

# *Product Information*



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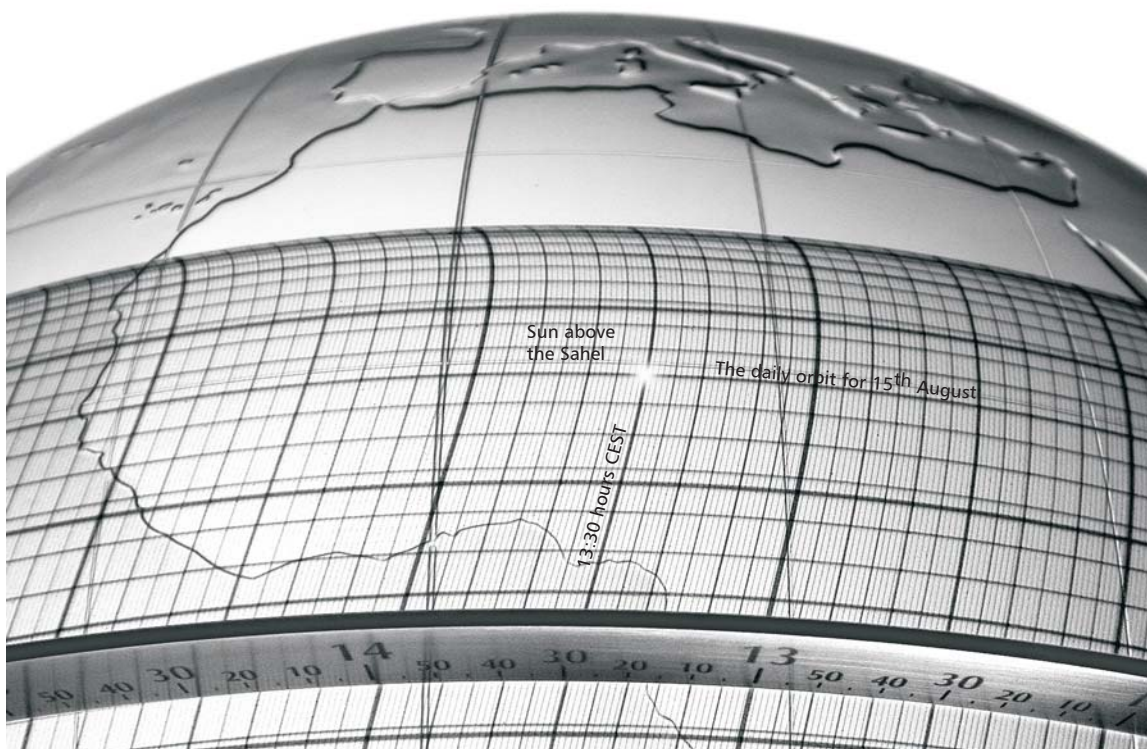
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# HELIOS *Subsolaris*

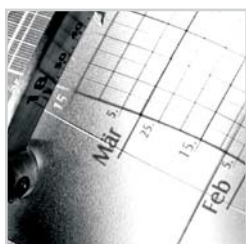


**Helios**  
ASTRONOMISCHE UHREN

PRODUCTS



## HELIOS *Subsolaris*



Named after its unique function, the representation of the sun's path across the globe, **HELIOS Subsolaris** displays the exact Central European time (CET/CEST) and date.

The movement of the earth in its ecliptic path around the sun and around its own axis is the gigantic cosmic clockwork which powers the sundial - accurate and consistent. The clock's hand is the sunlight, which is coming from a different direction at any moment in time. The rays of light meet the sundial's mirror and project the image of the sun as point of light on the screen. In the example, the sun's image displays the sub-solar point in the Sahel at 13.30 hours CEST on 15th August.

The zenith position, daily migration, seasons, solstice, equinox - the sun itself makes these natural phenomena visible on the **HELIOS** sundial.

The sundial is clearly superior to the quartz clock in its continuous accuracy. The deviation of a quartz clock may be up to  $\pm 1$  second per week, in a year it may be almost a whole minute too fast or too slow. The **HELIOS** sundial is absolutely accurate for the first year and even in 100 years will only deviate by a maximum of  $\pm 30$  seconds.

