

New Energy Solutions

Photovoltaics, Solar Thermal
& Heat Pumps



New Energy Solutions

Pioneering heating solutions since 1905

As environment concerns remain hot on the national agenda and the demand for energy efficient heating technologies continues to increase, here at Ideal, we understand that you want a reliable, long term partner that has the skills and expertise to deliver you a wide range of reliable and pragmatic solutions.

With over 100 years of manufacturing experience, you can be confident to know that our capabilities stretch beyond traditional boiler technologies, including a wide range of new energy solutions in the form of photovoltaics, solar thermal and heat pumps; all perfectly designed to meet your individual building requirements.



As well as being able to help you rise to the challenge of the UK building regulations, we also provide a dedicated one-to-one support service throughout the design, planning and after sales stages, giving you total peace of mind that we will provide you with the complete one-stop solution, all from one manufacturer. When you choose to partner with Ideal you can be confident to know that you're partnering with a British manufacturer that's supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year.

We have been keeping British homes warm for over a century and believe in making products which are reliable, energy efficient and easy to use, combining the latest technology with common sense engineering that makes a real difference to installers and homeowners alike

Our products are easy to specify, simple to install & maintain and most importantly are reliable. From high efficiency boilers and controls to solar thermal, air source and ground source heat pumps, we can take care of all your heating and hot water needs, now and in the future.

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Legislation



The Renewable Energy Strategy was put together by UK Government to illustrate how it will achieve targets set in The Renewable Energy Directive that state the UK should be generating 15 percent of its energy from renewable sources by 2020.

Along with this, 'carbon footprint' is now a nationally recognised phrase and is becoming increasingly important not only to the government but also to the general public. People are becoming more 'environmentally aware' and hold high expectations of the colour green.

Although people want to be seen as being environmentally friendly, this is not currently being achieved when it comes to efficiency in the home. More than a quarter of carbon dioxide generated in the UK comes from energy used to heat, light and run people's homes. This carbon dioxide has been shown to damage the environment and cause climate change.

All of the above, teamed with the demand for more sustainable homes with low running costs, forces organisations in the public and private sector to take an environmentally responsible approach when it comes to new-build homes.

Everyone's business: Legislation and changing trends

Climate change plays a major role on Government agendas all over Europe with legislation in place outlining targets including a 20 percent use of renewable energy as part of the European Renewable

Energy Directive. And although the UK is currently not seen to use a high level of renewable energy sources, we still have targets to reach and legislation to adhere to when it comes to renewable energy.



Code for Sustainable Homes

The Code for Sustainable Homes was introduced in 2007 by the Government in the UK and works as a standard for which new build homes in England are required to meet. Wales and Northern Ireland use the CfSH but levels required may vary from England.

The code has four levels which are star rated, with any new build home that is publicly funded required to achieve a minimum of four stars, and privately built homes need to meet three star rating.

These requirements will increase over the years with both public and privately funded homes required to meet the highest star

rating of six stars by 2016 and therefore delivering zero carbon homes.

To achieve the various star ratings, new build homes are measured against nine design categories.

- Energy and CO₂ Emissions
- Pollution
- Water
- Health and Wellbeing
- Ecology
- Materials
- Surface Water Run-off
- Management
- Waste



Each category has a different points value depending on the impact it has on making the home sustainable.

In relation to the Energy/CO₂ category, the requirements are a percentage reduction in carbon emissions compared with the Target Emission Rate (TER) calculated in accordance with the Building Regulations Part L1 (2006), the table below shows the minimum percentage reduction required for levels three to six.

The Code works alongside Building Regulations, which outline the minimum building standards required by Government legislation. The standards set out in The Code are in excess of the Building Regulations, however new rules in Part L1A Building Regulations 2010 state that there shall be a minimum 25 percentage carbon emission reduction in new dwellings when compared to the 2006 Regulations. This 25 percent improvement in carbon emissions is also a requirement to achieve Code Level 3, showing that The Code for Sustainable Homes is shaping the future of new build homes in England.

Star rating/level	Category	Minimum standard
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CfSH level 3 **25%**



CfSH level 4 **44%**



CfSH level 5 **100%**



CfSH level 6 **Zero carbon**
(all energy use in home)

Minimum % rate improvement over Target Emission Rate (TER) as determined by 2010 Building Regs

Building Regulations – Part L1A

Part L1A of Building Regulations covers the Conservation of Fuel and Power in new homes. Rules on energy efficiency were tightened in October 2010 to bring them in line with the three star rating of The Code for Sustainable Homes. This means all new build residential properties that were submitted for Building Regulations post October 2010 are required to achieve a 25 percent improvement in Carbon emissions when compared to the previous regulations.

The requirements on fuel and power preservation are set to increase by an additional 25 percent in 2013, which will require new build homes to achieve a carbon emission reduction improvement equivalent to the current Code for Sustainable Homes Level 4.

The future of Part L of the Building Regulations looks set to impose further reductions in Carbon emissions, with zero Net CO₂ emissions possible by 2016.



Solar thermal

Flat plate collectors
Evacuated tubes



Ideal Solar thermal

Solar thermal hot water systems offer a simple and affordable solution for a wide variety of new build and retro fit applications. Often chosen for their hard wearing and performance benefits, solar thermal flat plate collectors can deliver significant hot water results even in the often dull UK climate, which means even on a cloudy day, solar gain can still be made.

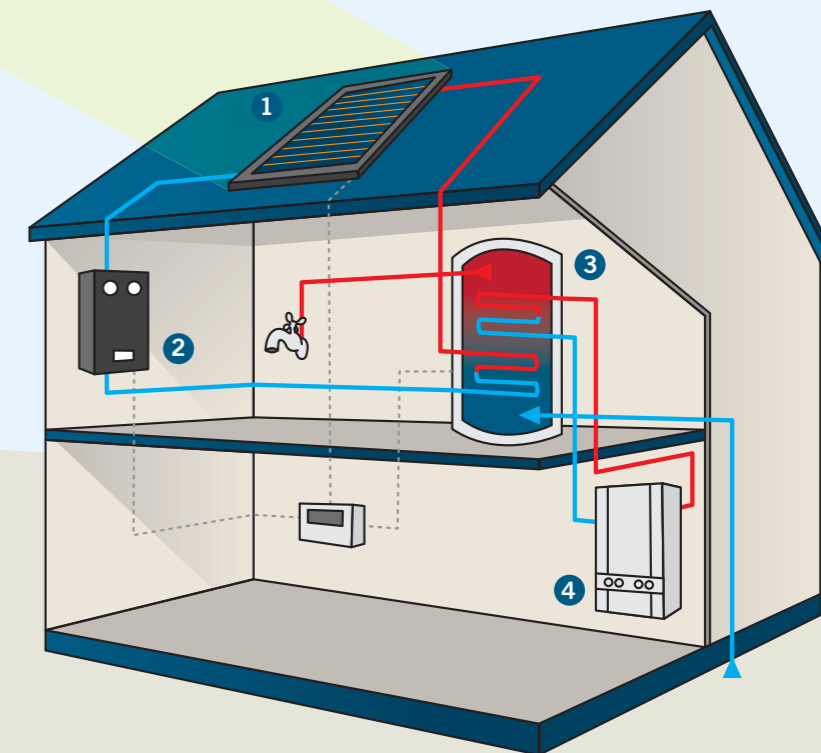
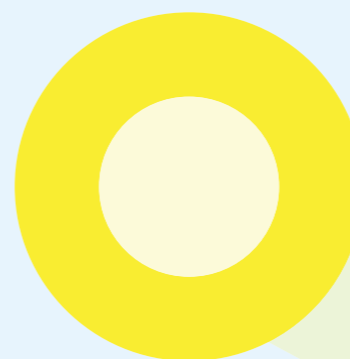
Delivering an average of up to 60% of the homes annual domestic hot water, Ideal offers pressurized systems which collect solar radiation from the sun and transfers it into a heat absorbent fluid. This fluid is then pumped into a twin coil cylinder to heat the homes domestic hot water supply.

The systems work in conjunction with a system or heat only boiler which supplements the system when required.

As an alternative to flat panel solar thermal collectors, evacuated tubes absorb solar energy converting it into heat for use in water heating.

Each evacuated tube consists of two glass tubes made from extremely strong borosilicate glass. The outer tube is transparent allowing light rays to pass through with minimal reflection. The inner tube is coated with a special selective coating (Al-N/Al) which features excellent solar radiation absorption and minimal reflection properties. The top of the two tubes are fused together and the air contained in the space between the two layers of glass is pumped out while exposing the tube to high temperatures. This "evacuation" of the gasses forms a vacuum, which is an important factor in the performance of the evacuated tubes.

Quick and simple to install, Ideal flatplate collectors can be mounted in-roof or on-roof with the minimum of fuss, while solar evacuated tubes can be quickly installed on a roof. For flat roof installations an easy-assemble A-frame can be utilized in both options. Available in a choice of easy to specify packs, Ideal offers a hassle free solar thermal solution.



Ideal Solar System

A solar thermal system is made up of solar collectors (flat panel or tube type), a pump station, a twin coil cylinder, a solar controller and a boiler.

- 1 Solar panels are located on the roof of the property which collect solar radiation, heating the solar fluid contained inside.
- 2 When the fluid has reached the desired temperature, the pump station will begin to circulate the hot fluid down and into the twin coil cylinder.
- 3 The hot fluid enters the twin coil cylinder via the bottom coil and heats the water held inside. A sensor within the cylinder monitors the temperature of the water as it increases. The hot water is then ready for use within the home.
- 4 If the water within the cylinder doesn't reach 60°C, or the set temperature, the boiler will fire up to supplement the system.

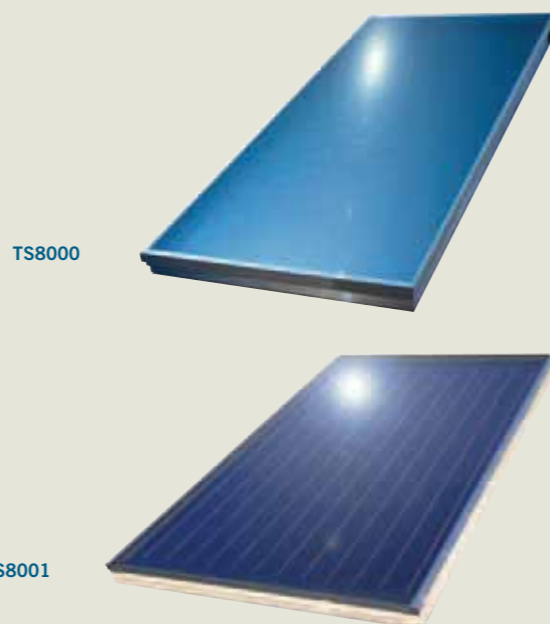
Ideal flat plate collectors

TS8000 On-roof and TS8001 In-roof collectors

These lightweight flat panel collectors are manufactured on their own robotic line

The number of individual components has been kept to a minimum for this product concept. A specially developed glue is the only joining technique used on the flat plate collector.

