

These “opbrengst verklaring 10-60 °C” state the thermal performance of the “CitrinSolar 3.72 m2/200 l” and the extrapolated “CitrinSolar 3.72 m2/300 l with serial linked internal heat exchangers”. These statements of thermal performance are only valid for Dutch climate conditions and therefore only available in Dutch. The text is as follows:

“In order of Leylandi consultancy vof, we determined the energetic savings of solar domestic hot water system “CitrinSolar 3.72 m2/200 l”, according to NPR 7976. The system give, for a reference hot water use of 110 l/day heated from 10-60 °C demanded by the user, the following energetic savings:

Based on DST test report 99-BBI R065, “deelrapportageformulier zonneboilers. Fabrikaat NAU, type 3.72 m2/ 200 l “ 23th July 1999.

This statement is valid until 1<sup>st</sup> March 2010.

The energetic savings are calculated as follows:

$$Q_{sav} = Q_{aux,ref} - (Q_{aux} + Q_{par})$$

Wherein  $Q_{aux,ref} = Q_D$

List of symbols as used in NPR 7976:

$Q_{aux}$	Annual auxiliary energy
$Q_{aux,ref}$	Annual heat consumption of a non-solar reference system
$Q_{par}$	Annual parasitic energy
$Q_D$	Annual heat demanded by the user
$Q_{sav}$	Annual energy savings

Conditions:

The solar domestic hot water system (SDHW systems), is identical to the system as tested and described in report 99-BBI R065. (Except the hot water tank volume of 300 l)

Remarks:

Performance calculations are executed according to NPR 7976, which describes the standard conversion procedure for determination of the thermal performance based on the Dutch reference conditions, in English. Except:

- Performance is calculated for a hot water demand heated from 10 to 60 degrees Celsius.
- TNO-report ‘herziene achtergrond rapportage: Conversie van TNO-zonneboileropbrengst in NEN 5128 formaat’ (TNO rapport 2005-BBE-R0053)’ describes adjustments in the NPR 7976 for solar plus supplementary SDHW systems.
- The possibilities for extrapolation of the thermal performance of tested systems are extended. For extrapolation are sufficient provable properties of the changed components needed. TNO considers if an accurate extrapolation can be made. “