


# LESSO


## 210 MBB Mono Perc Half-cell Module


Pure Black Series

**635W ~ 660W**



 **12** years product workmanship warranty

 **25** years linear power output warranty

 1st year power degradation no more than **2%**  
Subsequent annual power degradation no more than **0.55%**



# LESSO 210 MBB Mono Perc Half-cell Module



Power Range  
**635W ~ 660W**



Power Output Tolerance  
**0W ~ +5W**



Maximum Efficiency  
**21.2%**

## Features and Benefits



The application of multi-busbar (MBB) half-cut cell technology brings stronger resistance to shade and lower risk of hot spot.



Strict control on raw materials and process optimization of high efficiency PERC ensure better resistance against PID of PV module.



Through harsh weathering tests of sand, dust, salt mist, ammonia, etc., to get stronger weather resistance of outdoor environment.



Lower oxygen and carbon content result in lower LID.

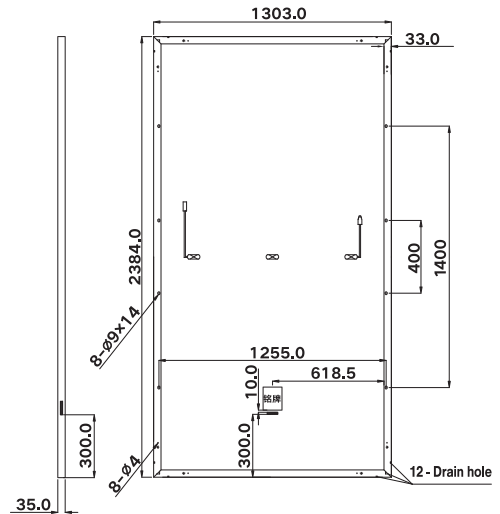


By series and parallel design, to reduce the series RS and achieve higher power output and lower BOS cost.



Lower temperature coefficient and lower operating temperature can ensure higher power generation.

(Unit: mm)



## Electrical Performance Parameters | STC

| Model Type             |                      | 635D(BPM)<br>66(210) | 640D(BPM)<br>66(210) | 645D(BPM)<br>66(210) | 650D(BPM)<br>66(210) | 655D(BPM)<br>66(210) | 660D(BPM)<br>66(210) |
|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Nominal Max. Power     | P <sub>max</sub> (W) | 635                  | 640                  | 645                  | 650                  | 655                  | 660                  |
| Maximum Power Voltage  | V <sub>mp</sub> (V)  | 36.85                | 37.05                | 37.25                | 37.45                | 37.65                | 37.85                |
| Maximum Power Current  | I <sub>mp</sub> (A)  | 17.24                | 17.28                | 17.32                | 17.36                | 17.40                | 17.44                |
| Open Circuit Voltage   | V <sub>oc</sub> (V)  | 45.12                | 45.32                | 45.52                | 45.72                | 45.92                | 46.12                |
| Short Circuit Current  | I <sub>sc</sub> (A)  | 18.18                | 18.02                | 18.26                | 18.30                | 18.34                | 18.40                |
| Module Efficiency      | (%)                  | 20.40                | 20.60                | 20.80                | 20.90                | 21.10                | 21.20                |
| Power Output Tolerance | (W)                  | 0~+5W                |                      |                      |                      |                      |                      |

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

\* Power measurement tolerance ±3%.

## Electrical Performance Parameters | NMOT

| Model Type            |                      | 635D(BPM)<br>66(210) | 640D(BPM)<br>66(210) | 645D(BPM)<br>66(210) | 650D(BPM)<br>66(210) | 655D(BPM)<br>66(210) | 660D(BPM)<br>66(210) |
|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Nominal Max. Power    | P <sub>max</sub> (W) | 477                  | 481                  | 485                  | 489                  | 493                  | 497                  |
| Maximum Power Voltage | V <sub>mp</sub> (V)  | 34.20                | 34.40                | 34.60                | 34.80                | 35.00                | 35.20                |
| Maximum Power Current | I <sub>mp</sub> (A)  | 13.97                | 14.00                | 14.03                | 14.06                | 14.09                | 14.12                |
| Open Circuit Voltage  | V <sub>oc</sub> (V)  | 42.20                | 42.40                | 42.60                | 42.80                | 43.00                | 43.20                |
| Short Circuit Current | I <sub>sc</sub> (A)  | 14.10                | 14.76                | 14.80                | 14.84                | 14.88                | 15.00                |

\* NMOT: Irradiance 800W/m<sup>2</sup>, Cell Temperature 20°C, Wind Speed 1m/s.

\* Power measurement tolerance ±3%.

## Structure Performance

|                        |   |
|------------------------|---|
| Solar Cell Type        | 210mm Mono-crystalline (Half Cell)  |
| Solar Cell Arrangement | 132pcs(6×22)  |
| Module Dimension       | 2384×1303×35mm  |
| Weight                 | 33.8kg  |
| Front Glass            | 3.2mm, highly transparent tempered glass with anti-reflective coating   |
| Back Sheet             | Black   |
| Frame                  | Anodized Aluminum Alloy (Black)   |
| Junction Box           | IP68 rated  |
| Cable                  | 4mm <sup>2</sup> , portrait <sup>400mm(+)</sup> / <sub>200mm(-)</sub> + landscape <sup>1400mm(+)</sup> / <sub>1400mm(-)</sub><br>Length can be customized |
| Diode Quantity         | 3 pcs   |
| Front side/Rear side   | 5400pa/2400pa   |
| Connector              | MC4 Compatible  |
| Per Pallet             | 31pcs   |
| Per Container(40'HQ)   | 558pcs  |

## Temperature Characteristics

|   |         |
|---|---------|
| Nominal Module Operating Temperature        | 44±2°C  |
| Temperature Coefficient (I <sub>sc</sub> )  | +0.048% |
| Temperature Coefficient (V <sub>oc</sub> )  | -0.26%  |
| Temperature Coefficient (P <sub>max</sub> ) | -0.34%  |

## Maximum Parameters

|                              |          |
|------------------------------|----------|
| Working Temperature          | -40~85°C |
| Maximum System Voltage       | 1500V DC |
| Nominal Maximum Fuse Current | 30A      |

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Data contained in these specifications is subject to change without notice.