

SOLAR WATER HEATING CALCULATION FORM (Page 1 of 2) CF-SR

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| Project Title | Date |
|---------------|------|

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| CF-SR- Solar Water Heating Calculation Form | | OG-300 |
| Property Name: | Building Type: (Single Family, Multi-family): | |
| Total Conditioned Floor Area (CFA)ft ² : | Climate zone (1-16): | |
| INPUTS FOR SYSTEMS SRCC OG-300: | | |
| 1. Solar Energy Factor of OG-300 solar water heating system as listed in SRCC directory | | |
| 2. Energy Factor of Water Heater (enter .6 for gas .9 for electric) | | |
| 3. Constant - 41045 (amount of energy used in SRCC test) | | |
| 4. Constant - 3500 average parasitic loss value in SRCC test | | |
| 5. System type. Enter 1 for systems with pumps or forced circulation for all other systems enter 0 | | |
| 6. Gallons per day use value calculated as: (21.5*.0014*CFA) | | |
| 7. Constant – 64.3 gallons used in SRCC test method | | |
| 8. Hot water supply temperature 135 degrees | | |
| 9. Environmental temperature (Enter value from Table 1 based on entry on Climate Zone) | | |
| 10. Difference in supply and inlet water (subtract line 9 from line 8) | | |
| 11. Constant - 1500 Solar radiation value used in SRCC test | | |
| 12. Solar radiation level from Table 1 below | | |
| 13. Energy for circulation. (enter 0.9 of forced re-circulation and 1 for all other systems) | | |
| CALCULATION FOR SYSTEM | | |
| 14. Multiply line 2 by line 3 | | |
| 15. Divide the results by line 1 | | |
| 16. Divide line 6 by line 7 | | |
| 17. Divide the result in line 10 by 77 | | |
| 18. Subtract 1 by line 2 | | |
| 19. Multiply lines 15, 16 and 17 | | |
| 20. Multiply line 4 by line 5 by line 18 | | |
| 21. Add line 19 to line 20 | | |
| 22. Divide line 21 by line 3 | | |
| 23. Divide line 11 by line 12 | | |
| 24. Multiply line 22 by line 23 by line 13 | | |
| 25. Subtract 1 add line 13 add line 24 | | |
| Solar Fraction | | |

Table 1

| Climate Zone | Water Temperature | Solar Radiation | Environmental Temperature | Climate Zone | Water Temperature | Solar Radiation | Environmental Temperature |
|--------------|-------------------|-----------------|---------------------------|--------------|-------------------|-----------------|---------------------------|
| 1 | 53.90 | 1220 | 53.71 | 9 | 63.76 | 1685 | 63.73 |
| 2 | 57.52 | 1220 | 57.52 | 10 | 63.76 | 1612 | 63.80 |
| 3 | 57.69 | 1533 | 57.55 | 11 | 61.00 | 1580 | 61.22 |
| 4 | 59.12 | 1601 | 59.07 | 12 | 59.65 | 1670 | 59.77 |
| 5 | 57.93 | 1602 | 57.87 | 13 | 63.99 | 1726 | 64.31 |
| 6 | 61.55 | 1599 | 61.48 | 14 | 61.48 | 1827 | 61.94 |
| 7 | 62.63 | 1586 | 62.48 | 15 | 73.55 | 1884 | 73.86 |
| 8 | 62.97 | 1682 | 63.73 | 16 | 50.54 | 1513 | 51.68 |

EXAMPLE**CF-SR- Solar Water Heating Calculation Form****OG-300**

Property Name: _____

Building Type: (Single Family, Multi-family): Single FamilyTotal Conditioned Floor Area (CFA)ft²: 2500Climate zone (1-16): 2**INPUTS FOR SYSTEMS SRCC OG-300:**

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|---|-------|
| 1. Solar Energy Factor of OG-300 solar water heating system as listed in SRCC directory | 3.4 |
| 2. Energy Factor of Water Heater (enter .6 for gas .9 for electric) | 0.9 |
| 3. Constant - 41045 (amount of energy used in SRCC test) | 41045 |
| 4. Constant - 3500 average parasitic loss value in SRCC test | 3500 |
| 5. System type. Enter 1 for systems with pumps or forced circulation for all other systems enter 0. | 1 |
| 6. Gallons per day use value calculated as: (21.5*.0014*CFA) | 75.25 |
| 7. Constant – 64.3 gallons used in SRCC test method | 64.3 |
| 8. Hot water supply temperature 135 degrees | 135 |
| 9. Environmental temperature (Enter value from Table 1 based on Climate Zone) | 57.52 |
| 10. Difference in supply and inlet water (subtract line 9 from line 8) | 77.48 |
| 11. Constant - 1500 Solar radiation value used in SRCC test | 1500 |
| 12. Solar radiation level from Table 1 below | 1220 |
| 13. Energy for circulation. (enter 0.9 of forced re-circulation and 1 for all other systems) | 0.9 |

CALCULATION FOR SYSTEM

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| 14. Multiply line 2 by line 3 | 36940.5 |
| 15. Divide the results by line 1 | 10864.9 |
| 16. Divide line 6 by line 7 | 1.2 |
| 17. Divide the result in line 10 by 77 | 1.0 |
| 18. Subtract 1 by line 2 | 0.1 |
| 19. Multiply lines 15, 16 and 17 | 12384.8 |
| 20. Multiply line 4 by line 5 by line 18 | 350.0 |
| 21. Add line 19 to line 20 | 12734.8 |
| 22. Divide line 21 by line 3 | 0.3 |
| 23. Divide line 11 by line 12 | 1.2 |
| 24. Multiply line 22 by line 23 by line 13 | 0.3 |
| 25. Subtract 1 add line 13 add line 24 | 0.4 |

Solar Fraction**0.4**