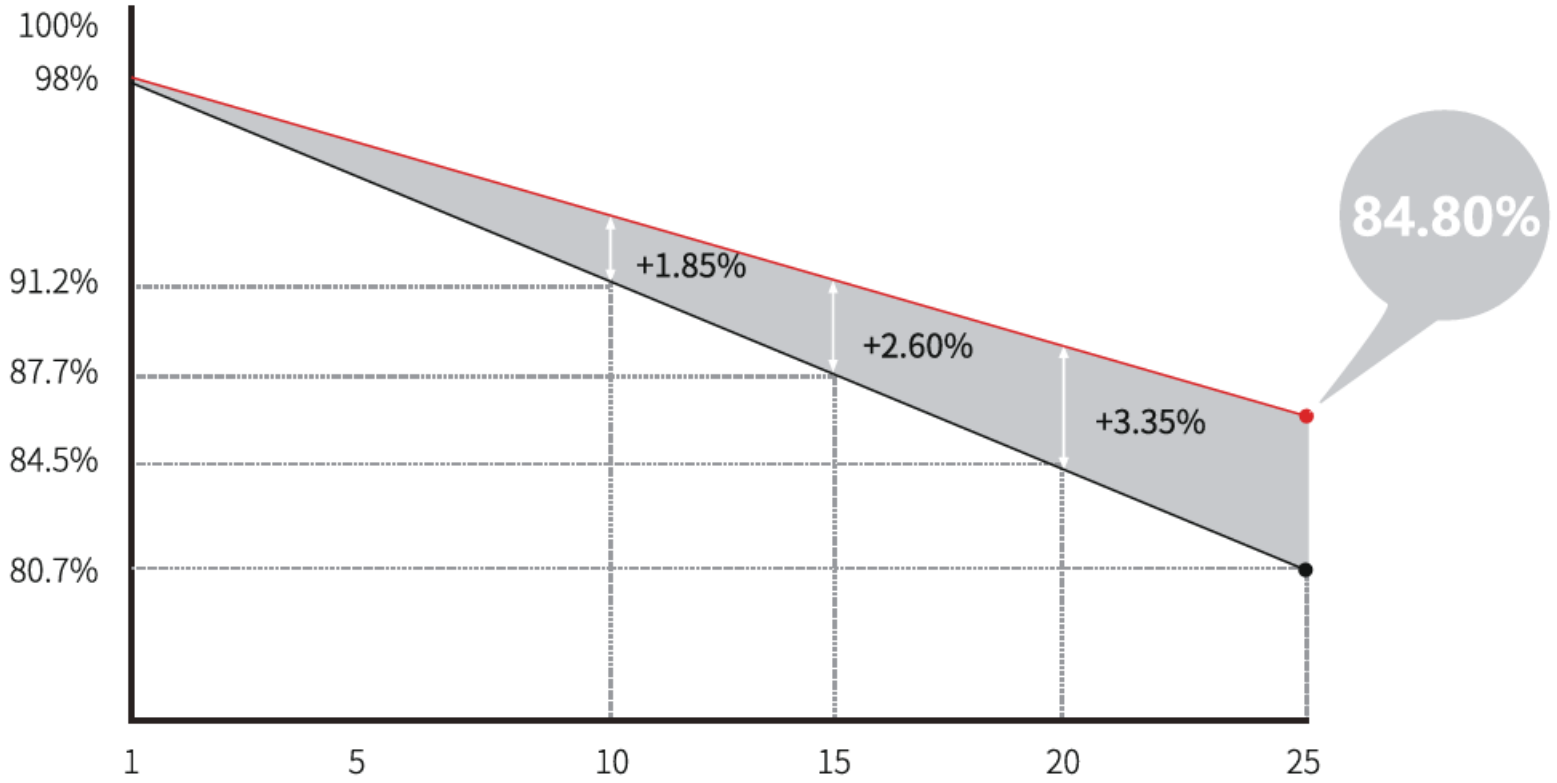
Hi-MO 5m Product Warranty

Propelling the transformation

Performance backed by LONGi Warranty:

