

FAQs about the collector label

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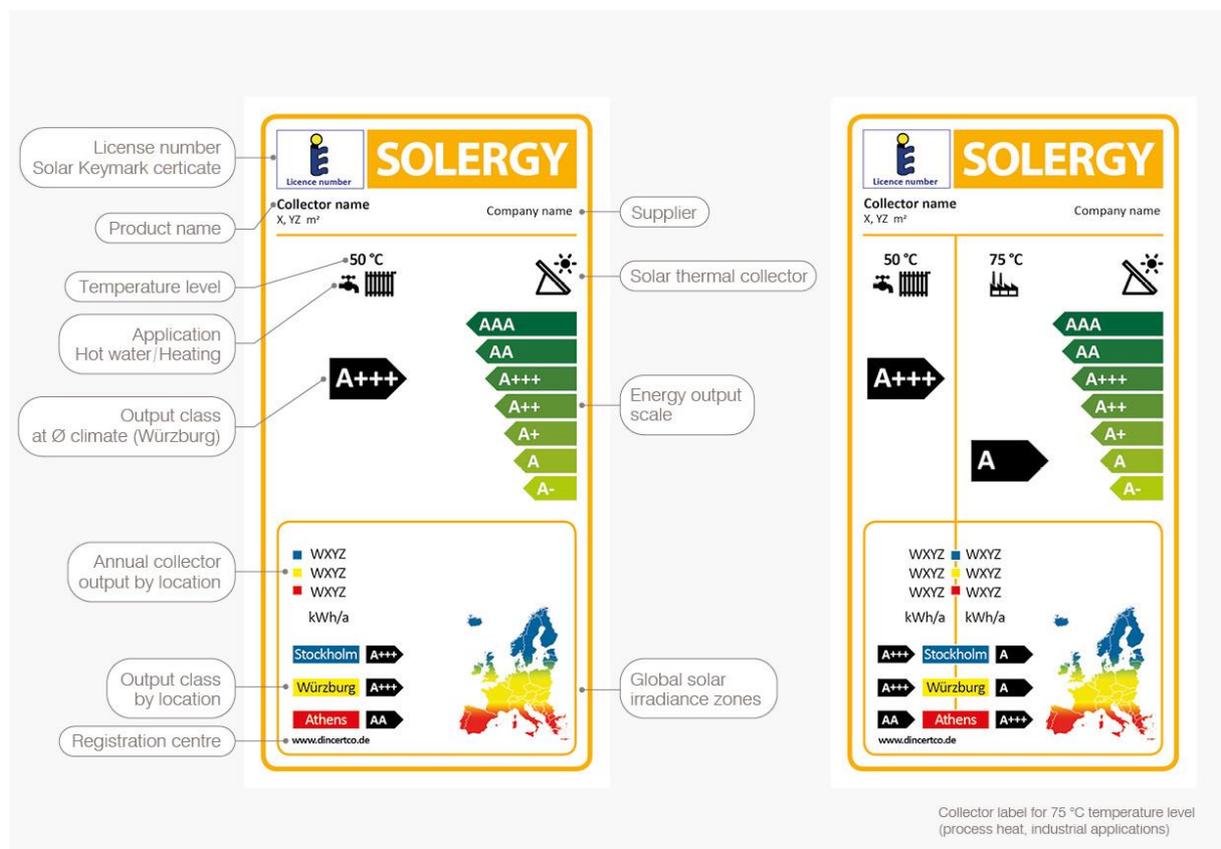
Worth knowing for home owners

1. What is the collector label?

The collector label is a voluntary product label introduced by several market players of the solar thermal market. It provides information about the performance and energy output of different solar thermal collectors in a transparent way and allows consumers to make an informed decision on the product which best meets their needs.

2. What kind of information can the consumer get from the collector label?

The design of the label itself and the symbol for the collector makes the consumer aware of the topic: it is about solar collectors, which are considered as a basic heating technology. The icons for hot water and heating together with the temperature indicate that the solar collector is used for water and space heating. Furthermore, the scale represents the different energy output classes and the technological stages available in the market. The map of Europe shows the influence the regional location has on the output values. Furthermore, the consumer is able to proof all this information on the website of the Solar Keymark Network.



3. Which opportunities does the collector label represent?

The voluntary collector output label for solar thermal systems offers the consumers the possibility to choose among the different collectors according to their energy output. Its form and methodology is different to that of the already established energy efficiency label of the European Union. It has a green A-scale (A=renewable), the arrows go from the right to the left since collectors do not use primary energy, and therefore deliver heat ecologically and economically. The collector label expands the application area of the EU labelling scheme, which is currently restricted to primary energy use, by taking into consideration a sustainable, CO₂-free heating supply.

