

# Renewable technology



EVACUATED TUBE SOLAR THERMAL COLLECTORS \ ON TILE & INSET FLAT PLATE SOLAR THERMAL COLLECTORS \ AIR SOURCE HEAT PUMPS \ PRE SALES SUPPORT

For low carbon space and water heating





comfort



# Vokèra renewable products provide low carbon heating and hot water systems for domestic and commercial applications.

Vokèra is recognised for the quality and reliability of its products, from condensing boilers to unvented cylinders and solar thermal to air source heat pumps.

Vokèra is committed to reducing energy consumption and are focused on producing products that minimise impact on the environment.

With a wealth of experience in home heating, Vokèra is able to provide the product and the knowledge to ensure a reliable and successful installation.

By offering a range of solar thermal collectors and air source heat pumps, Vokèra can supply you with the product you need to make the most of sustainable energy resources, while the experienced Vokèra Pre Sales team support each project from start to finish.

Be it for one home or one hundred, you can trust Vokèra to provide the complete and correct renewable energy system for you.

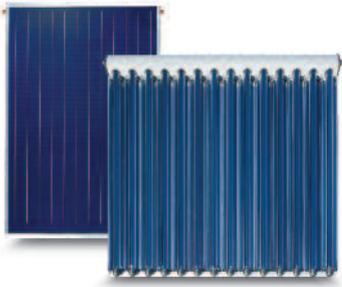


# Vokèra renewable portfolio

## Support from concept to completion

### Zenith solar thermal range

Our high grade MCS approved solar thermal collectors maximise energy efficiency and meet the approved standard of BS EN12975 and have the Solar Keymark seal of approval.



Flat plate and evacuated tube collectors

**Zenith 'evacuated tube' collectors** - Vokèra Zenith evacuated tube collectors are made up of 14 double sleeve evacuated glass tubes. Evacuated tubes can be more efficient than flat plate collectors in colder, less sunny parts of the UK and are suitable for retro fit and new build applications.

**Zenith flat plate collectors for 'on tile' and 'inset' applications** - Vokèra Zenith on tile flat plate collectors and inset flat plate collectors are of high build quality and are designed to use both direct sunlight and daylight to gain the maximum amount of energy throughout the whole year. Zenith on tile collectors are more suited to retro fit applications and inset collectors to new build applications or for those requiring a more discreet finish.

### AriaPRO air source heat pump range



\*Dependent on ambient outside temperature

Our MCS approved AriaPRO air source heat pumps are available in 5 outputs from 4kW to 15kW and have been designed for both easy installation and simple end user operation. Sited outside a property without the requirement for extensive installation preparation, the AriaPRO range is the ideal renewable solution for both new build and retrofit applications.

As well as providing space heating through an underfloor heating or radiator system, the AriaPRO range can also significantly contribute to satisfying the domestic hot water requirements when connected to a water cylinder, by achieving flow outlet temperatures of up to 60°C.

The AriaPRO is extremely energy efficient and can reach a CoP (Co-efficient of Performance) of 4.2\*, i.e. 1kW of electrical energy can provide 4.2kW of heat output or £1 of electricity can provide over £4 of heat. The appliance can be effective in temperatures ranging from -20°C to +30°C and will therefore continue to provide heat even in the cold winter months.

### Pre sales support for domestic and commercial applications

The Vokèra Pre Sales support team offer advice on a range of products and applications to engineers, architects, specifiers and developers, ensuring you get the correct guidance and reassurance when choosing a solution for your project.

To ensure that your installation is reaching its energy efficiency potential the correct product and output must be specified. The Vokèra Pre Sales team will carry out a complete survey of your project and provide a bespoke report detailing the energy efficiency and potential energy savings of the installation, a complete bill of materials, and they can also provide on-site assistance and support with product assembly and commissioning.

Contact the Vokèra Pre Sales team: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)





# Renewable technologies

## Providing heating and hot water systems for the future

*Almost one third of the UK's carbon emissions come from the energy we use in our homes, with hot water and central heating accounting for over 70% of this.*

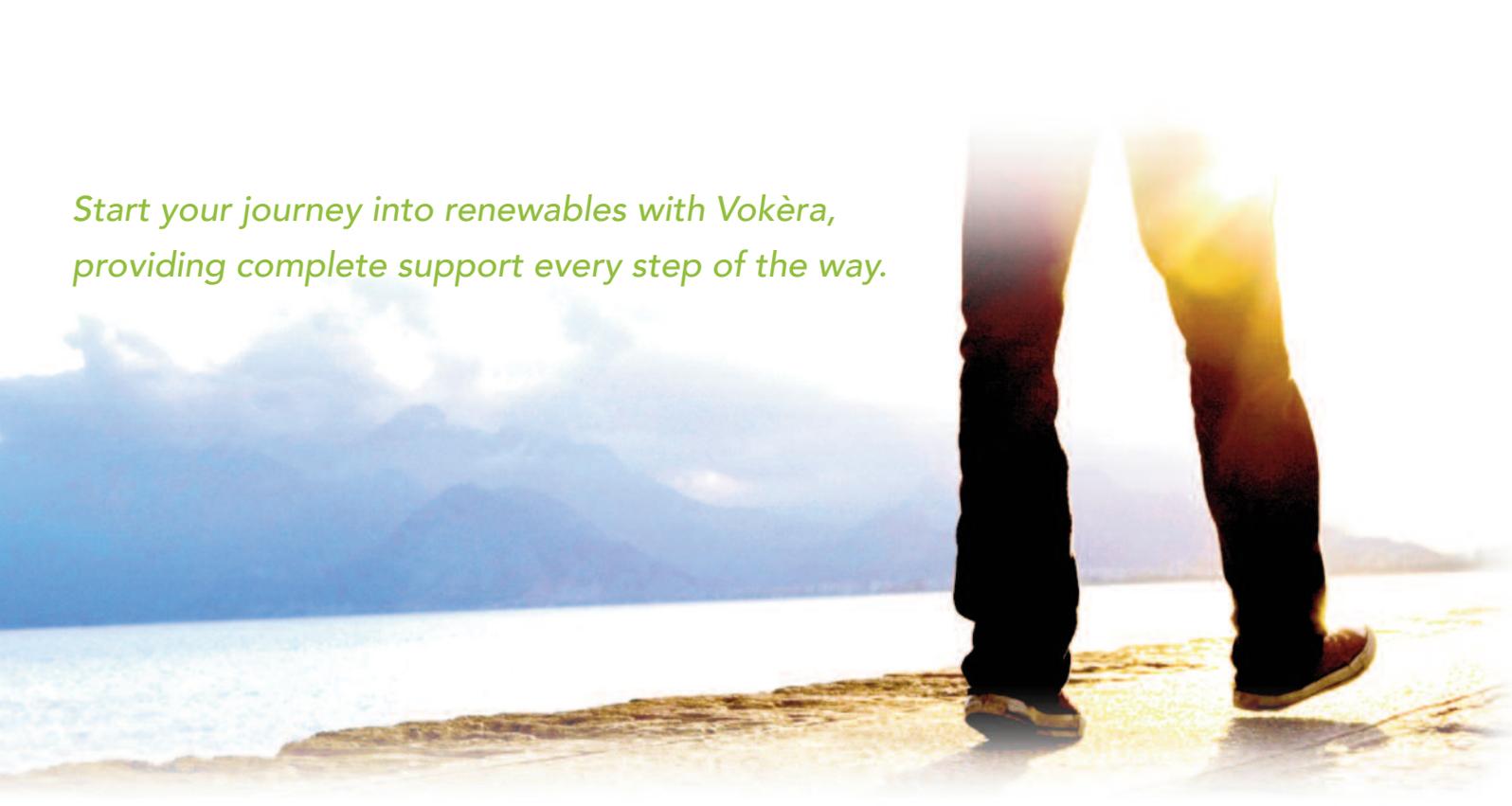
With fuel costs continuing to rise and natural energy resources depleting we need to be considering alternative, sustainable and more efficient ways of providing energy. With the Sustainable Energy and Climate Change Bill aiming to cut CO<sub>2</sub> emissions by 80% from 1990 levels by the year 2050, legislation has been introduced to ensure that homes are becoming as energy efficient as possible.

Not only does the UK have to meet carbon emission reduction targets but we are all having to deal with rising energy costs. While legislation will enforce the integration of renewable technologies into new build projects, the issue of improving the energy efficiency of existing homes is a major concern with 87% of UK homes still likely to be around in 2050.

The need to help householders and commercial businesses to improve their energy efficiency has resulted in the Government introducing a number of initiatives that provide financial rewards for installing renewable technology. For the latest information on the funding available, visit [www.decc.gov.uk](http://www.decc.gov.uk).

Before considering the installation of a sustainable heating solution it is important that the property is already as energy efficient as possible and that measures, such as loft and wall insulation, have been taken to minimise any potential heat loss. A heat loss calculation should be completed to get a full understanding of the heating requirements of the property so that the most suitable and correct equipment is specified, ensuring maximum energy efficiency and comfort.

*Start your journey into renewables with Vokèra,  
providing complete support every step of the way.*



# Why choose Vokèra?

## Commercial projects

### Why choose Vokèra?

Vokèra is leading the way in commercial renewable installations with a variety of successful projects, including leisure complexes with swimming pools, hotels, schools, medical centres, churches and in conjunction with district heating. All of these projects utilised the Pre Sales team, ensuring the correct equipment was specified and that Vokèra were there to offer support and guidance throughout the installation.

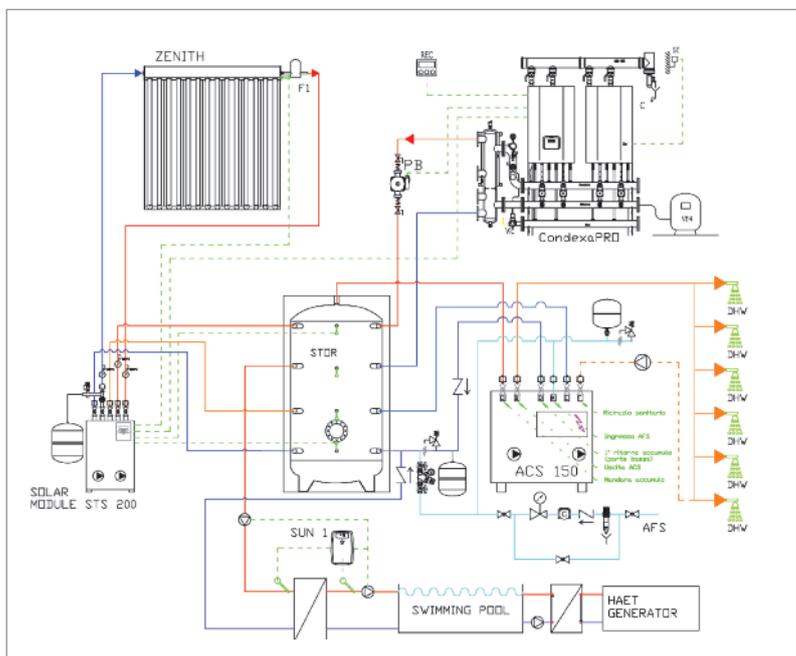
### Pre Sales support for commercial projects

Regardless of the size of your project, the Vokèra Pre Sales support team will provide you with the advice and guidance you need to ensure the most reliable and efficient product solution is specified. Depending on the technology used and the complexity of the installation, the level of support you need will differ, from basic advice to a full bespoke solution. The Pre Sales support team can even attend an initial on site survey and evaluation, on-site assistance and support with product assembly and commissioning.