12 12-year Warranty for Materials and Processing

25 25-year Warranty for Extra Linear Power Output



Re-insurable by Munich RE

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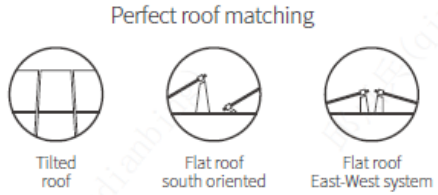
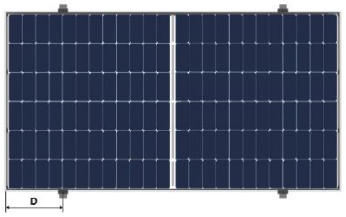
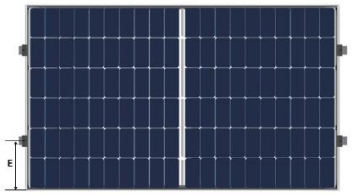
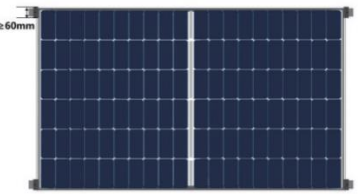
Hi-MO 5m System Compatibility

Standard Mounting Systems:



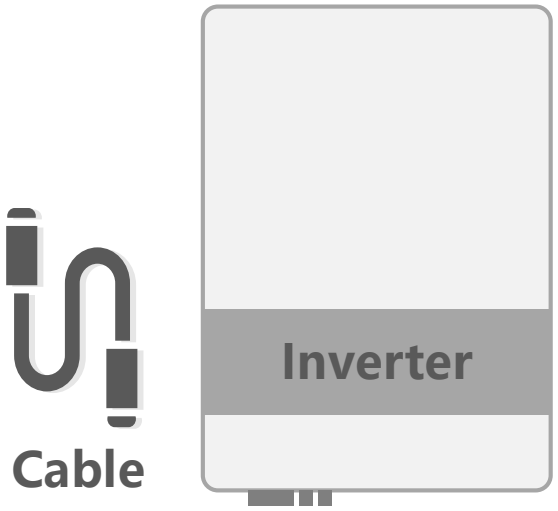
Compatible with most industry standard mounting systems*

*See LONGi Installation Manual for more details on supported mounting methods or contact our local Technical Service Team

	Long side fixation using four clamps	Short side fixation using four clamps / lay-in systems	Edge fixations using four clamps
Application	Residential Roof Systems	Residential Roof Systems or Ground Mount	Commercial & Industrial Flat Roof Systems
Max. Loads (Snow & Wind)	+5.400 Pascal -2.400 Pascal	+2.400 Pascal -2.400 Pascal	+2.400 Pascal -1.800 Pascal
Illustration			

Hi-MO 5m System Compatibility

DC/AC Inverter:



Hi-MO5m 54C modules are compatible with most top brand inverters.

The operating current Imp of Hi-MO 5m 54C is approx. 13A.

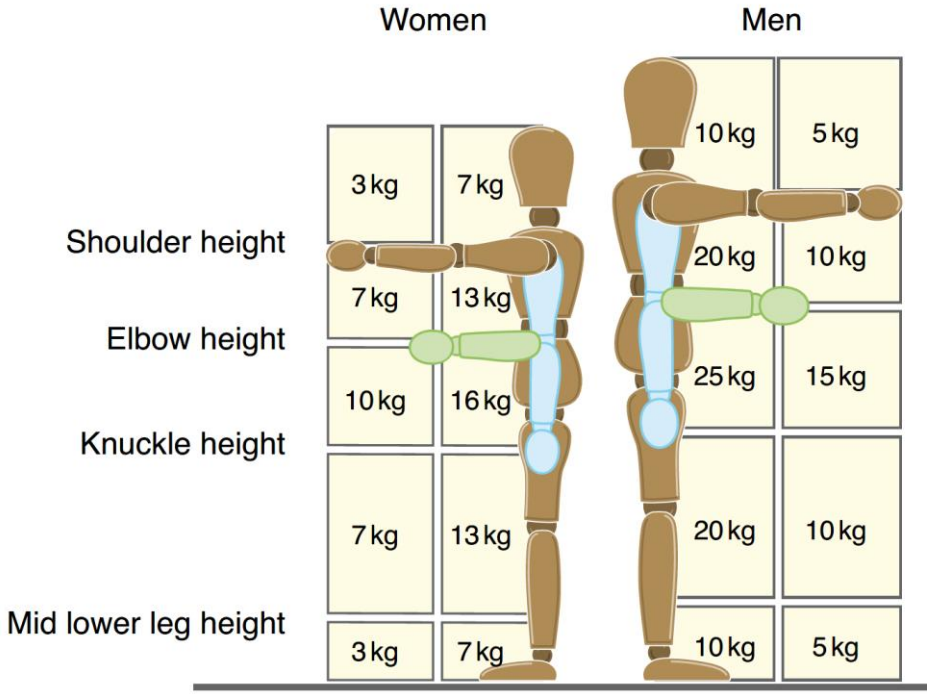
Hi-MO5m 54C			
Pmax (W)	405W	410W	415W
Isc (A)	13.83	13.88	13.94
Imp (A)	13.07	13.12	13.18