The participating companies in this voluntary labelling scheme want to strengthen the positioning of solar thermal collectors as clean, serious and advanced technologies. Solar thermal can optimize the energy balance of a house. Though, home owners can significantly save costs and even get a solar-based heat supply. The collector label could also be used as a basis for a fair grant systems based on energy output.

4. What is so special about the collector label?

Even when the identity of the collector label is similar to the well-known principle of the EU efficiency label, the scale is different: it shows energy output classes which relate to the annual efficiency and not energy efficiency classes which relate to energy use. The scale is green since solar thermal collectors are sustainable energy suppliers and no energy consumers. For this reason, practically there are no CO₂ emissions. The energy output of the collectors is taken from the Solar Keymark data sheets, which are officially issued by DIN CERTCO. The corresponding energy output potential by location is represented on the label as well. An additional advantage is that collectors can be compared to each other by the heat they generate and regardless of its construction (vacuum tubes or flat plate)

5. Why should solar thermal collectors be compared with each other by their energy output and not by their size in m²?

The reason is that collector modules from different manufacturers and different collector types might have the same size but can have different energy output. Subventions which are based on the size on m² of the collector field do not take into consideration how powerful the individual collectors are. Therefore, manufacturers supporting this initiative have chosen the specific energy output per gross collector area as reference to compare.

6. Why there are more energy output classes than the usual A+, A++ and A+++?

On the one hand, a more detailed classification allows differentiating between the different technological stages which a product could go through. On the other hand, the potential customer can quickly notice that the range of collectors available in the market is big and that it is worth it to have a closer look into the market. This differentiation makes the technological status of the individual products evident and together with the corresponding price a comparison is possible for the consumer to determine the economic benefit. The initiators of the collector label want to show with the additional classes AA and AAA the potential solar thermal has. It is expected that manufacturers will exploit this potential in the upcoming years. Reaching these classes could become a good incentive for manufacturers for product

improvement. Not only consumers would profit from this, but it also contributes to achieve the “Energiewende”.

7. Why is the energy output class A- necessary?

The energy output class A- is necessary as a boundary line. It includes collectors, which are on the edge of current subventions scheme. It includes for instance low-cost import tube collectors with big space between the tubes. Even though they can comply with the minimum requirements to get access to subventions, which usually refer to the effective tube area and not to the relevant gross area, they get a lower ranking according to their energy output by collector module.

8. Why there are seven energy output classes?

The initiators want to provide a clear and meaningful classification of the products with the division into seven energy output classes. They take the criticism of consumer organizations seriously, who claim the EU efficiency label is too rough and thus revealing little. The differentiated scale prevents that higher energy output collectors are treated equal to those with low energy output. Thanks to the different energy output classes, the potential buyer quickly recognizes which product best suits his needs, because he may compare different technologies (collectors) and price ranges. In this way, the market will also be effectively protected against low-output and cheap products.

9. What do the output classes say about the technological level of the collectors?

Output classes	Technological level
AAA AA	In order to reach the classes AA and AAA it is necessary to have additional features such as double glazing, vacuum isolation or reflectors.
A+++	Flat plate collectors of the “premium” class and vacuum tube collectors with little distance between the tubes and without reflector
A++	Flat plate collectors of the “comfort” class and vacuum tube collectors with bigger space between the tubes
A+	Flat plate collectors of the “standard” class and vacuum tube collectors with even bigger space between the tubes
A	Simple flat plate collectors and vacuum tube collectors with considerable big space between the tubes or weak technical heat properties
A-	Very simple flat plate collectors which comply with the minimum requirements for getting grants, and non-selective flat plate collectors, as well as vacuum tube collectors with extreme space between the tubes

Worth knowing for manufacturers and installers

1. Which opportunities does the collector label give the industry?

The label contributes to the improvement of the positioning of solar thermal technologies in the market. A starting point is the opportunity to get the recognition of the consumer organizations. Due to its distinct message, its clear arrangement, and its intuitive, understandable representation the collector label is a meaningful and valuable guideline. It gives the industry the opportunity to drive the attention of the consumers towards solar thermal. Suitable subsidy systems for this technology based on energy output-oriented labelling, can enhance the confidence of the customers in the industry.

2. Which explanations help consumers to understand the information on the label?

It is worth it to focus the attention of the customers on three topics. First of all, it is advisable to point to the particular scale which depicts energy output classes and not energy efficiency classes. Secondly, it is worthwhile to go into the color of the scale which is different to the ErP efficiency label: the green color stands for the fact that the solar energy is an energy supplier and not an energy user. Thirdly, a special indication should be made on the unit of measure, which relates to the specific energy output of a collector and accordingly refers to the annual efficiency.

