

COTECH SOLAR · TOPCon

CSTB66R-615~640

N-Type Rectangular-Wafer TOPCon Bifacial Dual-Glass Module · 132 half-cells

640 W_p

MAXIMUM
POWER OUTPUT

23.7 %

MAXIMUM
EFFICIENCY

High customer value

- N-type i-TOPCon bifacial dual-glass module
- Compatible with mainstream inverters & mounting systems
- Mechanical load up to 5400 Pa front / 2400 Pa rear
- Lower BOS cost and lifetime LCOE

High efficiency & power

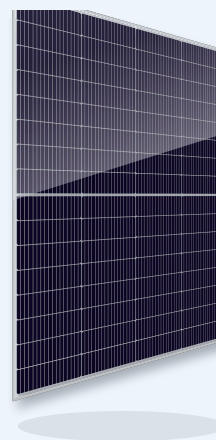
- Up to 23.7% module efficiency
- OBB / SMBB low-resistance cell interconnection
- Excellent performance under low irradiance

High reliability & yield

- 15-year product & 30-year linear power warranty
- Resistant to PID, salt mist and ammonia; low LID / LeTID
- Low temperature coefficient $-0.29\%/^{\circ}C$ · up to $80 \pm 5\%$ bifaciality

Key specifications

Maximum power	615 – 640 W_p
Module efficiency	up to 23.7 %
Open-circuit voltage	49.30 – 50.20 V
Cell type	N-type TOPCon mono, rectangular 182×210mm
No. of cells	132 (6×22) half-cut
Dimensions (mm)	2382 × 1134 × 30
Weight	32.5 kg
Bifaciality	80 ± 5%



N-Type TOPCon

low LID / LeTID

Bifacial

80 ± 5%

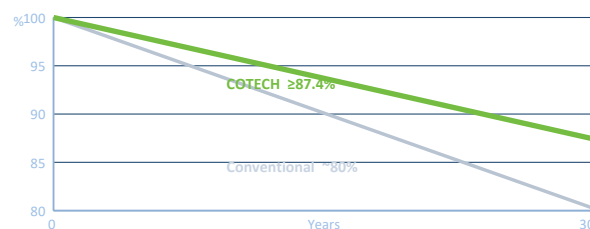
OBB · SMBB

higher energy yield

Glass · Glass

dual-glass

PERFORMANCE WARRANTY



15-yr product

30-yr power

QUALITY ASSURANCE



EL & flash tested

100% inspected, binned & traceable

APPLICATIONS



Residential



C & I



Utility



Off-grid

QUALITY SYSTEM

ISO 9001

ISO 14001

ISO 45001

CERTIFICATION & QUALIFICATION

IEC 61215

IEC 61730

IEC 61701

IEC 62716

UL 61730

CE

TÜV

ISO 9001/14001/45001

TESTED

✓ Damp heat

✓ Thermal cycling

✓ Humidity-freeze

✓ PID

✓ Salt mist

✓ Ammonia

✓ Mechanical load

✓ Hail

Electrical characteristics at STC

Parameter	615	620	625	630	635	640
Maximum power P_{max} (W)	615	620	625	630	635	640
Open-circuit voltage V_{oc} (V)	49.30	49.48	49.66	49.84	50.02	50.20
Short-circuit current I_{sc} (A)	16.05	16.12	16.19	16.26	16.33	16.40
Voltage at P_{max} V_{mp} (V)	40.80	40.95	41.10	41.25	41.40	41.55
Current at P_{max} I_{mp} (A)	15.07	15.14	15.21	15.27	15.34	15.40
Module efficiency η_m (%)	22.77	22.95	23.14	23.32	23.51	23.69

Electrical characteristics at NMOT

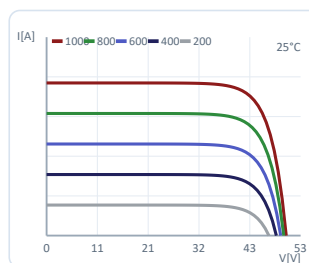
Parameter	615	620	625	630	635	640
Maximum power P_{max} (W)	464.3	468.1	471.9	475.6	479.4	483.2
Open-circuit voltage V_{oc} (V)	45.95	46.12	46.28	46.45	46.62	46.79
Short-circuit current I_{sc} (A)	12.87	12.93	12.98	13.04	13.10	13.15
Voltage at P_{max} V_{mp} (V)	37.86	38.00	38.14	38.28	38.42	38.56
Current at P_{max} I_{mp} (A)	11.95	12.01	12.06	12.11	12.16	12.21

STC 1000 W/m² · 25 °C · AM1.5 — NMOT 800 W/m² · 20 °C · AM1.5 · 1 m/s — Power tolerance 0 ~ +3 %

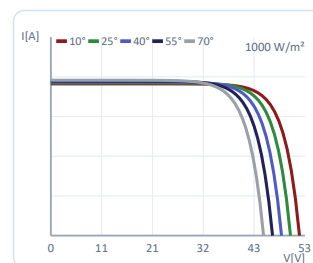
Parameter	Value
Solar cell	N-type TOPCon mono, rectangular 182×210mm
Cell size	210 × 105 mm
No. of cells	132 (6×22) half-cut
Busbar	0BB · SMBB
Dimensions	2382 × 1134 × 30 mm
Weight	32.5 kg
Front / back glass	2.0 mm / 2.0 mm tempered, AR coated
Encapsulant	POE
Frame	Anodized aluminium alloy, 30 mm
Junction box	IP68, 3 bypass diodes
Connector	MC4-compatible · EVO2
Output cable	4 mm ² , 400/200 mm

Parameter	Value
NMOT	43 ± 2 °C
Temp. coeff. of P_{max}	-0.29 %/°C
Temp. coeff. of V_{oc}	-0.25 %/°C
Temp. coeff. of I_{sc}	+0.045 %/°C
Operating temperature	-40 °C ~ +85 °C

I-V curve · irradiance



I-V curve · temperature



Bifacial gain & coefficients

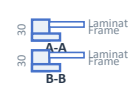
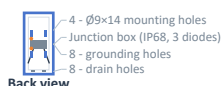
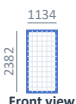
 ϕV_{oc} 98 ± 5% ϕI_{sc} 80 ± 5% ϕP_{max} 80 ± 5%

Rear gain	+0%	+10%	+20%	+25%
P_{max} (W)	640	704	768	800
I_{sc} (A)	16.40	18.04	19.68	20.50

Maximum ratings

Parameter	Value
Max system voltage	1500 V DC (IEC/UL)
Max series fuse	30 A
Max test load (front / back)	5400 Pa / 2400 Pa
Application / safety class	Class A / Class II
Fire rating	Class C

Mechanical drawing (mm)

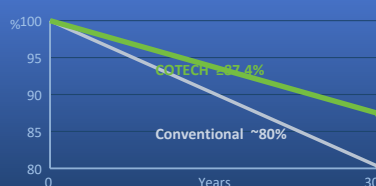


Linear power warranty

15 yr product warranty

30 yr linear power output warranty

1st-year ≤1% · annual ≤0.4% · ≥87.4% at year 30



Packaging

Pieces / pallet	31
Pieces / 20'GP	124
Pieces / 40'HC	620
Pallet size	2450 × 1150 × 1180 mm