The collectors come with an aluminium absorber. Equipped with a modular mounting system, the collectors can be used for both flat-roof and roof-mounted installations.



SAP data

TS8000 - On-Roof (part number 206500)
Aperture area - 1.922m²
Conversion factor N_0 0.769
Heat loss coefficient a_1 3.847W/m²K

TS8001 - In-Roof (part number 206507)
Aperture area - 2.33m²
Conversion factor N_0 0.776
Heat loss coefficient a_1 3.293W/m²K



Ideal evacuated tube collectors

Solar evacuated tube collectors 15, 20 & 30 tube

The collector manifold is manufactured from copper and conducts heat transferred by heat pipe technology to the heat transfer fluid, which is pumped through the manifold and to the thermal store.

This process is repeated whenever the collector temperature is more than eight degrees hotter than the thermal store until the desired temperature is achieved.

The collector manifold is designed to manage high pressure and large water consumption systems, making the Ideal evacuated tube a good all round collector.



SAP data

15 Tube (part number 206525)
Aperture area - 1.397m²
Conversion factor N_0 0.679
Heat loss coefficient a_1 1.696W/m²K

20 Tube (part number 206526)
Aperture area - 1.876m²
Conversion factor N_0 0.679
Heat loss coefficient a_1 1.696W/m²K

30 Tube (x2 15 Tubes) (part number 206527)
Aperture area - 2.794m²
Conversion factor N_0 0.679
Heat loss coefficient a_1 1.696W/m²K



Solar Pump Station (PU1)

- A custom built fully insulated pump station
- Visible temperature gauges:
 - Display temperature rise
 - Isolation points
- Visible pressure gauge
- Side access for pump and filling points so no need to remove the cover for most operations
- Supplied with a two years parts and labour warranty



- Quick and easy to install
- Temperature gauges
- Flow meter
- Flow & return check valves
- Pressure relief valve and pressure gauge
- Expansion vessel connection
- Filling & drain connection

Solar Controller (EC1)

- A standard controller or an East/West Controller can be supplied with the system
- Controllers are user friendly and easy to install
- Supplied with a two year parts and labour warranty



- Neat design
- Quick to install
- Simple and easy to use
- two year parts and labour warranty

Twin Coil Cylinder

A hot water cylinder with two coils should be used in an Ideal solar system. The lower coil connects to the solar circuit, whilst the upper coil connects to the normal boiler circuit.

The cylinder capacity can be determined from household size and number of panels.

Selecting the right solar system



Roof types

A range of mounting systems from Ideal ensures the collectors can be installed in the most appropriate manner for the property you are working with.

Flat plate

Equipped with a modular mounting system (for the on-roof TS8000) the collector can be used for both free standing and roof-mounted installations.

The in-roof TS8001 features an external timber frame for ease of installation directly on the roof rafters. A standard type flashing approach then finishes the installation.

Evacuated tubes

Solar evacuated tubes can be quickly installed on roof. For flat roof installations an easy-assemble A-frame can be utilized in both options.



Selecting your Ideal solar system

Ideal have taken the headache away from specifying the right solar system thanks to a series of pre-prepared packs; designed especially to meet the property size and with all the key components needed to achieve a quick and straightforward installation.

Ideal solar is available in a choice of three packs, small, medium or large to suit the individual property requirements. Components are also available to order separately if needed.

Small	For small properties
	<p>Two solar collectors, or 15 tubes, with all required equipment for the solar system installation.*</p>
Medium	For average sized properties
	<p>Three solar collectors, or 20 tubes, with all required equipment for the solar system installation.*</p>
Large	For larger properties
	<p>Four solar collectors, or 30 tubes, with all required equipment for the solar system installation.*</p>

All Packs include the following:

- Solar collector(s) TS8000, TS8001 or Evacuated tubes including connectors
- Roof fixing brackets/rails (number and type to suit quantity and type of collector)
- Expansion vessel with hose and bracket
- Controller (EC1) including sensors
- Pump station (PU1)
- 20 litres of solar fluid

*(Note: cylinder and pipework to be sourced separately)

Solar PV



Solar PV

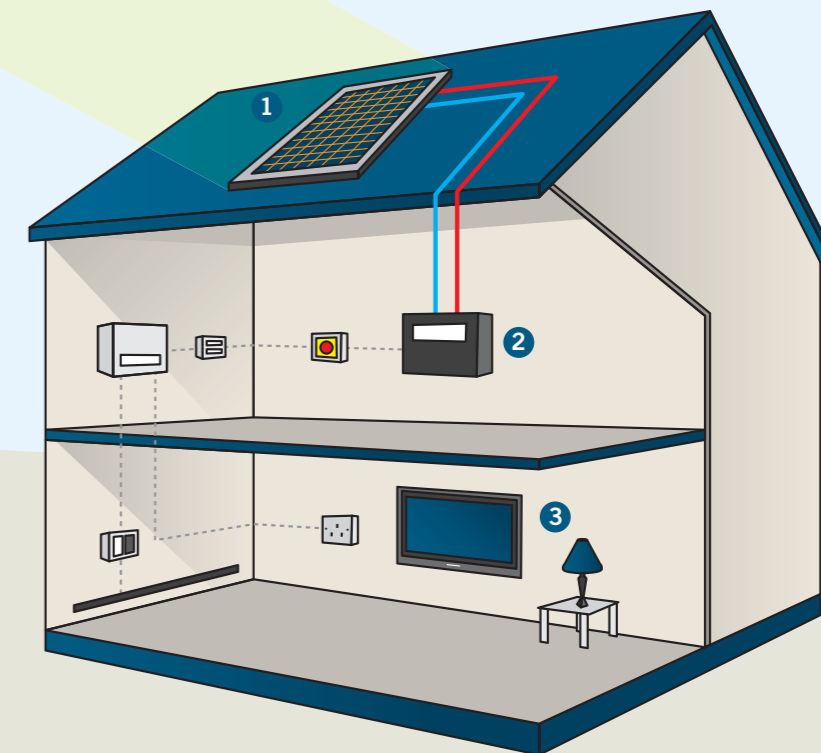
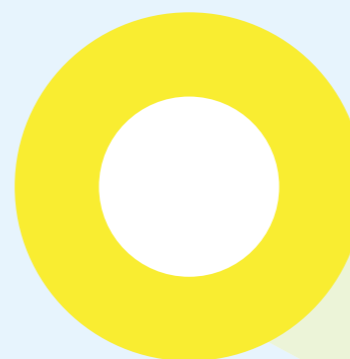
Ideal Photovoltaics

Solar photovoltaic panels, or solar PV panels, is a technology in which daylight is converted into electricity which is then used to power homes and businesses. It uses energy from the sun to create electricity that will operate electrical appliances and lighting.

The system allows for excess electricity generated to be sold back to the electricity grid or stored in batteries for off the grid areas. Solar PV panels work well in both urban and rural areas. They are also capable of generating electricity on cloudy days as they only need daylight to work, not necessarily sunlight.

Solar PV reduces usage of fossil fuels and housing carbon emissions. The panels produce green energy that will significantly reduce the cost of energy bills and provides independence from energy providers.

The use of photovoltaic can generate revenue as power that is generated and not used can be sold back to the electricity grid through the UK Feed in Tariff.



Ideal PV solar system

- 1 A solar photovoltaic panel is made up of a number of cells wired together (PV module) which convert energy gathered from sunlight into direct current (DC) electricity.
- 2 A PV cell consists of two thin layers of semi-conducting materials (generally silicon). When sunlight shines on the PV cell it knocks electrons from the orbits of the semi-conductor in sufficient numbers to generate direct current electricity.
- 3 With the aid of an inverter, direct current electricity is converted into alternating current (AC) power. Alternating current is the type of electricity required to run electrical appliances in the home.

On and off the grid solar photovoltaic systems



On the grid solar PV system

On the grid solar PV systems are the most common type of installation. In the case of on the grid installations the electricity produced during the day is used by the property with the excess being sold back to the utility provider. At night, electricity is supplied via the normal utility grid system.

Main components:

- PV array (several PV modules)
- Mounting system
- DC isolator and cabling
- AC isolator and cabling
- AC/DC inverter
- Meter

Off the grid solar PV system

Off the grid solar PV systems are used where connection to the electricity is not possible or proves to be too costly. In this case sizing the installation on off the grid solar PV systems is critical to ensure power supply is available when required.



PV collector 200 and 205 Wp

These photovoltaic modules are first class and surpass all the quality standards in European markets. The high efficiency multicrystalline solar modules on a six inch wafer base are manufactured exclusively using the very latest equipment. Innovative testing ensures exact technical performance data for each individual module. The solar modules with power of 200 and 205 Wp are delivered with aluminum frames and junctions. A Tyco junction box is fixed as standard. Only top-quality solar modules leave the production line. These solar modules, designed for high output of power and profit, are mainly used in systems coupled with on grid systems.



Part Number:
TSPV 200 Wp - 206552
TSPV 205 Wp - 206551

Solar PV accessories

AC/DC Inverter

Grid tied and off the Grid options

An AC/DC inverter converts direct current (DC) electricity into alternating current (AC) grid compliant power. The inverter is available in various outputs and is a very flexible option which can be installed indoor and outdoors.

Grid tied inverter SB1700 model



AC/DC Isolators

AC and DC isolators are available to suit all system sizes. The isolators we supply have an IP66/67 rating which means it's one of the safest devices on the market. The isolators are supplied in insulated enclosures with the operational currents ranging from 16 to 64 amps and voltages ranging from 450 to 800.



Solar PV Meter

We can supply both single phase and three phase k/w input meters.

These basic monitoring systems show the amount of electricity consumed and exported to the grid. The more advanced monitoring systems show consumption by unit and value and have wireless communication with up to 12 inverters via Bluetooth, audio alarm, USB port for which enable easy data transfer to laptops and computers.

These products are available to special order.

Selecting your PV solar system

We have taken the headache away from specifying the right solar PV system thanks to a series of pre-prepared packs with all the key components needed to achieve a quick and straightforward installation.

By giving us some information about roof area and roof type as well as the orientation, we are able to size up the maximum amount of PV modules that can be fitted to the roof. Selection can then be made from the various PV packs available to match available space.

Ideal solar PV is available in a choice of various kW output packs to suit your individual requirements.

Components are also available to order separately if needed.

A typical 2kW pack consists of the following:

2kW Pack			
			<p>Ten modules (200W)</p>
	<p>One Single phase inverter (part number 206556)</p>		<p>One AC isolator (part number 206565)</p>
	<p>One single phase kW meter (part number 206553)</p>		<p>Cable and connections (cable 1m part number 206568) (female connector -blue part number 206569) (female connector +red part number 206570)</p>
	<p>One DC isolator (part number 206564)</p>		<p>Mounting system to fix five modules</p>

Air source heat pumps

Airtherm



Air source heat pumps

Designed specifically to operate in the UK climate on new or existing situations, air source heat pumps utilise the heat within the air, to create heat for underfloor heating or low temperature radiators.

