

VELUX®

Solar water heating

Solar water heating

2010 edition

WE'VE FIGURED OUT HOW TO MAKE
THE SUN WORK TWICE AS HARD.



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Warming up to new ideas

For 65 years, VELUX has been utilizing the power of the sun to bring natural light into homes through skylights and roof windows. Now VELUX is enabling homeowners to harness even more power from the sun. With a VELUX solar water heating system, proven for years in Europe and around the world, you can use the sun to heat the water in your home. Using the sun to heat your water will reduce your monthly utility bill, and your family's carbon footprint on the world.

Energy prices continue to rise, and environmental concerns are high on the nation's agenda. Savvy homeowners are on the lookout for alternative energy sources that will reduce their energy costs and their carbon footprints. Solar energy can be collected through solar panels, providing a major portion of the energy needed to produce hot water, lowering household energy costs and reducing carbon emissions. Making a VELUX solar water heating system an integral part of a home can reduce the amount of energy consumed for water heating by up to 80%.





Proven partner

When considering an energy partner, it is hard to know who to trust. VELUX is the world leader in skylights and roof windows and is one of the strongest brands in the global building materials sector. With over 65 years of experience as a global leader in daylighting and solar energy technologies, you can trust that VELUX will be here for you in the future.

Through ongoing research and development, extended warranty programs and the creation of installation and service networks, VELUX is working to ensure that when you are ready to go green with a solar water heating system, you will have a trusted resource nearby to assist you.