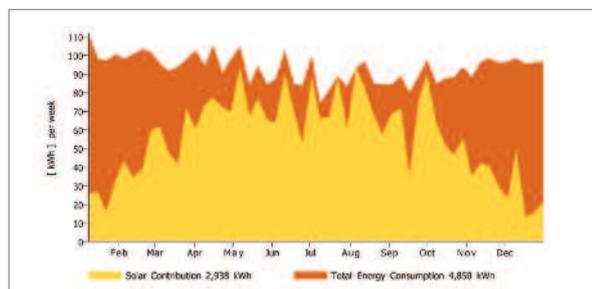
### System design service

A bespoke specification report is provided for every project that utilises the Pre Sales support service. The use of advanced software, such as TSOL and RETScreen, enables the Pre Sales team to provide realistic projections on the potential system efficiency, ensuring the most reliable and efficient solution is specified.

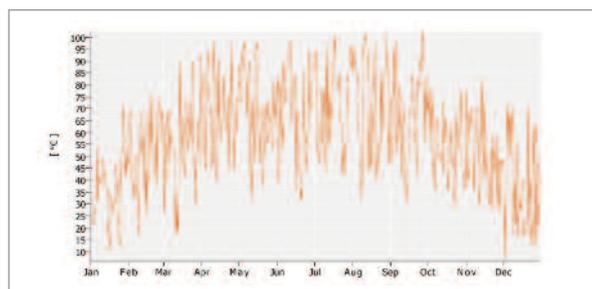
The report also includes a detailed CAD drawing, system efficiency analysis and a complete bill of materials. The below represent examples of the support materials supplied within the report.



Pre Sales CAD Drawing for solar thermal application with Swimming pool



Pre Sales solar application TSOL analysis. Graphical analysis of maximum solar contribution



Pre Sales solar application TSOL analysis. Graphical analysis of maximum collector temperature

### Choosing the right equipment for commercial projects

The equipment required for commercial projects differs to that for domestic applications and Vokèra are able to provide the complete product solution for any size installation.

A range of system components are available for commercial Zenith solar thermal installations, including 300l expansion vessel, 1000l solar thermal water cylinder, buffer store ideal for the accumulation of heating sources, various sized plate heat exchangers and STS200 solar module, ideal for multiple collector installations.

See page 20 for more information on the components available for commercial applications.



# Why choose solar thermal?

## Take the step into solar

### Why choose solar thermal?

Solar thermal has become one of the most cost efficient renewable technologies currently available for reducing CO<sub>2</sub> emissions, harnessing the sun's natural energy to heat water.

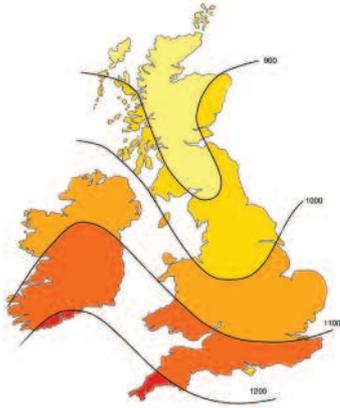


Fig 1 - Source: Solar Trade Association

#### How does it work?

Solar thermal collectors absorb the sun's energy, which is absorbed by the heat transfer fluid that circulates around the collector and pipework to a twin coil cylinder that then heats the domestic hot water. The water is then stored ready for supply to the taps.

When the system does not heat to the required temperature the boiler steps in to make up the difference.

#### How effective is solar thermal in the UK and Ireland?

Fig 1 shows the annual average solar radiation falling on one m<sup>2</sup> measured in kW hours, (UK and Ireland). By installing a solar thermal system you can expect to save on average around 350 to 400kg of CO<sub>2</sub> per year.

Financial returns will depend on a number of factors including; location of the property, positioning of the collectors on the roof, weather conditions and which fossil fuel you are replacing. On average you can expect a solar thermal system to provide between 50 - 60% of the annual hot water requirements for a domestic property.

#### Is solar thermal suitable for my home?

Solar thermal collectors are suitable for a wide range of applications including new build and existing properties. A variety of roof fixing kits and frames are available to suit different roof types and tiles so there is a installation solution for any application.

#### Is solar thermal suitable for my commercial project?

Vokèra are able to provide a solar solution for any size commercial projects as the Zenith solar thermal collectors can be connected into a variety of different series.

#### How can I ensure I make the most out of a solar thermal installation?

Solar thermal collectors achieve optimum performance when positioned on a south facing roof at an angle of 35° and 45°. If this position is not possible a split system could be used whereby one collector would be placed on the east facing side of the roof and another on the west.

The Vokèra Pre Sales team will be able to advise you on the most effective way to position the collectors for your installation and can also provide bespoke reports detailing the potential energy savings available by installing the proposed solar thermal system.

### Choosing the right solar equipment

If you are considering taking the step into solar thermal it is important to:

Carry out a TSOL simulation prior to the solar installation. This ensures the suitability of the solar equipment and identifies the ideal components, Vokèra offers this service.

Check that the product has the Solar Keymark seal of approval as this shows that the equipment fulfils the European Standards and ensures a reliable, quality system that is backed by reliable performance information.

# Why choose Vokèra?

## Zenith solar thermal

### Why choose Vokèra?

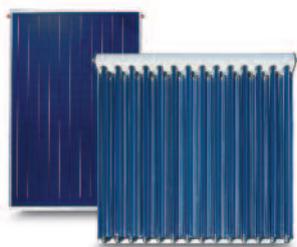


#### Industry approval

Our **MCS approved** high grade solar thermal collectors maximise energy efficiency and meet the approved standard of **BS EN12975** and have the **Solar Keymark seal of approval**.

#### Flexible installation

The Vokèra Zenith solar thermal range consists of flat plate on tile and inset solar thermal collectors and evacuated tube collectors, ensuring there is a Vokèra solar thermal solution for new build and retro fit applications. A variety of support rails and fixing brackets are available to suit pitched and flat roof types and also for the different types of roof tiles, including slate and tile roofs.



Flat plate and evacuated tube collectors

ZENITH BOILER COMPATIBILITY		
Vision S	Verve	Mynute i
Mynute VHE	CondexaPRO	

#### Highest of quality

Zenith collectors are manufactured in house to ensure the highest of build quality and reliability. Zenith flat plate collectors are extremely robust with tempered glass to protect against extreme weather conditions and are backed by a 10 year warranty. The Zenith evacuated tube collectors long working life is enhanced by no metal parts passing through the glass tubes to cause loss of vacuum and is backed by a 2 year warranty.

#### Whatever the weather

Come rain or shine, Vokèra Zenith collectors continue to produce high energy savings. The high build quality, designed to use both direct sunlight and daylight, and a highly selective finish on the copper absorber plate maximises energy performance even on cloudy days. Zenith solar thermal collector systems are pressurised which provides greater flexibility for siting of the collector and a faster reaction time to daylight and sunlight, maximising upon the sun's energy.

Evacuated tube technology provides better efficiency in cooler parts of the UK and Ireland due to their ability to absorb and retain solar radiation, with the tubes working on the same principle as a vacuum flask.

#### Pre Sales support for solar thermal projects

If you are planning a solar thermal installation for one property or hundreds, the Vokèra Pre Sales support team are able to provide the advice and guidance you need.

Information regarding the installation is input into a simulation software that processes the data and the findings are submitted to you in a bespoke specification report.

The report will document potential annual results including proposed collector power, natural gas savings, system efficiency and a graphical TSOL analysis of solar thermal performance. See page 6 for examples of the TSOL graphical analysis.

With this information you will be able to determine which potential solution will be the most cost effective and efficient. Vokèra can also offer an on site survey and commissioning service for contractors working on large domestic and commercial projects.

Contact the Vokèra Pre Sales team: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

# Zenith evacuated tube

## Product specifications



MCS approved demonstrating the quality and reliability of the Zenith solar thermal collector range.

Evacuated tube technology provides better efficiency in cooler parts of the UK due to their ability to absorb and retain solar radiation, with the tubes working on the same principle as a vacuum flask.

High build quality designed to use both direct sunlight and daylight maximising energy performance even on cloudy days.

Ideal for retro fit and new build applications.

Evacuated tube collectors are easy to install as, if necessary, the tubes can be removed prior to the frame being fitted onto the roof. The tubes can then be positioned within the collector frame.

Zenith solar thermal packages include an intelligent controller for increased functionality and flexibility.

Evacuated tube collectors have greater application flexibility, this is due to the wide range of angles the collector can be positioned in, while maintaining effective absorption.

Easy replacement of glass tubes without having to empty the solar heating circuit.

As a guide 1m<sup>2</sup> of solar collector is required per person in a household. Up to 6 collectors can be connected in a series.

Zenith solar thermal collector systems are pressurised which provides greater flexibility for siting the collector and a faster reaction time to daylight and sunlight, maximising upon the sun's energy.

Integrated CPC mirrors maximise absorption even in oblique light.

A highly selective finish on the copper absorber plate within each tube guarantees exceptional absorption performance.

14 individual tubes in each collector.

Long working life, with no metal parts passing through the glass tubes to cause loss of vacuum.

Solar Keymark seal of approval.

Pre Sales service available to provide advice and assistance on suitability and free design service.



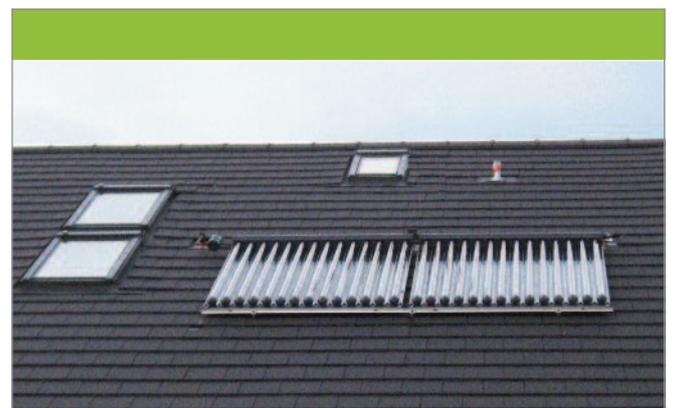
TECHNICAL SPECIFICATIONS	Evacuated Tube Collector
Total area	2.77 m <sup>2</sup>
Exposed area	2.40 m <sup>2</sup>
Effective absorption area	2.69 m <sup>2</sup>
Dimensions H x W x D (mm)	1730 x 1600 x 145
Empty weight	52 kg
Liquid content	2.05 L
Recommended flow rate of panel (per m <sup>2</sup> /hr)	30 L
Absorption (α)	> 94%
Emissions (β)	< 7%
Maximum permitted pressure	10 bar
Maximum temperature	236 °C

### EVACUATED TUBE COLLECTOR PACKAGE CODES

Description	Code
Evacuated tube pitched roof package	29450193
Evacuated tube flat roof package	29450194

### EVACUATED TUBE COLLECTOR PACKAGE INCLUDES

Evacuated tube solar collectors (x2)	Air vent
Roof kit (pitched or flat roof)	Expansion vessel
Glycol	Premium controller
Pump station	



Zenith evacuated tube installation, domestic property.

# Zenith flat plate 'on tile' and 'inset'

## Solar thermal collectors



**ON TILE COLLECTORS** - Ideal for retro fit applications with solar collectors sitting on top of the roof tiles, therefore requiring minimal adaptation to the roof.