This clean and sustainable heating solution, provides an ideal solution for properties without a gas supply, or looking to reduce their CO₂ emissions.

The Ideal Airtherm has been designed to provide a simple and dependable solution; delivering up to 100% of the annual heating and domestic hot water for a wide variety of properties.

Ideal Airtherm heat pumps provide an excellent efficiency performance of up to 400% (dependent on duty).

The normal measure of efficiency is the coefficient of performance (COP) which usually varies between two and four dependent on external air temperatures, humidity and heating temperatures. The range is particularly suitable for well-insulated properties and those without a mains gas supply.

Heat pumps are recognised by the Government's Standard Assessment Procedure (SAP) and show significant carbon emissions savings over other forms of space and water heating. With the target to reduce CO₂ emissions by 50%, Ideal's Airtherm allows compliance with level 3 of the Code for Sustainable Homes, when used in conjunction with notional energy saving methods such as improved thermal insulation.

Even in low ambient temperatures, if frost builds up on the evaporator due to moisture in the air, the unit will automatically defrost itself to maintain operation.

Ideal's Airtherm design provides hot water supply up to 65°C ensuring there is no need for electrical heating backup and delivering complete homeowner comfort and peace of mind.

Designed for external use, Ideal's Airtherm range offers an unobtrusive, simple and cost effective renewable energy solution for new build and retrofit installations alike.

The Ideal Airtherm range is approved under the Microgeneration Certification Scheme.



How does an air source heat pump system work?



The process is as follows:

1 The Evaporator

The evaporator collects heat from the outside air, which has been pre-heated by the sun. The air is drawn into the unit by the fan. Liquid refrigerant (R134a) passing through the evaporator is at a considerably lower temperature than the outside air, causing the air to give up its heat to the refrigerant which is vaporised.

2 The Compressor

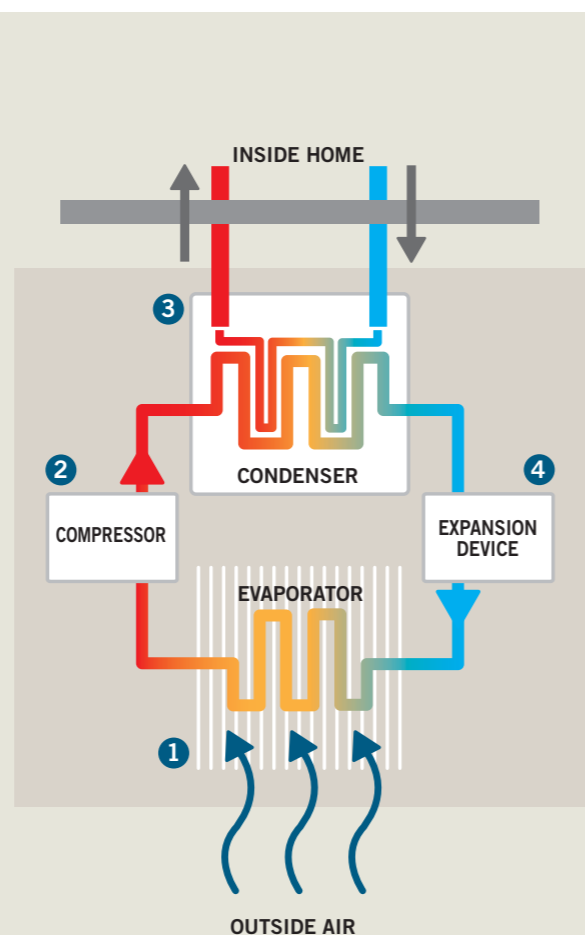
The preheated vapour passes to the compressor, where it is compressed and upgraded to a much higher temperature and pressure.

3 The Condenser

The hot vapour created by the compressor now enters the condenser where it is surrounded by water from the heating system, causing the heat to be given up to the cooler water. The cooled refrigerant now returns to its former liquid state, although it remains under high pressure from the compressor.

4 The Expansion Device

The refrigerant is further cooled and pressure reduced by passing the liquid through the expansion device, from where it returns to the evaporator to repeat the cycle.



Applications

Monovalent applications

The heat pump can be sized to provide 100% of the heating requirement on the coldest day of the year, plus 100% of the annual DHW requirement in applications with low temperature space heating requirements.

This makes an air source heat pump ideal for new build properties, or retro fitted into highly insulated existing dwellings.

Airtherm can efficiently provide required volumes of water to service the dwelling's heating and hot water loads. A buffer tank ensures even temperatures and defrost capacity. Defrost cycles are a maximum of four minutes per hour and not above 4°C ambient.

Bivalent applications

Retro fitting to existing properties whilst retaining an existing boiler as an additional heating capacity does not need to be a problem.

The Airtherm heat pump can be sized to provide a variable proportion of the annual heating requirement, for example 80% with the existing boiler integrated to deliver the balance on the coldest days.

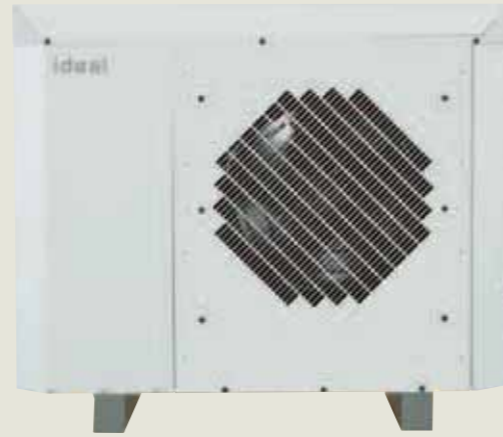
This type of system design and application provides the homeowner with an ability to balance the initial capital cost of installation with the benefit of reduced running costs.



Air source heat pumps

Airtherm features and benefits

- Available in three outputs of 4.5, 9 and 12 kW
- Dual temperature operation for maximum efficiency
- DHW heating temperature control of 65°C (needs no additional immersion heater or boiler back up)
- Space heating temperatures variable from 35-55°C for underfloor heating or radiators
- Twin coil compressors in larger models optimise efficiency
- Reverse cycle defrost: max 4 mins per hour
No defrost above 4°C ambient
- Operational to -15°C
- No flues, gas supply or ventilation required
- Low starting currents
- Simple installation: only requiring water and electrical connections
- Very low sound levels
- Maintenance free



Accredited to the following:



Built in control panel



Thermstore

A range of unvented cylinders, buffer tanks and combined buffer and cylinders are available for use with Airtherm heat pumps.



Ideal Airtherm Heat Pumps and Cylinders

Easy to order packs. Ideal have taken the headache away from specifying the right Airtherm system thanks to a series of pre-prepared packs designed especially to meet the property size.

Heat Pump and Unvented Cylinder ordering guide

Heat Pump			Unvented Cylinder	
	Airtherm 4.5 kW (part number 204826)	+		Thermstore Unvented cylinder 150L (part number 204829)
	Airtherm 9 kW (part number 204827)			Thermstore Unvented cylinder 180L (part number 204830)
	Airtherm 12 kW (part number 204828)			Thermstore Unvented cylinder 200L (part number 204831)

Heat Pump and Unvented Buffer Tank ordering guide

Heat Pump			Unvented Buffer Tank	
	Airtherm 4.5 kW (part number 204826)	+		Thermstore Unvented buffer tank 50L (part number 204832)
	Airtherm 9 kW (part number 204827)			Thermstore Unvented buffer tank 90L (part number 204833)
	Airtherm 12 kW (part number 204828)			Thermstore Unvented buffer tank 150L (part number 204834)

Heat Pump and Combined Unvented Cylinder and Buffer Tank ordering guide

Heat Pump			Combined Unvented Buffer + Cylinder Pack	
	Airtherm 4.5 kW (part number 204826)	+		Thermstore Unvented buffer tank and cylinder 50L/150L (part number 204835)
	Airtherm 9 kW (part number 204827)			Thermstore Unvented buffer tank and cylinder 95L/180L (part number 204836)
	Airtherm 12 kW (part number 204828)			Thermstore Unvented buffer tank and cylinder 150L/200L (part number 204837)

Ground source heat pumps

Groundtherm



Ground source heat pumps

Ground source heat pumps have been shown to provide significant carbon savings compared to conventional forms of space and water heating. Ideal's ground source heat pumps have been developed specifically with the UK housing market in mind and provide the perfect solution for reducing the carbon footprint of both new built and existing dwellings.

Our ground source heat pumps are maintenance free and can heat a home and at the same time are designed to supply domestic hot water at 65°C, without the need for electric heating back up.

Along with saving energy and preserving fossil fuels, the use of ground source also provides the perfect water and heating solution for new built and existing homes that are off gas-grids. The heating and hot water are managed by a standard central heating programmer with a room thermostat controlling the heat output in exactly the same way as with a conventional boiler. The pumps have higher efficiency levels because the ground provides a constant source of energy.

Field trials show that code level four of CfSH can be achieved with Ideal's ground source heat pump with no change to the basic structure of the building.

How does a ground source heat pump system work?

Ground source heat pumps work on the principle of transforming the solar energy from the ground into a useable energy that can be used in a home. This is achieved by placing a heat exchanger (a collector which can be of varying forms) into the ground adjacent to the property and simply allowing it to absorb the solar energy from the immediate area around it.

The ground source heat pump circulates water (with anti-freeze) through the ground collector. The water absorbs energy and passes it to the heat pump in the following manner.

The process is as follows:

1 The Evaporator

The water from the ground collector circulates through the evaporator in the heat pump. There it gives up its heat to liquid refrigerant passing separately through the evaporator, causing the refrigerant to vapourise. The water returns to the ground collector to be heated again in a continuous cycle.

2 The Compressor

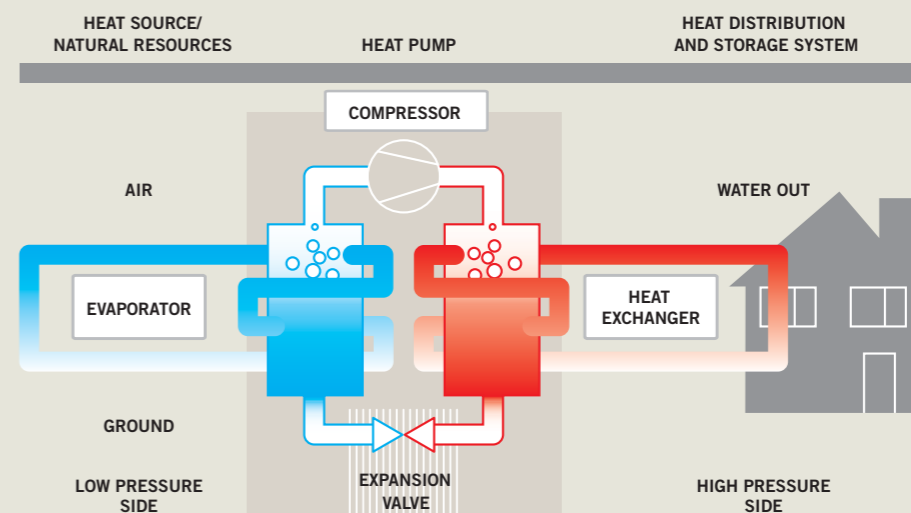
The preheated vapour passes to the compressor, where it is compressed and upgraded to a much higher temperature and pressure.

