



ines

INSTITUT NATIONAL
DE L'ENERGIE SOLAIRE

liten
cea tech

CUSTOMIZED SHJ PV MODULE

OPTIMIZATION OF HETEROJUNCTION (SHJ) TECHNOLOGY BENEFITS TROUGHT CUSTOMIZED MODULING



SHJ BENEFITS :

- High performance (Efficiency, W/m²)
- Stable performance (LID, PID and LeTID free)
- Low cost potential
- High bifaciality (~ 90%)
- Energy Yield: T coefficient -0.27%/°C (SHJ) vs -0.4%/°C (PERC)
- Ultra-thin wafer compatibility
- Reduced environmental impacts

> SHJ MODULING: FOR SIMPLE INTEGRATION

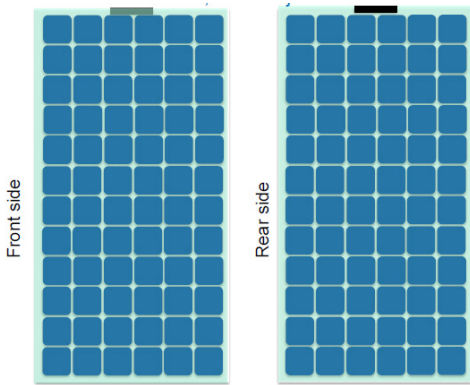
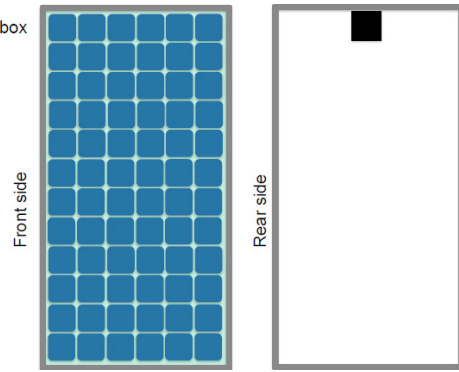
GLASS/BACKSHEET (BUSBAR-BUSBARLESS)

- Transparent Backsheet
- Efficiency or Power (wafer size M2, M4, M6...)
- Half Cells
- Shingling
- Glass Coatings / Soiling

ECA Interconnection
Last Innovation: Up to 6 Busbar

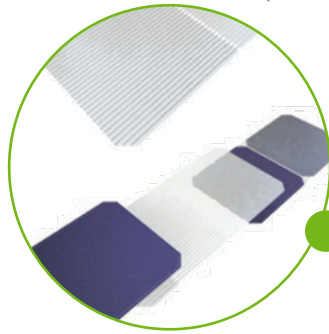


Junction box



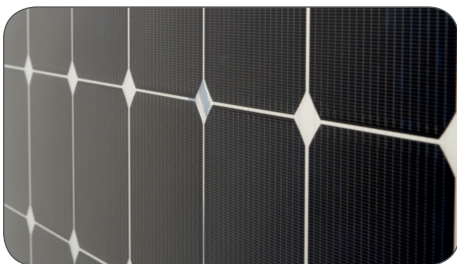
GLASS/GLASS (BUSBAR-BUSBARLESS)

- Cell To Module Improvements
- Certified Module Bill Of Materials (ECA, glass, JB)
- Specific Equipments
- Reliability
- Specific Characterization



 MEYER BURGER
SWCT Interconnection
Last Innovation: SWCT on 1/2 cells

STATE-OF-THE-ART RESULTS <



MONOFACIAL

72 cells
 $P_{(STC)} = 410Wp$



BIFACIAL

72 cells
 $P_{(STC)} = 388Wp$
 $P_{BIF20} = 455Wp$



Using 1/2 cells SWCT Interconnection

120 1/2 cut cells
348Wp