



| | |
|---------------------|--|
| Product | SOLAR FLAT-5XL 23 Wp |
| Manufacturer | TEJAS BORJA S.A.U. (Edilians Group) |
| Made in | Spain (Valencia) |
| Type | Large-format SOLAR tile with a flat ceramic base, lateral interlocking, and variable head overlap. |
| Applications | Pitched roofs and vertical surfaces |
| Installation | On battens or an equivalent system with support from lower lugs. Mechanical (dry) fixing, according to Technical Building Code, through the pre-marked holes. In combination with the Flat-5XL ceramic tile. From right to left, in line or staggered. |



MAIN CHARACTERISTICS OF SOLAR FLAT-5XL | 23 Wp

| | |
|--|--|
| Dimensions | 457 x 510 (mm) 17.99 x 20.08 (inch) |
| Useful length (batten distance) | 370 ~ 385 (mm) 14.57 ~ 15.16 (inch) |
| Useful width | 475 (mm) 18.70 (inch) |
| Unit weight | 7.5 kg 16.53 lb |
| Tiles per m² | 5,46 - 5,68 uds./m ² 0.507 - 0.528 units/ sq.ft |
| Weight per m² | 40,95 - 42,6 kg/m ² 8.39 - 8.73 lb/sq.ft |
| Minimum recommended slope | 30% – 17° (*) |
| Pallet data | 36 units |
| Finish | LEON MATTE / CRISTAL FULL-BLACK |
| Cell type | Monocrystalline |
| Support | Flat-5XL ceramic base |
| Panel dimensions | 410 x 360 x 4.5 (mm) 16.14 x 14.17 x 0.18 (inch) |
| Active panel area | 385 x 315 mm 15.16 x 12.40 (inch) |
| Equivalence to ceramic tiles | 1 FLAT-5XL roof tile |
| Installation | According to FLAT-5XL roof tile |
| Front side | 3.2 mm tempered glass 0.13 inch |
| Back side | Ceramic |

Approximate values. The values of the roof tile dimensions admit a tolerance of $\pm 2\%$ according to UNE-EN 1024. Before installation, it is necessary to determine the useful length on site. It must be installed in compliance with the UNE-EN-136020 standard for the design and assembly of roofs with ceramic roof tiles and the Tejas Borja specifications.

* In zone 1, in a protected area, it should be laid in staggered staggered pattern with waterproof sheeting and a 355 mm batten step, in an up to 6.5 m skirt. Consult the table of minimum slopes depending on the length of the roof and the geographical area (Standard UNE-136020).

The SOLAR FLAT-5XL roof tile has an entirely black (FULL-BLACK), anti-reflective finish, with none of the typically visible connections. It is entirely compatible with the FLAT-5XL ceramic tile (see available finishes on the Tejas Borja website).

SOLAR Flat-5XL Ceramic Tile must always be installed on ventilated roofs using a double batten system or equivalent.

SOLAR FLAT-5XL | 23 Wp SPECIFICATIONS

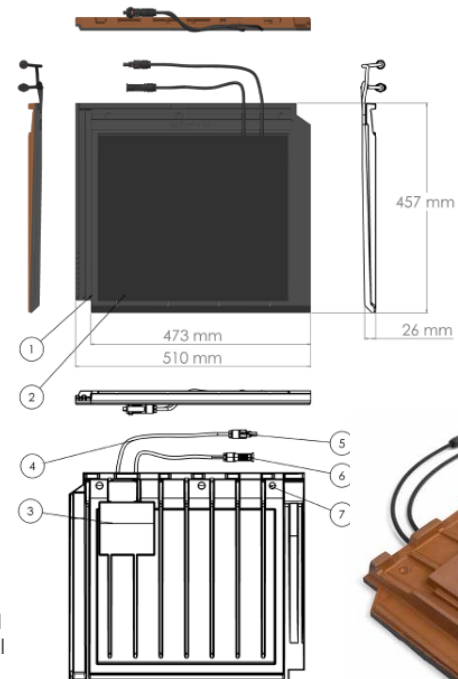
| | |
|---|--|
| Power per m² ft² | 126 ~ 131 Wp/m² 11.71 ~ 12.17 Wp/sq.ft |
| Area for 1 KWp | 7.63 ~ 7.93 m² 82.13 ~ 85.36 sq.ft |
| Units per 1 kWp | 43.5 units |
| DC Cable Length | 2 x 470 (mm) 2 x 18.50 (inch) |
| DC Cable | 4.0 mm ² 12 AWG |
| Connector Plug | MC4 Compatible |
| Junction Box | IP67 |
| Standards | CE, IEC 61646 - IEC 61730** |
| Warranty | 10 years PRODUCT 25 years PERFORMANCE at 80% |

** Certification reference: SM G-20W.

Key box:

- 1 - Flat-5XL ceramic support
- 2 - Photovoltaic panel
- 3 - Junction box ceramic housing
- 4 - Connection cables
- 5 - MC4 connector (+) positive terminal
- 6 - MC4 connector (-) negative terminal
- 7 - Holes for fixing to the batten*

* Requires 2 screws for fixing to the batten (per solar tile unit): diameter from 3,5 to 4,2 / thread length 45 - 55 mm, depending on the batten type.