3 The Condenser

The hot vapour created by the compressor now enters the condenser where it is surrounded by water from the heating system, causing the heat to be given up to the cooler water. The cooled refrigerant now returns to its former liquid state, although it remains under high pressure from the compressor.

4 The Expansion Device

The refrigerant is further cooled and pressure reduced by passing the liquid through the expansion device, from where it returns to the evaporator to repeat the cycle.



Different types of collector

With an appropriately designed system, including a geological survey, the Ideal Groundtherm heat pump will provide energy to heat the space and provide domestic hot water.



Bore Hole Collector



Slinky Collector



Horizontal Collector

Type collector explanations

Bore hole

A bore hole is buried 50 to 150 meters under the ground. Minimum ground area is required as the coil is placed in a vertical line underground. Specialist drilling is necessary for bore hole.

Slinky collector

A Slinky is buried 1 to 1.5 meters under the ground. Large ground area is required with no other specialist requirements.

Collector

A collector needs to be buried between 1 to 1.5 meters under the ground as with the slinky, however, a collector requires less ground area as the coil lies in a horizontal line.



Groundtherm features and benefits

- Is easy to install, no gas supplied, flue or ventilation required
- Fitted with plumbing and electrical connections only - no refrigeration certification required for the installation
- Operates with low starting currents
- Provides the unique ability to operate up to 65°C water temperature to generate DHW without any direct electrical assistance back up
- Space heating temperatures variable from 35°C to 55°C for underfloor heating or radiators
- User friendly digital controls, designed to interface with standard central heating programmers



Product Components

Compressor

- Scroll compressor technology
- Single Compressor in 3.5 / 5 & 6 kW units
- Twin Compressors in 8 & 12kW units

Condenser

- Copper condenser achieving high heat transfers

Digital Controls

- Simple and user friendly integrated controls designed to interface with standard heating programmers
- Two stage control for the water setting achieving part load operation

Accessories: Ground Loop Circulating Pump

Available for use with the 3.5 & 5 kW units.

It can also be used with a 6.5 kW unit on a single ground loop. For larger units and systems a system pump is to be specified separately.



Part Number: 206365



Thermstore

A range of unvented cylinders, buffer tanks and combined buffer and cylinders are available for use with Groundtherm heat pumps.



Heat Pump and Unvented Cylinder ordering guide

Heat Pump			Unvented Cylinder	
	Groundtherm 3.5kW (part number 206307)	+		Thermstore Unvented cylinder 150L (part number 204829)
	Groundtherm 5 kW (part number 206308)			Thermstore Unvented cylinder 180L (part number 204830)
	Groundtherm 6.5 kW (part number 206309)			Thermstore Unvented cylinder 200L (part number 204831)
	Groundtherm 8 kW (part number 206310)			
	Groundtherm 12 kW (part number 206311)			

Note: Don't forget to order your ground loop circulating pump, part number 206365 for the 3.5kW and 5kW units.

Heat Pump and Unvented Buffer Tank ordering guide

Heat Pump			Unvented Buffer Tank	
	Groundtherm 3.5kW (part number 206307)	+		Thermstore Unvented buffer tank 50L (part number 204832)
	Groundtherm 5 kW (part number 206308)			Thermstore Unvented buffer tank 90L (part number 204833)
	Groundtherm 6.5 kW (part number 206309)			Thermstore Unvented buffer tank 150L (part number 204834)
	Groundtherm 8 kW (part number 206310)			
	Groundtherm 12 kW (part number 206311)			

Note: Don't forget to order your ground loop circulating pump, part number 206365 for the 3.5kW and 5kW units.

Heat Pump and Combined Unvented Cylinder and Buffer Tank ordering guide

Heat Pump			Combined Unvented Buffer + Cylinder Pack	
	Groundtherm 3.5kW (part number 206307)	+		Thermstore Unvented buffer tank and cylinder 50L/150L (part number 204835)
	Groundtherm 5 kW (part number 206308)			Thermstore Unvented buffer tank and cylinder 95L/180L (part number 204835)
	Groundtherm 6.5 kW (part number 206309)			Thermstore Unvented buffer tank and cylinder 150L/200L (part number 204835)
	Groundtherm 8 kW (part number 206310)			
	Groundtherm 12 kW (part number 206311)			

Note: Don't forget to order your ground loop circulating pump, part number 206365 for the 3.5kW and 5kW units.

Code for Sustainable Homes solutions



Here at Ideal we understand the growing importance of energy efficiency and our products are developed to reflect this.

to level five, to show how our solutions can be used to reach each Code level.

To show how our various domestic heating and new energy products can work together to achieve the different levels of the Code for Sustainable Homes we have put together a guide, which ranges from level three right up

Each solution is using an example property of a detached house with a total floor area of 90m² and a south facing roof elevation.

The Code for Sustainable Homes 2010 has been used for the calculations.

Code for Sustainable Homes:

Level 3

The following solutions show how Ideal products can be used to achieve level 3 of the CfSH* using SAP (2009) calculations.

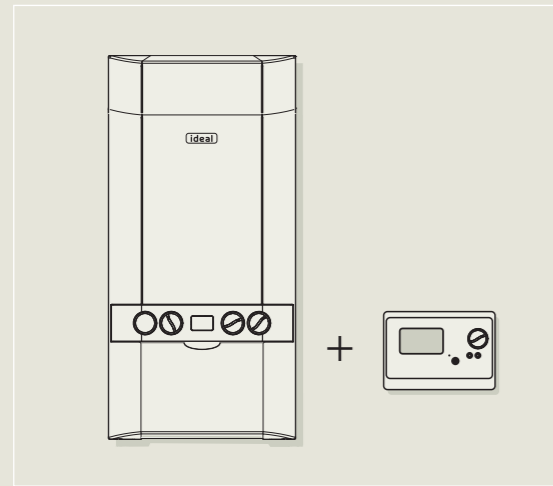
Code level 3 requires minimum a 25 percent saving of CO₂ to be achieved in comparison to Building Regulations.

*Calculations based on a 90m² detached property as an illustration only. Customers must conduct own SAP calculations to ensure final compliance.



Level 3: Solution one

1. Code Combi 33	
Boiler	Ideal Code Combi 33
Controls	Time & Temperature Zone Control Weather Compensation
Water heating	13.4 litres @ 35° rise
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



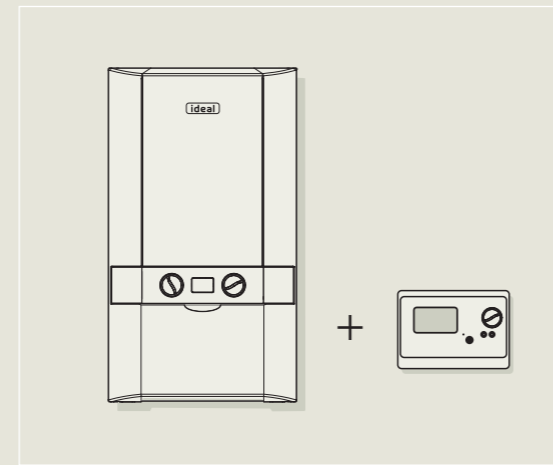
Building fabric

Element U Value	Baseline for Code Level 3	Solution one
Floor	0.18	0.20
Wall	0.24	0.25
Roof	0.11	0.12
Glazing	1.4	1.5
Door	2.0	2.0

Y Value	Baseline for Code Level 3	Solution one
	0.08	0.08

Level 3: Solution two

2. Logic System 30	
Boiler	Ideal Logic System 30
Controls	Time & Temperature Zone Control Weather Compensation
Water heating	210 litre heat loss 1.85 kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



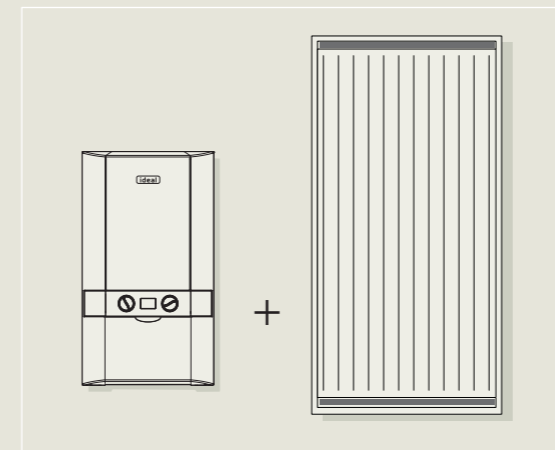
Building fabric

Element U Value	Baseline for Code Level 3	Solution two
Floor	0.18	0.20
Wall	0.24	0.25
Roof	0.11	0.12
Glazing	1.4	1.7
Door	2.0	2.0

Y Value	Baseline for Code Level 3	Solution two
	0.08	0.08

Level 3: Solution three

3. Logic System 30 & Solar Thermal Flat Plates*	
Boiler	Ideal Logic System 30
Renewable technology	Ideal solar thermal flat plate TS8001
Controls	Programmer Room stat TRV's
Water heating	65/145 litre heat loss 1.85 kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



Building fabric

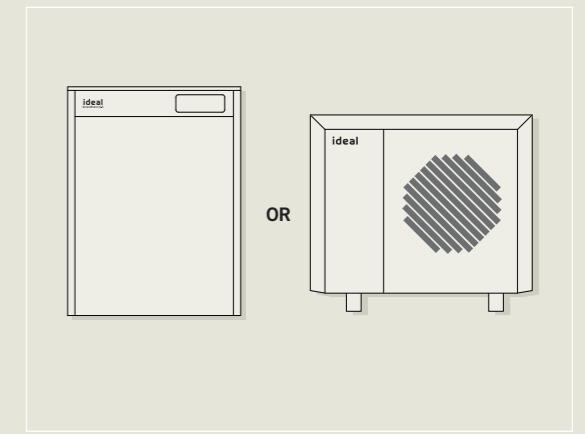
Element U Value	Baseline for Code Level 3	Solution three
Floor	0.18	0.20
Wall	0.24	0.30
Roof	0.11	0.12
Glazing	1.4	1.9
Door	2.0	2.5

Y Value	Baseline for Code Level 3	Solution three
	0.08	0.08

*This option is also available using Ideal solar evacuated tubes (TS15)

Level 3: Solution four

4. Heat Pump	
Boiler	Ideal Airtherm Air Source Heat Pump OR Ideal Groundtherm Ground Source Heat Pump
Controls	Time & Temperature Zone Control Weather Compensation
Water heating	210 litre heat loss 1.85 kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

Element U Value	Baseline for Code Level 3	Solution four
Floor	0.18	0.22
Wall	0.24	0.30
Roof	0.11	0.16
Glazing	1.4	1.9
Door	2.0	2.5

Y Value	Baseline for Code Level 3	Solution four
	0.08	0.15

Code for Sustainable Homes:

Level 4

The following solutions show how Ideal products can be used to achieve level 4 of the CfSH* using SAP (2009).

