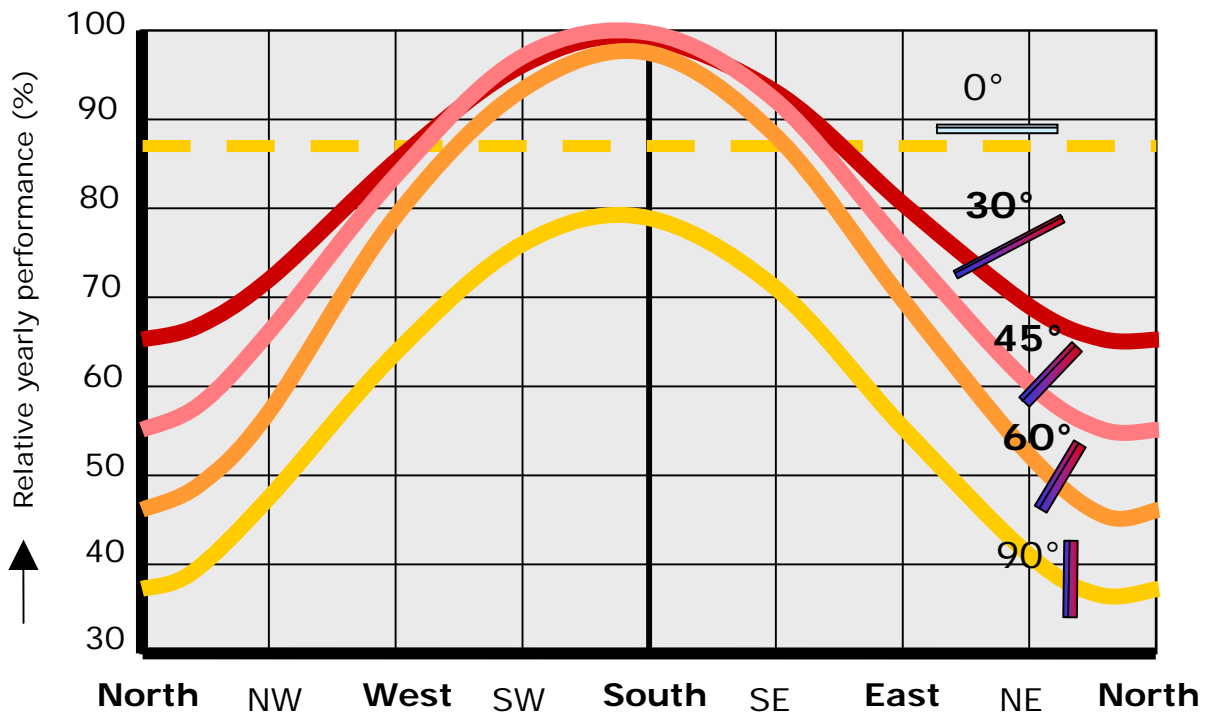


Western European climate conditions



**ORIENTATION:**

The **orientation of a collector is not critical**. The optimum direction is south and the collector tilted to 30°-60°. If a roof is oriented west/east it is best to use the west faced roof for the collector. The performance will be still 85% compared to the optimum. As can be seen from the graph, even a collector (tilt 30°) facing north will have a considerable contribution of 65% compared to the optimum. A horizontal collector is not suitable because it will become dirty and the dirt will not be flushed away by rain.

**SOLAR RADIATION:**

Solar radiation consists of direct sunlight (sunny weather), and diffuse sunlight (cloudy weather). In western Europe diffuse cloudy weather is more common than sunny weather. Cloudy weather gives diffuse light coming from all directions. In these cloudy periods the orientation of the collector is irrelevant thus making the mounting orientation not critical.

**SOLAR FRACTION:**

On average a standard solar system will provide a solar fraction of 50%. Which means that 50% of the yearly hot water usage will be heated by solar energy. To ensure a hot shower for the user the rest will be heated by an auxiliary heating source. (boiler, electrical element, etc.) In summer time stretching from April to September the solar fraction will be 90%. During winter time the solar fraction will drop to 25%.

**APPLICATIONS:**

Small to large domestic hot water systems, industrial process and swimming pool heating.