Why VELUX SWH
Proven partner



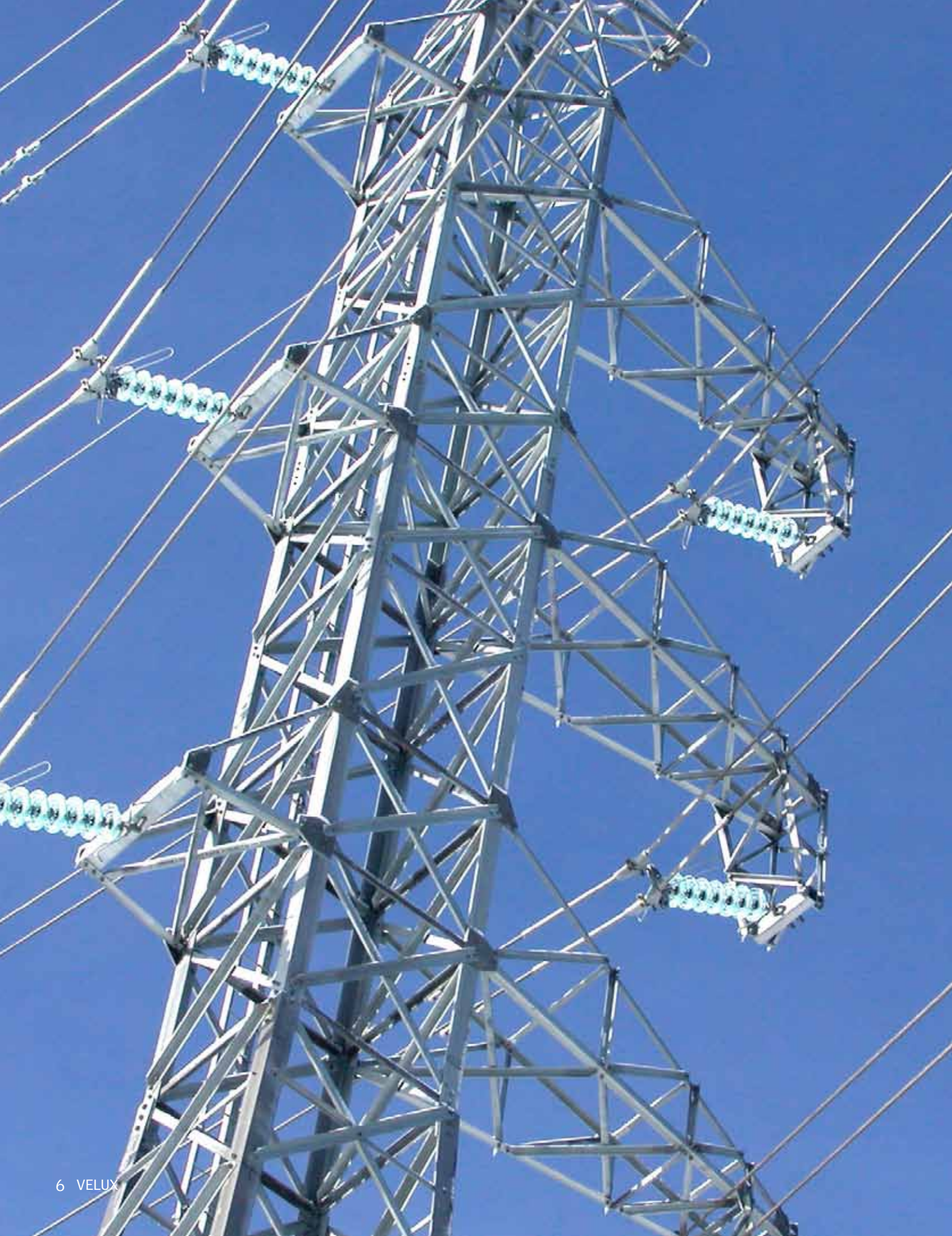
Complete systems for any climate

When making the decision to purchase a solar water heating system, it is important to know that you will be getting a complete system that provides year after year of peak performance backed by a company you can trust.

VELUX solar water heating systems include all of the components necessary for years of trouble free operation — no matter where you live in the U.S. VELUX systems are engineered so you don't have to worry about overheating in warm climates, or freezing in cold climates. In addition, all system components are backed by The VELUX promise*, giving you peace of mind that you will be protected from potential problems for years to come.

** Visit www.veluxusa.com/Consumer/Products/warranty for complete details.*





ENERGY STAR® qualified systems



An ENERGY STAR® qualified solar water heating system must meet strict energy efficiency standards set by the Department of Energy (DOE) and the Environmental Protection Agency (EPA).

Visit www.energystar.gov for more information and a complete listing of ENERGY STAR® qualified systems.

Cost effective solution

On average, if you install a solar water heater, your water heating annual energy consumption should drop 50% - 80%. For the typical household, this represents an annual savings of 10% - 15% off of the total household energy costs. Also, because the energy from the sun is endless and free, future fuel shortages and price hikes will have less of an impact on your pocket book. Other financial incentives include:

- Lower up-front costs than other renewable energy systems.
- Federal tax credits help pay 30% of the system and installation costs. Many states, local governments, and utilities offer additional support.
- With tax credits and energy savings, these systems offer a faster return on investment than other types of renewable energy systems.
- Solar energy systems can take advantage of the sun's free energy year round.
- Solar energy can be used to produce hot water even in cold climates.

Source: U.S. Department of Energy EERE consumer's guide.



Environmentally beneficial

- Solar energy is an unlimited resource.
- Solar energy does not produce harmful emissions or require transportation or pipelines like electric energy, natural gas, or other fossil fuel energy sources.
- Solar water heating systems installed in the U.S. help reduce our household energy consumption, and the nation's reliance on toxic fossil fuels.
- Solar water heating systems will work anywhere in the U.S., not just sunny states.

Source: U.S. Department of Energy EERE consumer's guide.

Certified product

All VELUX solar water heating systems and components have been certified to national safety and performance standards by independent testing agencies.



Aesthetically pleasing design

VELUX solar collectors have been designed to hug the roofline, creating a streamlined, aesthetically pleasing appearance. The VELUX roof integrated collectors have the same low profile look and performance as the VELUX skylights and roof windows used for years throughout the U.S., and they can even be combined with our skylight and roof window products to provide integrated solutions for solar water heating, daylighting, and ventilation.

VELUX rack mounted collectors mount on top of the roof using special rack mounting hardware. A flat roof rack is available for the installation of our collectors on flat roofs, roofs with a pitch less than 15°, or where a variable pitch adjustment is needed to better align your collectors for maximum efficiency. A parallel to the roof rack option provides top mount fastening capability into metal roof panels and other roofing materials that may not be feasible for our roof integrated collectors.



