

TCL¹⁸²

TCL-MR440~455DT182-58NSB

TOPCon Shingled Bifacial All Black High Efficiency PV Module

PRODUCT FEATURES



HIGH LIFETIME ENERGY PRODUCTION

- The shingled-cell design helps to manage shade and keep cell temperatures low to produce more power over time.



MADE FOR REAL WEATHER

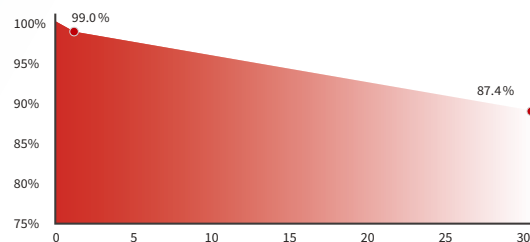
- It's strong frame and cell connection design helps to protect the panels against weather challenges like temperature swings, snow loads, and hail.



NO SACRIFICES FOR CURB APPEAL

- Smaller metallic wires help to achieve a sleek black appearance to seamlessly integrate into your roof.

LINEAR PERFORMANCE WARRANTY



product warranty



linear power warranty



Linear attenuation of 0.40% per year within 30 years

CERTIFICATES

- IEC 61215/IEC 61730
- ISO 9001:2015
- ISO 14001:2015



Electrical Data, Front STC Characteristics

| | TCL-MR455-DT182-58NSB | TCL-MR450-DT182-58NSB | TCL-MR445-DT182-58NSB | TCL-MR440-DT182-58NSB |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| Nominal Power (P _{nom}) | 455 W | 450 W | 445 W | 440 W |
| Power Tolerance | +3/0% | +3/0% | +3/0% | +3/0% |
| Panel Efficiency | 22.4% | 22.2% | 21.9% | 21.7% |
| Rated Voltage (V _{mpp}) | 35.70 V | 35.45 V | 35.20 V | 34.95 V |
| Rated Current (I _{mpp}) | 12.75 A | 12.70 A | 12.65 A | 12.60 A |
| Open-Circuit Voltage (V _{oc}) (+/-3%) | 42.13 V | 41.95 V | 41.77 V | 41.59 V |
| Short-Circuit Current (I _{sc}) (+/-4%) | 13.45 A | 13.38 A | 13.32 A | 13.29 A |

Bifacial Gain

| | | | | |
|---|---------|---------|---------|---------|
| P _{max} with 5% Bifacial Gain | 478 W | 473 W | 467 W | 462 W |
| I _{sc} with 5% Bifacial Gain | 14.12 A | 14.05 A | 13.99 A | 13.95 A |
| P _{max} with 10% Bifacial Gain | 501 W | 495 W | 490 W | 484 W |
| I _{sc} with 10% Bifacial Gain | 14.80 A | 14.72 A | 14.65 A | 14.62 A |
| P _{max} with 20% Bifacial Gain | 546 W | 540 W | 534 W | 528 W |
| I _{sc} with 20% Bifacial Gain | 16.14 A | 16.06 A | 15.98 A | 15.95 A |

Electrical Data

| | |
|----------------------------------|---------------------|
| Bifaciality (φP _{max}) | 80% +/-10% |
| Maximum System Voltage | 1000 V & 1500 V IEC |
| Temperature | -40°C to +85°C |
| Maximum Series Fuse | 25 A |
| Power Temp. Coef. | -0.29% / °C |
| Voltage Temp. Coef. | -0.25% / °C |
| Current Temp. Coef. | 0.045% / °C |

Mechanical Data

| | |
|------------------------|--|
| Solar Cells | N-type TOPCon |
| Glass | 2.0 mm + 2.0 mm, high transmission heat strengthened glass, AR coating on front glass |
| Junction Box | IP-68, 3 bypass diodes |
| Connector | MC4 EVO2 & Compatible |
| Weight | 24.8 kg |
| Max. Load ^a | Wind: 2400 Pa, 244 kg/m ² front & back Snow: 5400 Pa, 550kg/m ² front |
| Impact Resistance | 40 mm diameter hail at 27.5 m/s |
| Frame | Black anodized aluminum alloy |

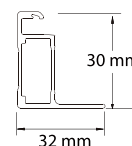
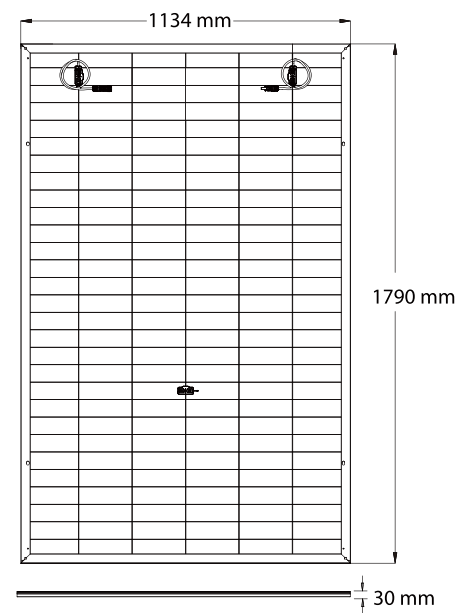
Packaging configuration

| | |
|---|-----|
| Number of modules per pallet | 36 |
| Number of pallets per 40ft HQ container | 24 |
| Number of modules per container | 864 |

Tests And certifications

| | |
|----------------|-------------------------------|
| Standard Tests | IEC 61215, IEC 61730 |
| Fire Rating | Class C (IEC 61730) |
| Quality Certs | ISO 9001:2015, ISO 14001:2015 |

Module Dimensions (mm)



(A) Cable Length: 1200 mm +/-15 mm