3. What is the difference between the voluntary collector label and the EU label?

The application area of the labels is different. The EU label refers exclusively to the use of primary energy. The SOLERGY label refers to the renewable energy generation without the use of primary energy.

The fact that the collector label is about energy output and not energy use, is clearly shown by the length of the arrows. The longer the arrow, the higher the class (more energy output). In the EU label, the shorter the arrow, the higher the class (less use of primary energy).

The followings parts of the EU label are protected:

- The color gradient of the scale which goes from green to red
- The name of the classes which goes from A+++ to G
- The EU flag

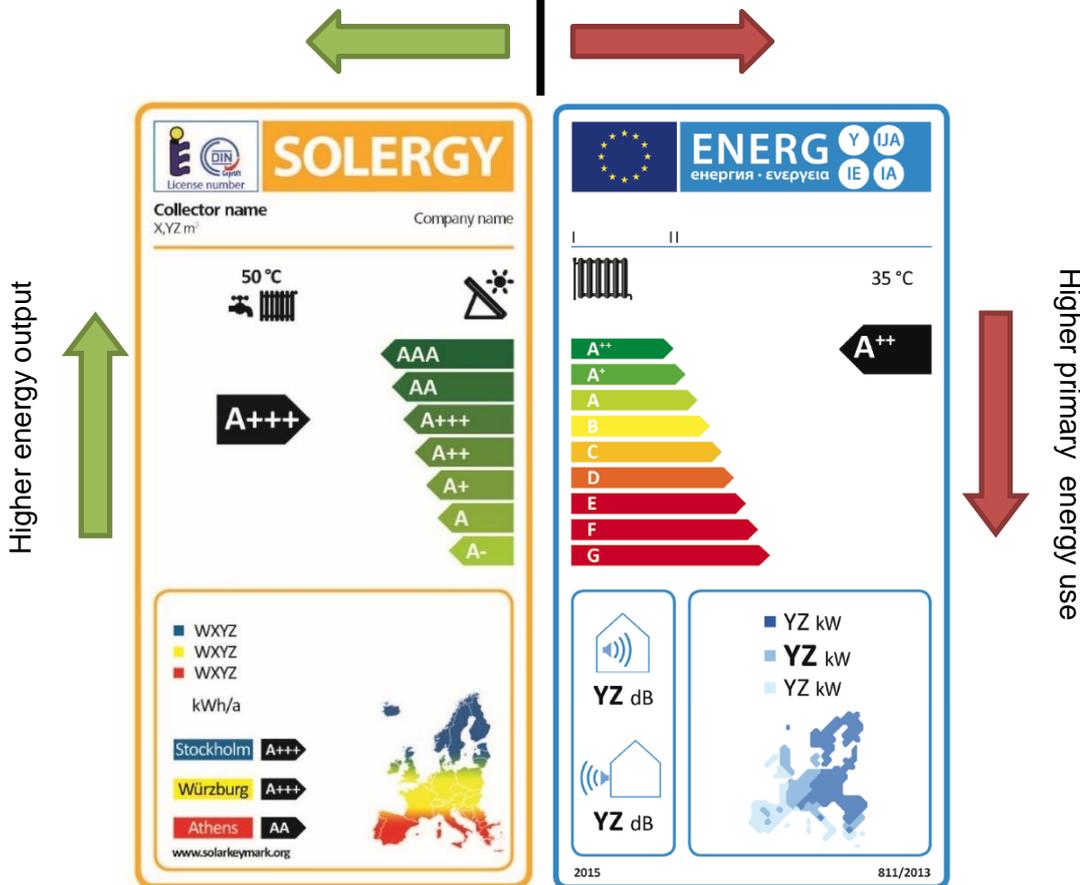
The SOLERGY label does not violate the EU label since

- it has green arrows that go to the left
- the denomination of the classes is based on the letter A (=renewable) going from A- to AAA
- it is calculated based on the Solar Keymark Certificate with the indication of the license number