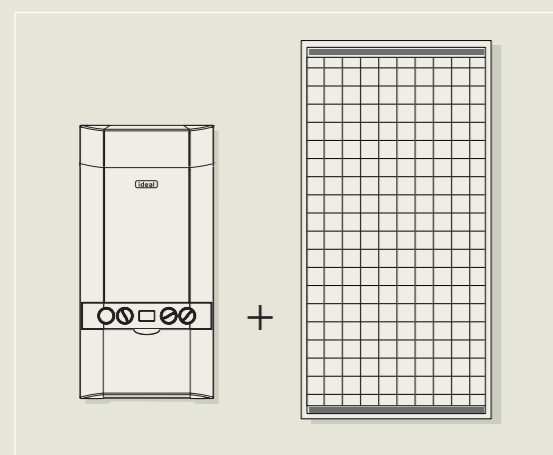
Improvements set to take place in 2013 will result in level 4 becoming the new minimum requirement for new built dwellings. Level 4 requires a 44 percent improvement of CO₂ of that made in 2005.

*Calculations based on a 90m² detached property as an illustration only. Customers must conduct own SAP calculations to ensure final compliance.



Level 4: Solution one

1. Code Combi 33 & Solar Photovoltaic	
Boiler	Ideal Code Combi 33
Renewable technology	0.5kw PV panel
Controls	Time & Temperature Zone Control Weather Compensation Delayed Start Thermostat
Water heating	13.4 litres @ 35° rise
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



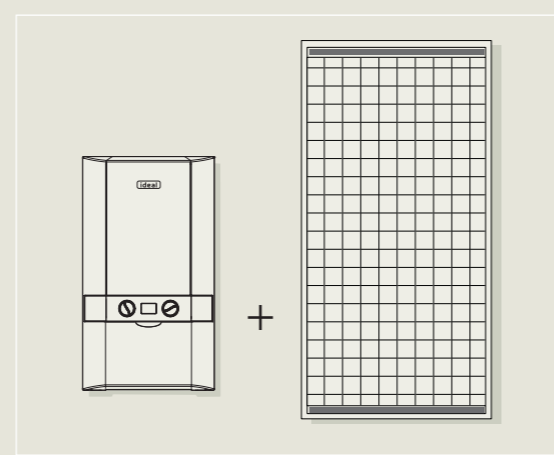
Building fabric

Element U Value	Baseline for Code Level 4	Solution one
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 4	Solution one
	0.05	0.07

Level 4: Solution two

2. Logic System 30 & Solar Photovoltaic	
Boiler	Ideal Logic System 30
Renewable technology	0.5kw PV panel
Controls	Time & temperature zone control + Weather compensator + Delayed start thermostat
Water heating	N/A
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



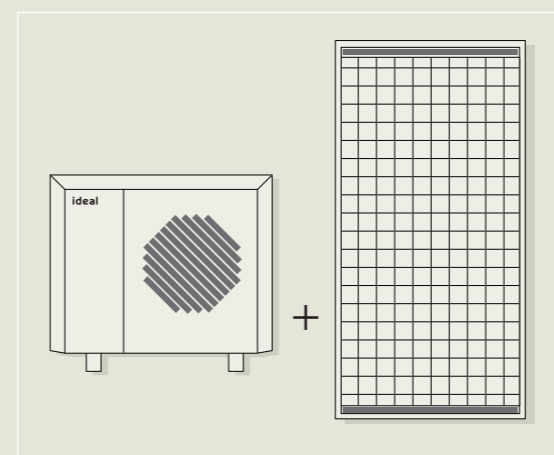
Building fabric

Element U Value	Baseline for Code Level 4	Solution two
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 3	Solution two
	0.08	0.07

Level 4: Solution three

3. Air Source Heat Pump & Solar PV	
Boiler	Ideal Airtherm Air Source Heat Pump
Renewable technology	1.7kw Ideal Solar PV
Controls	Time & temperature zone control + Weather Compensator
Water heating	210 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



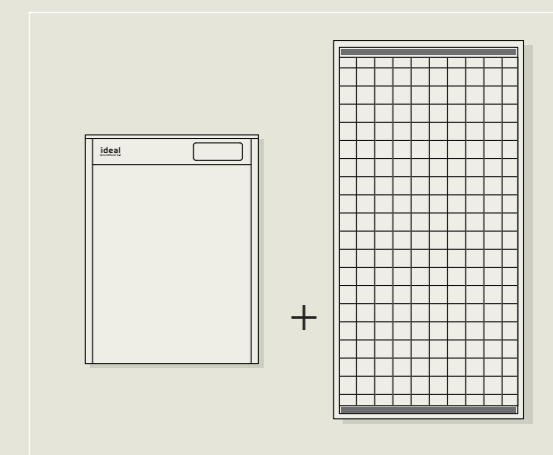
Building fabric

Element U Value	Baseline for Code Level 4	Solution three
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 4	Solution three
	0.08	0.07

Level 4: Solution four

4. Ground Source Heat Pump & Solar PV	
Boiler	Ideal Groundtherm Ground Source Heat Pump
Renewable technology	1.2kw Ideal Solar PV
Controls	Time & temperature zone control + Weather Compensator
Water heating	210 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

Element U Value	Baseline for Code Level 4	Solution four
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 4	Solution four
	0.08	0.07

Code for Sustainable Homes:

Level 4 (continued)



Code for Sustainable Homes:

Level 5

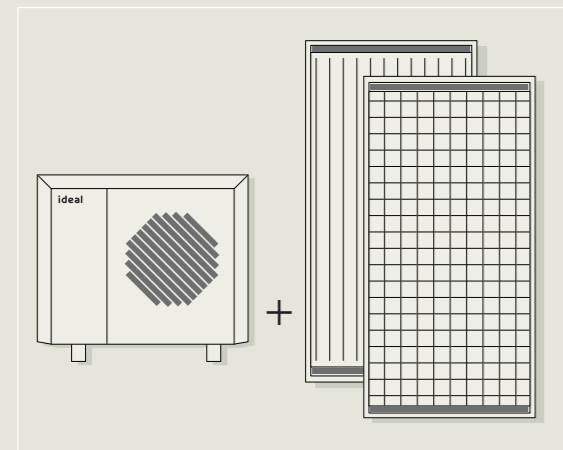
The following solutions show how products can be used to achieve level 5 of the CfSH* using SAP (2009).

Level 5 requires a 100 percent improvement of CO₂ is made in comparison to Building Regulations.

*Calculations based on a 90m² detached property as an illustration only. Customers must conduct own SAP calculations to ensure final compliance.

Level 4: Solution five

5. Air Source Heat Pump + Solar Flat Plates & Solar PV*	
Boiler	Ideal Airtherm Air Source Heat Pump
Renewable technology	1x Ideal TS800 flat plate & 1kw Ideal PV
Controls	Time & temperature zone control + Weather compensator
Water heating	65/145 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

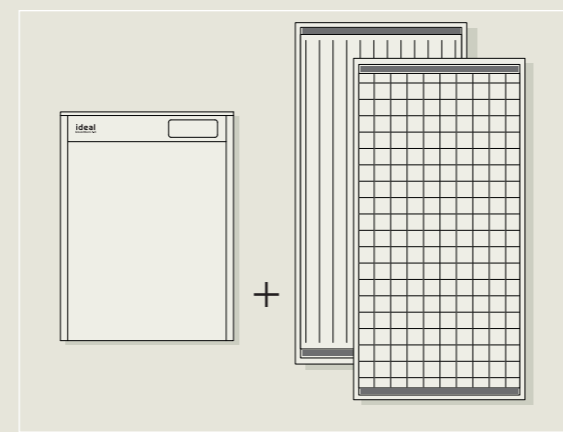
Element U Value	Baseline for Code Level 4	Solution five
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 4	Solution five
	0.08	0.07

*This option is also available using Ideal solar evacuated tubes (TS15)

Level 4: Solution six

6. Ground Source Heat Pump + Solar Flat Plates & Solar PV*	
Boiler	Ideal Groundtherm Ground Source Heat Pump
Renewable technology	1x Ideal TS800 solar flat plate & 0.5kw Ideal PV
Controls	Time & temperature zone control + Weather Compensator
Water heating	65/145 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

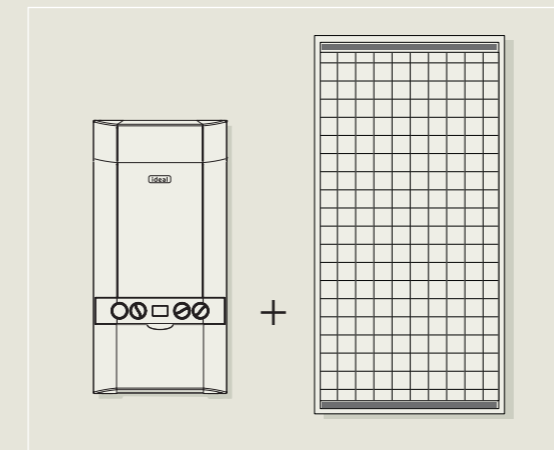
Element U Value	Baseline for Code Level 4	Solution six
Floor	0.17	0.17
Wall	0.20	0.25
Roof	0.10	0.11
Glazing	1.0	1.5
Door	1.0	1.5

Y Value	Baseline for Code Level 4	Solution six
	0.08	0.07

*This option is also available using Ideal solar evacuated tubes (TS15)

Level 5: Solution one

1. Code Combi 33 & Solar Photovoltaic	
Boiler	Ideal Code Combi 33
Renewable technology	3.0kw PV panel
Controls	Time & temperature zone control Weather compensation Delayed start thermostat
Water heating	13.4 litres @ 35° rise
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



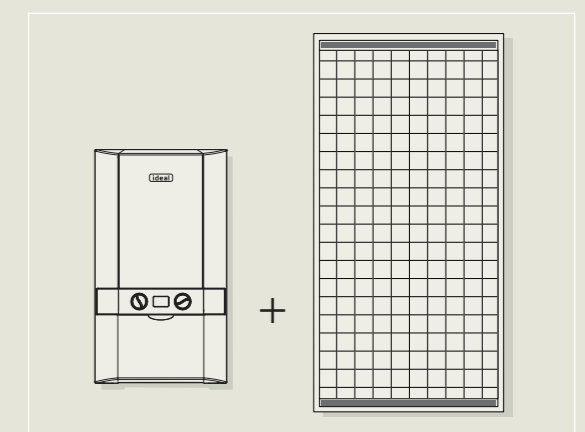
Building fabric

Element U Value	Baseline for Code Level 5	Solution one
Floor	0.15	0.15
Wall	0.18	0.19
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

