



<b>Product</b>	<b>SOLAR FLAT-10   80 Wp</b>
<b>Manufacturer</b>	<b>TEJAS BORJA S.A.U. (Edilians Group)</b>
<b>Made in</b>	Spain (Valencia)
<b>Type</b>	<b>SOLAR tile with an aluminum frame, lateral interlocking, and variable head overlap.</b>
<b>Applications</b>	Pitched roofs and vertical surfaces
<b>Installation</b>	On battens or an equivalent system with support from lower lugs. Mechanical (dry) fixing, through the provided holes. In combination with the Flat-10 ceramic tile. From right to left, in line or staggered.



#### MAIN CHARACTERISTICS OF SOLAR FLAT-10 | 80 Wp

<b>Dimensions</b>	1,268 x 457 x 39.4 (mm)   49.9 x 18 x 1.55 (inch)
<b>Useful length (batten distance)</b>	370 ~ 400 (mm)   14.57 ~ 15.75 (inch)
<b>Useful width</b>	1,230 (mm)   48.4 (inch)
<b>Unit weight</b>	8.7 kg   19.2 lbs
<b>Tiles per m²</b>	2,03 - 2,19 uds./m²   0.189 - 0.204 units/sq.ft
<b>Weight per m²</b>	17,6 - 19,9 kg/m²   3.61 - 4.07 lb/sq.ft
<b>Minimum recommended slope</b>	30% – 17° (*)
<b>Pallet data</b>	32 units / 1,003 kg   2,211 lbs
<b>Finish</b>	Black / FULL-BLACK Glass
<b>Cell type</b>	Monocrystalline
<b>Support</b>	Black anodized aluminum frame
<b>Panel dimensions</b>	345 x 1,215 (mm)   13.6 x 47.8 (inch)
<b>Active panel area</b>	332 x 1,180 (mm)   13.1 x 46.5 (inch)
<b>Equivalence to ceramic tiles</b>	5 roof tiles FLAT-10
<b>Installation</b>	According to FLAT-10 roof tile
<b>Front side</b>	3.2 mm tempered glass   0.13 inch
<b>Back side</b>	Weather-resistant film

Approximate values. The dimensions of the tiles allow a tolerance of  $\pm 2\%$  according to UNE-EN 1024.

Before installation, determine the useful length on-site. Installation must comply with the UNE-EN 136020 standard for the design and installation of roofs with ceramic tiles and the specifications of Tejas Borja.

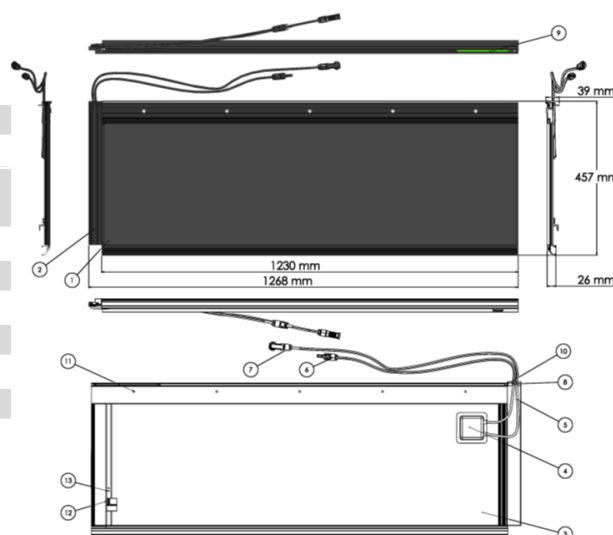
\* In Zone 1, protected area, tiles must be installed staggered with a waterproof membrane and batten spacing of 370 mm, on a slope of up to 6.5 m. Please refer to the minimum slope table depending on roof length and geographic area (UNE-136020 standard).

The finish of the SOLAR FLAT-10 tile maintains a uniform black (FULL-BLACK) anti-reflective appearance, without typical visible connections. It is fully compatible with the FLAT-10 tile (see finishes on the website).

The SOLAR FLAT-10 tiles must always be installed on ventilated roofs, using a double batten system or equivalent system.