SOLAR FLAT-5XL | 23 Wp ELECTRICAL CHARACTERISTICS

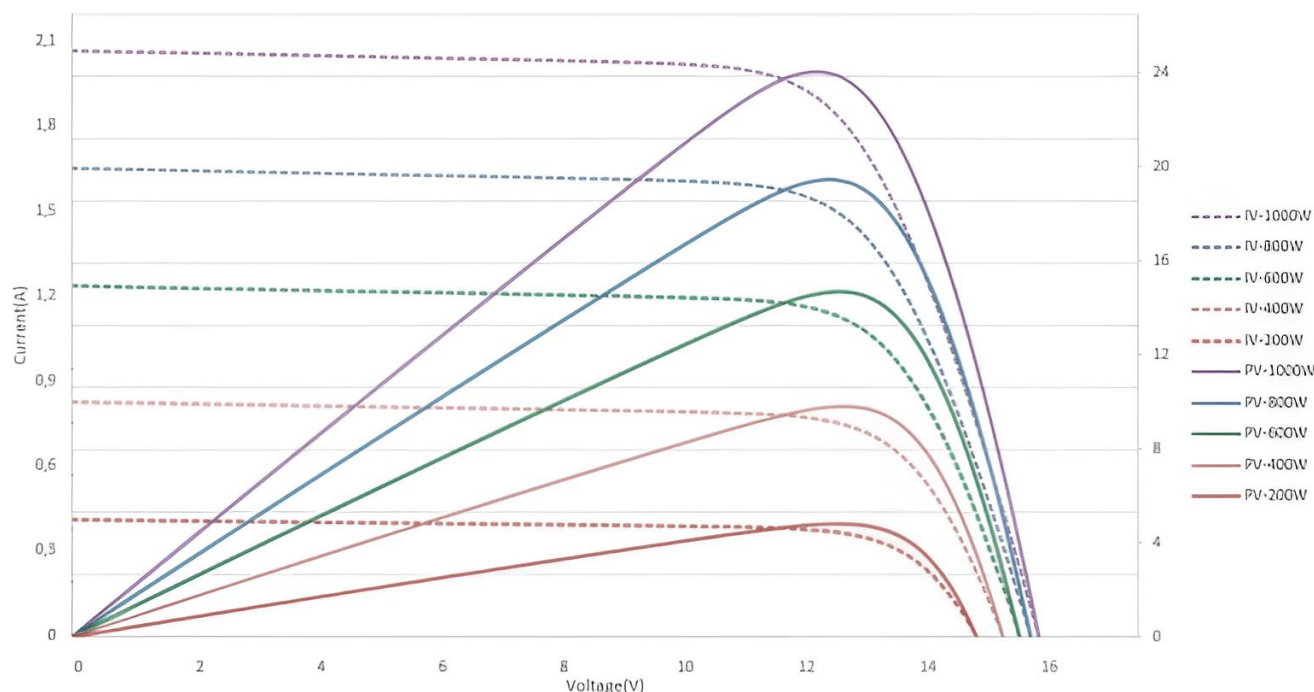
| | |
|--|--------------|
| Peak Power (P_{max}) | 23 Wp |
| Output power tolerance | -5% / 5 % |
| Current at Nominal Power (I_{mpp}) | 1.78 A |
| Voltage at Nominal Power (V_{mpp}) | 13.20 V |
| Short-Circuit Current (I_{sc}) | 1.92 A |
| Open-Circuit Voltage (V_{oc}) | 15.5 V |
| Cell Efficiency | 22.7% |
| Maximum System Voltage | 600 V (IEC) |
| Temperature Coefficient P_{max} (δ) | - 0.38 % K |
| Temperature Coefficient V_{oc} (β) | - 0.36 % K |
| Temperature Coefficient I_{sc} (α) | + 0.07 % K |
| Max. System Fuse Rating (I_{st}) | 3 A |
| Operating Temperature | -40°C ~ 85°C |

Standard Conditions STC: Irradiance 1,000 W/m², Cell Temperature: 25°C, AM=1.5



VOLTAGE CURVE

I-V and P-V curves at different irradiance levels.



COMPATIBILITY



| | |
|------------------------|-------------------------------------|
| Dimensions | 457 x 510 (mm) 18 x 20.1 (inch) |
| Length exposure | 340 - 385 (mm) 13.4 - 15.2 (inch) |
| Width exposure | 475 (mm) 18.7 (inch) |
| Roof tiles / m l eaves | 2 pcs./lm 0.61 pcs./ft |
| Unit weight | 6.55 kg/pc 14.4 lb/pc |
| Performance | 5,48 pcs./sq.m. 51 pcs./square) |
| Weight per sq.m. | 35.89 kg/sq.m. 735.1 lb/square |
| Min. recommended slope | 30° - 17° 6:21 (*) |

Approximate values. The values of the dimensions of the roof tiles admit a tolerance of $\pm 2\%$ according to UNE-EN 1024. Consult finishes and technical specifications on the website.

