

| Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results | | | | | Licence Number | | 011-7S1687 F | | | | |
|--|--|------------------------|----------------------|------------------------------------|--|-----------|----------------------|-----------|-----------|------------|------|
| | | | | | Date issued | | 2018-04-25 | | | | |
| | | | | | Issued by | | DIN CERTCO | | | | |
| Licence holder | | SST Solar GmbH | | | Country | | Austria | | | | |
| Brand (optional) | | - | | | Web | | www.sst-solar.com | | | | |
| Street, Number | | Galinastraße 14 | | | E-mail | | office@sst-solar.com | | | | |
| Postcode, City | | 6820 Nenzing | | | Tel | | +43 5525 20 580 | | | | |
| Collector Type | | | | | Flat plate collector, glazed | | | | | | |
| Collector name | Gross area (A _G) m ² | Gross length mm | Gross width mm | Gross height mm | Power output per collector G _b = 850 W/m ² ; G _d = 150 W/m ² θ _m - θ _a | | | | | | |
| | | | | | 0 K W | 10 K W | 30 K W | 50 K W | 70 K W | 100 K W | |
| SST ECO E 2125 | 2.52 | 2 015 | 1 252 | 128 | 1 791 | 1 704 | 1 517 | 1 311 | 1 088 | 718 | |
| SST ECO E 2150 | 3.03 | 2 015 | 1 502 | 128 | 2 149 | 2 045 | 1 820 | 1 573 | 1 305 | 861 | |
| SST ECO E 2200 | 4.03 | 2 015 | 2 002 | 128 | 2 864 | 2 725 | 2 426 | 2 097 | 1 739 | 1 148 | |
| SST ECO E 2250 | 5.04 | 2 015 | 2 502 | 128 | 3 579 | 3 406 | 3 031 | 2 621 | 2 174 | 1 435 | |
| SST ECO E 2300 | 6.05 | 2 015 | 3 002 | 128 | 4 295 | 4 086 | 3 637 | 3 144 | 2 608 | 1 722 | |
| SST ECO E 3125 | 3.76 | 3 005 | 1 252 | 128 | 2 671 | 2 542 | 2 262 | 1 956 | 1 622 | 1 071 | |
| SST ECO E 3150 | 4.51 | 3 005 | 1 502 | 128 | 3 205 | 3 049 | 2 714 | 2 346 | 1 946 | 1 285 | |
| SST ECO E 3200 | 6.02 | 3 005 | 2 002 | 128 | 4 271 | 4 064 | 3 617 | 3 127 | 2 594 | 1 712 | |
| SST ECO E 3250 | 7.52 | 3 005 | 2 502 | 128 | 5 338 | 5 079 | 4 521 | 3 908 | 3 241 | 2 140 | |
| SST ECO E 3300 | 9.02 | 3 005 | 3 002 | 128 | 6 405 | 6 094 | 5 424 | 4 689 | 3 889 | 2 567 | |
| SST ECO E 4125 | 5.00 | 3 995 | 1 252 | 128 | 3 551 | 3 379 | 3 007 | 2 600 | 2 156 | 1 423 | |
| SST ECO E 4150 | 6.00 | 3 995 | 1 502 | 128 | 4 260 | 4 054 | 3 608 | 3 119 | 2 587 | 1 708 | |
| SST ECO E 4200 | 8.00 | 3 995 | 2 002 | 128 | 5 679 | 5 403 | 4 809 | 4 157 | 3 448 | 2 276 | |
| SST ECO E 4250 | 10.00 | 3 995 | 2 502 | 128 | 7 097 | 6 753 | 6 010 | 5 196 | 4 309 | 2 845 | |
| SST ECO E 4300 | 11.99 | 3 995 | 3 002 | 128 | 8 515 | 8 102 | 7 211 | 6 234 | 5 170 | 3 413 | |
| SST ECO E 5125 | 6.24 | 4 985 | 1 252 | 128 | 4 431 | 4 216 | 3 753 | 3 244 | 2 691 | 1 776 | |
| SST ECO E 5150 | 7.49 | 4 985 | 1 502 | 128 | 5 316 | 5 058 | 4 502 | 3 892 | 3 228 | 2 131 | |
| SST ECO E 5200 | 9.98 | 4 985 | 2 002 | 128 | 7 086 | 6 742 | 6 001 | 5 188 | 4 303 | 2 840 | |