## HELIOS *Subsolaris 4*

The earth's orbit around the sun takes a quarter of a day longer than 365 days, which causes a shift in the date display. It is corrected every four years by the additional day in the leap year. To increase its date accuracy, **HELIOS Subsolaris 4** comes with four display screens for each leap year cycle.



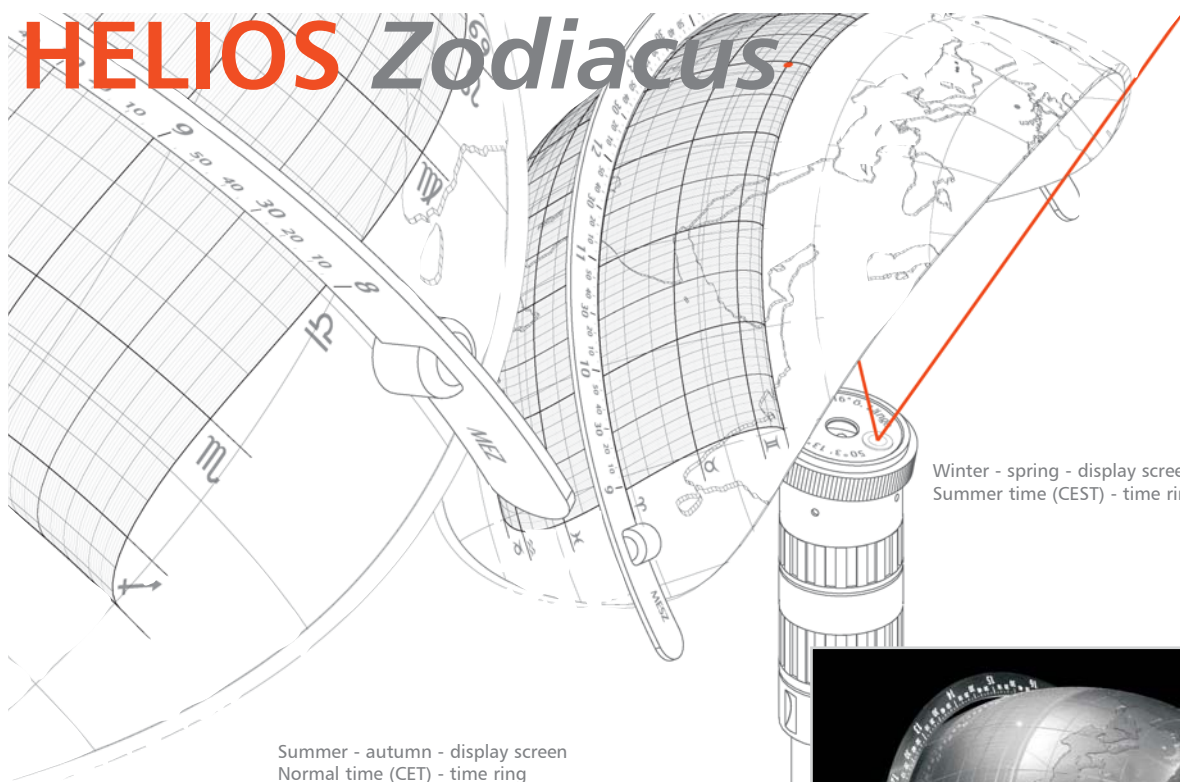
The sundial is located in Wiesbaden and displays 13:30 hours CEST on 15th August and the sub-solar point in the Sahel.

Sun above the Sahel (sub-solar point). It is exactly in its zenith at this location.