**INSET COLLECTORS** - Ideal for new build applications with collectors sitting in the roof, therefore requiring less roof tiles and resulting in a neat and discreet finish.

MCS approved demonstrating the quality and reliability of the Zenith solar thermal collector range.

High build quality, designed to use both direct sunlight and daylight, and a highly selective finish on the copper absorber plate maximises energy performance even on cloudy days.

The collectors have an aluminium body, with a single piece copper absorber plate to create a greater reflective surface, maximising energy performance.

Flat plate collectors achieve optimum performance when positioned on a south facing roof at an angle of 35° and 45°. If this position is not possible, a split system could be used whereby one collector would be placed on the east facing side of the roof and another on the west.

The collectors are ultrasonically welded together to ensure high build quality and product longevity.

Heat transfer fluid flows through 12 individual copper pipes in the collector to create a large surface area for absorption.

As a guide, 1m<sup>2</sup> of solar collector is required per person in a household. Up to 6 collectors can be connected in a series.

Zenith solar thermal collector systems are pressurised which provides greater flexibility for siting of the collector and a faster reaction time to daylight and sunlight, maximising upon the sun's energy.

The bottom and walls of the collector tray are lined with 4cm of rock wool insulation to maximise heat retention and energy efficiency.

Low iron oxide content for high energy transmission and to minimise corrosion.

Each collector is protected with tempered glass to withstand extreme weather conditions, such as hail stones.

A well installed Zenith system will provide a reliable and extremely efficient service with a life expectancy of approximately 20+ years.

Pre Sales service available to provide advice and assistance on suitability and free design service.

SPECIFICATIONS	Flat Plate Collector
Total area	2.43 m <sup>2</sup>
Exposed area	2.20 m <sup>2</sup>
Effective absorption area	2.15 m <sup>2</sup>
Dimensions H x W x D (mm)	2046 x 1186 x 90
Empty weight	40 kg
Liquid content	1.6 L
Recommended flow rate per m <sup>2</sup> (l/hr)	30 L
Absorption ( $\alpha$ )	95%
Emissions ( $\beta$ )	5%
Maximum permitted pressure	10 bar
Maximum temperature	204 °c
Zero loss collector efficiency ( $\eta_0$ )	0.798
Collector heat loss efficiency $a_1$ W/(m <sup>2</sup> K)	4.27

FLAT PLATE COLLECTOR PACKAGE CODES	
Description	Code
On tile pitched roof package	29450195
On tile flat roof package	29450196
Inset slate roof package	29450191
Inset tile roof package	29450192

FLAT PLATE COLLECTOR PACKAGE INCLUDES	
Flat plate solar collectors (x2)	Air vent
Roof kit	Expansion vessel
Glycol	Premium controller
Pump station	



Domestic property with a Vokera Zenith inset installation

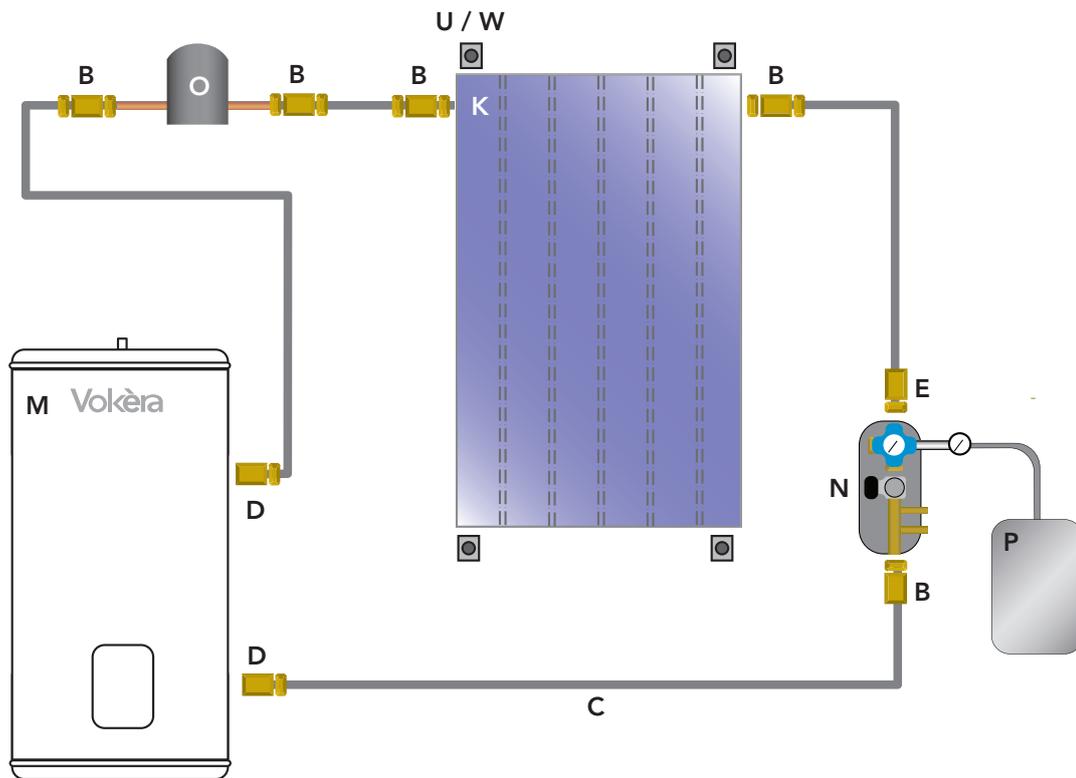
# Zenith installation configurations

## The simple solar ordering system

To ensure you order all the key components needed for your installation simply find the relevant application configuration and order the stated quantity of the components listed.

### INSET APPLICATION - CONFIGURATION 1

Inset slate or tile roof application - One collector with manual air vent connected within DN15 pipework



Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	5
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	1
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
U*	20022309	Inset kit for slate roof one collector	1
W*	20010353	Inset kit for tile roof one collector	1
-	1150559	Glycol 10 litres (undiluted)	1
-	20009244	Premium controller (two temp)	1

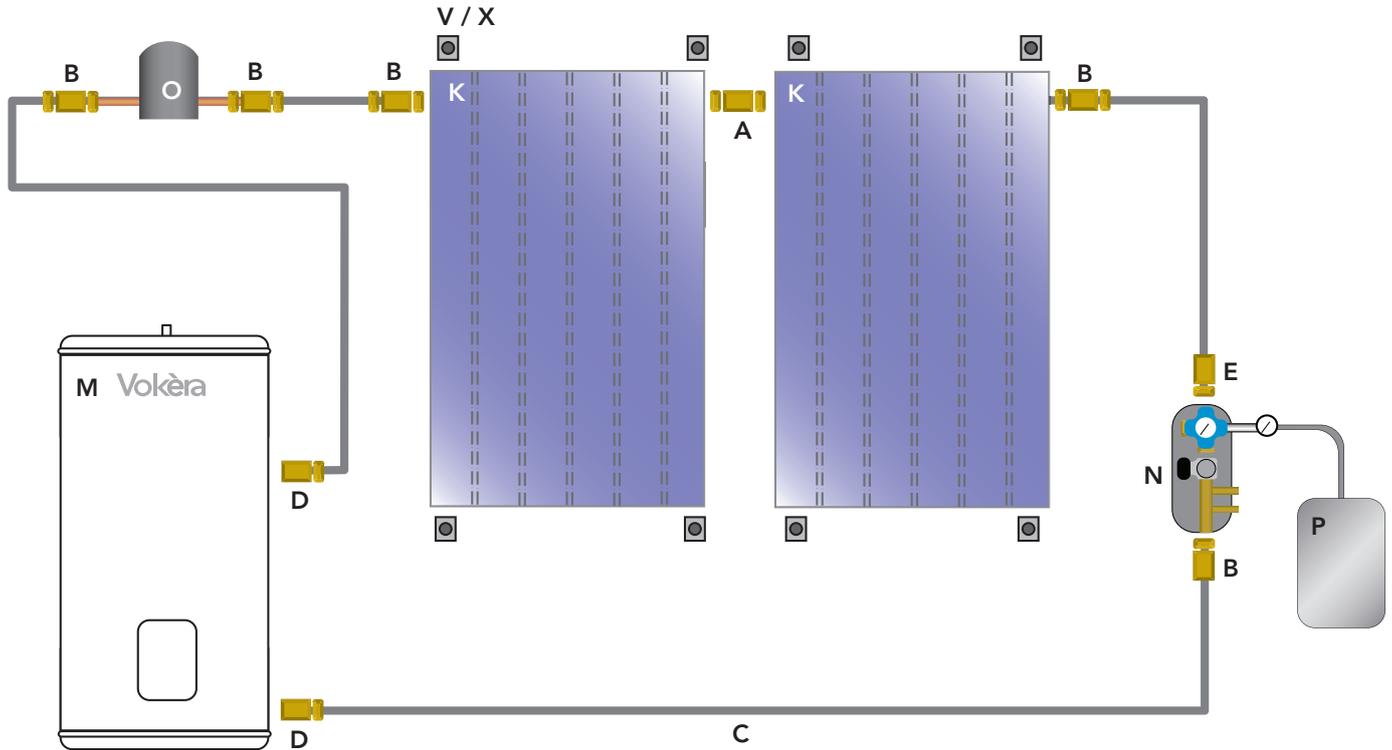
You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

\*For slate roof applications choose diagram reference 'U' and for tile roof applications choose diagram reference 'W'

See pages 19 - 20 for a complete list of the Zenith components and accessories.

## INSET APPLICATION - CONFIGURATION 2

Inset slate or tile roof application - Two collectors with manual air vent connected within DN15 pipework



Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
B	29450103	DN15 x F22mm connector	5
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	2
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
V*	20022310	Inset kit for slate roof two collectors	1
X*	20010393	Inset kit for tile roof two collectors	1
-	1150559	Glycol 10 litres (undiluted)	1
-	20009244	Premium controller (two temp)	1

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

*\*For slate roof applications choose diagram reference 'V' and for tile roof applications choose diagram reference 'X'*

See pages 19 - 20 for a complete list of the Zenith components and accessories.

