Side by side tests of two SDHW systems with solar collectors with and without antireflection treatment - DTU Orbit (09/02/2019)

**Side by side tests of two SDHW systems with solar collectors with and without antireflection treatment**

Two low flow SDHW systems based on mantle tanks are tested side by side in a laboratory test facility for solar heating systems under the same weather and operation conditions. The systems are identical with the exception that one system is equipped with a solar collector with antireflection treated glass while the other system has a collector with a normal glass. Measurements of the thermal performance of the two systems have been carried out for a long measuring period. The thermal performances of the systems have also been calculated with a detailed simulation model. There is a good agreement between measured and calculated thermal performances for both systems. The extra thermal performance of the system with the solar collector with the anti reflection treated glass cover is a strong function of the solar fraction. In sunny periods with high solar fractions the percentage extra thermal performance gained by the antireflection treatment is low. In less sunny periods with low solar fractions the percentage extra thermal performance of the system with the antireflection treated cover glass is high, typically up to 8%.

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