# Helios

PRODUCTS



Summer - autumn - display screen  
Normal time (CET) - time ring

Winter - spring - display screen  
Summer time (CEST) - time ring

## HELIOS Zodiacus

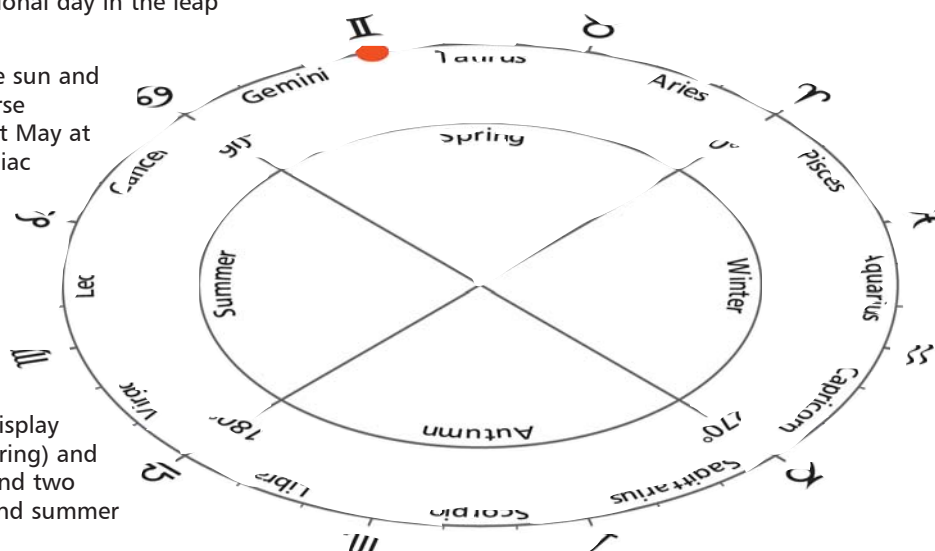
Until the 18th century, it was common practice to indicate the ecliptical position of the planets (sun, moon and stars) using the zodiac signs of the ancient world. Originating from the vernal point (first point of Aries), the zodiac divides the tropical year, that is the sun's annual orbit, into 12 parts, each of 30°. Each zodiac sign is divided into 3 deans of 10°.

Our Gregorian calendar is only suited to the sun's entry and departure from the zodiac signs in a very limited way. It assumes 365 days in a year. The tropical year is one quarter of a day longer. This causes a time delay each year, which is only corrected by the additional day in the leap year, every four years.

The **HELIOS Zodiacus** is driven by the sun and therefore accurately displays its course through the zodiac. In 2002, on 21st May at 12.58 CEST, the sun entered the zodiac sign of Gemini. This event is illustrated in the diagrams.

The **HELIOS Zodiacus** time display is shown in CET/CEST. The sun's path across the globe shows continuously where the sun is currently at its zenith (the sub-solar point).

The **HELIOS Zodiacus** includes two display screens for the ascending (winter/spring) and descending sun (summer/autumn) and two time rings for standard time (CET) and summer time (CEST).





