

COTECH SOLAR · TOPCon

CSTB54-430~455

N-Type 182mm TOPCon Bifacial Dual-Glass Module · 108 half-cells

455 W_p

MAXIMUM
POWER OUTPUT

22.8 %

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

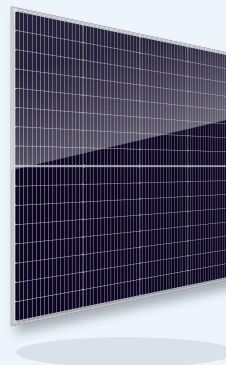
- Up to 22.8% module efficiency
- OBB / SMBB low-resistance cell interconnection
- Excellent performance under low irradiance

High reliability & yield

- 15-year product & 30-year linear power warranty
- Resistant to PID, salt mist and ammonia; low LID / LeTID
- Low temperature coefficient $-0.29\%/^{\circ}\text{C}$ · up to $70 \pm 5\%$ bifaciality

Key specifications

Maximum power	430 – 455 W _p
Module efficiency	up to 22.8 %
Open-circuit voltage	39.40 – 40.30 V
Cell type	N-type TOPCon mono, 182mm
No. of cells	108 (6×18) half-cut
Dimensions (mm)	1762 × 1134 × 30
Weight	23.0 kg
Bifaciality	70 ± 5%



N-Type TOPCon

low LID / LeTID

Bifacial

70 ± 5%

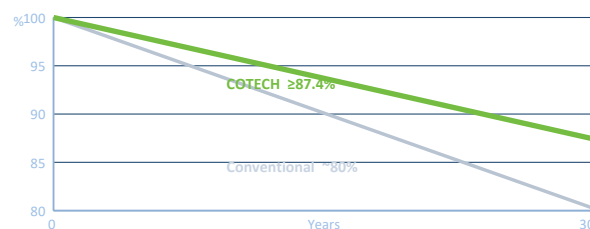
OBB · SMBB

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	430	435	440	445	450	455
Maximum power P_{max} (W)	430	435	440	445	450	455
Open-circuit voltage V_{oc} (V)	39.40	39.58	39.76	39.94	40.12	40.30
Short-circuit current I_{sc} (A)	13.70	13.76	13.82	13.88	13.94	14.00
Voltage at P_{max} V_{mp} (V)	32.80	32.98	33.16	33.34	33.52	33.70
Current at P_{max} I_{mp} (A)	13.11	13.19	13.27	13.35	13.42	13.50
Module efficiency η_m (%)	21.52	21.77	22.02	22.27	22.52	22.77

Electrical characteristics at NMOT

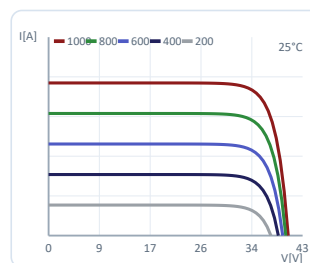
Parameter	430	435	440	445	450	455
Maximum power P_{max} (W)	324.6	328.4	332.2	336.0	339.8	343.5
Open-circuit voltage V_{oc} (V)	36.72	36.89	37.06	37.22	37.39	37.56
Short-circuit current I_{sc} (A)	10.99	11.04	11.08	11.13	11.18	11.23
Voltage at P_{max} V_{mp} (V)	30.44	30.61	30.77	30.94	31.11	31.27
Current at P_{max} I_{mp} (A)	10.40	10.46	10.52	10.59	10.64	10.71

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

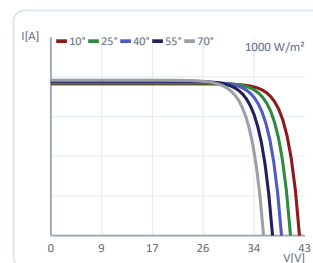
Parameter	Value
Solar cell	N-type TOPCon mono, 182mm
Cell size	182 × 91 mm
No. of cells	108 (6×18) half-cut
Busbar	0BB · SMBB
Dimensions	1762 × 1134 × 30 mm
Weight	23.0 kg
Front / back glass	2.0 mm / 2.0 mm tempered, AR coated
Encapsulant	POE
Frame	Anodized aluminium alloy, 30 mm
Junction box	IP68, 3 bypass diodes
Connector	MC4-compatible · EVO2
Output cable	4 mm ² , 300/200 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

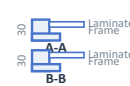
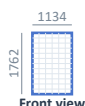
ϕV_{oc} 98 ± 5% ϕI_{sc} 70 ± 5% ϕP_{max} 70 ± 5%

Rear gain	+0%	+10%	+20%	+25%
P_{max} (W)	455	501	546	569
I_{sc} (A)	14.00	15.40	16.80	17.50

Maximum ratings

Parameter	Value
Max system voltage	1500 V DC (IEC/UL)
Max series fuse	25 A
Max test load (front / back)	5400 Pa / 2400 Pa
Application / safety class	Class A / Class II
Fire rating	Class C

Mechanical drawing (mm)

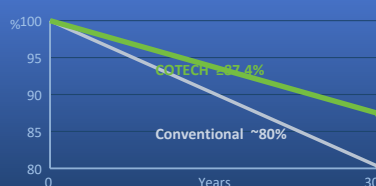


Linear power warranty

15 yr product warranty

30 yr linear power output warranty

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



Packaging

Pieces / pallet	36
Pieces / 20'GP	144
Pieces / 40'HC	792
Pallet size	1800 × 1150 × 1180 mm