

SPECIAL OFFER
THB 235.150
More info on the last page



CREATING
A CLIMATE
FOR GROWTH
PRIVA

> PRIVA COMPASS
The solution for perfect crop control

modern greenhouse technology
THAI GREENWORK

Luiten Projects

WWW.PRIVA.COM/HORTICULTURE



> PRIVA COMPASS

Point your crops in the right direction

The world population continues to increase and climate conditions continue to change. These factors not only make successful crops ever more important, but an even greater challenge, too. To grow more efficiently, use water and energy optimally and produce vegetables, fruit, and ornamental plants safely, you need to use the right technology. The number of covered and irrigated crops have increased drastically over the last few years, and this trend will continue for the foreseeable future.

To get the most out of your installations and systems, a process computer is an essential part of your cultivation. Besides the optimization of your growing process, there are more demands a modern process computer should meet. Your computer should be flexible and able to adapt to your expectations. Reliability is key, but of course, you want a computer that's user-friendly, too. After all, you'll be using it every day, so you want it to be easy to operate.



An optimal control for every process

The Priva Compass process computer was developed to control not just irrigation, but climate, light, and CO₂ as well. Priva Compass is made up of compact and flexible hardware and software modules and is incredibly easy to operate. It's perfect for monitoring your processes any time of the day. With its ultra-modern technology and affordable price point, Priva Compass is the only one of its kind on the market today. Thanks to the built-in Wi-Fi network, you can operate the computer from any device at any time.



Who is Luiten Projects?

We're here to help business owners take the next step in developing their enterprise. Whether you're a grower in Thailand with a plastic multi-span greenhouse, a Chinese breeder with a simple but efficient solar greenhouse, or a horticultural entrepreneur with a high-tech closed greenhouse system in the Netherlands: Luiten projects has a suitable solution for you. With every step we take together with our clients, our top priority is more profit per square foot while using less energy and recycling water as much as possible. Whether you're growing ornamental plants (like flowers and potted plants) or healthy, high-quality fruits and vegetables, Luiten Projects provides the solutions that help you optimize indoor climate, water recycling, energy savings, and labor registration. Streamline your business with process computers, air treatment systems, fertilizer dosing systems, workplace automation, and management information systems.

A global network of partners

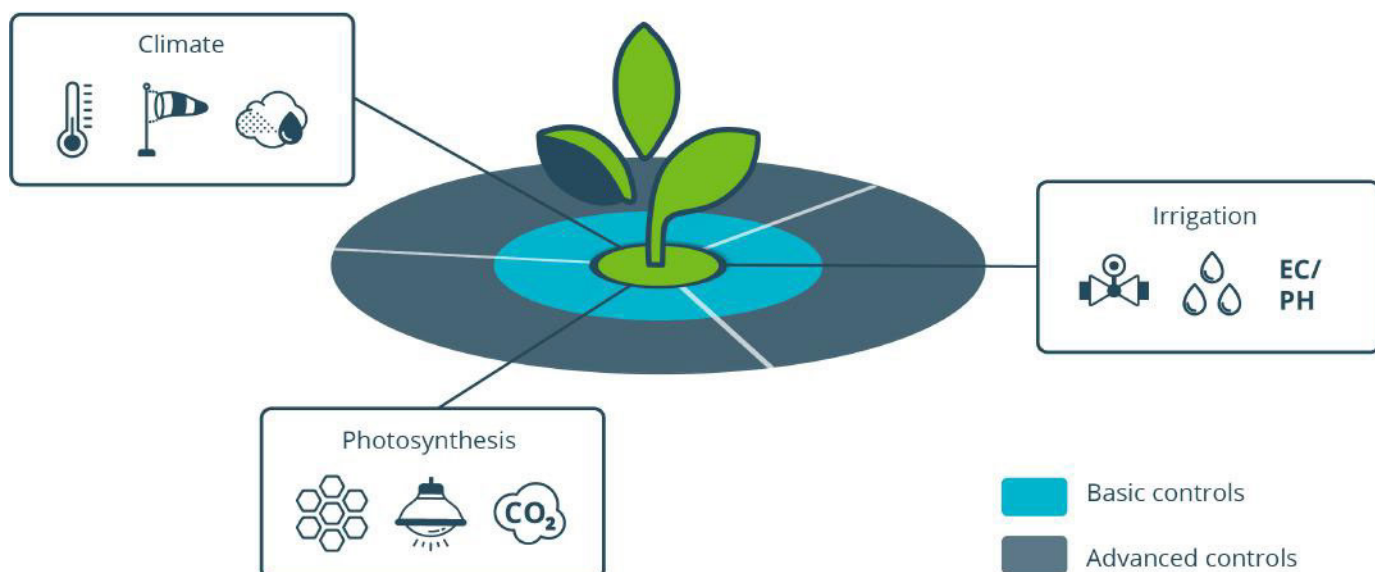
Of course, we don't work in isolation. Together with our certified partners, we're ready to help you. In Thailand is our reliable partner Thai Greenwork. Whether you need advice, technical installation, maintenance, training, or long-term service, we're here to give you the support you need.