## HELIOS Meridiana

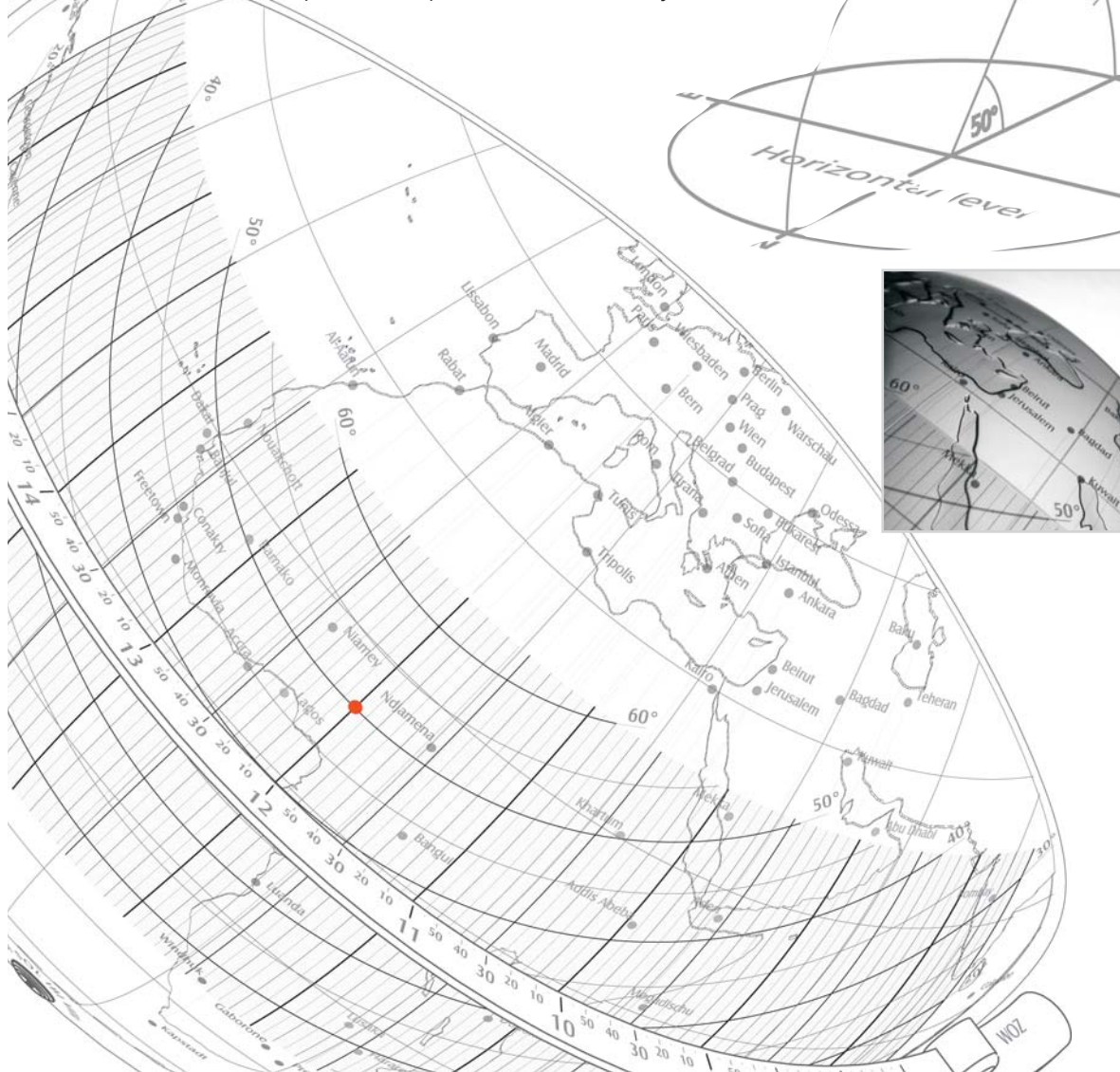
Meridiana is the Italian word for sundial. Like its classical forerunner, this world noon sundial shows the apparent solar time at the sundial's location. The sundial in the illustration is located in Wiesbaden and displays 12:00 hours apparent solar time. By definition, at this point in time the sun is passing through the meridian. This means it is true solar noon in Wiesbaden and the sun is directly to the south.

Important capital cities and the longitude on which they are situated are engraved on the globe. You can observe the moment of true solar noon for a particular city by watching the point of light as it traverses the longitude of the city.

The point of light on **HELIOS Meridiana** also shows the sun's current altitude above the location's horizon. In the example illustrated, the altitude is  $50^\circ$ , this is the meridian altitude (culmination) of the sun on this day.