<< 15A

Hi-MO 5m Easy Handling

Propelling the transformation

Reasonable Size and Weight:



Source: Health and Safety Executive - Manual Handling at Work (www.hse.gov.uk)

- **Length:**

  Module height is around 1,7m, suitable for installation

- **Width:**

  Module width is around 1,1m, convenient carrying

- **Weight:**

  The maximum weight for a single person carrying modules should between 20~25kg. The specific value varies according to regional regulations. E.g., according to the U.S. regulations, the carrying weight for a single person should not exceed 50 pounds(about 22,7kg).

- **Area:**

  With 1,95 m² area Hi-MO5m 54C products are well below 2 m² limit for rooftop installations in Germany

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Hi-MO 5m Independent Product Quality Verification

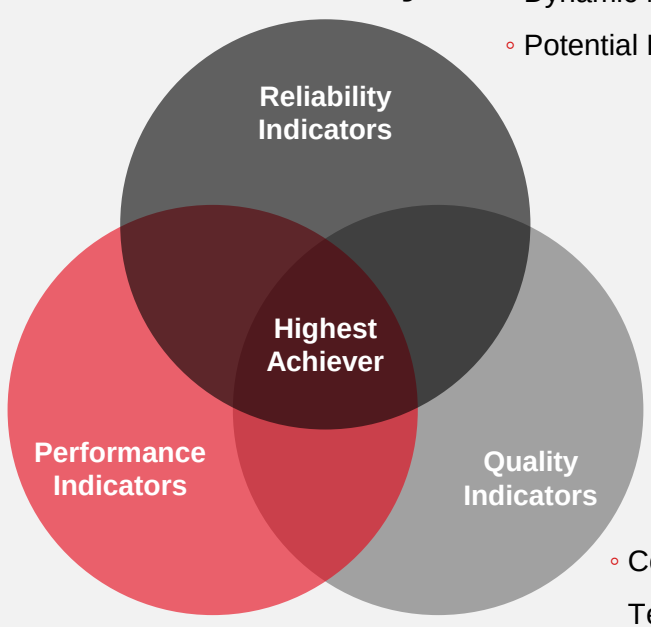
Top Performer and High Achiever:

TOP PERFORMER 2021 PVEL PV MODULE RELIABILITY SCORECARD

PV MODULE INDEX REPORT 2021 HIGH ACHIEVER RETC

RETC, a leading engineering service and certification testing provider in the U.S. for PV and renewable energy, has awared LONGi as “2021 High Achiever” in its PV Module Index Report for the third consecutive year.

PVEL 2021 Reliability Scorecard awared LONGi products as a “Top Performer” in all categories with the best overall score and in all tests and test sequences.



- Damp Heat 2000 Cyles Test
- Dynamic Mechanical Load
- Potential Induced Degradation

- Module Efficiency
- PTC-to-STC Ratio
- PVSyst Simulation PAN File
- Light Induced Degradation

- Combined Thresher Test including Humidity Freeze (3x IEC), Temperature Cycles (3x IEC), Damp Heat (2x IEC), UV Soaking

Hi-MO 5m LONGi Life-Cycle Quality System

Propelling the transformation

Basis for Quality and Reliability:

1. Design

- Established models of optics, electricity, mechanics and heat
- Combines theories with experimental results and historical experience
- Comprehensive analysis of product value based on application scenarios

2. Material

- Specific tests based on material properties
- Suppliers with high financial health
- Thresher reliability test

3. Plan

- Product and Material Standard
- Ensure the continuity of production and the versatility of materials

4. Reliability Test

- Advanced lab recognized by the third party
- Passed the internal thresher reliability test
- Excellent performance in the test of third party organizations

5. Manufacture

- Highly automated production lines
- Quality assurance(Manufacturing bases, headquarters, marketing)

- The power generation performance and reliability are verified by theory and demonstration
- Joint demonstration with authoritative third party institutions and customers

LONGi

Hi-MO 5m 54c

Best Choice for Solar Rooftop Systems

on private, residential, commercial, and industrial buildings

Propelling the transformation