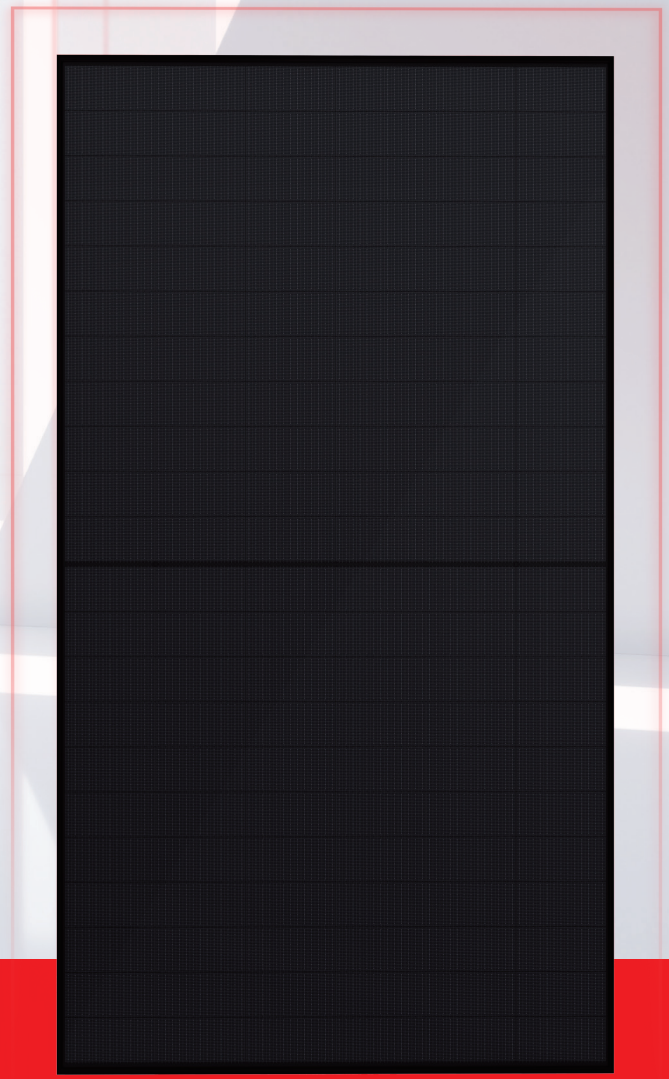


Pure Black series

## 210 P-type Monofacial Module

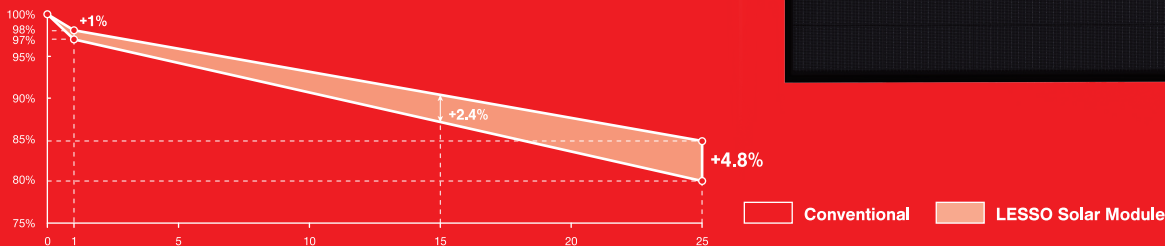
### 640W ~ 650W



**12** years product workmanship warranty

**25** years linear power output warranty

**2%** 1st-year degradation  
**0.55%** annual degradation



### FEATURES AND BENEFITS

High efficiency PERC, better resistance against PID.

Highly-resistant black, crystal material, modernity to buildings.

Better temperature coefficient, more power generation.

Zero LID, increase power generation.

Even cloudy or foggy days, better weak illumination response.

Multiple weather, resistance tests, wider applicability.