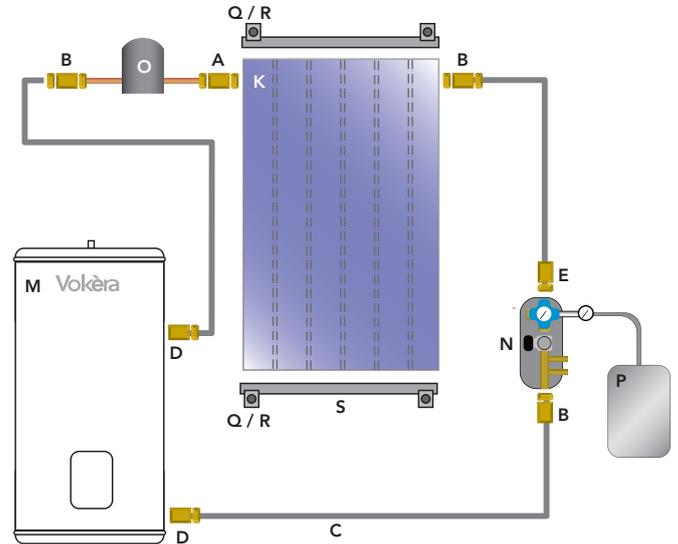
For 3 collectors in this configuration, in addition to the above, you will also need the items listed on the right. You should also consider revising the size of your expansion vessel and pump station to ensure a highly efficient system. **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
K	568	Zenith flat plate collector	1
-	20022311	Connecting joints for additional inset collector for slate roof (for use with 3+ collectors)	1
-	20010447	Connecting joints for additional inset collector for tile roof (for use with 3+ collectors)	1

## ON TILE APPLICATION - CONFIGURATION 3

On tile flat or pitched roof application - One collector directly connected to manual air vent

Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
B	29450103	DN15 x F22mm connector	3
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	1
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	2
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	2
S	20008315	Support rails for one on tile collector	1
-	1150559	Glycol 10 litres (undiluted)	1
-	20009244	Premium controller (two temp)	1



\*For pitched roof applications choose diagram reference 'Q' and for flat roof applications choose diagram reference 'R'

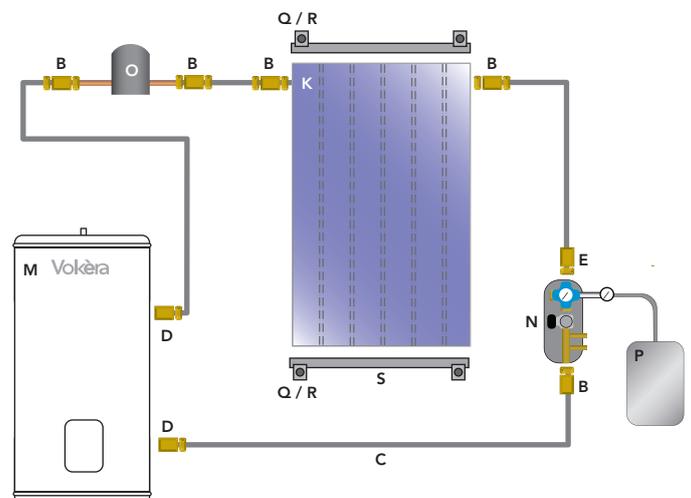
You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return).

See pages 19 - 20 for a complete list of the Zenith components and accessories. Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

## ON TILE APPLICATION - CONFIGURATION 4

On tile flat or pitched roof application - One collector with manual air vent connected within DN15 pipework

Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	5
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	1
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	2
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	2
S	20008315	Support rails for one on tile collector	1
-	1150559	Glycol 10 litres (Undiluted)	1
-	20009244	Premium controller (two temp)	1



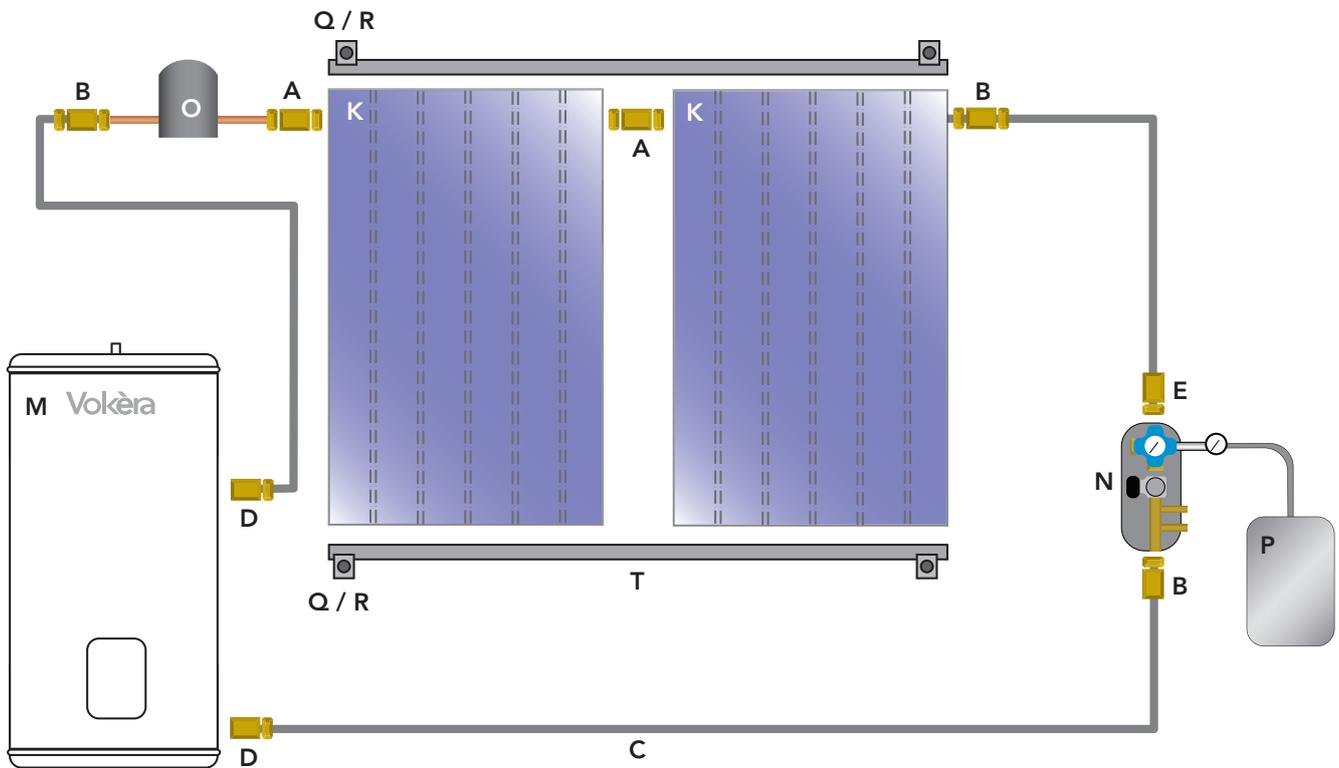
\*For pitched roof applications choose diagram reference 'Q' and for flat roof applications choose diagram reference 'R'

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return).

See pages 19 - 20 for a complete list of the Zenith components and accessories. Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

## ON TILE APPLICATION - CONFIGURATION 5

On tile flat or pitched roof application - Two collectors directly connected to manual air vent



Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	2
B	29450103	DN15 x F22mm connector	3
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	2
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	2
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	2
T	20008322	Support rails for two on tile collectors	1
-	1150559	Glycol 10 litres (undiluted)	1
-	20009244	Premium controller (two temp)	1

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

*\*For pitched roof applications choose diagram reference 'Q' and for flat roof applications choose diagram reference 'R'*

See pages 19 - 20 for a complete list of the Zenith components and accessories.

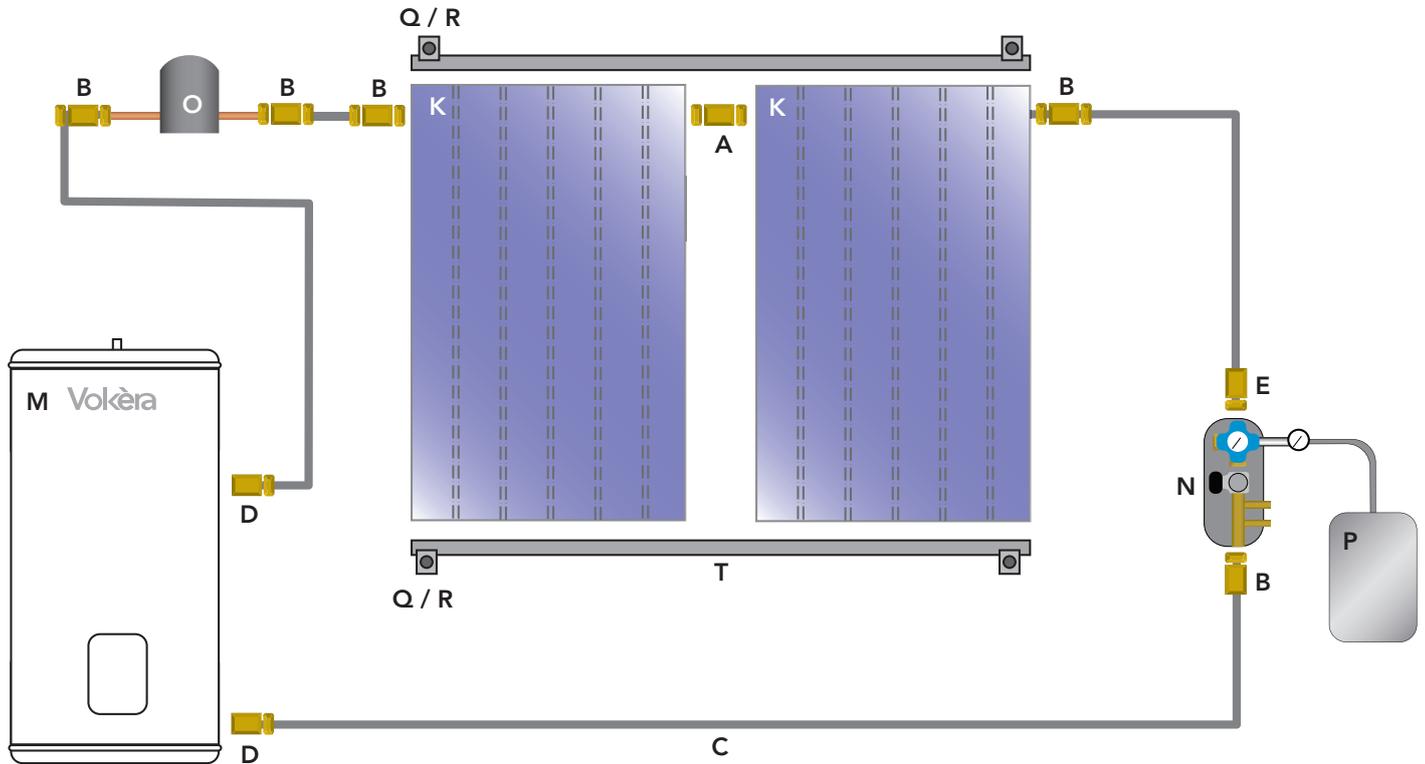
For 3 collectors in this configuration, in addition to the above\*, you will also need the items listed on the right. You should also consider revising the size of your expansion vessel and pump station to ensure a highly efficient system. **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
K	568	Zenith flat plate collector	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	1
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	1
-	20008759	Support rails for three on tile collectors	1

*\*For 3 collectors you do not need to order the support rail for two on tile collectors (diagram reference T) but only the support rail for three on tile collectors.*

## ON TILE APPLICATION - CONFIGURATION 6

On tile flat or pitched roof application - Two collectors with manual air vent connected within DN15 pipework



Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
B	29450103	DN15 x F22mm connector	5
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
K	568	Zenith flat plate collector	2
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	2
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	2
T	20008322	Support rails for two on tile collectors	1
-	1150559	Glycol 10 litres (undiluted)	1
-	20009244	Premium controller (two temp)	1

See pages 19 - 20 for a complete list of the Zenith components and accessories.