Priva Compass in three steps

Deciding on the right Priva Compass for your crops is simple:

1. Select your themes: Irrigation, climate, photosynthesis, water, and/or energy
2. Select your level: Basic or advanced
3. Select the I/O modules that are crucial to your installation

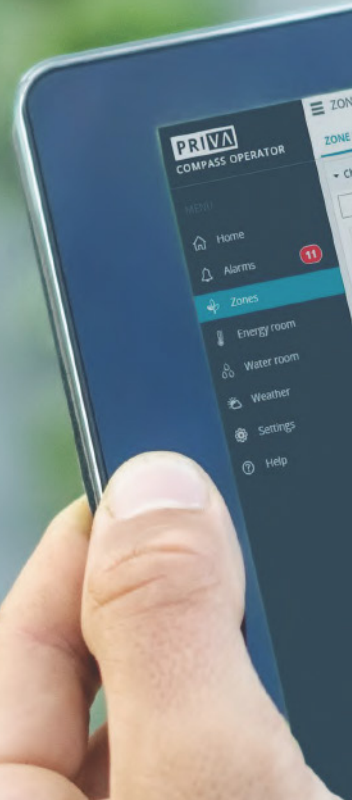
This will give the perfect solution for you, your crops, and your ambitions.





POINT YOUR CROPS IN THE RIGHT DIRECTION

- > Your crops in the spotlight
- > Flexible and future-proof
- > Local and cloud operation
- > Easy to use in every way
- > Easy installation
- > Priva quality and service



Crop control software

Within a crop zone, everything revolves around the crop. Using the crop zone control modules that are part of Priva Compass, you can operate your installations directly to control the amount of light, water dosage, and/or the humidity level and temperature within a crop zone. Priva Compass can control four zones by default. Of course, it is also possible to make the system suitable for multiple crop zones. Priva Compass supports standard one weather station. In addition, two universal measurements and two universal time programs are being supported per zone. This allows Priva Compass to be used universally.

For every crop zone and every theme, you can select basic or advanced modules.

Irrigation module

Water is essential for any crop. With the irrigation modules, you can adjust the right amount of water at the right time, to the perfect combination for your crop. No more dehydration or poor root development.

Basic irrigation module

The basic irrigation module lets you set one starting strategy for up to ten irrigation valves. Set the starting strategy to start irrigation manually or automatically, based on a weekly schedule, time, amount of radiation, or radiation sum.

The basic irrigation module is ideal for outdoor crops and crops that require manual and planned irrigation, such as trees, potted and bedding plants, and a number of types of cut flowers.

Advanced irrigation module

When your irrigation process becomes more complex or scales up, you could consider using the advanced irrigation module. This module supports up to forty irrigation valves and ten starting strategies. What's more, the module lets you optimize your starting strategies using one drain sensor and up to ten moisture sensors. You can even connect up to forty drain valves.

The advanced irrigation module is especially suited to large-scale cultivation and cultivation on substrate using a mostly automated irrigation process, such as the cultivation of vegetables, cut flowers, and soft fruit.



Climate module

The environment conditions are important for the performance of your crop. With the climate modules, you can simply control and optimize temperature, air humidity and airflow. Now your crop can develop itself optimally with minimal risks of diseases.

Basic climate module

The basic climate module lets you control the climate in one zone of your crop area. Use it to control two groups of vents, two cooling stages, two groups of hot-air heaters, and one screen based on one temperature and humidity measurement inside the greenhouse over two periods within one 24-hour period. The basic climate module is perfect for use in garden centers and tunnel greenhouses, and ideal for the cultivation of bedding plants and trees.