Y Value	Baseline for Code Level 5	Solution one
	0.04	0.05

Level 5: Solution two

2. Logic System 30 & Solar Photovoltaic	
Boiler	Ideal Logic system 30
Renewable technology	3.0kw PV panel
Controls	Time & temperature zone control Weather compensation Delayed start thermostat
Water heating	210 litre heat loss 1.85 kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



Building fabric

Element U Value	Baseline for Code Level 5	Solution two
Floor	0.15	0.15
Wall	0.18	0.19
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

Y Value	Baseline for Code Level 5	Solution two
	0.04	0.05

Code for Sustainable Homes:

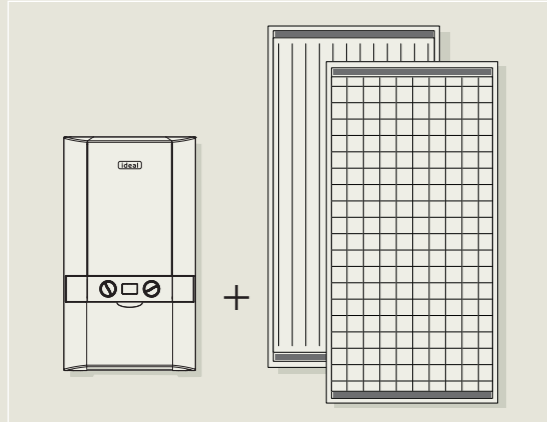
Level 5 (continued)



Level 5: Solution three

3. Logic System 30 + Solar Flat Plates & Solar Photovoltaic*

Boiler	Ideal Logic system 30
Renewable technology	2x Ideal TS8000 flat plates 2.5kw PV panel
Controls	Time & temperature zone control Weather compensation Delayed start thermostat
Water heating	65/145 litre heat loss 1.85 kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Radiators



Building fabric

Element U Value	Baseline for Code Level 5	Solution three
Floor	0.15	0.15
Wall	0.18	0.20
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

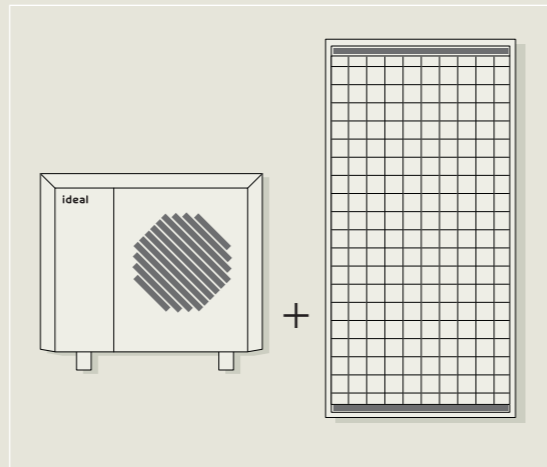
Y Value	Baseline for Code Level 5	Solution three
	0.04	0.05

*This option is also available using Ideal solar evacuated tubes (2x TS15)

Level 5: Solution four

4. Air Source Heat Pump & Solar PV

Boiler	Ideal Airtherm Air Source Heat Pump
Renewable technology	3.9kw Ideal solar PV
Controls	Time & temperature zone control + Weather compensator
Water heating	210 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

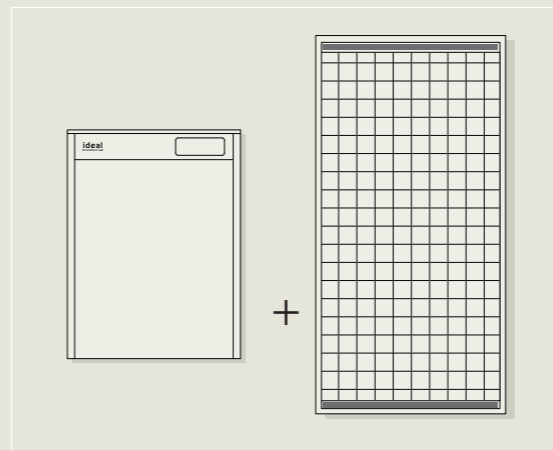
Element U Value	Baseline for Code Level 5	Solution four
Floor	0.15	0.15
Wall	0.18	0.18
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

Y Value	Baseline for Code Level 5	Solution four
	0.04	0.05

Level 5: Solution five

5. Ground Source Heat Pump & Solar PV

Boiler	Ideal Groundtherm Ground Source Heat Pump
Renewable technology	3.9kw Ideal PV
Controls	Time & temperature zone control + Weather Compensator
Water heating	210 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

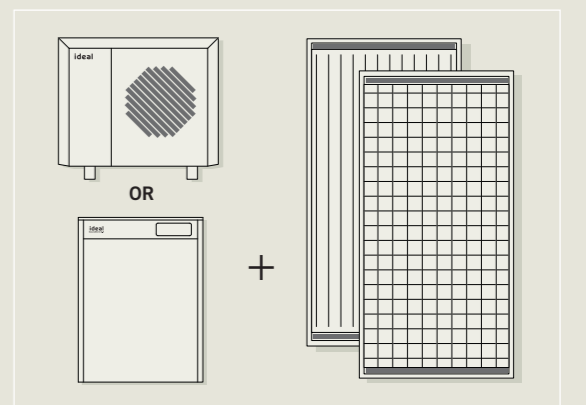
Element U Value	Baseline for Code Level 5	Solution five
Floor	0.15	0.15
Wall	0.18	0.18
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

Y Value	Baseline for Code Level 5	Solution five
	0.04	0.04

Level 5: Solution six

6. Heat pump + Solar Flat Plates & Solar PV*

Boiler	Ideal Airtherm Air Source Heat Pump OR Ideal Groundtherm Ground Source Heat Pump
Renewable technology	1x Ideal TS801 flat plate & 3.1kw Ideal PV
Controls	Time & temperature zone control + Weather compensator
Water heating	65/145 litre heat loss 1.85kw/24hr
Mechanical ventilation	SFP 0.7 85% efficient
Emitters	Underfloor GF Radiators 1F



Building fabric

Element U Value	Baseline for Code Level 5	Solution six
Floor	0.15	0.15
Wall	0.18	0.18
Roof	0.10	0.10
Glazing	0.8	0.8
Door	0.8	0.8

Y Value	Baseline for Code Level 5	Solution six
	0.04	0.04

*This option is also available using Ideal solar evacuated tubes (2x TS20)

Technical Specification

- Ideal flat plate collectors

Model		Flat Plate Collectors		
		TS 8000	TS 8001	
Size	Collector type	Roof-mounted collector	In Roof-mounted collector	
	Overall area (m2)	2.02	2.51	
	Absorber area (m2)	1.84	2.28	
	Aperture area (m2)	1.91	2.32	
	L x W x H (mm)	1730 x 1170 x 83	2058 x 1227 x 105	
	Weight (kg)	35	49	
	Performance and Installation	Absorber capacity (l)	1.4	1.7
		Housing	Al-frame	Wooden frame
		Surface	Al, natural or anodized (Improved corrosion resistance)	
		Back plate	Al-sheet	
Absorber sheet		Al highly selectively coated	Al, highly selective vacuum coating	
Absorption* (%)		95	95	
Emission* (%)		5	5	
Ø manifold (mm)		18 or 22 (¾ or 1")	22 (1")	
Ø risers (mm)		8	8	
Connections		Blank (compression joint), coupling nut with flat seal	Coupling nut with flat seal	
Glass		3.2 mm tempered solar safety glass	3.2 mm tempered solar safety glass	
Transmittance of glass (%)		95	90.2	
Insulation		40 mm mineral wool plate	50 mm mineral wool plate	
Max. stagnation temperature		234°C under test conditions	234°C under test conditions	
Max. operating pressure		10 bar	10 bar	
Aperture area	1.922m ²	2.33m ²		
Conversion factor N ₀	0.769	0.776		
Heat loss coefficient a ₁	3.847W/m ² K	3.293W/m ² K		
Proper heat transfer medium	Polypropylene glycol/water mixture	Polypropylene glycol/water mixture		
Approved installation angle min.	15°, max. 75°	15°, max. 75°		
Certificate	EN 1 2975-1.2 SOLAR KEYMARK			

Technical Specification

- Ideal evacuated tube collectors

Model		Evacuated Tube Collectors		
		TS 15	TS 20	TS 30 (x2 TS 15)
Size	Number of tubes	15	20	30
	Gross size (mm)	(W-L)	1610 - 1980 (W-L)	(W-L)
	Aperture area (m2)	1.397	1.876	2.794
	Absorber area (m2)	1.199	1.603	1.199
	Flat roof installation size L x W x H (mm)	1420 x 1235 x 1420 mm	1420 x 1610 x 1420 mm	1420 x 2470 x 1420 mm
	Weight empty (kg)	56	64.4	112
Performance and Installation	Fluid volume (l)	1	1.37	1
	Heat transfer medium	Pure water/glycol	Pure water/glycol	Pure water/glycol
	Working pressure	6 bar	6 bar	6 bar
	Max. testing pressure	12 bar	12 bar	12 bar
	Max. working temperature	280°C	280°C	280°C
	Efficiency n°	0.79	0.795	0.79
	Inlet/outlet connection (mm)	22	22	22
	Conversion factor N ₀	0.679	0.679	0.679
	Heat loss coefficient a ₁	1.696W/m ² K	1.696W/m ² K	1.696W/m ² K
	Manifold packing (mm)	1/2000/200/160	1/2000/200/160	1/2000/200/160
	Tubes packing (mm)	1/1940/350/270	1/1940/350/180	1/1940/350/270
	Certificate	EN 1 2975-1.2 SOLAR KEYMARK		

Technical Specification

- Ideal Photovoltaics

Model		PV Collectors		
		TSPV 200 PE	TSPV 205 PE	
Size	Pmpp (WP)	200	205	
	Umpp (V)	26.24	26.52	
	Impp (A)	7.63	7.76	
	UOC (V)	32.89	33.08	
	ISC (A)	8.02	8.26	
		54 Multi-crystalline cells	156mm x 156mm	
Performance and Installation	Tyco-Solarlok* (max system voltage)	1000 V DC		
	Power tolerance	+3 -0%		
	Temperature coefficients	Pmpp = 0.43%	UOC = 116.1mV/K	ISC = +4.40 mA/K
	Standard test conditions (STC)	AM 1.5 / 1000 W pro m ² / 25°C		
	Ambient temperature	+85°C bis -40°C		