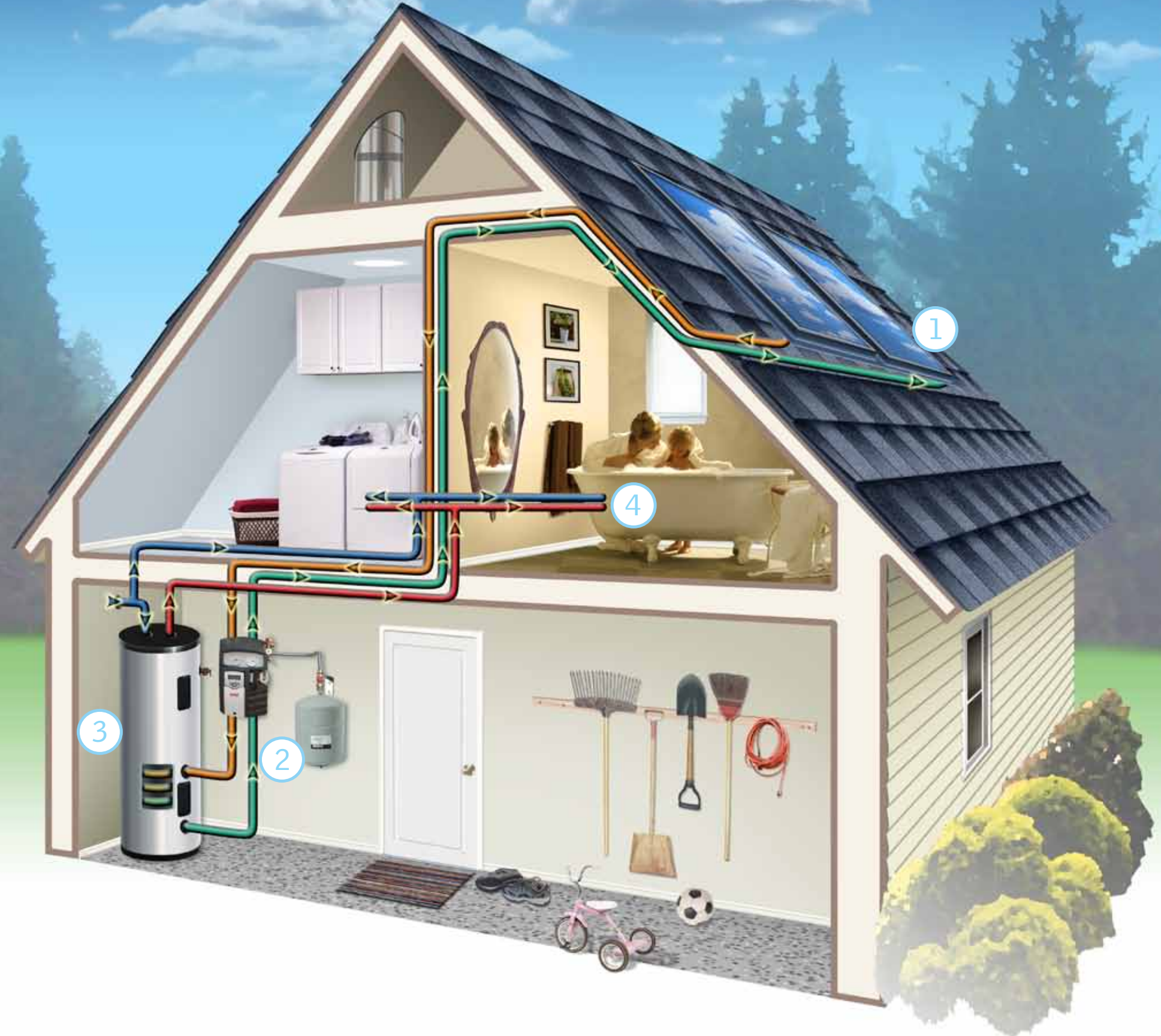
How it works

1 Sun heats up liquid inside collectors.

2 Controller pumps hot liquid to the water tank.

3 Hot liquid heats up water inside the tank.

4 Hot water is available for household use.





VELUX roof integrated collector systems

VELUX roof integrated collector systems have the same low profile look and performance as the VELUX skylights and roof windows used for years throughout the U.S.

These systems use the same flashing systems our customers have come to trust for years of trouble free operation. Systems are available for tile or shingle roof applications where the roof pitch is greater than 15°.

