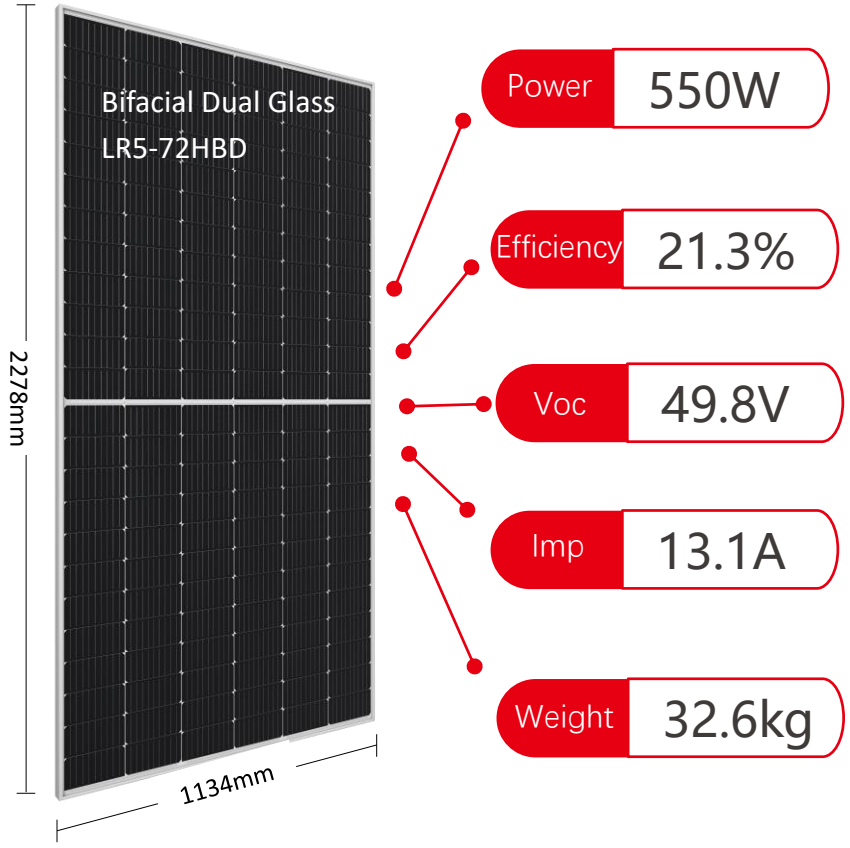
There is an Optimum Module Size

2022.6

Advantages of M10 modules

- LONGi's M10 PERC cell has achieved a benchmark factory efficiency of 23.8% with ultra-low silver consumption and high yield. The efficiency is expected to reach 24% by the end of 2022. In the second half of 2022, the main power of Hi-MO 5 bifacial modules based on standard size will be 550W, with an efficiency of 21.3%.
- Based on analysis of entire industry chain, M10 is determined as optimal module dimension to realize the standardization of the manufacturing and application system. It also realizes the reduction of module manufacturing costs and system BOS costs.
- Future innovation should focus back on the improvement of efficiency and power generation but not increase module size with reliability risk.



Production feasibility & cost

- Industry chain cost
- Manufacturing yield
- Module efficiency

Module reliability

- Mechanical load
- Junction box

M10

Optimal Size with Systematic Thinking

Manual installation

- Installation efficiency
- Installation damage rate

Module transportation

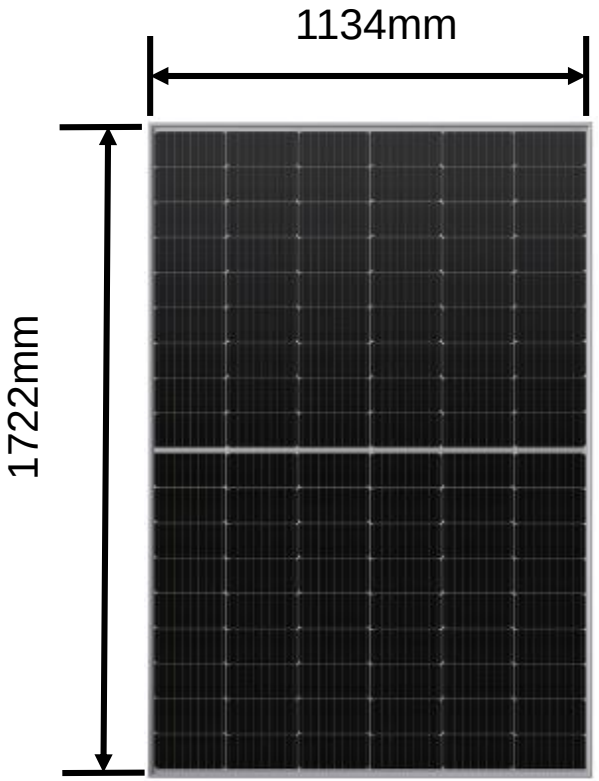
- Loading & unloading
- Transport reliability