# LESSO 210 Pure Black P-type Monofacial Module (66)



Power Range  
**640W ~ 650W**



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

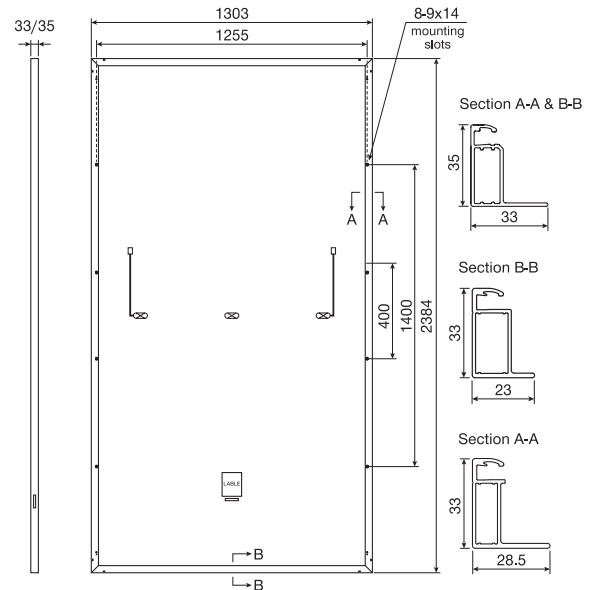


Maximum Efficiency  
**20.92%**

(Unit: mm)

## Structure Performance

<b>Solar Cell Type</b>	210mm Mono-crystalline (Half Cell)
<b>Solar Cell Arrangement</b>	132pcs(6x22)
<b>Module Dimension</b>	2384×1303×35mm/33mm
<b>Weight</b>	33.8kg(35mm) / 32.3kg(33mm)
<b>Front Glass</b>	3.2mm, highly transparent tempered glass with anti-reflective coating
<b>Back Sheet</b>	Black
<b>Frame</b>	Anodized Aluminum Alloy (Black)
<b>Junction Box</b>	IP68 rated
<b>Cable</b>	4mm <sup>2</sup> , portrait <sup>400mm (+)</sup> / <sub>230mm (-)</sub> , landscape <sup>1400mm (+)</sup> / <sub>1400mm (-)</sub> Length can be customized
<b>Diode Quantity</b>	3 pcs
<b>Front side / Rear side</b>	5400pa / 2400pa
<b>Connector</b>	MC4 Compatible
<b>Per Pallet</b>	31pcs(35mm) / 33pcs(33mm)
<b>Per Container(40'HQ)</b>	558pcs(35mm) / 594pcs(33mm)

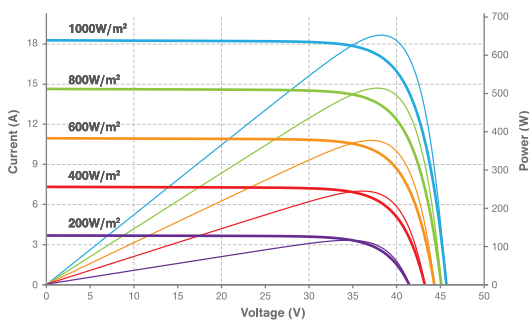


## Electrical Performance Parameters

Model Type	640D(BPM)66(210)		645D(BPM)66(210)		650D(BPM)66(210)	
	STC	NMOT	STC	NMOT	STC	NMOT
<b>Testing Condition</b>	STC	NMOT	STC	NMOT	STC	NMOT
<b>Nominal Max. Power</b> $P_{MAX}$ (W)	640	481	645	485	650	489
<b>Max. Power Voltage</b> $V_{MP}$ (V)	37.05	34.40	37.25	34.60	37.45	34.80
<b>Max. Power Current</b> $I_{MP}$ (A)	17.28	14.00	17.32	14.03	17.36	14.06
<b>Open Circuit Voltage</b> $V_{OC}$ (V)	45.32	42.40	45.52	42.60	45.72	42.80
<b>Short Circuit Current</b> $I_{SC}$ (A)	18.22	14.76	18.26	14.80	18.30	14.84
<b>Module Efficiency</b> (%)	20.60		20.76		20.92	

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5; NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass AM1.5, Wind Speed 1m/s; Power measurement tolerance ±3%.

## Current-Voltage & Power-Voltage Curve (650D)



## Temperature Characteristics

<b>Nominal Module Operating Temperature</b>	44±2°C
<b>Temperature Coefficient (<math>I_{SC}</math>)</b>	+0.048%
<b>Temperature Coefficient (<math>V_{OC}</math>)</b>	-0.26%
<b>Temperature Coefficient (<math>P_{MAX}</math>)</b>	-0.34%

## Maximum Parameters

<b>Working Temperature</b>	-40~+85°C
<b>Maximum System Voltage</b>	1500V DC
<b>Nominal Maximum Fuse Current</b>	30A