Our collectors are all that can be seen on the roof — all piping and mounting hardware are located beneath the flashing system for a clean look your neighbors will like.



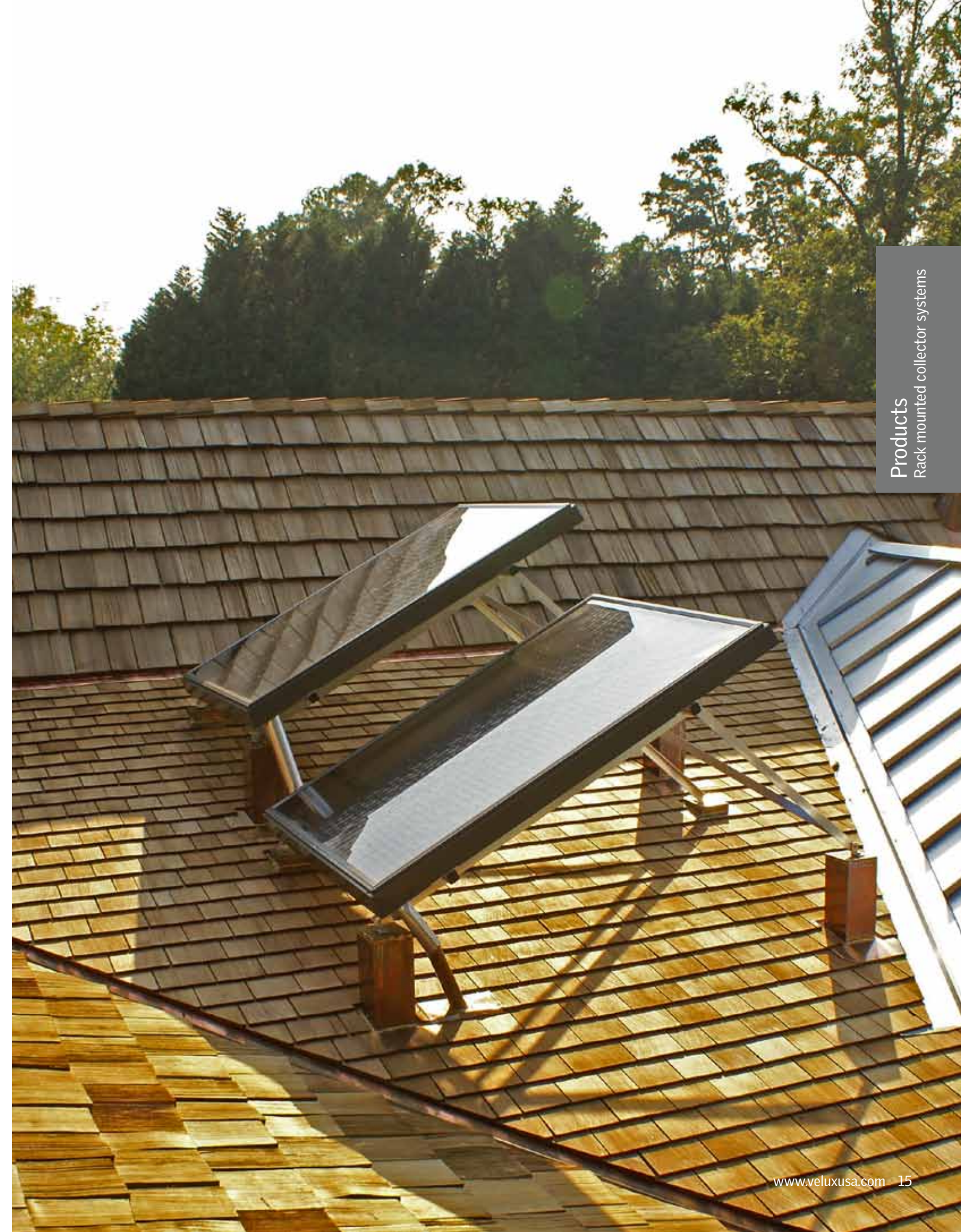


Rack mounted collector systems

VELUX rack mounted collector systems mount on top of the roof using special rack mounting hardware. Rack mounted collectors are used primarily for flat roof applications, or when a roof integrated system may not be feasible.