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

*\*For pitched roof applications choose diagram reference 'Q' and for flat roof applications choose diagram reference 'R'*

For 3 collectors in this configuration, in addition to the above\*, you will also need the items listed on the right. You should also consider revising the size of your expansion vessel and pump station to ensure a highly efficient system. **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

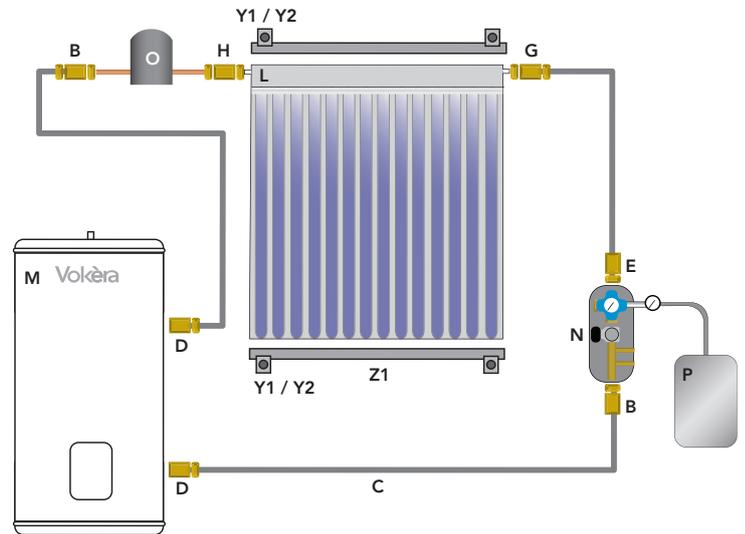
Ref	Code	Description	Quantity
A	29450161	F22 straight coupling	1
K	568	Zenith flat plate collector	1
Q*	20008292	Pitched roof fixing kit for on tile collector (2 per kit)	1
R*	20008317	Flat roof fixing kit for on tile collector (2 per kit)	1
-	20008759	Support rails for three on tile collectors	1

*\*For 3 collectors you do not need to order the support rail for two on tile collectors (diagram reference T) but only the support rail for three on tile collectors.*

## EVACUATED TUBE APPLICATION - CONFIGURATION 7

Evacuated tube flat or pitched roof application - One collector directly connected to manual air vent

Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	2
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
G	29450109	DN15 x 18mm connector	1
H	29450162	F18mm x F22mm connector	1
L	20026323	Zenith evacuated tube collector	1
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector (2 per kit)	2
Y2*	20026384	Flat roof fixing kit for evacuated tube collector (2 per kit)	2
Z1	20026381	Support rails for one evacuated tube collector	1
-	1151029	Premix Glycol 20 litres	1
-	20009244	Premium controller (two temp)	1



\*For pitched roof applications choose diagram reference 'Y1' and for flat roof applications choose diagram reference 'Y2'

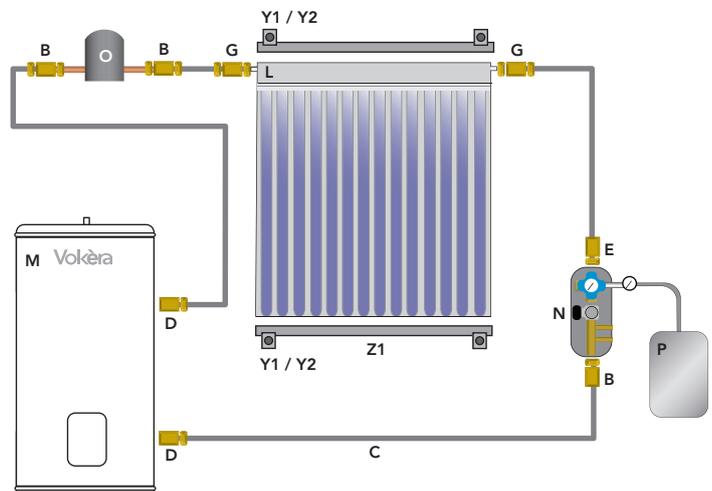
You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return).

See pages 19 - 20 for a complete list of the Zenith components and accessories. Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

## EVACUATED TUBE APPLICATION - CONFIGURATION 8

Evacuated tube flat or pitched roof application - One collector with manual air vent connected within DN15 pipework

Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	3
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
G	29450109	DN15 x 18mm connector	2
L	20026323	Zenith evacuated tube collector	1
M	924	AquaFlow twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P	1150489	18L expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector (2 per kit)	2
Y2*	20026384	Flat roof fixing kit for evacuated tube collector (2 per kit)	2
Z1	20026381	Support rails for one evacuated tube collector	1
-	1151029	Premix Glycol 20 litres	1
-	20009244	Premium controller (two temp)	1



\*For pitched roof applications choose diagram reference 'Y1' and for flat roof applications choose diagram reference 'Y2'

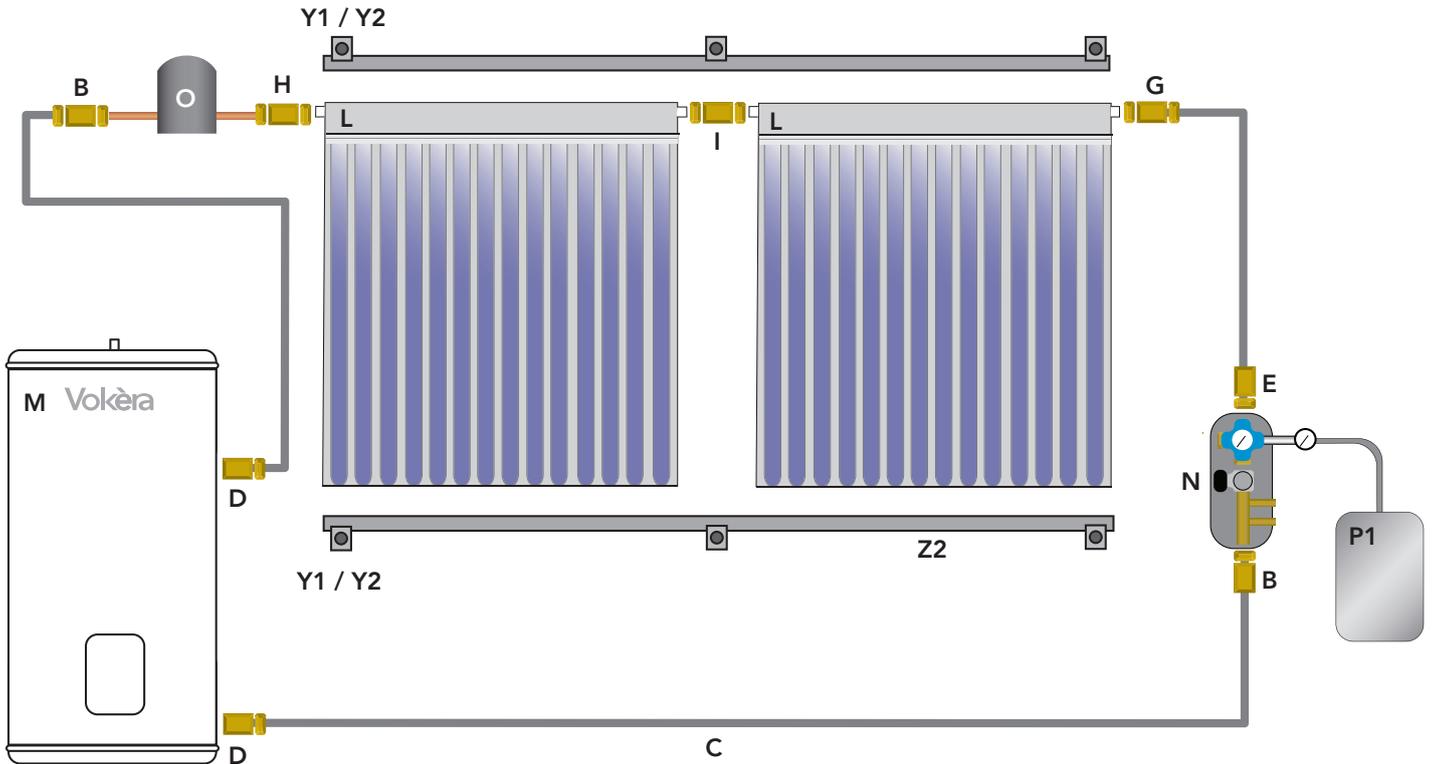
You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return).

See pages 19 - 20 for a complete list of the Zenith components and accessories. Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)



## EVACUATED TUBE APPLICATION - CONFIGURATION 9

Evacuated tube flat or pitched roof application - Two collectors directly connected to manual air vent



Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	2
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
G	29450109	DN15 x 18mm connector	1
H	29450162	F18mm x F22mm connector	1
I	29450160	F18mm straight coupling	1
L	20026323	Zenith evacuated tube collector	2
M	-	Twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P1	1150509	24L Expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector (2 per kit)	3
Y2*	20026384	Flat roof fixing kit for evacuated tube collector (2 per kit)	3
Z2	20026383	Support rails for two evacuated tube collectors	1
-	1151029	Premix Glycol 20 litres	1
-	20009244	Premium controller (two temp)	1

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

**\*For pitched roof applications choose diagram reference 'Y1' and for flat roof applications choose diagram reference 'Y2'**

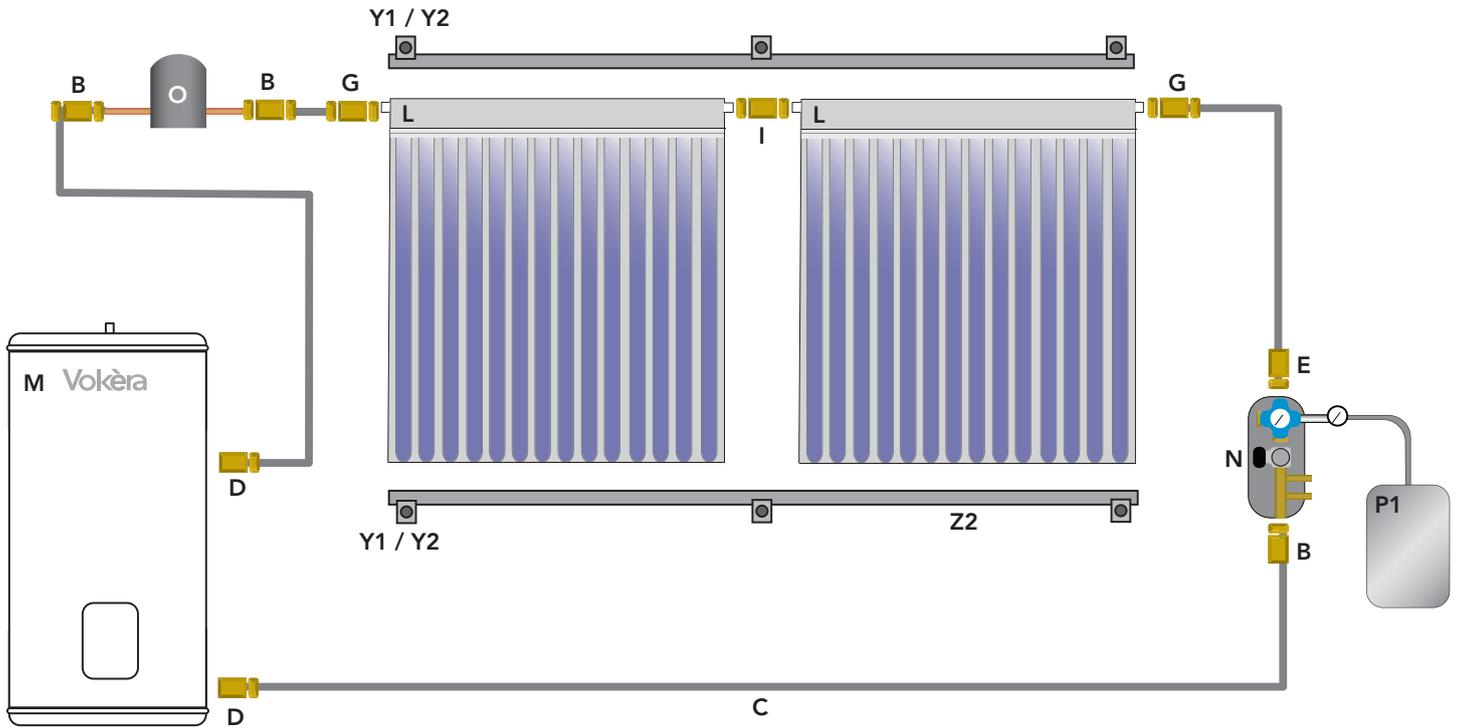
See pages 19 - 20 for a complete list of the Zenith components and accessories.