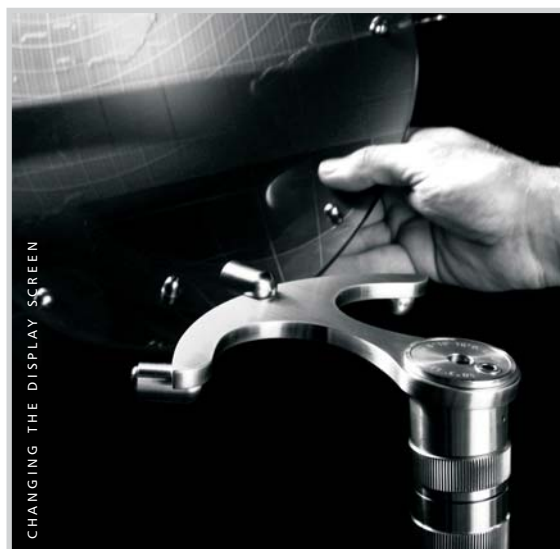


## HELIOS Meridiana



## HELIOS - the sundial with a system

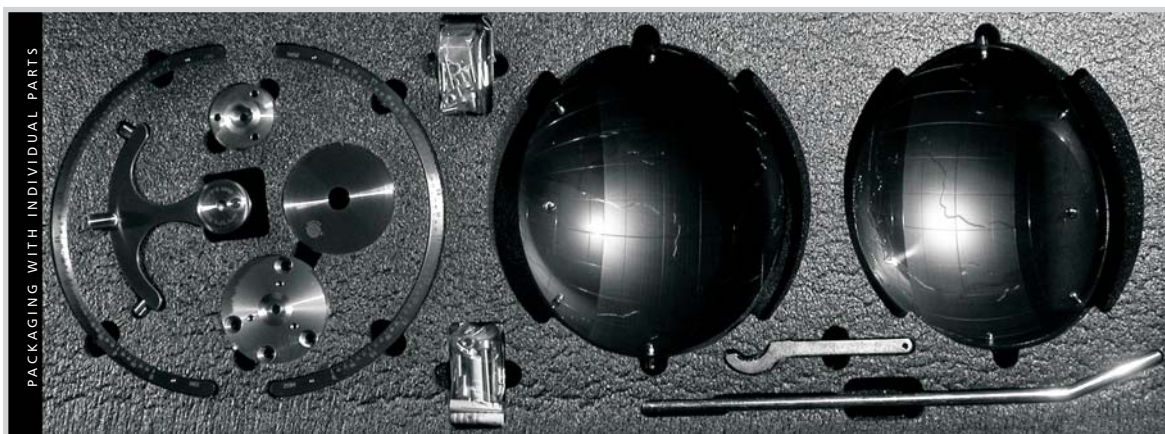
The **HELIOS** sundial display screen is attached to its support at three points. Both of the outer steel balls of the globe are held in magnetic sockets, while the middle connection is secured with a screw. This three-point attachment guarantees that the globe is always positioned correctly and ensures that the display is absolutely accurate. You can change the display screens in next to no time.



CHANGING THE DISPLAY SCREEN

The **HELIOS** system offers the advantage that all models can be used on one support and alternated as required. For example, on one day you may choose to read the exact Central European time and date on the **HELIOS Subsolaris**, the next day you can track the path of the sun through Madrid's meridian and read off the altitude of the sun. To do this, you simply place the **HELIOS Meridiana** display screen onto the support. Once you have changed over the screens, the display is immediately correct - there is no need to adjust the sundial.

If you already own a **HELIOS** and would like to purchase complementary display screens, you can do so anytime. You just need to send us the sundial's mirrored head, and we will manufacture new screens for your sundial.



PACKAGING WITH INDIVIDUAL PARTS

## Calculating the co-ordinates

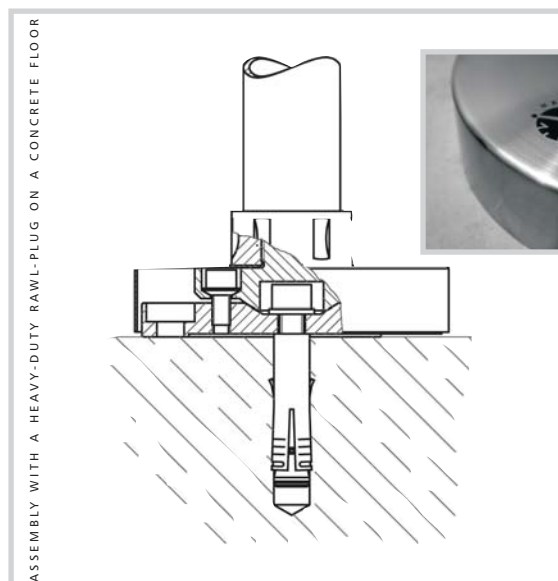
The accuracy of the sundial is conditional on our knowledge of the exact geographic co-ordinates of the desired location. We can calculate these using your address information and will send you a city map indicating your specific location for you to check.