These systems are offered in either a flat roof version or a parallel to the roof version. The flat roof rack allows for the installation of our collectors on roofs with a pitch less than 15°, or where a variable pitch adjustment is needed to better align your collectors for maximum efficiency.

The parallel to the roof rack option provides top mount fastening capability into metal roof panels and other roofing materials that may not be feasible for our roof integrated collectors.





Daylight combination systems

VELUX is the only company in the U.S. able to provide an integrated solution for solar water heating, daylighting and ventilation.

In many instances, our solar collectors can be installed in combination with our skylights or roof windows to minimize energy consumption while maximizing daylight and ventilation.

Natural daylight has a positive effect on health, productivity, children's learning abilities and

general well-being. Similarly, fresh air via natural ventilation is vital for producing a healthy indoor climate.

Combination systems use the same flashing systems used for our stand alone skylight, roof window, or solar collector products. Systems are available for tile or shingle roof applications where the roof pitch is between 15° and 60°.





How to order the right solar system for your home

Following the example below, utilize the tables on the following pages to select the VELUX solar water heating system for your home.

- 1 Choose your roof type.
- 2 Choose your solar tank type.
(Electric, boiler, natural gas, or propane backup).
- 3 Choose the size of your household.*
- 4 Select the model.

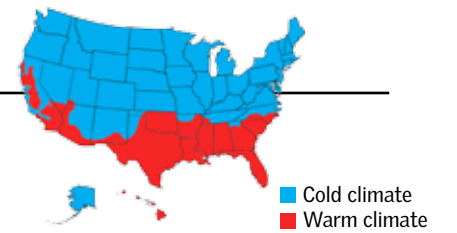
*Note: Multiple VELUX systems should be used for households larger than those shown in the charts.

Example:

1

Roof integrated, shingle roof, pitch > 15°

Size of household										
# Persons in household	Up to 2			Up to 4			Up to 6			
# Bedrooms/# Baths	1/1.5	2/1.5	3/1.5	2/2.5	3/2.5	4/2.5	3/3.5	4/3.5	5/3.5	
Solar tank type	System recommended?									VELUX model
Electric backup	●									CLI U12 SD0L118
				●						CLI U12 SK0L218
							●			CLI U12 SK0L318
Boiler backup	●									CLI U12 SD0L119
				●						CLI U12 SK0L219
							●			CLI U12 SK0L319
Natural gas backup	●			● (Warm climate)						CLI U12 SD0L1110
				● (Cold climate)			●			CLI U12 SK0L2110
Propane backup	●			● (Warm climate)						CLI U12 SD0L1111
				● (Cold climate)			●			CLI U12 SK0L2111

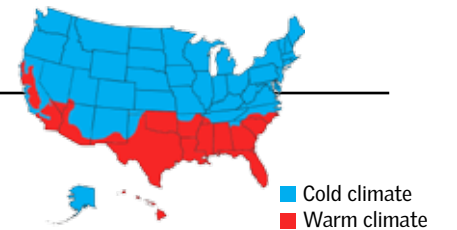


Roof integrated, shingle roof, pitch > 15°

Size of household										
# Persons in household	Up to 2			Up to 4			Up to 6			
# Bedrooms/# Baths	1/1.5	2/1.5	3/1.5	2/2.5	3/2.5	4/2.5	3/3.5	4/3.5	5/3.5	
Solar tank type	System recommended?									VELUX model
Electric backup	●									CLI U12 SD0L118
				●						CLI U12 SK0L218
							●			CLI U12 SK0L318
Boiler backup	●									CLI U12 SD0L119
				●						CLI U12 SK0L219
							●			CLI U12 SK0L319
Natural gas backup	●			● (Warm climate)						CLI U12 SD0L1110
				● (Cold climate)			●			CLI U12 SK0L2110
Propane backup	●			● (Warm climate)						CLI U12 SD0L1111
				● (Cold climate)			●			CLI U12 SK0L2111