| SST ECO E 5250 | 12.47 | 4 985 | 2 502 | 128 | 8 855 | 8 426 | 7 499 | 6 483 | 5 377 | 3 550 | |
| SST ECO E 5300 | 14.96 | 4 985 | 3 002 | 128 | 10 625 | 10 110 | 8 998 | 7 779 | 6 452 | 4 259 | |
| SST ECO E 6125 | 7.48 | 5 975 | 1 252 | 128 | 5 311 | 5 054 | 4 498 | 3 888 | 3 225 | 2 129 | |
| SST ECO E 6150 | 8.97 | 5 975 | 1 502 | 128 | 6 372 | 6 063 | 5 396 | 4 665 | 3 869 | 2 554 | |
| SST ECO E 6200 | 11.96 | 5 975 | 2 002 | 128 | 8 493 | 8 081 | 7 192 | 6 218 | 5 157 | 3 404 | |
| SST ECO E 6250 | 14.95 | 5 975 | 2 502 | 128 | 10 614 | 10 099 | 8 989 | 7 771 | 6 445 | 4 255 | |
| SST ECO E 6300 | 17.94 | 5 975 | 3 002 | 128 | 12 735 | 12 117 | 10 785 | 9 324 | 7 733 | 5 105 | |
| SST ECO E 7125 | 8.72 | 6 965 | 1 252 | 128 | 6 191 | 5 891 | 5 243 | 4 533 | 3 759 | 2 482 | |
| SST ECO E 7150 | 10.46 | 6 965 | 1 502 | 128 | 7 428 | 7 067 | 6 290 | 5 438 | 4 510 | 2 977 | |
| SST ECO E 7200 | 13.94 | 6 965 | 2 002 | 128 | 9 900 | 9 420 | 8 384 | 7 248 | 6 012 | 3 968 | |
| SST ECO E 7250 | 17.43 | 6 965 | 2 502 | 128 | 12 373 | 11 773 | 10 478 | 9 058 | 7 513 | 4 960 | |
| SST ECO E 7300 | 20.91 | 6 965 | 3 002 | 128 | 14 845 | 14 125 | 12 572 | 10 868 | 9 014 | 5 951 | |
| SST ECO E 8125 | 9.96 | 7 955 | 1 252 | 128 | 7 071 | 6 728 | 5 989 | 5 177 | 4 294 | 2 835 | |
| SST ECO E 8150 | 11.95 | 7 955 | 1 502 | 128 | 8 483 | 8 072 | 7 184 | 6 211 | 5 151 | 3 401 | |
| SST ECO E 8200 | 15.93 | 7 955 | 2 002 | 128 | 11 307 | 10 759 | 9 576 | 8 278 | 6 866 | 4 533 | |
| SST ECO E 8250 | 19.90 | 7 955 | 2 502 | 128 | 14 131 | 13 446 | 11 968 | 10 346 | 8 581 | 5 665 | |
| SST ECO E 8300 | 23.88 | 7 955 | 3 002 | 128 | 16 955 | 16 133 | 14 359 | 12 413 | 10 296 | 6 797 | |
| SST ECO E Sondergröße* | | | | | | | | | | | |
| Power output per m ² gross area | | | | | 710 | 676 | 601 | 520 | 431 | 285 | |
| Performance parameters test method | | Steady state - indoor | | | | | | | | | |
| Performance parameters (related to AG) | | η ₀ ,hem | a ₁ | a ₂ | | | | | | | |
| Units | | - | W/(m ² K) | W/(m ² K ²) | | | | | | | |
| Test results | | 0.710 | 3.354 | 0.009 | | | | | | | |
| Incidence angle modifier test method | | Steady state - outdoor | | | | | | | | | |
| Bi-directional incidence angle modifiers | | No | | | | | | | | | |
| Incidence angle modifier | | Angle | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| Transversal | | K _{θT, coll} | | | | | 0.97 | | | | 0.00 |
| Longitudinal | | K _{θL, coll} | | | | | 0.97 | | | | 0.00 |

| | | | |
|---|--------------------------------------|---|--|
| Heat transfer medium for testing | | Water | |
| Flow rate for testing (per gross area, A_G) | dm/dt | 0.020 | kg/(sm ²) |