System compatibility

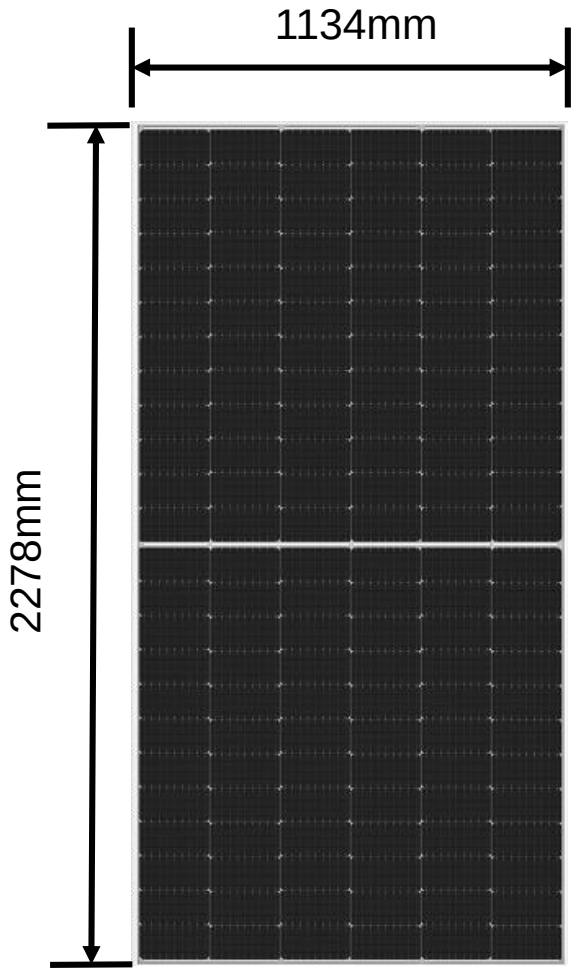
- Mountain scene matching
- Tracking system
- Cable matching

Unified Size for M10(182mm) Product

- Unified size for M10 product is beneficial for reliable industry chain supply and downstream power plants' construction