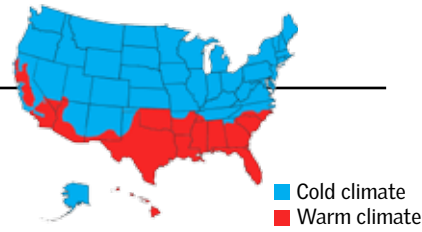
Roof integrated, tile roof, pitch > 15°

Size of household										
# Persons in household	Up to 2			Up to 4			Up to 6			
# Bedrooms/# Baths	1/1.5	2/1.5	3/1.5	2/2.5	3/2.5	4/2.5	3/3.5	4/3.5	5/3.5	
Solar tank type	System recommended?									VELUX model
Electric backup	●									CLI U12 SD0W118
				●						CLI U12 SK0W218
							●			CLI U12 SK0W318
Boiler backup	●									CLI U12 SD0W119
				●						CLI U12 SK0W219
							●			CLI U12 SK0W319
Natural gas backup	●			● (Warm climate)						CLI U12 SD0W1110
				● (Cold climate)			●			CLI U12 SK0W2110
Propane backup	●			● (Warm climate)						CLI U12 SD0W1111
				● (Cold climate)			●			CLI U12 SK0W2111



Parallel rack, all roof materials, pitch > 15°

Size of household									
# Persons in household	Up to 2			Up to 4			Up to 6		
# Bedrooms/# Baths	1/1.5	2/1.5	3/1.5	2/2.5	3/2.5	4/2.5	3/3.5	4/3.5	5/3.5

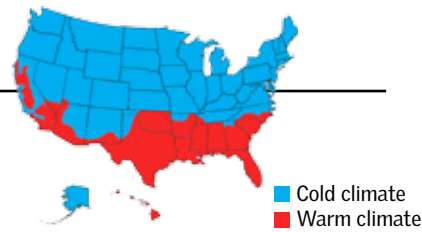


Solar tank type	System recommended?								
Electric backup	●								
				●					
								●	
Boiler backup	●								
				●					
								●	
Natural gas backup	●			● (Warm climate)					
				● (Cold climate)				●	
Propane backup	●			● (Warm climate)					
				● (Cold climate)				●	

VELUX model	System recommended?
CLI U12 SD0P118	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0P218	2 U12 Collectors w/ 80 gallon tank
CLI U12 SK0P318	3 U12 Collectors w/ 120 gallon tank
CLI U12 SD0P119	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0P219	2 U12 Collectors w/ 80 gallon tank
CLI U12 SK0P319	3 U12 Collectors w/ 120 gallon tank
CLI U12 SD0P1110	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0P2110	2 U12 Collectors w/ 80 gallon tank
CLI U12 SD0P1111	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0P2111	2 U12 Collectors w/ 80 gallon tank