| Maximum temperature difference for thermal performance calculations | $(\vartheta_m - \vartheta_a)_{\max}$ | 100 | K |
| Standard stagnation temperature ($G = 1000 \text{ W/m}^2$; $\vartheta_a = 30 \text{ }^\circ\text{C}$) | ϑ_{stg} | 190 | $^\circ\text{C}$ |
| Effective thermal capacity, incl. fluid (per gross area, A_G) | C/m ² | 5.768 | kJ/(Km ²) |
| Maximum operating temperature | $\vartheta_{\text{max,op}}$ | - | $^\circ\text{C}$ |
| Maximum operating pressure | $p_{\text{max,op}}$ | 1000 | kPa |
| Testing laboratory | TZS, ITW University Stuttgart | | www.itw.uni-stuttgart.de |
| Test report(s) | 18COLP20400780101 | Dated | 25.04.2018 |
| | 18COLP20400780101Q | | 25.04.2018 |
| Comments of testing laboratory | | Datasheet version: 5.01, 2016-03-01 | |
| <p>This data sheet replaces the data sheet issued 01.02.2017</p> <p>Documented performance parameters are taken from 18COLP20400780101 (SST ECO E 2200)</p> <p>The company address was updated.</p> <p>* This collector type is being offered in customer-specific dimensions</p> | |  | |
| <p>DIN CERTCO • Alboinstraße 56 • 12103 Berlin, Germany</p> <p>Tel: +49 30 7562-1131 • Fax: +49 30 7562-1141 • E-Mail: info@dincertco.de • www.dincertco.de</p> | | | |

| | | |
|---|-----------------------|---------------------|
| Annex to Solar Keymark Certificate Supplementary Information | Licence Number | 011-7S1687 F |
| | Issued | 2018-04-25 |

| Annual collector output in kWh/collector at mean fluid temperature ϑ_m, based on ISO 9806:2013 test results | | | | | | | | | | | | |
|---|---|--------|--------|-------------------------|--------|-------|-------------------------|--------|-------|-------------------------|--------|-------|
| Collector name | Athens | | | Davos | | | Stockholm | | | Würzburg | | |
| | ϑ_m | 25°C | 50°C | 75°C | 25°C | 50°C | 75°C | 25°C | 50°C | 75°C | 25°C | 50°C |
| SST ECO E 2125 | 2 943 | 2 129 | 1 434 | 2 240 | 1 576 | 1 025 | 1 655 | 1 098 | 685 | 1 800 | 1 192 | 730 |
| SST ECO E 2150 | 3 530 | 2 554 | 1 720 | 2 688 | 1 891 | 1 229 | 1 986 | 1 318 | 822 | 2 159 | 1 430 | 876 |
| SST ECO E 2200 | 4 706 | 3 404 | 2 293 | 3 582 | 2 520 | 1 639 | 2 647 | 1 756 | 1 095 | 2 878 | 1 906 | 1 167 |
| SST ECO E 2250 | 5 881 | 4 254 | 2 866 | 4 477 | 3 149 | 2 048 | 3 307 | 2 195 | 1 368 | 3 597 | 2 381 | 1 459 |
| SST ECO E 2300 | 7 056 | 5 105 | 3 438 | 5 372 | 3 779 | 2 457 | 3 968 | 2 633 | 1 642 | 4 316 | 2 857 | 1 750 |
| SST ECO E 3125 | 4 389 | 3 175 | 2 139 | 3 341 | 2 350 | 1 528 | 2 468 | 1 638 | 1 021 | 2 684 | 1 777 | 1 089 |
| SST ECO E 3150 | 5 265 | 3 809 | 2 566 | 4 008 | 2 819 | 1 833 | 2 961 | 1 965 | 1 225 | 3 220 | 2 132 | 1 306 |
| SST ECO E 3200 | 7 018 | 5 077 | 3 420 | 5 342 | 3 758 | 2 444 | 3 947 | 2 619 | 1 633 | 4 292 | 2 842 | 1 741 |