Comparison of both labels

Voluntary SOLERGY label
= renewable energy output

EU – Energy efficiency
= primary energy use



4. What is the goal of the collector output label?

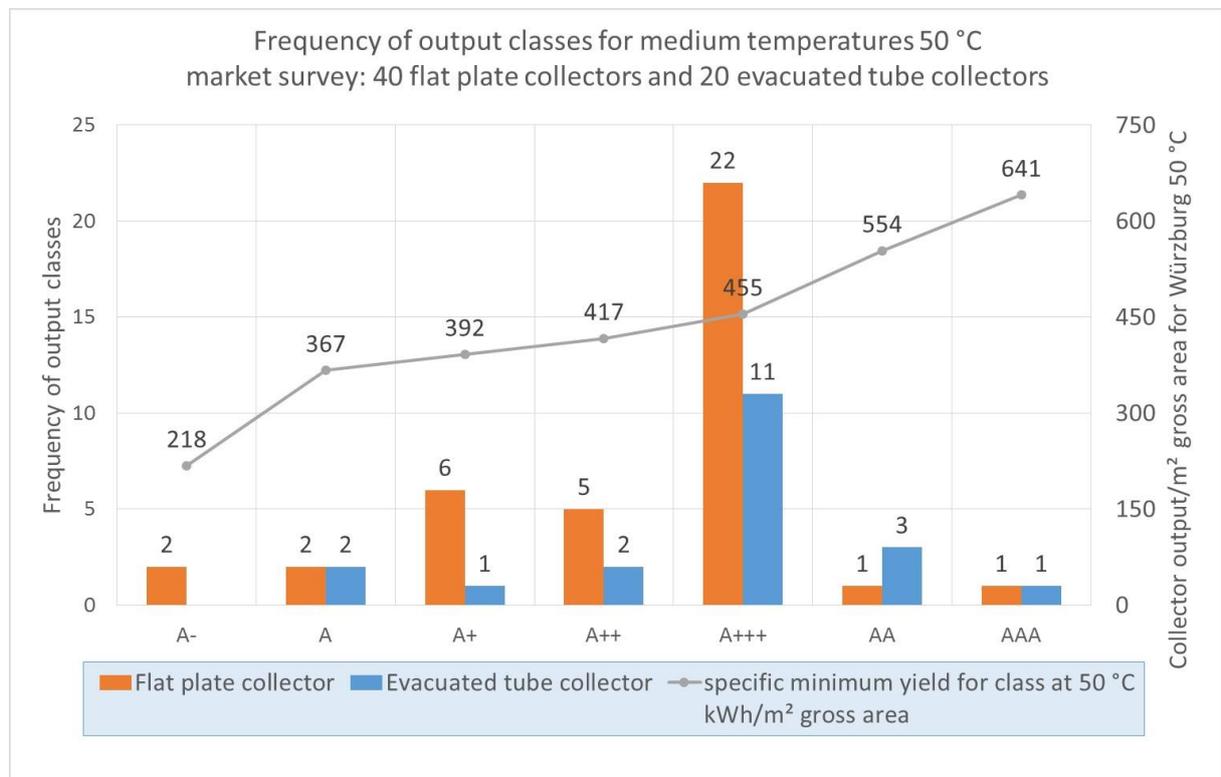
The goal of the collector label is to complement the ErP labelling, which only takes into consideration products which use energy and includes solar collectors in the package label, yet as an efficiency or additional technology. At the same time, the collector label manages to present solar collectors as an independent technology and display product differentiation in the collector market. Finally, the information from the Solar Keymark data sheet 2 is shown in a simplified form, so it can be explained more easily.

5. What is the classification of the energy output classes?

Energy output class	Annual efficiency η_a in %
AAA	$\eta_a \geq 52$
AA	$45 \leq \eta_a < 52$
A+++	$37 \leq \eta_a < 45$
A++	$34 \leq \eta_a < 37$
A+	$32 \leq \eta_a < 34$
A	$30 \leq \eta_a < 32$
A-	$18 \leq \eta_a < 30$
<i>A--</i>	<i>$17 \leq \eta_a < 18$</i>
<i>A---</i>	<i>$16 \leq \eta_a < 17$</i>
<i>B</i>	<i>$\eta_a < 16$</i>

According to this classification, most of the collectors currently available on the market are included in the class A+++ . The three lower classes, which are shown in italics will not be able to get established in the market and will therefore not be included on the label.

Classification of relevant collectors by energy output class



The methodological division into the individual energy output classes has been done according to EU Regulation No. 811/2013 and in line with the standardized steps for boilers/heat pumps, respectively low-temperature heat pumps. This and the new aspects such as the energy output-based classification could be considered as a recommendation on how renewable energy technologies could be usefully integrated in revisions of existing or new EU regulations.

The energy output class A++ has been selected for the collectors of the “comfort” class because it corresponds to the class where the best available conventional heat generators are currently placed. It stands for the ecological, sustainable and long-term economic superiority of solar thermal energy. The additional energy output classes AA and AAA allow not only for awareness about the type of collectors belonging in those classes, but also represent the potential solar thermal has compared to other heat sources such as gas condensing boilers or heat pumps.

6. What does the value η_a mean?

The value η_a represents the average annual efficiency of a solar collector, in other words, the share of solar irradiation which can be converted in heat per square meter gross collector area. η stands for the collector output, while **a** (= anno) stands for the yearly average. The calculation is done based on the Solar Keymark certification for the reference location Würzburg.