For 3 collectors in this configuration, in addition to the above you will also need the items listed on the right. You will also need to consider revising the size of your expansion vessel and head pump station to ensure a highly efficient system. **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

Ref	Code	Description	Quantity
I	29450160	F18mm straight coupling	1
L	20026323	Zenith evacuated tube collector	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector	2
Y2*	20026384	Flat roof fixing kit for evacuated tube collector	2
Z1	20026381	Support rails for one evacuated tube collector	1
-	20008757	Connecting joint for additional collectors (for use with 3+ collectors)	1

## EVACUATED TUBE APPLICATION - CONFIGURATION 10

Evacuated tube flat or pitched roof configuration - Two collectors with manual air vent connected within DN15 pipework



Ref	Code	Description	Quantity
B	29450103	DN15 x F22mm connector	3
C	29450101	25m DN15 pipe	1
D	29450104	DN15 x M 3/4" connector	2
E	29450108	DN15 x M 1" connector	1
G	29450109	DN15 x 18mm connector	2
I	29450160	F18mm straight coupling	1
L	20026323	Zenith evacuated tube collector	2
M	-	Twin coil cylinder	1
N	20026145	4.5m head pump station	1
O	20026577	Manual air vent	1
P1	1150509	24L Expansion vessel with metal support	1
-	1150499	Flex and support for expansion vessel	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector (2 per kit)	3
Y2*	20026384	Flat roof fixing kit for evacuated tube collector (2 per kit)	3
Z2	20026383	Support rails for two evacuated tube collectors	1
-	1151029	Premix Glycol 20 litres	1
-	20009244	Premium controller (two temp)	1

You may require a larger pump station and more Glycol for longer pipe runs (of over the supplied 25m flow and return). **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

*\*For pitched roof applications choose diagram reference 'Y1' and for flat roof applications choose diagram reference 'Y2'*

See pages 19 - 20 for a complete list of the Zenith components and accessories.

For 3 collectors in this configuration, in addition to the above you will also need the items listed on the right. You will also need to consider revising the size of your expansion vessel and head pump station to ensure a highly efficient system. **Contact Pre Sales for advice: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)**

Ref	Code	Description	Quantity
I	29450160	F18mm straight coupling	1
L	20026323	Zenith evacuated tube collector	1
Y1*	20008292	Pitched roof fixing kit for evacuated tube collector	2
Y2*	20026384	Flat roof fixing kit for evacuated tube collector	2
Z1	20026381	Support rails for one evacuated tube collector	1
-	20008757	Connecting joint for additional collectors (for use with 3+ collectors)	1

# Zenith Solar Matrix

## Primary components

These next few pages offer a simple process to enable you to identify the components that you will need for your solar thermal installation. The below matrix enables you to identify the primary components for solar installations of up to 6 collectors for each collector type. To complete your parts listing you will also need to order the required secondary universal components, see next page. For installations with more than 6 collectors please contact Vokèra Pre Sales for advice and a bespoke bill of materials.

PRIMARY COMPONENTS FOR ZENITH SOLAR THERMAL APPLICATIONS								
INSET SLATE ROOF	INSET - SLATE ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	568	Flat plate collector (on tile and inset applications)	1	2	3	4	5	6
	20022309*	Inset kit for slate roof one collector	1	-	-	-	-	-
	20022310*	Inset kit for slate roof two collectors	-	1	1	1	1	1
	20022311*	Connecting joints for additional inset collectors for slate roof	-	-	1	2	3	4
INSET TILE ROOF	INSET - TILE ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	568	Flat plate collector (on tile and inset applications)	1	2	3	4	5	6
	20010353*	Inset kit for tile roof one collector	1	-	-	-	-	-
	20010393*	Inset kit for tile roof two collectors	-	1	1	1	1	1
	20010447*	Connecting joint for additional inset collectors for tile roof	-	-	1	2	3	4
ON TILE PITCHED ROOF	ON TILE - PITCHED ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	568	Flat plate collector (on tile and inset applications)	1	2	3	4	5	6
	20008292**	Pitched roof fixing kit for on tile collector (2 per kit)	2	2	3	5	6	7
	20008315	Support rails for one on tile collector	1	-	-	-	-	-
	20008322	Support rails for two on tile collectors	-	1	-	2	1	-
	20008759	Support rails for three on tile collectors	-	-	1	-	1	2
	20008757	Connecting joint for additional collectors	-	-	-	1	1	1
ON TILE FLAT ROOF	ON TILE - FLAT ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	568	Flat plate collector (on tile and inset applications)	1	2	3	4	5	6
	20008317**	Flat roof fixing kit for on tile collector (2 per kit)	2	2	3	5	6	7
	20008315	Support rails for one on tile collector	1	-	-	-	-	-
	20008322	Support rails for two on tile collectors	-	1	-	2	1	-
	20008759	Support rails for three on tile collectors	-	-	1	-	1	2
	20008757	Connecting joint for additional collectors	-	-	-	1	1	1
EVACUATED TUBE PITCHED ROOF	EVACUATED TUBE - PITCHED ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	20026323	Evacuated tube collector	1	2	3	4	5	6
	20008292**	Pitched roof fixing kit for evacuated tube collector (2 per kit)	2	3	5	6	8	9
	20026381	Support rails for one evacuated tube collector	1	-	1	-	1	-
	20026383	Support rails for two evacuated tube collectors	-	1	1	2	2	3
	20008757	Connecting joint for additional collectors	-	-	1	1	2	2
EVACUATED TUBE FLAT ROOF	EVACUATED TUBE - FLAT ROOF FIXING COMPONENTS		For 1 collector order:	For 2 collectors order:	For 3 collectors order:	For 4 collectors order:	For 5 collectors order:	For 6 collectors order:
	Code	Description						
	20026323	Evacuated tube collector	1	2	3	4	5	6
	20026384**	Flat roof fixing kit for evacuated tube collector (2 per kit)	2	3	5	6	8	9
	20026381	Support rails for one evacuated tube collector	1	-	1	-	1	-
	20026383	Support rails for two evacuated tube collectors	-	1	1	2	2	3
	20008757	Connecting joint for additional collectors	-	-	1	1	2	2

The matrix for inset applications, for both slate and tile roofs, is for linear collector installations where all collectors are positioned side by side.

\*Where this symbol appears you have a choice of components that will depend on the installation requirements. Choose between a slate or tile roof fixing kit.

\*\*Where this symbol appears you have a choice of components that will depend on the installation requirements. Choose between a pitched or flat roof fixing kit.

# Zenith Solar Matrix

## Secondary components

Having identified the primary components for your solar installation, to complete your parts listing you will also need to order the required secondary components, these are suitable for all Zenith collector types unless specified. The secondary components that you will need will vary depending on the installation and system requirements, it is very important that the solar system is sized correctly and that the necessary pump station and expansion vessel is used.

Contact the Vokèra Pre Sales team for advice and assistance in specifying a bespoke bill of materials.

### SECONDARY UNIVERSAL COMPONENTS FOR ZENITH SOLAR THERMAL APPLICATIONS

Code	Description	Code	Description
20009244	Premium controller (3 temp)	29450103	DN15F x F 22mm connector x1
20026145	4.5m head pump station	29450109	DN15 x 18mm connector x1
20026215	6.6m head pump station	29450162	F 18mm x F 22mm connector x1
20001453	Flow regulator	29450160	F 18mm straight coupling x1 connector
20026577	Manual air vent for collector(s)	29450161	F 22mm straight coupling x1 connector
1150499	Flex and support for expansion vessel	1150549	Pure Glycol 5L (on tile and inset collectors only)
1150489	18L expansion vessel with metal support	1150559	Pure Glycol 10L (on tile and inset collectors only)
1150509	24L expansion vessel	1151029	Premix Glycol 20L (evacuated tube collectors only)
1150519	35L expansion vessel	20001454	Solar system filling and pump trolley
29450101	Insulated flexible pipe DN15 (25m)	20001492	Thermostatic mixing valve
29450106	DN15 coupling (connect lengths of DN15 pipe)	924	250L AquaFlow Twin coil cylinder
29450108	DN15F x M 1" connector x1	925	300L AquaFlow Twin coil cylinder
29450104	DN15F x M 3/4" connector x1		

## Choosing the right solar equipment for commercial applications

Vokèra are also experienced in commercial solar projects and offer a range of components that are suitable for installations that require a large number of solar collectors. The list of components below is not definitive and is just a selection of suitable or compatible products and other components are available, please see the Vokèra Commercial High Power Heating Solutions catalogue for more information or contact the Pre Sales team.

### SECONDARY UNIVERSAL COMPONENTS FOR COMMERCIAL ZENITH SOLAR THERMAL APPLICATIONS

Code	Description	Code	Description
29450102	Insulated flexible pipe DN20 (25m)	20052790	IDRA N DS 1500 twin coil cylinder (1449 litres)
20009246	Large system controller (3 temp)	20052791	IDRA N DS 2000 twin coil cylinder (2054 litres)
20009196	11m head pump station	20051862	Hybrid Stor 430 triple coil buffer tank (407 litres)
20001448	50L expansion vessel	20051863	Hybrid Stor 550 triple coil buffer tank (520 litres)
20001449	100L expansion vessel	20051864	Hybrid Stor 750 triple coil buffer tank (732 litres)
20009237	300L expansion vessel	20051866	Hybrid Stor 1000 triple coil buffer tank (898 litres)
29450105	DN20 x F22mm connector	20055207	Stor 300M buffer tank with coil (283 litres)
29450107	DN20 coupling (connect lengths of DN20 pipe)	20055208	Stor 500M buffer tank with coil (489 litres)
20009236	STS 200 solar Module	20001406	Stor 1000M buffer tank with coil (1000 litres)
20009238	ACS150 DHW production thermal modules	20001407	Stor 1500M buffer tank with coil (1449 litres)
20016731	50kW plate heat exchanger	20056180	Stor H 200 water storage tank (203 litres)
20001226	IDRA DS 430 twin coil cylinder (433 litres)	20056181	Stor H 300 water storage tank (283 litres)
20001227	IDRA DS 550 twin coil cylinder (546 litres)	20056182	Stor H 400 water storage tank (399 litres)
20009144	IDRA DS 750 twin coil cylinder (716 litres)	20056183	Stor H 500 water storage tank (483 litres)
20009145	IDRA DS 1000 twin coil cylinder (875 litres)		

**FOR ALL COMMERCIAL INSTALLATIONS, VOKERA RECOMMEND THAT YOU CONTACT THE PRE SALES TEAM WHO CAN PROVIDE A SYSTEM DESIGN AND COMPLETE BILL OF MATERIALS, ENSURING THE MOST RELIABLE AND EFFICIENT SYSTEM IS SPECIFIED.**



# Why choose air source heat pumps?

## An advanced and efficient heating and hot water system

### Why choose air source heat pumps?

With minimal installation preparation required, an air source heat pump is an ideal renewable solution for a variety of house sizes or styles and for both new-build projects and existing homes. Traditionally heat pumps have been known as only being suitable for under floor heating but the more advanced models can now provide heat to radiators and domestic hot water.