| SST ECO E 3250 | 8 770 | 6 345 | 4 274 | 6 676 | 4 697 | 3 054 | 4 933 | 3 273 | 2 041 | 5 364 | 3 552 | 2 175 |
| SST ECO E 3300 | 10 523 | 7 613 | 5 128 | 8 011 | 5 635 | 3 664 | 5 918 | 3 927 | 2 449 | 6 436 | 4 261 | 2 610 |
| SST ECO E 4125 | 5 835 | 4 221 | 2 843 | 4 442 | 3 124 | 2 032 | 3 281 | 2 177 | 1 358 | 3 569 | 2 363 | 1 447 |
| SST ECO E 4150 | 7 000 | 5 064 | 3 411 | 5 328 | 3 748 | 2 437 | 3 937 | 2 612 | 1 629 | 4 281 | 2 834 | 1 736 |
| SST ECO E 4200 | 9 330 | 6 749 | 4 546 | 7 102 | 4 996 | 3 249 | 5 247 | 3 482 | 2 171 | 5 707 | 3 778 | 2 314 |
| SST ECO E 4250 | 11 660 | 8 435 | 5 682 | 8 876 | 6 244 | 4 060 | 6 558 | 4 352 | 2 713 | 7 132 | 4 722 | 2 892 |
| SST ECO E 4300 | 13 990 | 10 120 | 6 817 | 10 650 | 7 492 | 4 872 | 7 868 | 5 221 | 3 255 | 8 557 | 5 665 | 3 470 |
| SST ECO E 5125 | 1 268 | 955 | 662 | 1 002 | 736 | 497 | 730 | 511 | 332 | 792 | 557 | 357 |
| SST ECO E 5150 | 8 734 | 6 318 | 4 256 | 6 649 | 4 677 | 3 041 | 4 912 | 3 260 | 2 032 | 5 342 | 3 537 | 2 166 |
| SST ECO E 5200 | 11 642 | 8 422 | 5 673 | 8 862 | 6 234 | 4 054 | 6 547 | 4 345 | 2 709 | 7 121 | 4 714 | 2 888 |
| SST ECO E 5250 | 14 549 | 10 525 | 7 090 | 11 076 | 7 791 | 5 066 | 8 183 | 5 430 | 3 385 | 8 899 | 5 892 | 3 609 |
| SST ECO E 5300 | 17 457 | 12 628 | 8 507 | 13 289 | 9 348 | 6 079 | 9 818 | 6 515 | 4 062 | 10 677 | 7 069 | 4 330 |
| SST ECO E 6125 | 8 726 | 6 313 | 4 252 | 6 643 | 4 673 | 3 039 | 4 908 | 3 257 | 2 031 | 5 337 | 3 534 | 2 164 |
| SST ECO E 6150 | 10 469 | 7 573 | 5 101 | 7 969 | 5 606 | 3 646 | 5 888 | 3 907 | 2 436 | 6 403 | 4 239 | 2 597 |
| SST ECO E 6200 | 13 954 | 10 094 | 6 800 | 10 622 | 7 472 | 4 859 | 7 848 | 5 208 | 3 247 | 8 535 | 5 650 | 3 461 |
| SST ECO E 6250 | 17 439 | 12 615 | 8 498 | 13 275 | 9 339 | 6 073 | 9 808 | 6 508 | 4 058 | 10 666 | 7 062 | 4 325 |
| SST ECO E 6300 | 20 924 | 15 136 | 10 196 | 15 928 | 11 205 | 7 286 | 11 767 | 7 809 | 4 869 | 12 798 | 8 473 | 5 190 |
| SST ECO E 7125 | 10 172 | 7 359 | 4 957 | 7 743 | 5 447 | 3 542 | 5 721 | 3 796 | 2 367 | 6 222 | 4 119 | 2 523 |
| SST ECO E 7150 | 12 203 | 8 828 | 5 947 | 9 290 | 6 535 | 4 250 | 6 863 | 4 554 | 2 840 | 7 464 | 4 942 | 3 027 |
| SST ECO E 7200 | 16 266 | 11 767 | 7 926 | 12 382 | 8 710 | 5 664 | 9 148 | 6 070 | 3 785 | 9 949 | 6 587 | 4 034 |
| SST ECO E 7250 | 20 328 | 14 706 | 9 906 | 15 475 | 10 886 | 7 079 | 11 433 | 7 587 | 4 730 | 12 434 | 8 232 | 5 042 |
| SST ECO E 7300 | 24 391 | 17 644 | 11 885 | 18 567 | 13 061 | 8 493 | 13 717 | 9 103 | 5 675 | 14 918 | 9 877 | 6 050 |
| SST ECO E 8125 | 11 618 | 8 405 | 5 661 | 8 844 | 6 222 | 4 046 | 6 534 | 4 336 | 2 703 | 7 106 | 4 705 | 2 882 |