Advanced climate module

The advanced climate module has everything you need to fully control a crop area. All controls are based on four periods per day, with the possibility of installing four measuring boxes per crop zone. Using this module, you can control four vents, six cooling stages, four groups of hot-air heaters, and two wire beds with two screens each. In addition, you can connect four more temperature sensors, four plant temperature sensors and four separate heating systems. The module supports four mixing valves for use with tube heating.

To even out your climate, you can also manage fans. The mist and humidity strategy control lets you manage humidity levels in your greenhouse. You have the possibility to connect up to twelve temperature influences. The advanced climate module offers you a great deal of flexibility based on outside parameters and its fully configurable custom control programs. You could, for instance, set the fans to stop running when the vents are opened. In this way, the module allows you to attain the perfect climate at any given time.

The advanced climate module is perfect for you if you run a complex installation for the cultivation of cut flowers, vegetables, or house plants in plastic or glass greenhouses.





Photosynthesis module

Photosynthesis is the starting point of every crop. With the photosynthesis modules, you can control and optimize light and CO₂ to have the right balance in your photosynthesis process. This results in a higher quality of your crop and a higher yield.

Basic photosynthesis module

The basic photosynthesis module lets you control one growing light circuit within one system. You can select manual switching or a lighting strategy that switches based on time or radiation intensity. To keep your climate stable during lighting, your lighting strategy control can also manipulate your temperature strategy control.

The basic photosynthesis module is ideal for the cultivation of various cut flowers and a number of ornamental plants in (plastic) multi-span greenhouses and glass greenhouses.

Advanced photosynthesis module

Do you want to control multiple growing light circuits or dose CO₂? Then the advanced photosynthesis module is the perfect choice for you. This module lets you manage up to four growing light circuits, based on manual switching, time, or radiation intensity. CO₂ dosing is automatically controlled based on high or low radiation levels.

The advanced photosynthesis module is the key to optimizing your photosynthesis. This is especially beneficial for the cultivation of cut flowers, vegetables, and various ornamental plants in glass greenhouses.

Technical installation control software

Water and energy are scarce, but necessary for your growing operation. With Priva Compass, you can control your water systems and boilers with minimal use of those natural resources. This is not only sustainable, but will also save you a lot of money.

Energy module

The realization of an optimal climate is indispensable without energy. With the energy modules, you can control your boilers in the most efficient way.

Basic energy module

If your system makes use of heating tubes, your heat is probably supplied by a boiler. If this boiler has its own control system, you only need to manage the pump and you'll find the basic energy module is great for you. This module can control up to two boiler pumps.

Advanced energy module

Using the advanced energy module, you can control not just the pump, but the entire boiler with Priva Compass. This module handles up to four boilers plus one heat manifold. In addition, the advanced energy module offers completely customizable control programs. These programs allow you to control other installations based on the status of your energy installation. It's the flexibility you need to respond to your crop's specific needs.

Water module

At the moment your crop needs irrigation, you need to have a water system in place to supply it. With the water modules, you can provide your irrigation valves with the right amount of water and fertilizers.

Basic water module

Using the basic water module, you can control one pump and connect one flow sensor. It's the ideal water module to use if your water system has its own controls, when you don't apply fertigation, or when you use mechanical dosing systems.






Advanced water module

If you're looking for a water system with automatic fertilizer dosing, the advanced water module is what you need. This module supports not only pump control and flow measurement, but up to five dosing channels. Use them to add EC, acid, lye, or other fluids based on your flow, EC, or pH measurements. You can configure and use up to eight irrigation recipes.

Using completely customizable control programs, you can control other installations based on the status of your water installation. The advanced water module is perfect for you if you want a completely integrated way to control and manage your dosing channel water system.

Enterprise water module

If you use more than five dosing channels, the Enterprise water module is your ideal choice. It has all the features of the advanced water module, plus an extension of three dosing channels so you can control up to eight channels at a time. On top of that, this module supports EC pre-regulation software. With the Enterprise water module, you can manage up to eight silos and one filter flushing program. In short, this module gives you everything you need to control an enterprise water system.