Technical Specification

- Ideal Airtherm

Model	Unit	Airtherm 4.5	Airtherm 9	Airtherm 12
@ Air On 0°C, 90%RH*				
Output To Water (@ 55°C)#	kW	2.97	5.63	7.87
Electrical Input	kW	1.54	2.92	3.99
COP		1.93	1.93	1.97
Output To Water (@ 35°C)#	kW	3.39	6.56	9.11
Electrical Input	kW	1.11	2.16	2.94
COP		3.05	3.04	3.10
@ Air On 7°C, 87%RH*				
Output To Water (@ 35°C)#	kW	4.41	8.4	11.7
Electrical Input	kW	1.2	2.31	3.14
COP		3.68	3.64	3.73
@ Air On 20°C, 60%RH*				
Output To Water (@ 55°C)#	kW	6.1	11.44	15.93
Electrical Input	kW	1.78	3.34	4.54
COP		3.43	3.43	3.51
Output To Water (@ 35°C)#	kW	6.3	11.81	16.5
Electrical Input	kW	1.37	2.58	3.51
COP		4.60	4.58	4.70
Electrical data				
Electrical Supply Spec' 1 Phase	V/ph/Hz	230V / ~1N / 50Hz	230V / ~1N / 50Hz	230V / ~1N / 50Hz
Minimum Supply Capacity	amps	13	25	32
Maximum Supply Fuse 1 Phase N/Type CMCB	amps	15	32	40
Soft Start Amps 1 ph N	amps	19	35	31
Air data				
Air Flow (Anem' @ air on grille. Wet evap')	m3/hr	2700	3000	4330
Fan External Resistance STD	mm WG	0	0	0
Fan External Resistance "F"	mm WG	6	6	6
Water data				
Water Flow ±20%	l/min	7.5	15	20
Pressure Drop (Water)	m hd	1.1	0.7	0.4
Water Connections	inches	3/4" BSPM	3/4" BSPM	1" BSPM
Condensate Water Connections	inches	3/4" Domestic Waste	3/4" Domestic Waste	3/4" Domestic Waste
Typical Buffer tank sizes	litres	50	100	150
General data				
Sound Pressure Level @ 1m	dB (A)	57	58	60
Sound Power (ENV12102)	dB (A)	68	69	71
Weight (unpacked)	kg	127	164	235

Technical Specification

- Ideal Groundtherm

		Units	Groundtherm 3.5	Groundtherm 5	Groundtherm 6.5	Groundtherm 8	Groundtherm 12
Model	Height (unpacked) mm	mm	850	850	945	945	945
	Width (unpacked) mm	mm	500	500	715	715	915
	Depth (unpacked) mm	mm	444	444	450	450	465
	Unpacked Weight (kg)	kg	103	109	133	158	196
Output to water	Water to Brine on 0°C @ 35°C	kW	3.17	4.54	6.24	8.3	12.5
	Water to Brine on 0°C @ 45°C	kW	2.89	3.98	6.22	8.2	12.375
	Water to Brine on 0°C @ 50°C	kW	2.75	3.69	6.2	8.15	12.125
	Water to Brine on 0°C @ 55°C	kW	2.61	3.41	6.19	8.1	12
Electric Input	Water to Brine on 0°C @ 35°C	kW	0.86	1.14	1.69	2.01	2.9
	Water to Brine on 0°C @ 45°C	kW	0.86	1.17	1.94	2.3	3.1
	Water to Brine on 0°C @ 50°C	kW	0.87	1.18	2.06	2.43	3.6
	Water to Brine on 0°C @ 55°C	kW	0.87	1.19	2.19	2.6	3.9
Coefficient of performance	COP 0°C @ 35°C	kW	3.69	3.97	3.68	4.13	4.31
	COP 0°C @ 45°C	kW	3.36	3.40	3.21	3.56	3.99
	COP 0°C @ 50°C	kW	3.16	3.13	3.01	3.35	3.36
	COP 0°C @ 55°C	kW	3.0	2.87	2.82	3.11	3.07
Output to water	Water to Brine on 15°C @ 35°C	kW	5.49	7.76	9.28	12.31	18.9
	Water to Brine on 15°C @ 45°C	kW	5.07	6.96	9.2	12.12	18.55
	Water to Brine on 15°C @ 50°C	kW	4.86	6.56	9.17	12.02	18.375
	Water to Brine on 15°C @ 55°C	kW	4.65	6.15	9.13	11.93	18.2
Electric Input	Water to Brine on 15°C @ 35°C	kW	1.11	1.49	1.76	2.27	3.08
	Water to Brine on 15°C @ 45°C	kW	1.16	1.57	2.15	2.565	4.29
	Water to Brine on 15°C @ 50°C	kW	1.18	1.6	2.35	2.8	4.895
	Water to Brine on 15°C @ 55°C	kW	1.2	1.64	2.54	3.03	5.5
Coefficient of performance	COP 15°C @ 35°C	kW	4.95	5.21	5.27	5.42	6.13
	COP 15°C @ 45°C	kW	4.37	4.43	4.28	4.72	4.32
	COP 15°C @ 50°C	kW	4.12	4.10	3.91	4.29	3.75
	COP 15°C @ 55°C	kW	3.87	3.75	3.59	3.93	3.3
Refrigerant type		R134A	R134A	R134A	R134A	R134A	
Refrigerant quantity	kg	2.5	2.5	2.4	3.2	5.3	
Freeze protection temperature	C	< 5°C	< 5°C	< 5°C	< 5°C	< 5°C	
Sound Pressure Level @ 1M	dB(A)	39	40	42	48	52	
Compressor type		Reciprocating	Reciprocating	Rotary	Rotary	Rotary	
Oil type		Polyolester	Polyolester	Polyolester	Polyolester	Polyolester	
Control Panel		Digital	Digital	Digital	Digital	Digital	
Electrical Supply Voltage 1 phase	V/ph/Hz	1/N/PE-230V 50HZ	1/N/PE-230V 50HZ	1/N/PE-230V 50HZ	1/N/PE-230V 50HZ	1/N/PE-230V 50HZ	
Minimum Supply Capacity 1 Phase	amps	11	15	20.4	25	32	
Maximum Supply Fuse 1 Phase	amps	15	20	32	32	40	
Ma Starting Current/Start (LRA)	amps	18	19	33	19	21	

Ground Source unit clearance dimensions:

600mm minimum front, 10mm sides and top, 150mm rear.

Please note:

The information in this brochure was correct at the time of going to print.

Ideal Heating reserve the right to make any modifications to product specifications or any other details, without prior notification. For further clarification, please enquire in writing to the head office address on the reverse of this brochure.

Ideal Service & Support

A century of Ideal Heating solutions

Ideal Heating has been keeping British homes warm for over 100 years. We believe in making products which are reliable, energy efficient and easy to use, combining the latest technology with common sense engineering that makes a real difference to installers and home owners alike.

From taking boilers from basements into kitchens in the 1920s, right through to introducing pioneering high efficiency technologies, Ideal have built up a range of comprehensive and reliable products, designed with the installer and homeowner in mind.

Today the company remains at the forefront of the domestic and commercial heating markets, still leading the industry in setting new standards and expanding technological boundaries. Ideal Heating remains true to its principles of quality, innovation and value; building on its rich heritage as it looks to the future.

Now, over 100 years on from when the organisation was first established, as environmental concerns continue to grow, Ideal remains dedicated towards creating solutions to meet the needs of the market through a range of renewable energy solutions, perfect for new build and retrofit applications alike.



Ideal Training



Here at Ideal, we understand that once you have chosen the product right for your needs, you want the confidence that it can be installed and serviced to the highest of standard.

With this in mind, we have created a series of one and two day product training courses available for all heating engineers on the full range of our domestic boilers and new energy technologies.

Providing a mix of hands-on and theory based learning, each Ideal training course has been designed specifically with the heating engineer in mind.

BPEC Solar Training Course Two days

An in-depth two day solar BPEC training course leading to full solar accreditation upon completion.

The course utilises a mixture of classroom and hands-on based learning, with a proportion of the course spent working outside on a low level, purpose built roof. The course is concluded with an examination at the end of day two.

The course covers the following:

- Introduction to solar thermal systems
- System sizing
- Installing solar
- Installing and setting up solar controllers
- Commissioning systems
- Maintenance and servicing
- Concluding examination

Lunch and refreshments are also provided during the course.

Solar Appreciation Course One day

A one day basic course on solar thermal systems. This introductory course provides a brief overview of the technology.

The course covers the following:

- Introduction to solar thermal hot water systems
- Installation designs
- Practical session on purpose built roof
- Setting up and using the solar controller
- Identifying parts

A certificate of attendance is awarded upon completion. Lunch and refreshments are also provided during the course.

Contact us: For more information please contact the training department on **01482 498432** or email technical_training@idealheating.com.

Solar Photovoltaic

We also offer a solar photovoltaic training course, for more information please contact the Ideal training team on **01482 498432**.

Heat Pump

We offer training courses on both ground source and air source heat pumps. For further information on the course please contact our training team on **01482 498432**.

Boiler Training Courses

Courses are available on the following products:

- Logic and Logic+ Combi
- Logic and Logic+ Heat
- Logic and Logic+ System
- Mexico HE heat only

These comprehensive one-day courses can be mixed and matched for individual installation and servicing companies. The course uses a simple step-by-step approach with hands on training to ensure all aspects of commissioning, servicing, and fault finding can be dealt with quickly and efficiently.

Each course covers the following:

- Product range overview
- Product specification
- Installation requirements
- Flue and accessory options
- Component overview
- Component change and repair
- User controls
- Sequence of operation
- Fault finding

The course involves discussion with tutors, demonstrations with practical advice.

Lunch and refreshments are provided. A certificate is awarded upon completion.



The Ideal Package

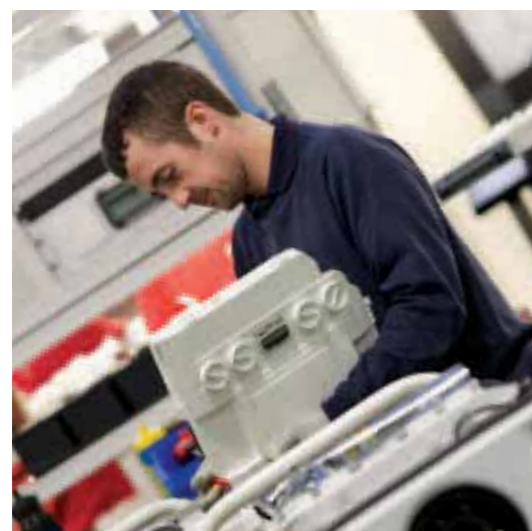
When you chose to work with Ideal, you can be confident to know that we will provide you with complete support before, during and after the sale. This includes extensive product training, a full design service, spare parts help and an after dedicated service support line which is available to you 364 days a year.

The Ideal Design Service

We understand that every development is different, and you may from time to time require some additional help designing your new heating system; Ideal can support you with a dedicated team of trained designers, on-hand to prepare system designs and heating schematics.

Our in-house design team, based in Newcastle, consists of six fully qualified Building Services Engineers with a combined knowledge of over 100 years in the design and installation of domestic and commercial systems.

We understand that new technologies can also sometimes be difficult to get to grips with. Our experienced design team can offer a completely bespoke design package for your development consisting of a full schedule of equipment, detailed layout drawings, and a comprehensive general specification. Using the latest CAD technology, your hot water and heating system plans can be drawn up quickly and efficiently, leaving you with more time to get on with the job.



We will also offer a system performance guarantee of the system with the provision that the system has been installed exactly as indicated on the aforementioned drawings.

For more information on the Design Service from Ideal, please call **0191 2615160**.