| SST ECO E 8150 | 13 938 | 10 083 | 6 792 | 10 610 | 7 464 | 4 854 | 7 839 | 5 202 | 3 243 | 8 525 | 5 644 | 3 457 |
| SST ECO E 8200 | 18 578 | 13 439 | 9 053 | 14 142 | 9 948 | 6 469 | 10 448 | 6 933 | 4 323 | 11 363 | 7 523 | 4 608 |
| SST ECO E 8250 | 23 218 | 16 796 | 11 314 | 17 674 | 12 433 | 8 085 | 13 058 | 8 665 | 5 402 | 14 201 | 9 402 | 5 759 |
| SST ECO E 8300 | 27 857 | 20 152 | 13 575 | 21 206 | 14 918 | 9 701 | 15 667 | 10 396 | 6 482 | 17 039 | 11 281 | 6 910 |
| SST ECO E Sondergröße* | | | | | | | | | | | | |
| Annual output per m ² gross area | 1 167 | 844 | 568 | 888 | 625 | 406 | 656 | 435 | 271 | 713 | 472 | 289 |
| 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 | | | | | | | | | | | | |

| 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 ISO 9806:2013 under the following conditions: | | | |
| Climate class (A, B or C) | C | -- | |
| 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 ²) | Data required for CDR (EU) No 811/2013 - Reference Area A _{sol} | |
| SST ECO E 2125 | 2.52 | Collector efficiency (η_{col}) | 56 % |
| SST ECO E 2150 | 3.03 | Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No | |

| | | | | |
|--|-------|--|-------|------------------------------------|
| SST ECO E 2200 | 4.03 | 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. | | |
| SST ECO E 2250 | 5.04 | | | |
| SST ECO E 2300 | 6.05 | | | |
| SST ECO E 3125 | 3.76 | | | |
| SST ECO E 3150 | 4.51 | | | |
| SST ECO E 3200 | 6.02 | | | |
| SST ECO E 3250 | 7.52 | | | |
| SST ECO E 3300 | 9.02 | Zero-loss efficiency (η_0) | 0.710 | -- |
| SST ECO E 4125 | 5.00 | First-order coefficient (a_1) | 3.35 | W/(m ² K) |
| SST ECO E 4150 | 6.00 | Second-order coefficient (a_2) | 0.009 | W/(m ² K ²) |
| SST ECO E 4200 | 8.00 | Incidence angle modifier IAM (50°) | 0.97 | -- |
| SST ECO E 4250 | 10.00 | 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. | | |
| SST ECO E 4300 | 11.99 | | | |
| SST ECO E 5125 | 6.24 | | | |
| SST ECO E 5150 | 7.49 | | | |
| SST ECO E 5200 | 9.98 | | | |
| SST ECO E 5250 | 12.47 | | | |
| SST ECO E 5300 | 14.96 | | | |
| SST ECO E 6125 | 7.48 | | | |
| SST ECO E 6150 | 8.97 | | | |
| SST ECO E 6200 | 11.96 | | | |
| SST ECO E 6250 | 14.95 | | | |
| SST ECO E 6300 | 17.94 | | | |
| SST ECO E 7125 | 8.72 | | | |
| SST ECO E 7150 | 10.46 | | | |
| SST ECO E 7200 | 13.94 | | | |
| SST ECO E 7250 | 17.43 | | | |
| SST ECO E 7300 | 20.91 | | | |
| SST ECO E 8125 | 9.96 | | | |
| SST ECO E 8150 | 11.95 | | | |
| SST ECO E 8200 | 15.93 | | | |
| SST ECO E 8250 | 19.90 | | | |
| SST ECO E Sondergröße* | | | | |
| DIN CERTCO • Alboinstraße 56 • 12103 Berlin, Germany | | | | |
| Tel: +49 30 7562-1131 • Fax: +49 30 7562-1141 • E-Mail: info@dincertco.de • www.dincertco.de | | | | |