	IRRIGATION	CLIMATE	PHOTOSYNTHESIS	ENERGY ROOM	WATER ROOM
Basic	 Irrigation valves 10 Irrigation strategy 1	 T/RH measurement 1 Strategy Periods 2 Vents 2 Cooling stages 2 Curtains 1	 Lights 1	 Boiler pump 2	 Water supply pump 1 Flow sensor 1
	Irrigation valves 40 Irrigation strategy 10 Irrigation sensors 10 Drain valves 40 Drain measurement 1	T/RH measurement 4 Strategy Periods 4 Vents 4 Cooling stages 6 Curtains 2x2 Local temp. sensors 4 Localized heating 4 Soil temp. sensors 4 Soil heating 4 Mixing valves 4 Recirculation fans 1 Misting valve 1 Humidity strategy 1 External overrides 2 Custom control progr. 6	Lights 4 CO dosing 1	Boiler pump 4 Boiler control 4 Ring line valve 1 Custom control progr. 6	Water supply pump 1 Flow sensor 1 Dosing channels 5 Custom control progr. 6
Advanced					Water supply pump 1 Flow sensor 1 Dosing channels 8 Custom control progr. 6 EC pre control 1 Irrigation tanks 8 Backwash control 1

Hardware installation

The Priva Compass is available in two basic versions: Priva Compass 2S and Priva Compass 4S. In addition, it is also possible to expand the Compass system with a Compass 2X or 4X, in order to control multiple crop zones. Depending on the number of crop zones, measurements and controls you need, you can select the version most suited to your situation.

Every Priva Compass 2S/X or 4S/X comes with the following:

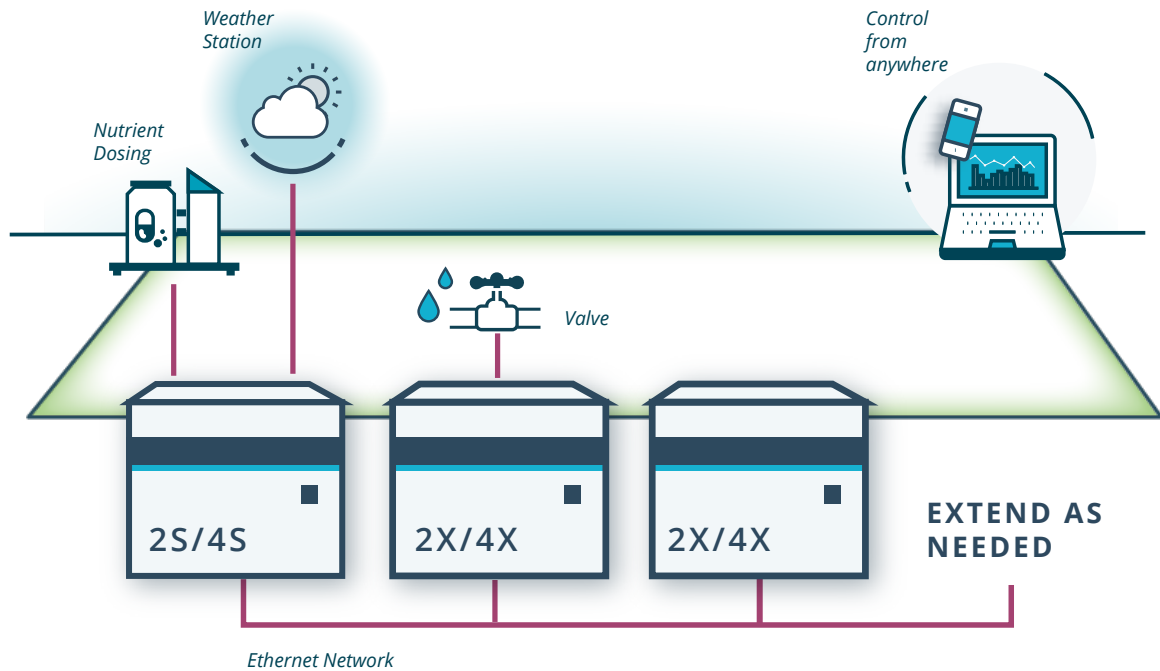
- > Priva Gateway (only in Compass 2S/4S)
- > Priva Blue ID C4 controller(s)
- > Flexibility thanks to small I/O modules
- > Multi-voltage power 100-230 Vac 50-60hz
- > Separate power supply to Priva Compass and field devices (two 24 Volt DC supplies)
- > Industrial quality enclosure



Priva Compass 2S



Priva Compass 4S



Control

Priva Compass uses a Priva controller: The Priva Blue ID C4 controller. You can expand it with various modules: A mixed I/O module, a universal input module, and a relay output module. As the modules are easy to install and the system is transparent and user-friendly, set-up and commissioning are wonderfully simple. The main controller uses a powerful microprocessor and a combination of various inputs and outputs. Depending on your specific needs, you can choose to expand the controller with universal input modules and/or relay output modules.

