

# TECHNICAL BULLETIN

## PRODUCT: GREENSKIES SOLAR

### SWIMMING POOL SIZING:

Weather conditions, location, orientation and heat loss have a considerable influence on swimming pools and the sizing of solar panels and associated equipment.

For that reason, sizing a solar system for a swimming pool can only ever be an approximation.

The sizing has to be aligned to the surface area of the pool and required pool temperature.

Therefore it is not possible to guarantee the water temperature within a swimming pool for all situations

A secondary heat source may need to be considered.

### Standard values for swimming pools;

Conditions for standard swimming pool values;

- ▶ Pool surface covered when not in use (insulation)
- ▶ Pool is insulated from ground heat losses
- ▶ The solar collectors are positioned facing south and angled at between 30 – 50°
- ▶ Required pool water temperature

If the required water temperature is higher than 24°C, the number of collector's increases by the correction factor in the table opposite. (See table 1)

The standard values only apply if the pool is insulated from the ground.

**It is not possible to give estimations for the necessary collector area if the pool is not insulated.** In this instance, please contact a pool specialist.

Pool Type	Sizing of Collectors	
	Worcester Greenskies Flat Plate Collectors	Worcester Greenskies Evacuated Tube Collectors
Indoor or Outdoor pool with cover	1 collector for every <b>5 m<sup>2</sup></b> of pool surface area	12 tubes for every <b>8 m<sup>2</sup></b> of pool surface area
Indoor or Outdoor pool without cover	1 collector for every <b>2 m<sup>2</sup></b> of pool surface area	12 tubes for every <b>3.2 m<sup>2</sup></b> of pool surface area
Correction factor for required pool water temperature above 24°C	<b>1.3</b> collectors for every 1°C above 24°C	<b>12</b> tubes for every 1°C above 24°C

Table 1: standard values

Both examples are for an insulated pool.

### Example 1 – indoor pool with cover Flat Plate Collectors

- ▶ Parameters;
  - Indoor swimming pool, covered
  - Pool surface area 40m<sup>2</sup>
  - Pool water temperature **27°C**
- ▶ Required;
  - No. of collectors for solar swimming pool heating
- ▶ Result;
  - 40m<sup>2</sup> [40 / **5** = 8 collectors]
  - Additional correction for 3°C to achieve **27°C** pool temperature (3 x **1.3** = 3.9 collectors)
  - Total, rounded up = **12 collectors** required to heat a covered 40m<sup>2</sup> indoor pool to **27°C**

### Example 2 – outdoor pool without cover Evacuated Tube Collectors

- ▶ Parameters;
  - Outdoor swimming pool, uncovered
  - Pool surface area 40m<sup>2</sup>
  - Pool water temperature **24°C**
- ▶ Required;
  - No. of collectors for solar swimming pool heating
- ▶ Result;
  - 40m<sup>2</sup> [(40 / **3.2**) x 12 = 150 tubes]
  - No correction needed as required pool temperature is **24°C**.
  - Total, rounded up = **150 tubes** required to heat an uncovered 40m<sup>2</sup> outdoor pool to **24°C** (or 12 x 12 tube collectors and 1 x 6 tube collector)

Page 1 of 1

Whilst it is always our intention to fully assist, it is essential to recognise that all information given by the company in response to an enquiry of any nature is provided in good faith and based upon the information provided with the enquiry. We recommend that advice should always be checked with your installer or contract partner. Consequently, the company cannot be held responsible for any liability relating to the use or repetition of such information or part thereof. In addition, whilst making every reasonable effort to monitor the performance and quality of our supply, installation and service network, we do not accept responsibility for the workmanship or operation of any third party company that the company may have promoted either in conversation, e-mail or other communication.

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