## Installation of the sundial

The sundial is delivered as a compact package including assembly material and tools. You can carry out the installation and adjustment of the sundial yourself, using the extensive illustrated instructions.

Choose a place in the sun for your sundial - on your balcony or in the garden. A place in which the sun shines all day, if possible, and no houses or trees overshadow the location.



ASSEMBLY WITH A HEAVY-DUTY RAWL-PLUG ON A CONCRETE FLOOR



The sundial must be solidly connected to the floor or ground. The appropriate securing device is available for whatever flooring consistency prevails.

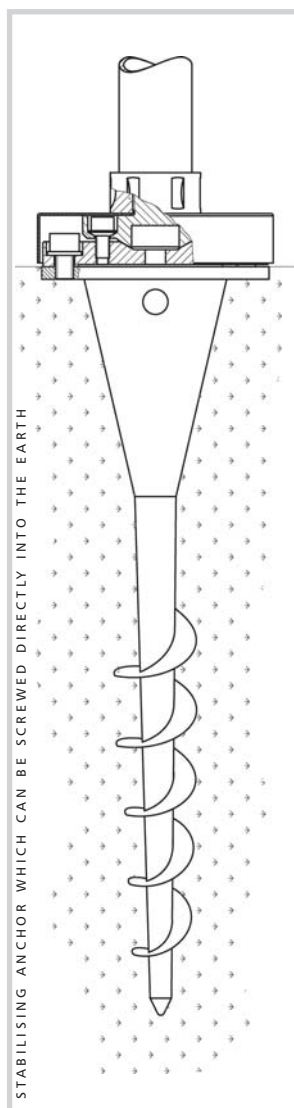
- > Concrete floor (balcony) and natural stone with a solid structure (e.g. granite) - a central heavy-duty rawl-plug
- > Less solid flooring (e.g. tiles): three universal rawl plugs
- > Earth: stabilising anchor to be screwed into the ground (included in the package)

All materials and tools required for the installation are included in our delivery package. To install the rawl-plugs you will need a hammer drill or a concrete drill (12 mm for the heavy-duty rawl-plug and 10 mm for the universal rawl-plug).

The installation of the stabilising anchor affords you the simplest and most flexible option of securing the sundial in the ground. Since the stabilising anchor is easy to remove, you are free to move the sundial to a different place, which may be sunnier or which you prefer.

If subjected to heavy rainfall or frost, the sundial may become "out of synch". This is easy to verify using the built-in spirit level, and the sundial can of course be re-adjusted to its correct position.

In the long term, we recommend the use of a frost-proof concrete foundation rather than the ground stabilising anchor. This foundation should be 80 cm deep and have a diameter of at least 10 cm. Once the concrete has hardened for at least 5 days, the heavy-duty rawl plug included in the package is set and the sundial secured. We recommend the use of a plastic drain pipe as a moulding within the concrete, to prevent the concrete from splitting when descending the rawl plug. The foundation can be laid by a bricklayer or garden landscaper.



Once the sundial has been installed, the final adjustment is carried out. Using the built-in spirit level, the sundial is set to the horizontal and then adjusted to the correct time. A compass is not required.

### *Helios installation service*

We can also carry out the installation and adjustment for you. We advise you on the selection of your location and assemble and adjust the sundial. We give you a detailed demonstration of its functionality and explain how to change the display screens at the solstices, and the time rings at the change-over to winter and summer time.

If you wish to make use of our installation service, we ask you to observe the following requirements:

- > To install the sundial, the sun must shine at least for some time during the day of the installation. It is best to arrange an installation appointment at short notice, depending on the current weather report. If there is no direct sunlight in spite of a positive weather forecast, we will install the sundial and instruct you how to adjust the sundial when the sun is shining.
- > If you want the sundial to be installed on a concrete base (see above), this should be set at least five days before our installation.

### *The Helios moving service*

Moving to a new location means that the display screen showing the time and date scale cannot be used there, since the geographic co-ordinates used to calculate the sundial are no longer correct.

