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|---|-----------------------|--------------------|
| <b>Annex to Solar Keymark Certificate<br/>Supplementary Information</b> | <b>Licence Number</b> | <b>011-7S667 R</b> |
|   | <b>Issued</b>         | <b>2017-03-02</b>  |

| Annual collector output in kWh/collector at mean fluid temperature $\vartheta_m$ , based on EN ISO 9806:2013 test results |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|---|-------------------------------------|---|-------|-------|-------------------------|-------|------|-------------------------|------|------|-------------------------|------|------|
| Collector name  | Standard Locations<br>$\vartheta_m$ | Athens  |       |       | Davos                   |       |      | Stockholm               |      |      | Würzburg                |      |      |
|   |                                     | 25°C  | 50°C  | 75°C  | 25°C                    | 50°C  | 75°C | 25°C                    | 50°C | 75°C | 25°C                    | 50°C | 75°C |
| EVR LUX 3006  |                                     | 1'445   | 1'266 | 1'074 | 1'234                   | 1'057 | 882  | 884                     | 738  | 599  | 954                     | 798  | 646  |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
|   |                                     |   |       |       |                         |       |      |                         |      |      |                         |      |      |
| Annual output per m <sup>2</sup> aperture area  |                                     | 957   | 838   | 711   | 817                     | 700   | 584  | 586                     | 489  | 396  | 632                     | 528  | 428  |
| Fixed or tracking collector   |                                     | Fixed (slope = latitude - 15°; rounded to nearest 5°) |       |       |                         |       |      |                         |      |      |                         |      |      |
| Annual irradiation on collector plane   |                                     | 1765 kWh/m <sup>2</sup>                               |       |       | 1714 kWh/m <sup>2</sup> |       |      | 1166 kWh/m <sup>2</sup> |      |      | 1244 kWh/m <sup>2</sup> |      |      |
| 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  $\vartheta_m$  (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](http://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                                   | No            |    |
| The collector was tested successfully according to EN 12975-2 under the following conditions: |               |    |
| No valid climate reference class  | A             | -- |
| Maximum tested positive load  | 1000          | Pa |
| Maximum tested negative load  | 1000          | Pa |
| Hail resistance using steel ball (maximum drop height)  |               | m  |

#### Energy Labelling Information

|              | Reference Area, $A_{sol}$ (m <sup>2</sup> ) | Data required for CDR (EU) No 811/2013 - Reference Area $A_{sol}$  |  |
|--------------|---|--|--|
| EVR LUX 3006 | 1.11  | Collector efficiency ( $\eta_{col}$ )  | 68 %                                     |
|              |   | Remark: Collector efficiency ( $\eta_{col}$ ) 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 <sup>2</sup> , expressed in % and rounded to the nearest integer. Deviating from the regulation $\eta_{col}$ 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 ( $\eta_0$ )  | 0.753 --                                 |
|              |   | First-order coefficient ( $a_1$ )  | 1.42 W/(m <sup>2</sup> K)                |
|              |   | Second-order coefficient ( $a_2$ )   | 0.007 W/(m <sup>2</sup> K <sup>2</sup> ) |
|              |   | Incidence angle modifier IAM (50°)   | 1.07 --                                  |
|              |   | 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.  |  |