### How do they work?

Air source heat pumps utilise air to generate warmth in order to heat water using compression technology, providing a great source of renewable technology. They work by extracting warmth from the outside air that is then transferred to a plate-heat exchanger that heats the central heating and domestic water in a traditional way.

### How effective is air source heat pump technology in the UK and Ireland?

Air source heat pumps are perfect for the ambient temperatures of the UK and Ireland and, depending on the model chosen, some can even operate in temperatures as low as -20°C.

The efficiency of the technology will vary depending on the model that is installed, but for example the Vokèra AriaPRO has a Co-efficient of Performance (CoP) of 4.2, meaning that every 1kW of input energy is converted into 4.2kW of output energy - or heat. The CoP is dependent on a number of factors including outside temperature and flow outlet temperature, but the intelligent technology within the AriaPRO controls the flow outlet temperature to minimise any inefficient productivity.

Heat pumps work much more efficiently at a lower flow outlet temperature than a standard boiler system would, making them ideal for underfloor heating systems or larger radiators, which give out heat at lower temperatures over longer periods of time.

Almost one third of the UK's carbon emissions come from the energy we use in our homes, hot water and central heating account for over 70% of this. Heat pumps can significantly reduce the CO<sub>2</sub> emissions by up to 40%.

Existing fuel type	CO <sub>2</sub> savings	£ savings
Electric	5270kg	£610
Oil	810kg	£310
Solid	5410kg	£330

Source Energy Saving Trust. Figures represent potential savings for a 'good installation' with a system efficiency of 300%. See Energy Saving Trust website for latest figures.

The financial savings available will depend on a number of factors, such as the fuel type that you are replacing. You will still have to pay fuel bills with a heat pump because it is powered by electricity, but you will save on the fuel you are replacing. The system will pay for itself much more quickly if it's replacing an electricity or coal heating system, heat pumps may not be the best option for homes currently using a mains gas supply.

### Is an air source heat pump suitable for my project?

Air source heat pumps should be sited outside of the property and have little need for any extensive installation preparation, so are suitable for both retro fit and new build installations. If the heat pump is set up to provide domestic hot water then this could limit the overall system efficiency, you could consider installing a solar thermal system to provide the hot water in order to maintain the maximum heat pump efficiency.

As stated above, a heat pump may not be the most efficient renewable technology solution for homes on the mains gas supply but they are a cost effective renewable solution if replacing an electricity or coal heating system.

The Vokèra AriaPRO is able to provide space heating and domestic hot water but it is advised that an additional heat source is included in the system to ensure that during periods of extreme cold weather the end users requirements are still met. A number of AriaPRO units can be connected in a series so the Vokèra air source heat pumps can also be utilised in commercial projects such as hotels, large residential homes, leisure centres and offices.

**A VOKERA BOILER CAN BE TEAMED WITH THE ARIAPRO AIR SOURCE HEAT PUMP TO MAKE UP ANY DIFFERENTIAL IN HEAT REQUIREMENTS, ENSURING MAXIMUM END USER COMFORT.**

# Why choose Vokèra?

## AriaPRO air source heat pumps

### Why choose Vokèra?

#### Introducing AriaPRO

Our **MCS approved** AriaPRO range is available in a number of outputs to suit a comprehensive range of installations. With 4, 6, 8, 12 and 15 kW models available, and the option to combine a number of units together in a series, Vokèra are able to provide a solution for any application from small domestic properties to commercial premises.

The AriaPRO range is an extremely environmentally friendly product as air is used as the primary energy source, this results in a reduced use of natural resources and fewer CO<sub>2</sub> emissions. The range also has a Ozone Depleting Potential (ODP) of zero as they have been designed to operate with the chlorine free refrigerant R-410A.

#### Flexible and simple installation

The Vokèra AriaPRO range operates on a single phase power supply and is a self contained mono-block design, meaning that the refrigerant circuit is located in the outdoor equipment only, enabling the AriaPRO to remain outside the scope of the F-Gas directive for installation; so there is no requirement for the refrigeration circuit to be assembled, connected, or charged, during the installation or commissioning phase and no F-Gas certification is necessary to install the product.



*Vokèra AriaPRO air source heat pump is ideal for residential installations as it is one of the quietest air source heat pumps available - with noise levels similar to a typical fridge freezer.*

#### Latest inverter driven technology

The AriaPRO range incorporates the latest inverter driven technology with a twin rotary compressor that is managed by both PAM and PWM logic control. This technology fully modulates the compressor speed to control the output temperature, rather than switching on and off which is very inefficient. By controlling the compressor speed, the AriaPRO modulates to provide the exact capacity required, making it highly efficient and quiet whilst providing a consistent water temperature.

#### Reduced energy consumption and increased comfort levels

The AriaPRO has a flow outlet temperature ranging from 7 - 60°C and this variable flow temperature ensures maximum comfort and energy savings. By using the lower flow temperatures the CoP is improved meaning lower CO<sub>2</sub> emissions and reduced running costs whilst also providing a more consistent room temperature.

If the AriaPRO is operated to produce a 60°C flow outlet temperature at all times, then the CoP will be reduced. However, because the AriaPRO is supplied as standard with a thermoregulation function built-in, the flow outlet temperature is managed to ensure maximum comfort and efficiency are achieved at all times.

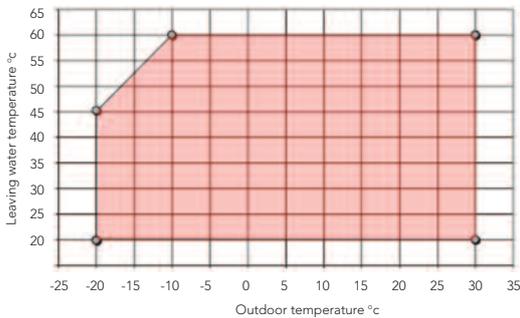
#### ARIAPRO SYSTEM PERFORMANCE

Output water 35° Flow	4kW	6kW	8kW	12kW	15kW	Output water 45° Flow	4kW	6kW	8kW	12kW	15kW
CoP at outdoor temp 2°C	3.1	3.1	3.1	3.1	3.1	CoP at outdoor temp 2°C	2.6	2.6	2.6	2.6	2.6
CoP at outdoor temp 7°C	4.05	4.2	3.91	3.91	4.06	CoP at outdoor temp 7°C	3.2	3.01	3.16	3.01	3.21
Output water 55° Flow	4kW	6kW	8kW	12kW	15kW						
CoP at outdoor temp 7°C	2.71	2.58	2.3	2.48	2.8						



## Heating and hot water solution

The AriaPRO is the ideal solution for providing heating and hot water to your home. It can be connected to a traditional radiator heating system, low temperature underfloor heating circuit and to a hot water cylinder to provide domestic hot water. Examples of AriaPRO configurations can be found on page 25.



### Operating range in heating mode

Although the AriaPRO can fulfil most properties annual heating and DHW demands; like all other air-source heat pumps, extreme low temperatures can have an effect on the appliance being able to meet the required flow outlet temperature.

Consequently, Vokèra recommend that the AriaPRO is installed in a 'bivalent' heating system, and/or the dwelling incorporates some form of secondary heating that can be used in the event of such extreme weather conditions.

## Intelligent sensor controlled refrigerant circuit

The AriaPRO range contains several intelligent sensors that are placed in key positions within the refrigerant circuit, including the compressor, fan motors and the pulse modulation valve. The sensors electronically monitor the operational state of the system and this transfers the data to a micro controller unit which responds by altering the refrigerant flow and the functioning of core components where necessary, ensuring maximum efficiency at all times.

## Thermoregulation controls

Thermoregulation refers to the control systems that maintain a constant temperature. The AriaPRO is supplied with a built-in external sensor, an additional external sensor and a remote control. Ideally the built-in sensor should monitor the cooler side of the property, however if this is not possible Vokèra recommend that the supplementary external sensor is installed on a north facing wall to ensure the correct value of the external temperature is obtained. The remote control can then accurately set the desired outlet temperature of the heat pump to ensure comfort and efficiency is maintained at all times.



### AriaPRO user interface control

The AriaPRO range is also supplied with its own intelligent and easy to use wall mounted interface. The interface has a large display to show all system settings and operating parameters as well as extended features including 'Home', 'Sleep' (silent mode), 'Away' and pre-set operating programs.

The interfaces programmed applications include:

**Service tool** - Enables the wall mounted control to be used as the heat pump interface, with the auto diagnosis and automatic configuration programmes providing engineers assistance during installation, commissioning and servicing.

**Programmable room thermostat** - The interface can also be utilised as a programmable room thermostat, allowing the operating times to be amended.

**Room thermostat** - Allows the desired room temperature to be amended.

To achieve maximum efficiency it is recommended that the end users desired flow temperature is set, either manually or via a climatic curve, and the intelligent weather compensation control is allowed to maintain it.



# AriaPRO

## Air source heat pump



INTEGRATED  
MODULE  
FOR EASY  
INSTALLATION

IDEAL FOR  
UNDERFLOOR  
HEATING



MCS approved demonstrating the quality and reliability of the AriaPRO range.

Extracts heat from ambient air, even when outside temperature is below 0°C, which is then transferred to a heat exchanger that heats the central heating and domestic hot water in a traditional way.

Co-efficient of Performance (CoP) of up to 4.2 i.e. 1.0kW of electrical energy required to generate 4.2kW of heat output (£1 of electricity can provide over £4 of heat) at EN 14511 reference conditions.

Designed for a simple installation as the integrated hydronic module requires the addition of only a few external components.

Mono-block design means that the refrigerant circuit is located in the outdoor equipment only, enabling the AriaPRO to remain outside the scope of the F-Gas directive for installation; so no F-Gas certification is necessary to install the product.

Latest inverter technology with twin rotary compressor managed by both PAM and PWM logic control ensures both temperature and efficiency is optimised at all times leading to fuel efficiency, lower noise emissions and improved comfort.

Built-in frost protection, protects the appliance from damage during periods of cold weather.

Both central heating and domestic hot water can be provided when connected to a water cylinder.

The Vokera heat pump system can incorporate Vokera Zenith solar thermal to further minimise reliance on fossil fuels.

AriaPRO can be installed with most Vokera boilers in a bivalent system to ensure maximum end user comfort during extreme weather conditions.

Sited outside a property without the requirement for extensive installation preparation.

SPECIFICATIONS	AriaPRO 4kW	AriaPRO 6kW	AriaPRO 8kW	AriaPRO 12kW	AriaPRO 15kW
Product order code	20033107	20033108	20033109	20033110	20033111
<b>Co-efficient of Performance (1)*</b>					
Nominal capacity (kW)	4.1	5.8	7.2	11.9	14.5
Power input (kW)	1.01	1.37	1.84	3.04	3.57
CoP 0/35°C	4.06	4.24	3.95	3.94	4.06
Energy class	A	A	B	B	A
<b>Co-efficient of Performance (2)* Typical UK and Ireland conditions</b>					
Nominal capacity (kW)	3.9	5.8	7.4	12.95	14.5
Power input (kW)	1.21	1.93	2.34	4.3	4.36
CoP 0/45°C	3.2	3.01	3.16	3.01	3.21
Energy class	A	B	B	B	B
<b>Dimensions and weights</b>					
Height (mm)	821	821	821	1363	1363
Width (mm)	908	908	908	908	908
Depth (mm)	350	350	350	350	350
Empty weight (kg)	61	61	71	105	105
<b>Sound levels</b>					
Sound pressure** (db)	42	42	44	47	48
<b>Electrical</b>					
Voltage (V/Hz)	230/50	230/50	230/50	230/50	230/50

\* CoP (1) - outside air +7°C / water 30-35°C.