#### SOLAR FLAT-10 | 80 Wp SPECIFICATIONS

<b>Power per m²   ft²</b>	<b>162.4 ~ 175.2 Wp/m²   15.09 ~ 16.28 Wp/sq.ft</b>
<b>Area for 1 kWp</b>	<b>5.70 ~ 6.16 m²   61.35 ~ 66.31 sq.ft</b>
<b>Units per 1 kWp</b>	<b>12.5 units</b>
<b>Solar Cell Brand</b>	A-grade monocrystalline solar cells (166 mm)
<b>Number of Cells &amp; Connector</b>	74 (2*37)
<b>DC Cable Length</b>	2 x 1,200 (mm)   2 x 47.2 (inch)
<b>DC Cable</b>	4.0 mm²   12 AWG
<b>Connector Plug</b>	MC4 Compatible
<b>Junction Box</b>	IP67
<b>Standards</b>	CE, ROHS
<b>Warranty</b>	10 years PRODUCT 25 years PERFORMANCE at 80%



#### Key box:

- |   |  |
|---|--|
| 1 - Glass-Glass photovoltaic panel      | 8 - Cable track  |
| 2 - Anodized aluminium base             | 9 - Grounding cable  |
| 3 - Backsheet                           | 10 - Grounding connection *                                  |
| 4 - Junction box                        | 11 - Holes for fixing to the batten**                        |
| 5 - Connection cables (0,9 m)           | 12 - Safety fixing bracket (2 screws included)               |
| 6 - MC4 connector (+) positive terminal | 13 - Holes for fixing safety bracket (as per batten spacing) |
| 7 - MC4 connector (-) negative terminal |  |

\* Requires an ISO 7049 screw (Thread size: ST 4,2 / Thread length: from 9,5 to 13 mm) for each ground connection.

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



## SOLAR FLAT-10 | 80 Wp ELECTRICAL CHARACTERISTICS

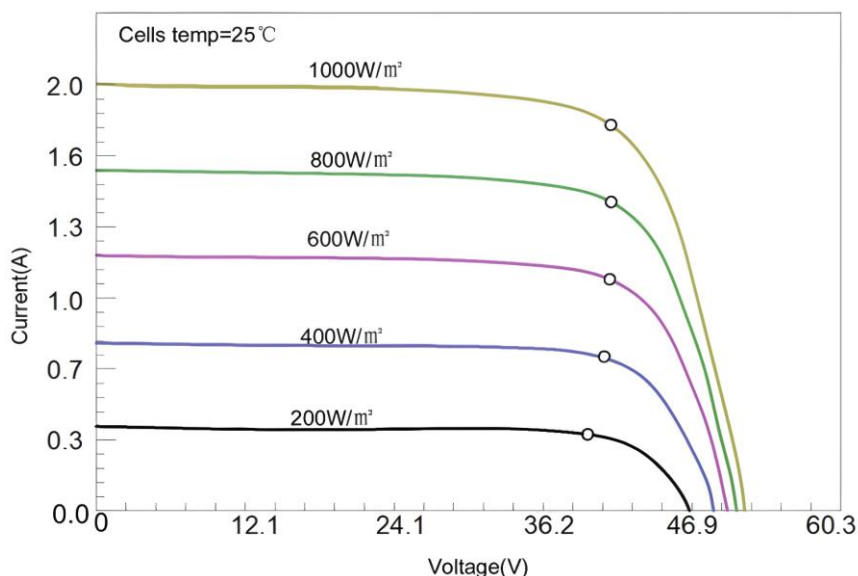
Peak Power ( $P_{max}$ )	80 W
Output power tolerance	$\pm 3 \%$
Current at Nominal Power ( $I_{mpp}$ )	1.87 A
Voltage at Nominal Power ( $V_{mpp}$ )	42.9 V
Short-Circuit Current ( $I_{sc}$ )	1.98 A
Open-Circuit Voltage ( $V_{oc}$ )	50.6 V
Cell Efficiency	22.7%
Maximum System Voltage	1000 V DC (IEC)
Temperature Coefficient $P_{max}$ ( $\delta$ )	-0.38 %/°C
Temperature Coefficient $V_{oc}$ ( $\beta$ )	-0.36 %/°C
Temperature Coefficient $I_{sc}$ ( $\alpha$ )	0.07 %/°C
Max. System Fuse Rating ( $I_{st}$ )	5 A
Operating Temperature	-40°C ~ 85°C   -40°F ~ 185°F

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	475 x 285 (mm)   18.7 x 11.2 (inch)
Length exposure	365 - 400 (mm)   14.4 - 15.7 (inch)
Width exposure	245 (mm)   9.65 (inch)
Roof tiles / m l eaves	4 pcs./lm   1.22 pcs./ft
Unit weight	3.5 kg/pc   7.7 lb/pc
Performance	10.2 pcs./sq.m.   95 pcs./square
Weight per sq.m.	35.70 kg/sq.m.   731.2 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.