Priva Gateway

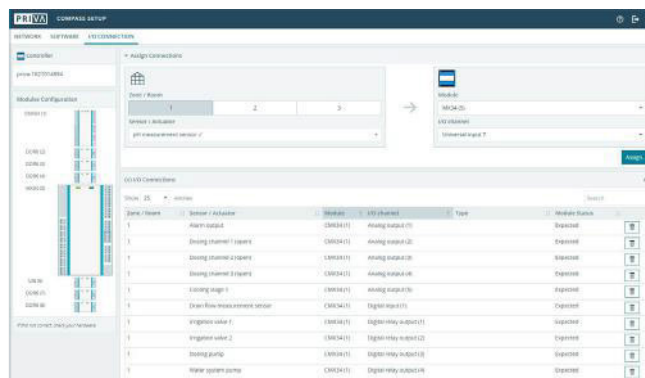
The Priva Gateway is the platform on which the user interface application Priva Operator runs. The Priva Compass installation application is also available via the Gateway. Like Priva Operator, it is a web-based application, meaning you don't have to install a separate application on your local device. The Gateway also secures the storage of historical data and is equipped with the foundation for a connection with the Priva cloud environment, enabling you to control the system remotely. The Gateway is an industrial-quality PC that allows for fast and reliable management of your system. This PC is the divider between the technical control network and the client network. It's this division that allows the Priva Compass system to operate independently from the rest of the network, making it an extremely reliable system.

Priva Compass setup

After you've installed the hardware, setting up your software is next. All too often, you come across highly technical applications you have to battle in order to get the system up and running. But when we developed the Priva Compass, we paid special attention to making this process as simple and straightforward as possible. First, you select and install the right software module. Thanks to our modular system, building your perfect package is a breeze. Based on this package, you only have to enter your Blue ID C4 serial number and we'll send you an activation code (license key).

You enter this activation code in the Priva Compass setup tool. Next, the software modules you selected become available in the application. You're free to assign modules to your various zones, exactly how you see fit. Based on your choices, the I/O assignment list is filtered accordingly. That means that controls that aren't available in the software aren't shown in the I/O list, so the process is clear and transparent every step of the way.

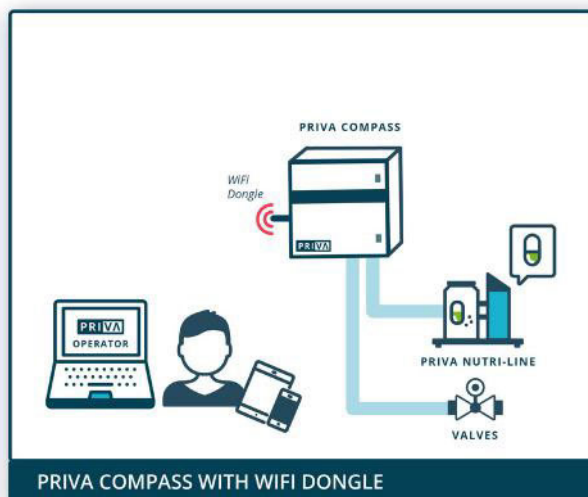
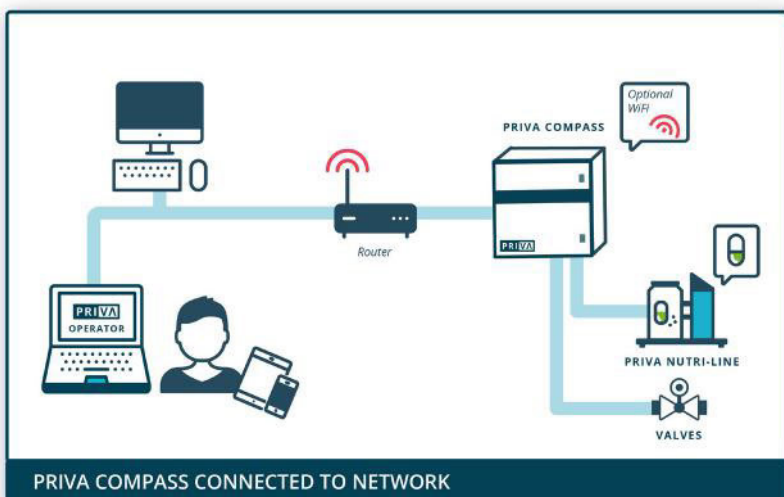
Next, you select the zone in which you want to connect an actuator or a sensor and if needed, you select the type. The setup tool will automatically generate a proposed I/O point for you to connect your sensor or actuator. Of course, you can select an I/O point yourself if you prefer. When you save this configuration, it's added to the I/O list and your control is immediately visible in Priva Operator. When you've completed the installation, one press of a button will save the I/O list as a PDF file or Excel spreadsheet to make maintenance and possible errors that much easier to handle.



