

COTECH SOLAR · TOPCon

CSTB60-480~505

N-Type 182mm TOPCon Bifacial Dual-Glass Module · 120 half-cells

505 W_p

MAXIMUM
POWER OUTPUT

22.7 %

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

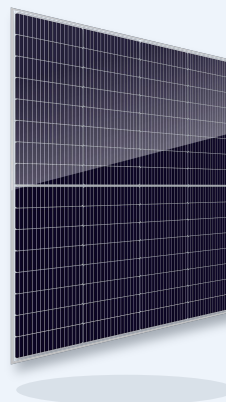
- Up to 22.7% module efficiency
- OBB / SMBB low-resistance cell interconnection
- Excellent performance under low irradiance

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 $75 \pm 5\%$ bifaciality

Key specifications

Maximum power	480 – 505 W_p
Module efficiency	up to 22.7 %
Open-circuit voltage	43.70 – 44.50 V
Cell type	N-type TOPCon mono, 182mm
No. of cells	120 (6×20) half-cut
Dimensions (mm)	1961 × 1134 × 30
Weight	25.5 kg
Bifaciality	75 ± 5%



N-Type TOPCon

low LID / LeTID

Bifacial

75 ± 5%

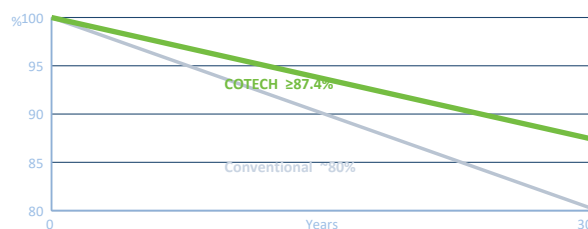
OBB · SMBB

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	480	485	490	495	500	505
Maximum power P_{max} (W)	480	485	490	495	500	505
Open-circuit voltage V_{oc} (V)	43.70	43.86	44.02	44.18	44.34	44.50
Short-circuit current I_{sc} (A)	13.90	13.96	14.02	14.08	14.14	14.20
Voltage at P_{max} V_{mp} (V)	36.50	36.66	36.82	36.98	37.14	37.30
Current at P_{max} I_{mp} (A)	13.15	13.23	13.31	13.39	13.46	13.54
Module efficiency η_m (%)	21.58	21.81	22.03	22.26	22.48	22.71

Electrical characteristics at NMOT

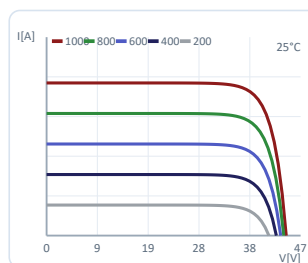
Parameter	480	485	490	495	500	505
Maximum power P_{max} (W)	362.4	366.2	369.9	373.7	377.5	381.3
Open-circuit voltage V_{oc} (V)	40.73	40.88	41.03	41.18	41.32	41.47
Short-circuit current I_{sc} (A)	11.15	11.20	11.24	11.29	11.34	11.39
Voltage at P_{max} V_{mp} (V)	33.87	34.02	34.17	34.32	34.47	34.61
Current at P_{max} I_{mp} (A)	10.43	10.49	10.55	10.62	10.67	10.74

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

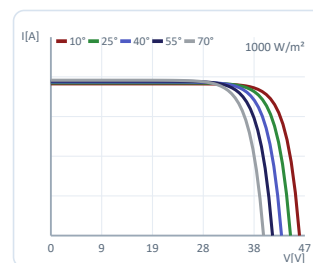
Parameter	Value
Solar cell	N-type TOPCon mono, 182mm
Cell size	182 × 91 mm
No. of cells	120 (6×20) half-cut
Busbar	0BB · SMBB
Dimensions	1961 × 1134 × 30 mm
Weight	25.5 kg
Front / back glass	2.0 mm / 2.0 mm tempered, AR coated
Encapsulant	POE
Frame	Anodized aluminium alloy, 30 mm
Junction box	IP68, 3 bypass diodes
Connector	MC4-compatible · EVO2
Output cable	4 mm ² , 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

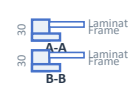
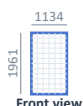
ϕV_{oc} 98 ± 5% ϕI_{sc} 75 ± 5% ϕP_{max} 75 ± 5%

Rear gain	+0%	+10%	+20%	+25%
P_{max} (W)	505	556	606	631
I_{sc} (A)	14.20	15.62	17.04	17.75

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)

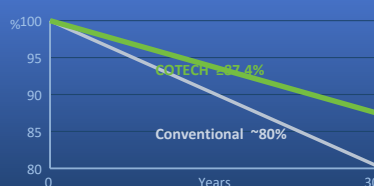


Linear power warranty

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	2000 × 1150 × 1180 mm