\* CoP (2) - outside air +7°C / water 40-45°C.

\*\* Sound pressure measured in a hemispheric field 4 meters in front of the fan.

Flexible application, suitable for both new build and retrofit applications.

Effective in outside air temperatures ranging from -20°C to +30°C.

Flow outlet temperature ranging up to +60°C, making the AriaPRO ideal for a number of domestic applications including underfloor heating, central heating and domestic hot water.

Electronically controlled variable speed helical fan ensures exceptionally low noise levels as low as 42 dBA (4 and 6kW outputs).

Supplied with built-in external sensor, a supplementary external sensor and remote control, to maximise efficiency.

Integral 2 litre expansion vessel supplied with the 4kW, 6kW, 8kW and 3 litre expansion vessel supplied with the 12kW and 15kW. Additional expansion capacity may be necessary dependant on the system.

If required, Vokera offer a low loss header<sup>(1)</sup> for systems that cannot guarantee sufficient flow through the heat pump at all times.

<sup>(1)</sup>When fitting a low loss header, an external pump is required.



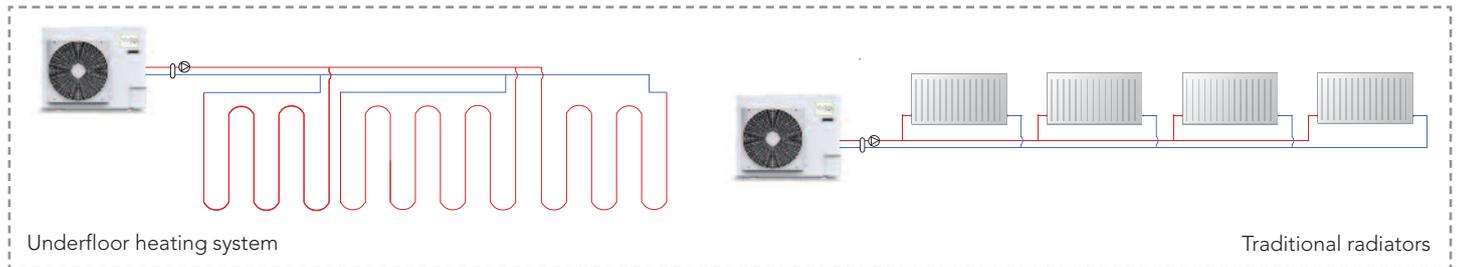
# AriaPRO configurations

## Heating system designs

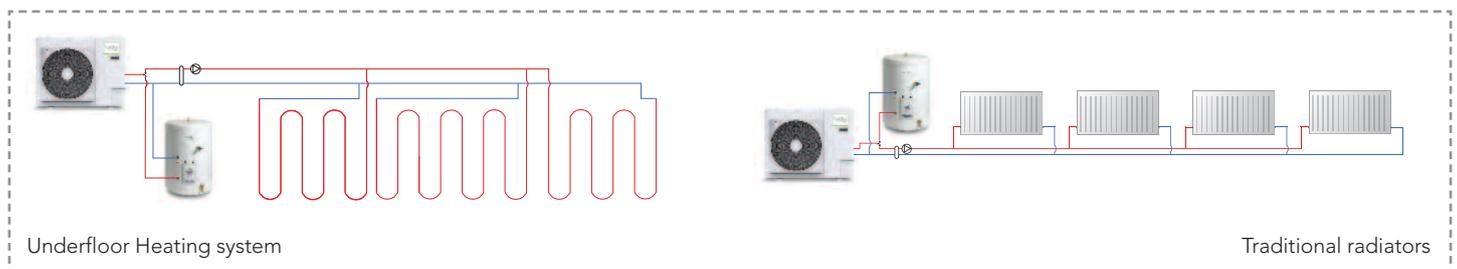
### AriaPRO installation options

The possibility of achieving a 60°C flow outlet temperature from the AriaPRO reduces the reliance on any additional heating device. This means that the AriaPRO, in all but very extreme weather conditions, is able to satisfy the demands of the DHW and the space heating requirements. The below diagrams represent examples of the basic applications that the AriaPRO can be utilised for. Talk to one of our Pre Sales advisors to discuss how the AriaPRO can be used to satisfy your installation.

### Space heating only - monovalent system

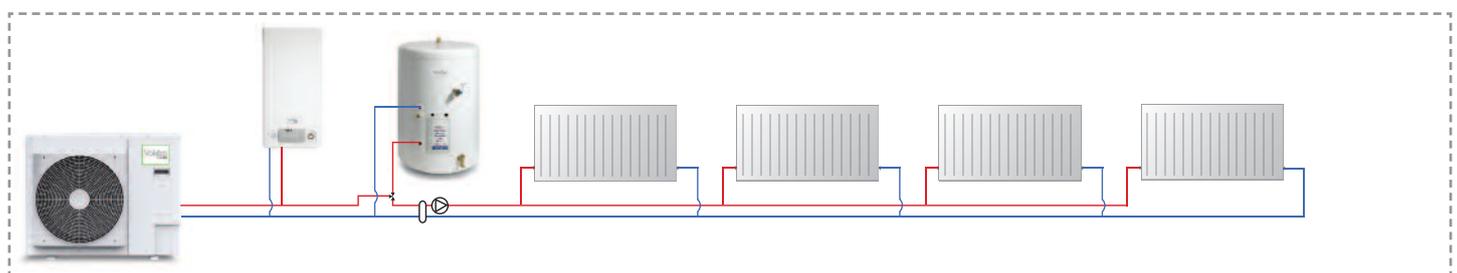


### Space heating and DHW via water cylinder - monovalent system



Although the AriaPRO can fulfil most properties annual heating and DHW demands, like all other air source heat pumps, extreme low temperatures can have an effect on the appliance being able to meet the required flow outlet temperature. Consequently, Vokèra recommend that the AriaPRO is installed in a 'bivalent' heating system, and/or the dwelling incorporates some form of secondary heating that can be used in the event of such extreme weather conditions.

### Space heating and DHW via water cylinder and boiler - bivalent system



### Pre Sales support for air source heat pumps

If you are planning to install the AriaPRO and require advice on what output is required or what accessories you need to complete the installation then the Pre Sales team are available to help.

After you have completed a simple questionnaire the Pre Sales team will provide you with a bespoke project checklist that will detail the most suitable product solution, including the required appliance output and a detailed listing of the additional parts and accessories needed to complete the installation.

Contact the Vokèra Pre Sales team: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

# Vokèra Support

## Providing support from concept to completion

### Vokèra prides itself in providing support from concept to completion

Our support network incorporates a Pre Sales support advice service, technical training, technical support service and a Customer Care team dedicated to providing great service.

### Vokèra renewable product training

Vokèra offers a one day renewable technical overview product course that introduces the MCS accredited Zenith solar thermal and AriaPRO air source heat pump ranges.

Attendees will be provided with an understanding of the Vokèra Zenith solar product and package and an insight into the theory of solar domestic hot water. The installation, commissioning and fault finding of the Zenith product is also discussed and demonstrated. As an introduction to air source heat pumps our technical trainers will guide you through the working principles of the technology and will cover the concept of the AriaPRO, including the operating principles, installation, commissioning, servicing and hands on fault finding.

The course is both theory and workshop based with activities on example installations of both technologies, so engineers can utilise their skills in a life like situation.

### Pre Sales support

The Vokèra Pre Sales support team offers advice on a range of products and applications to engineers, architects, specifiers and developers. Depending on the technology used and the complexity of the installation, the advice and level of support you need will differ, from basic advice to a full bespoke solution. The Pre Sales support team not only offer advice and guidance, but can also provide on-site assistance and support with product assembly and commissioning.\*

Vokèra Pre Sales support offers you practical, sound advice and will advise you if a solution is not fit for purpose, ensuring the correct products are recommended for the application. The experienced Vokèra Pre Sales team have had many successful projects including, schools, medical centres, leisure centres with swimming pools, churches, and in conjunction with district heating.

#### CONTACT PRE SALES

Email:	pre-sales@vokera.co.uk
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*'It was the specification support, reliability, guarantees and back up service offered by Vokèra that made it the perfect solution.'*

Project Manager - Pre Sales Customer

\*A cost may be incurred for some Pre Sales activities.

### Approved Installer Programme

The Vokèra Approved Installer Programme offers a complete partnership package that delivers even more information, support and rewards. Approved Installers are able to receive a number of benefits including marketing support, 'Approved Installer' van livery, free product training and end user leads. With the 'Approved Installer' programme, Vokèra are offering you the opportunity to ensure that you and your business are receiving an unrivalled level of service and support.

The 'Approved Installer' programme is split into three categories, each tailored to ensure you receive the support you need.

**Domestic Approved Installer** - purchase 25 or more Vokèra boilers a year to be eligible\*

**Commercial Approved Installer** - purchase minimum of 12 Vokèra CondexaPRO boilers per year to be eligible\*

**Renewable Approved Installer** - purchase a minimum of 12 Zenith packages and/or AriaPRO air source heat pumps to be eligible\*

To request an information pack, please contact the Boiler Upgrade team.

#### CONTACT BOILER UPGRADE TEAM

Telephone:	01727 744031
Email:	boilerupgrade@vokera.co.uk

\*Further scheme requirements apply.



# Complete your renewable installation

## Vokèra high efficiency boilers and water cylinders

Vokèra specialises in the domestic and light commercial heating and hot water market and provides products that fulfil most modern requirements. Complimenting the Vokèra renewable portfolio, Vokèra boilers are available in natural gas with LPG versions available and a wide range of flue options mean that Vokèra appliances are extremely versatile – there isn't any place in the home where they can't be installed. Unvented cylinders and an instantaneous water heater are also available to ensure that there is a Vokèra product solution for all modern heating and hot water requirements.

Vokèra's extensive product portfolio includes:

### Comprehensive range of domestic combination boilers



- Energy efficiencies over 90%
- Modulation ratios up to 10:1
- High flow rates up to 15.6 l/min

### Domestic open vent boilers



- Energy efficiencies over 90%
- Rear flue option
- Kitchen cupboard fit

### Domestic system boilers



- Energy efficiencies over 90%
- Outputs from 15kW - 47kW
- Modulation ratios up to 8:1

### Light commercial system boilers



- Linear and cascade installations
- Wall mounted or free standing
- Cascade systems up to 400kW
- Internal and external box units

### Water Cylinders and Water Heaters



- Unvented indirect cylinders
- Unvented twin coil cylinders, compatible with Zenith solar
- Instantaneous hot water heater

Please check with the Vokèra Pre Sales team for the compatibility of these products with Vokèra Zenith solar thermal and AriaPRO air source heat pumps.

Contact the Vokèra Pre Sales team: [pre-sales@vokera.co.uk](mailto:pre-sales@vokera.co.uk)

Also available are the below supporting product guides.

[Commercial High Power Heating Solutions Catalogue](#)

[A4 Product Catalogue](#)

[Pocket sized Product Guide \(domestic boilers and accessories\)](#)

To request a copy of the above product guides please email: [marketing@vokera.co.uk](mailto:marketing@vokera.co.uk)



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