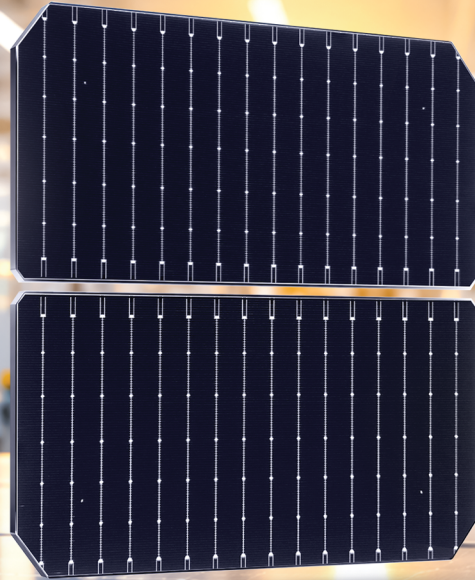


INTRODUCING
INDOSOL
TRUE™
G12R N TYPE TOPCon CELL



ONE G12R CELL
CUT INTO TWO
HIGH PERFORMANCE
HALF CELLS.

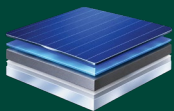
PRECISION CUT.
SUPERIOR
PERFORMANCE.

**ENGINEERED BEYOND
CONVENTIONAL TOPCon.**

Advanced Cell architecture for higher
Performance, greater Reliability and
a brighter tomorrow.

T

TOPCon



Tunnel-Oxide Passivated
Contacts for high-performance
N Type platform

-  **HIGH Voc**
-  **LOW LID/LeTID**
-  **BETTER TEMPERATURE COEFFICIENT**

R

REAR POLY-FINGER

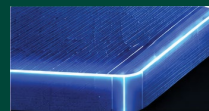


Selective rear poly finger
architecture to reduce parasitic
absorption and improve rear-side
response

-  **HIGHER BIFACIALITY**
-  **BETTER REAR SIDE UTILIZATION**

U

**UNIFORM ALD
EDGE PASSIVATION**

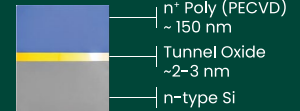


Conformal ALD passivation of
cut edges to reduce perimeter
recombination

-  **LOWER CUT EDGE RECOMBINATION**
-  **HIGHER MODULE OUTPUT**

E

**ENGINEERED
POLY INTERFACE**



Engineered poly interface with
Phosphorus-doped PECVD poly
for improved gate resilience

-  **LOWER REVERSE CURRENT**
-  **IMPROVED SHADE RESISTANCE**

KEY SPECIFICATIONS

G12R

CELL SIZE
210 x 182.3 mm

N Type TOPCon

CELL TECHNOLOGY

≥ 25.5%

CONVERSION EFFICIENCY

HALF-CUT

FORMAT



**CONSISTENT
QUALITY**



**RELIABLE
SUPPLY**



**PARTNER
FOR PROGRESS**



**GLOBAL
READY**

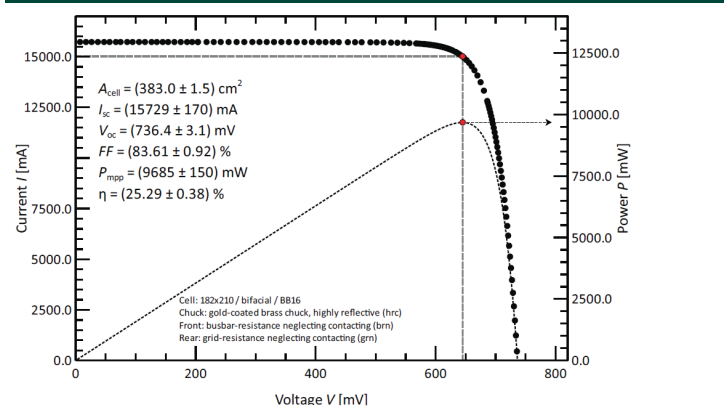
G12R N Type TOPCon Bifacial Solar Cell

Surface & Optical Structure	
Front Surface Texture	Random Pyramid Texture (Alkaline Texturing)
Front ARC Coating	Silicon Nitride (SiNx:H)
Front Surface Reflectance	< 2% (optimized refractive index)
Rear Passivation Structure	Tunnel oxide (SiO ₂) + doped poly-Si (TOPCon)
Edge Passivation	Aluminium Oxide (Al ₂ O ₃)
Rear Surface Coating	Dielectric stack for enhanced reflectivity

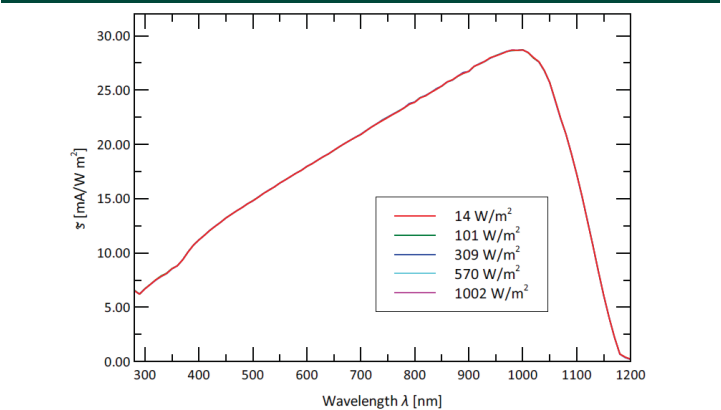
Temperature Coefficient		
Parameters	Value	Recommended Tolerance
Voc Temperature Coefficient	-0.256 % / K	±0.010 % / K
Isc Temperature Coefficient	+0.045 % / K	±0.005 % / K
Pmax Temperature Coefficient	-0.30 % / K	±0.015 % / K

Mechanical Data & Design			
Cell Technology	N-Type TOPCon, Bifacial	Product	G12R_16BB Rectangular Monocrystalline
Wafer Type	N-type Monocrystalline Silicon	Wafer Growth Method	Czochralski (CZ)
Crystal Orientation	<100>	Base Doping	Phosphorus-doped (N-type)
Cell Dimensions	182.3 mm × 210.0 mm ± 0.50 mm	Diagonal	272.0 mm ± 0.5 mm
Thickness	130 μm ± 20 μm	Wafer Resistivity	~1-3 Ω·cm
Front Side (-)	16 Busbars, 14 Pads, 210 Fingers	Back Side (+)	16 Busbars, 14 Pads, 222 Fingers
Front Busbar Width	0.05 ± 0.035 mm	Back Busbar Width	0.05 ± 0.035 mm
Busbar Distance (C-C)	10.8 ± 0.15 mm	Finger Count	Front: 210 / Back: 222

IV Curve



Spectral Response



Electrical Characteristics (STC*)						
Efficiency (%)	Pmpp (W)	Vmpp (V)	Impp (A)	Voc (V)	Isc (A)	FF (%)
25.5	9.77	0.6537	14.947	0.7393	15.612	84.66
25.4	9.73	0.6521	14.921	0.7386	15.601	84.44
25.3	9.70	0.6504	14.908	0.7371	15.596	84.36
25.2	9.66	0.6490	14.879	0.7377	15.594	83.93

*STC: Irradiance: 1000 W/m², AM: 1.5 Spectrum, Cell Temperature: 25 ± 2°C.
Specifications are subject to change due to continuous product improvement.

Version: CG12R042026



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