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| Annex to Solar Keymark Certificate Supplementary Information | Licence Number | 011-7S2692 F |
| | Issued | 2016-09-13 |

| Annual collector output in kWh/collector at mean fluid temperature ϑ_m, based on EN ISO 9806:2013 test results | | | | | | | | | | | | | |
|--|---------------|---|-------|-------|-------------------------|-------|------|-------------------------|-------|------|-------------------------|-------|------|
| Standard Locations | | Athens | | | Davos | | | Stockholm | | | Würzburg | | |
| Collector name | ϑ_m | 25°C | 50°C | 75°C | 25°C | 50°C | 75°C | 25°C | 50°C | 75°C | 25°C | 50°C | 75°C |
| ALDO+Quer | | 2 959 | 2 111 | 1 378 | 2 252 | 1 557 | 977 | 1 656 | 1 085 | 656 | 1 799 | 1 170 | 696 |
| ALDO+Hoch | | 2 959 | 2 111 | 1 378 | 2 252 | 1 557 | 977 | 1 656 | 1 085 | 656 | 1 799 | 1 170 | 696 |
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| Annual output per m ² gross area | | 1 198 | 855 | 558 | 912 | 630 | 396 | 670 | 439 | 266 | 728 | 474 | 282 |
| Fixed or tracking collector | | Fixed (slope = latitude - 15°; rounded to nearest 5°) | | | | | | | | | | | |
| Annual irradiation on collector plane | | 1765 kWh/m ² | | | 1714 kWh/m ² | | | 1166 kWh/m ² | | | 1244 kWh/m ² | | |
| Mean annual ambient air temperature | | 18.5°C | | | 3.2°C | | | 7.5°C | | | 9.0°C | | |
| Collector orientation or tracking mode | | South, 25° | | | South, 30° | | | South, 45° | | | South, 35° | | |
| The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc | | | | | | | | | | | | | |

| Additional Information | | |
|---|---------------|----|
| Collector heat transfer medium | Water-Glycole | |
| Hybrid Thermal and Photo Voltaic collector | No | |
| The collector is deemed to be suitable for roof integration | Yes | |
| The collector was tested successfully according to EN ISO 9806:2013 under the following conditions: | | |
| Climate class (A, B or C) | B | -- |
| Maximum tested positive load | 3500 | Pa |
| Maximum tested negative load | 3000 | Pa |
| Hail resistance using ice balls (diameter) | 35 | mm |

| Energy Labelling Information | | | |
|-------------------------------------|---|--|--|
| | Reference Area, A_{sol} (m ²) | Data required for CDR (EU) No 811/2013 - Reference Area A_{sol} | |
| ALDO+Quer | 2.47 | Collector efficiency (η_{col}) | 60 % |
| ALDO+Hoch | 2.47 | Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m ² , expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013. | |
| | | Data required for CDR (EU) No 812/2013 - Reference Area A_{sol} | |
| | | Zero-loss efficiency (η_0) | 0.760 -- |
| | | First-order coefficient (a_1) | 3.53 W/(m ² K) |
| | | Second-order coefficient (a_2) | 0.013 W/(m ² K ²) |
| | | Incidence angle modifier IAM (50°) | 0.93 -- |
| | | Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs. | |