For DG market

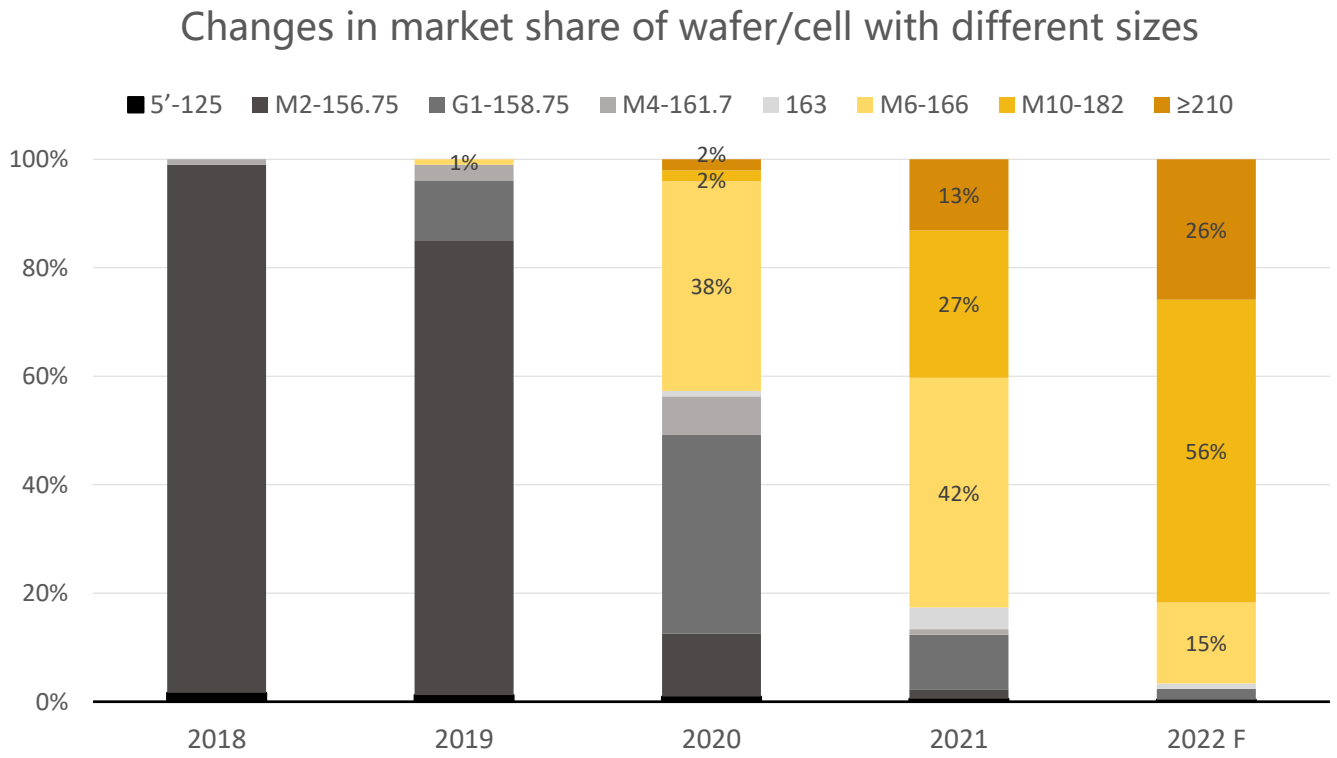


For Utility

Market share of M10 modules

The market share of M10 modules exceeds expectations, which will quickly exceed half of market share

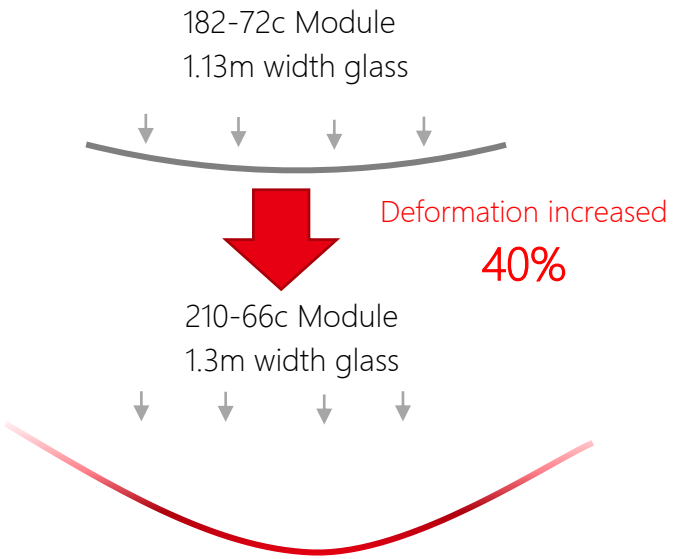
- With a reasonable design, the M10 modules launched in 2020 have a significantly higher market share than the G12 modules launched in 2019. In 2021, the global shipment of M10 module is about 48.5GW, and it is expected to achieve a market share of more than 50% in 2022
- Third-party institutions have biased market share expectations based on equipment manufacturing capabilities. In fact, in the second half of 2021, a large number of G12 cell and wafer production capacity transformed to M10 products.
- Expensive shipping cost magnifies the advantages of M10 modules in packaging and transportation. Together with the cost saving of 0.156 cent/W for cell manufacturing, M10 modules also quickly squeezed M6's DG market share