Ideal parts

In unlikely event of you ever needing to replace any of the parts in your Ideal product, the Ideal Spare Parts team is on-hand to provide friendly and helpful advice all year round.

Our team of specialists are on the phone to help you 7 days a week when identifying the right spare part; we will also help you further by suggesting the nearest approved Ideal parts stockist located close to you.

To contact the Parts team on Tel: **01482 498665**

Fax: **01482 498489**

or email: spares@idealheating.com



Your Ideal Support



At Ideal Heating, we are committed towards delivering the highest levels of customer service. With over century of experience in the heating industry, we know how important confidence and trust is to our customers. You can be confident to know that you're partnering with a British manufacturer that's supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year.

Our rigorous research and development procedures and manufacturing quality control checks, ensures that all of our products are produced to the highest standards; delivering total home comfort and peace of mind. We hold a Customer Service Charter, which is our declaration of the quality service we endeavor to deliver to you.

The call centre team, based in Hull, East Yorkshire, is comprehensively trained to provide tailored advice to homeowners and the trade. All customer calls will be answered by trained members of staff who will take ownership of the call.

All of our trained staff are on-hand to assist with enquiries or help diagnose and resolve faults over the telephone. Should that not be possible, we will arrange an appointment for one of our engineers to visit.

Our dedicated service team of engineers are fully trained to exacting standards, are Gas Safe registered and provide one-to-one advice to thousands of customers each year.

In the event of an engineer being required, we endeavor to make all visits no later than one day for boiler products and three working days for renewable products from the call for assistance, unless requested otherwise.

On the day of the visit the appointed engineer will telephone between 8am and 9am to confirm the timing of their arrival. And where required, following the visit of the engineer, we will telephone the customer to explain what actions have been taken and if anything else needs to be done.

As well as this, all written correspondence whether letter or e-mail will be replied to within five working days, so you can feel confident we are on hand to offer any help or advice around the clock.

Ideal Heating Service

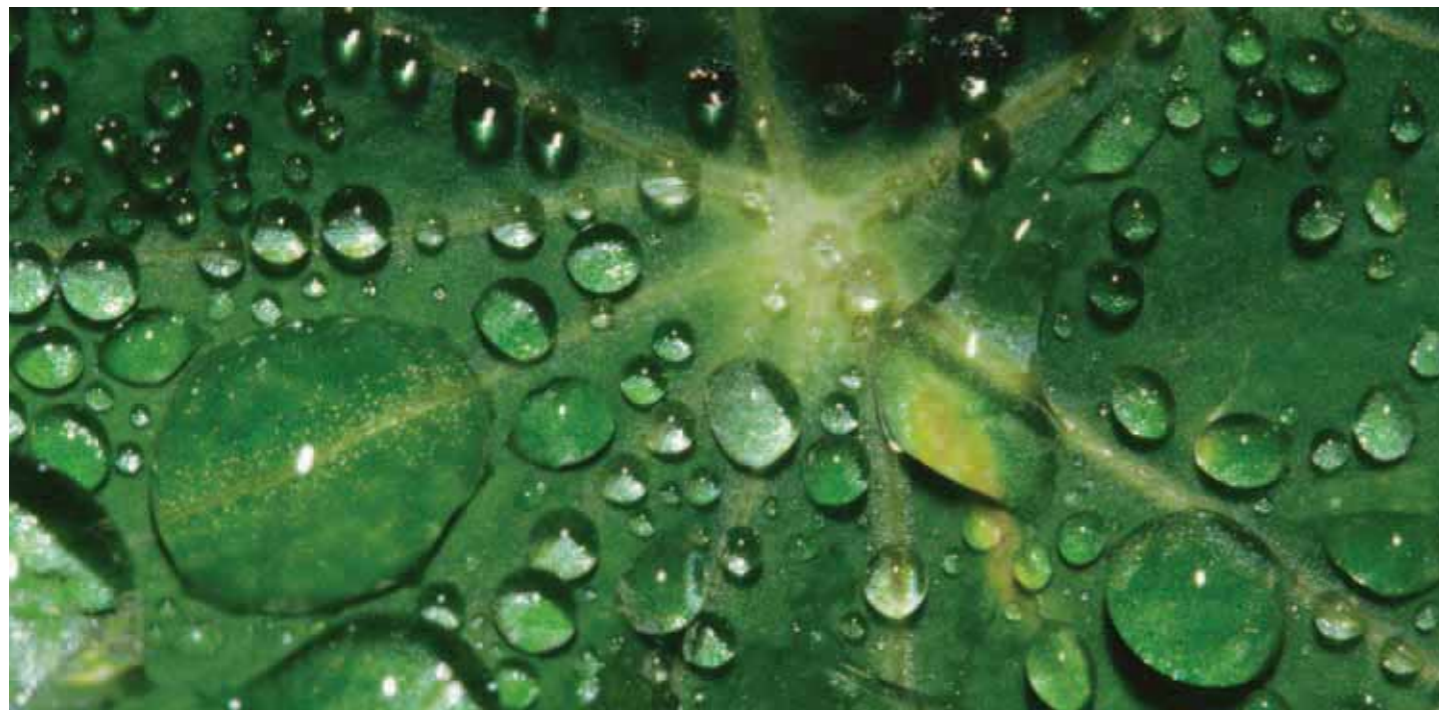
Installer helpline **01482 498663**

Homeowner helpline **01482 498660**

Monday - Friday	8am - 5pm
Saturday	8am - 2pm
Sunday	8am - 12pm



In an Ideal world...



Here at Ideal we are concerned about being a responsible organisation and like to help where we can in a range of areas that contribute to both our immediate community and the UK as a whole.

Ideal environment

We like to consider ourselves as 'being green' and along with providing innovative heating solutions that will help reduce damage to

environment we try to ensure all other areas of our day to day business cause as little impact to the environment as possible.

We are certified by The Carbon Trust, the certificate recognises organisations which have genuinely acted on climate change and have shown commitment to ongoing emission reductions. We are also listed in the Business in the Community Environmental

Index, a regional survey which measures environmental performance. Our performance led to Ideal being awarded best new entrant into the index.

Since 2003 Ideal has maintained certification to the ISO 14001 Environmental Management System Standard. This standard illustrates Ideals ongoing commitment to continually improve our environmental performance.

As an organisation we are committed to reducing landfill with up to 93 percent of our general waste being recycled. A target we aim to improve on in the coming year.

Ideal community

Ideal Heating is accredited by the Investors in People Standard. IiP is the national award that sets a level of good practice for training and development of staff to achieve the goals of the organisation.

As a business, we are particularly proud of our commitment to our apprenticeship programme. We currently have 14 apprentices, local young people, undertaking four and five year apprenticeships in a wide range of engineering disciplines. These apprentices form a major part of our succession planning strategy in these specialist fields.

Ideal recruits two to three engineering apprentices every year and have done so for over 25 years. These apprentices are trained for four or five years to take roles within our Plant Engineering, New Product Development, Quality and Production areas. As a result of their practical and academic studies, they achieve a minimum of HNC qualifications or equivalent but many achieve engineering degrees. Apprentices are recruited in conjunction with local schools and training providers through our in-house selection procedure.

Many of the members of our management team started as apprentices or young trainees with the business.

Case Studies - Darlington Council

Ideal's Logic boiler range ticked all of the boxes for Darlington Council

Designed as a direct result of customer comments, Ideal created an innovative and reliable product that's easy to install, fit for purpose and simple to operate.

Darlington Council will now install Logic in approximately 1,000 of its 5,500 housing stock over the next three years. With outputs including 24, 30 and 35kW, the range is perfect for the majority of domestic dwellings, and its compact dimensions make it ideal for smaller homes, where space is a premium and it can be fitted into a standard kitchen cupboard. David Scarr, Purchasing Manager for Darlington Council, said of the Logic range: "To date, Darlington Council has installed approximately 50 boilers and our initial impressions are extremely positive. We have had nothing but good comments, from both tenants and installers. The boiler appears

to include design features that meet all Darlington's requirements and more." Local authorities make technology decisions based on the whole-life cost of a product, not just the initial outlay and ease of installation – Ideal scored highly here too, beating the competition in the domestic market following Darlington's strict approval process.

For David, the choice was clear: "We went through a series of presentations from boiler manufacturers, comparing features, after sales service offered, warranties, whole life costs and price comparison. Ideal came out on top thanks to the excellent warranty attached to its heat exchanger and boilers, which makes its lifetime cost much cheaper than its competitors. With added parts and service support, Ideal proved by far the best boiler manufacturer for Darlington." "For installers, Ideal provided comprehensive workshops. Call centre operatives at Darlington housing association have also been trained to assist end-users with any problems that may occur.

“ Ideal is a forward thinking manufacturer that listens to its customers and then uses this information to learn and improve its products. They support us both professionally and practically, responding to our needs to meet all our requirements. ”



Case Studies - Inverness City Council

Air Source Heat Pumps combat the Highlands winter...

When Inverness City Council was faced with the problem of heat pumps freezing on their properties due to severe low temperatures, they took the conscious decision to source a more resilient, reliable solution from their local contractor Ace Heating.

After a call from Ace Heating, Ideal's Area Sales Manager Andrew Inglis, stepped forward and introduced Ace Heating to Ideal's solution; the Airtherm range of Air to Water Heat Pumps. With Airtherm Heat Pumps working to temperature as low as -15 thanks to a built-in defrost cycle, the heat pump will continue to run even in drastically low temperatures.

"In mid January our team visited the first installation of a 9kw unit on a council property to offer support and advice. The whole installation was seamless; the commission and start up run completely to plan" said Andrew Inglis, Area Sales Manager for Ideal. "The Installers said the unit was very simple to install and commission compared with other heat pumps they have used in the past" he adds. Stevie Orrock, the installation and service engineer for Ace Heating, was impressed with how quick and simple the products were to install: "I highly recommend the Airtherm range and will defiantly be using these again in the future" says Stevie. The tenant was extremely pleased with the air source heat pump:

“ There is no hassle involved unlike the previous unit, and my house has never been so warm! ”



To date five of Ideal's air source units have been fitted at Inverness City Council properties working towards their target of lowering carbon emissions in the area.

Available NOW!

Logic Code Combi

Single, one unit solution!

Straightforward heating solutions capable of supporting the Code for Sustainable Homes level 4

- Highly efficient advanced boiler technology
- Secondary heat exchanger converts waste flue energy to maximise DHW performance
- Compact and lightweight
- Concealed pipe work for a neat installation
- Optional weather compensation controls
 - providing further assistance towards achieving CfSH
- Efficiencies achieved:
 - Fully condensing HW operation
 - NOx class 5 and maximum CfSH credit at <40 mg/kWh
 - Increased flow rates of 10%
- Dedicated service and support from Ideal
 - Inhouse bespoke design service
 - Hands-on product training
 - Technical helpline
 - After sales warranty
 - One-to-one advice and support

For more information, please contact your local Ideal Sales Manager, or Ideal heating on 01482 492251

www.idealheating.com



Ideal Heating

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