In such a case, we offer our moving service, which includes the following elements:

- > Calculation of the geographic co-ordinates for the new location
- > Production of new screens (ascending and descending sun)
- > Engraving of the new geographic co-ordinates.

In order to do this, the head of the sundial complete with mirror must be sent to us.

## Engraving the sundial

Each sundial is calculated and manufactured for its specific location. Only at this location will it display the time, date and exact zenith position of the sun. This means that each sundial is unique.

The engraving on the display screen and on the head of the sundial show for which location the sundial has been produced.

At your request, we can add additional engraving to the **HELIOS**.

## Standard inscriptions

The sundial's location according to its geographic co-ordinates is engraved on the globe.



The geographic co-ordinates are engraved in a circle around the head which holds the mirror and the spirit-level.



## Customised inscriptions

Would you like to express your personal motto on the sundial? Or do you want to cause people to pause for thought with an epigram? Your own name or a personal dedication could also adorn the sundial.

We offer two options for placing the engraving.

> On the display screens: in this case, you can choose two different mottos, one for the winter-spring screen and one for the summer-autumn screen.



> On the stainless steel base of the sundial.



## Example of inscriptions

UBI SOL IBI VITA  
Where there is sun, there is life

NIHIL SINE SOLE SOLET  
Nothing comes to pass without the sun

VIVERE MEMENTO  
Remember to live

CARPE DIEM  
Seize the day

## Sundials

### HELIOS *Subsolaris* .....2.950,00 EURO

Sundial with display of CET/CEST, date and sub-solar point. Two display screens for ascending and descending sun, two time rings for CET and CEST. Also available with GMT display. Stainless steel support, weatherproof acrylic glass display screens.

### HELIOS *Subsolaris 4* .....6.450,00 EURO

Sundial with CET and CEST display, date and sub-solar point. Four display screens for a leap year cycle (4 years), each for ascending and descending sun, two time rings for CET and CEST. Also available with GMT display. Stainless steel support, display screens made of weatherproof acrylic glass. Robust storage case for additional display screens.

### HELIOS *Zodiacus* .....2.950,00 EURO

Sundial with CET and CEST display, sun's position in the zodiac and sub-solar point. Two display screens for ascending and descending sun, two time rings for CET and CEST. Also available with GMT display. Stainless steel support, display screens made of weatherproof acrylic glass.

### HELIOS *Meridiana* .....2.550,00 EURO

Sundial displaying apparent solar time at the location, sun's altitude and sub-solar point. Stainless steel support, display screens made of weatherproof acrylic glass.

### Additional display screens for the *Subsolaris* and *Zodiacus* models .....1.290,00 EURO

Two display screens which can be used on the support of the different models.

### Additional display screen for the *Meridiana* model .....890,00 EURO

One display screen and a time ring (apparent solar time), which can be used on the support of a different model.

### Additional supply: basic price for additional order .....300,00 EURO

Only payable as an additional order on a previously purchased HELIOS sundial. Price for preparation and new measurements of the re-supplied head to produce new display screens.

## Inscriptions

### Inscription display screen .....240,00 EURO

Inscription of the display screen for ascending and descending sun as circular inscription below the display scale. Up to 60 characters, longer text on request.

### Additional price for different inscriptions .....60,00 EURO

For differing inscriptions on the two display screens.

### Inscription on the cover of the sundial base .....150,00 EURO

Inscription on the stainless steel base cover. Up to 100 characters, longer texts on request.

## Service

### Installation service: Basic price .....690,00 EURO

Consulting on the sundial's location, assembly and adjustment of the sundial. Detailed instructions.

### Installation service, travel costs per kilometer .....0,45 EURO

Please ask about our service partner nearest to your location.

### Relocation service: Basic price .....300,00 EURO

Calculation of the geographic co-ordinates for your new location. Preparation and new measurement of the support to manufacture new display screens. Replacement of the head cover and engraving of the new geographic co-ordinates.

### Relocation service: Manufacture of new display screens, per screen .....480,00 EURO

Manufacture of display screens at the new location, special price.

Within the European Union: All prices include VAT, packaging and postage.