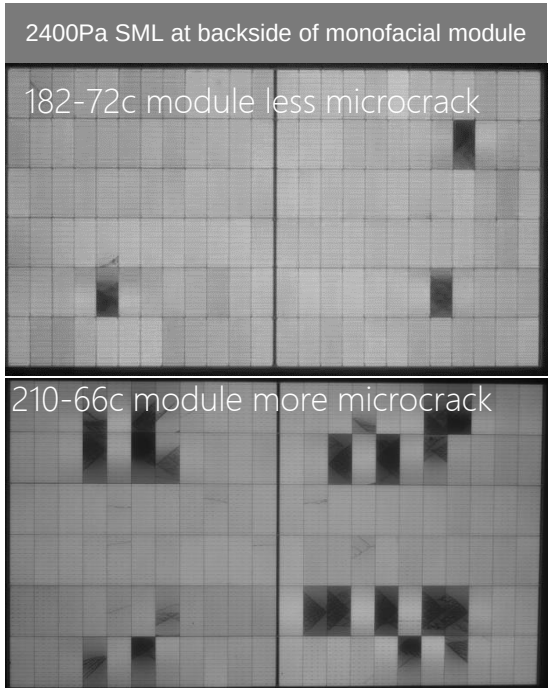


Source: PV Infolink updated data in 2022.5

Module Reliability-The Mechanical Load

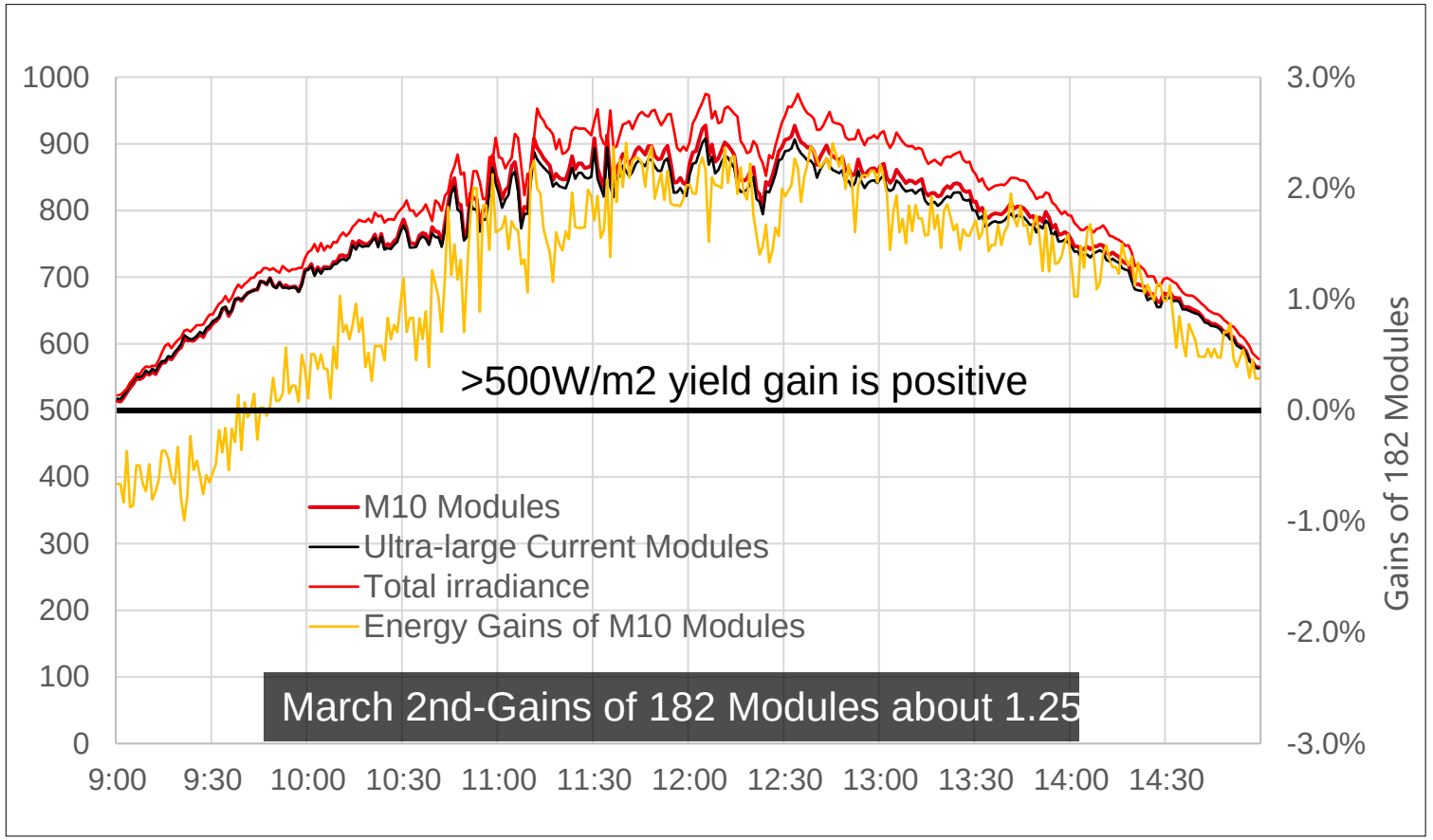
- With the increase of module width, the maximum deformation will increase: In one hand, the power degradation caused by microcrack will increase; In another hand, the risk of glass breakage will increase.





Power generation performance in demo project

- The comparison of power generation shows that the M10 modules and the ultra-large current G12 modules reproduce the similar results of half-cell vs full-cell modules. M10 modules with lower internal loss have more advantages in power generation when the irradiation is high, and the critical irradiation is around 500W/m^2
- The result shows that the design direction of PV modules should still be to improve efficiency and control internal losses instead of improving current



THANKS

LONGi

Product Marketing