Priva Compass Operator

Gone are the days when all we used were desktop computers. In all probability, you use different devices for different goals: Your smartphone, your tablet, and your PC. Priva Compass is made for you.

You can use Priva Compass Operator on any device that has an Internet browser. This way, you can operate your installation from anywhere, at any time. The application automatically adapts to your screen size. No wired or Wi-Fi network available? No problem! Priva Compass comes equipped with built-in Wi-Fi hotspot functionality, enabling you to control your Priva Compass system wirelessly from within a radius of about 30 feet (10 meters).



Dashboards for easy operation

Whichever device you use, you always have insight into your operation in the form of a clearly laid-out dashboard. Your dashboards show you the information that is most relevant to you in a clean and simple layout. Thanks to the clear interface with intuitive dashboards and graphs, it only takes a glance to see the status of the various components of your system, including the components that may need adjusting. The dashboards give you control over all the parts connected to your installation, leaving you in charge of your processes at all times.



Historical data and alarms

When we developed the Priva Compass Operator, we didn't just focus on making it as user-friendly as possible. We also made sure you can use it to generate excellent graphs and reports. Once you have insight into your process and you're able to analyze it, your job suddenly becomes a lot easier.

For every setting within the Priva Compass Operator, there is a clear predefined graph, enabling you to quickly analyze the process. In addition, graphs have a Quick Analysis function. This lets you add graph lines based on pre-defined sets. For instance, consider combining the vent controls with your weather station data and use it to optimize your strategy. Priva Compass Operator stores all your data for 14 days, so you can come back at a later date to analyze your past processes.

Of course, Priva Compass Operator comes with a crystal-clear alarms page. If one of your processes is not going as planned, an alert will appear in the alarms overview. This tells you the location the alarm occurred, the time and date, and more. You can search the alarms page and filter for specific types of alarms. This helps you take appropriate action right away so all your processes run as desired.

The easiest setup

We've created a number of different scenarios within Priva Compass Operator. By combining separate settings, it's now easier than ever to understand the relationship between settings and use that knowledge to benefit your crops.

AIR TEMPERATURE ALARM

Trigger if temp sensor 1 rises above or falls below

Manual operation

Even though your system runs automatically, you can always manually override it to take control of your process. In Priva Compass Operator, there are manual overrides for every connected installation. This feature of the software allows you to see the results of your manual override instantly. Your actions are reflected on the dashboard too, making sure you're always completely on top of your system's status.

We're ready to help you if you have any questions about your Priva Compass. Simply pick one of two possibilities:

- > Online help. This help function will always contain the latest support information. Please note that your Priva Compass needs an Internet connection for this feature.
 - > Offline help. You can install the support documentation on your system. Go to support.priva.com to download all currently available documentation.
-

Browser

- > All internet browsers, Google Chrome is preferred
- > Maximum number of clients: 8

Units

- > Date notation: D-M-Y, M-D-Y, Y-M-D
- > Time notation: 24 hours, AM/PM
- > Temperature: Celsius, Fahrenheit
- > Velocity: Feet per second, km/h, knots, m/s, mph
- > Evaporating pressure: Pascal, bar
- > Pressure: Pascal, bar, psi
- > Volume: Liters, US gallons

More information?

Go to support.priva.com for more information and available languages.

This offer includes

1x Climate basic suitable for 1 compartment including Measuring box with Temp and RH sensors.

1x Irrigation basic suitable for up to 10 irrigation valves

1x Waterroom basic suitable for 1 irrigation pump and flow sensor

1x Weather station

1x Compas S2 cabinet including Controller with onboard I/O; 8 universal inputs, 12 Digital inputs, 6 analog outputs and 8 digital outputs.

This set is expandable for multiple compartments.
Prices on request.

*Transport in Thailand not included in price.

CABLING AND INSTALLATION NOT INCLUDED DIY PRICE.

***INSTALLATION AND CABLING PRICE AVAILABLE ON REQUEST.**

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