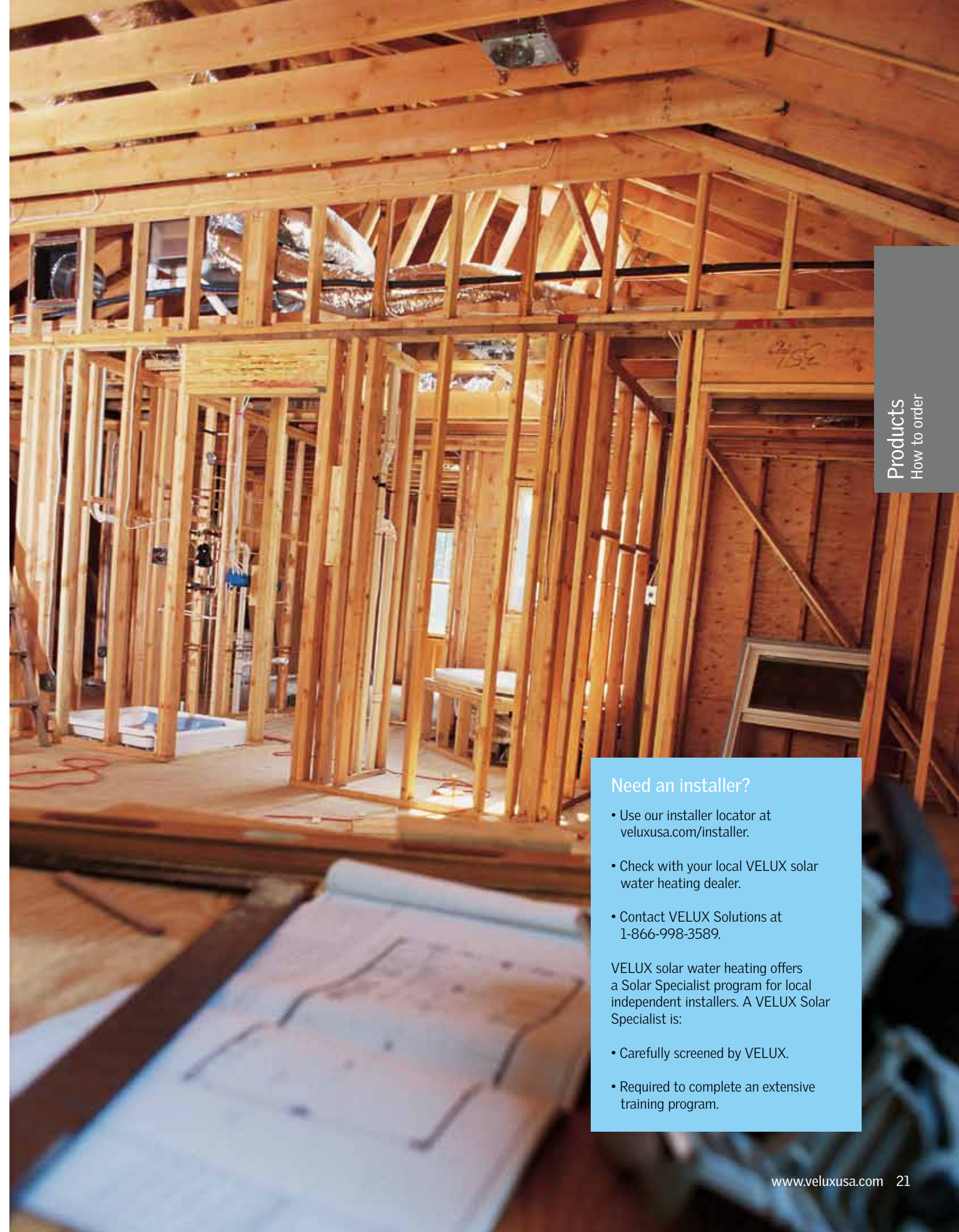
Adjustable rack, all roof materials, pitch 0° to 90°

Size of household									
# Persons in household	Up to 2			Up to 4			Up to 6		
# Bedrooms/# Baths	1/1.5	2/1.5	3/1.5	2/2.5	3/2.5	4/2.5	3/3.5	4/3.5	5/3.5



Solar tank type	System recommended?								
Electric backup	●								
				●					
								●	
Boiler backup	●								
				●					
								●	
Natural gas backup	●			● (Warm climate)					
				● (Cold climate)				●	
Propane backup	●			● (Warm climate)					
				● (Cold climate)				●	

VELUX model	System recommended?
CLI U12 SD0F118	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0F218	2 U12 Collectors w/ 80 gallon tank
CLI U12 SK0F318	3 U12 Collectors w/ 120 gallon tank
CLI U12 SD0F119	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0F219	2 U12 Collectors w/ 80 gallon tank
CLI U12 SK0F319	3 U12 Collectors w/ 120 gallon tank
CLI U12 SD0F1110	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0F2110	2 U12 Collectors w/ 80 gallon tank
CLI U12 SD0F1111	1 U12 Collector w/ 60 gallon tank
CLI U12 SK0F2111	2 U12 Collectors w/ 80 gallon tank



Products
How to order

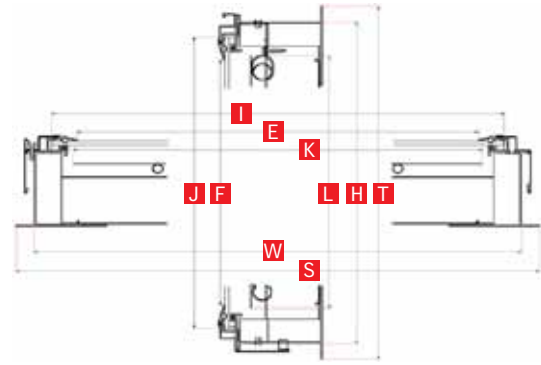
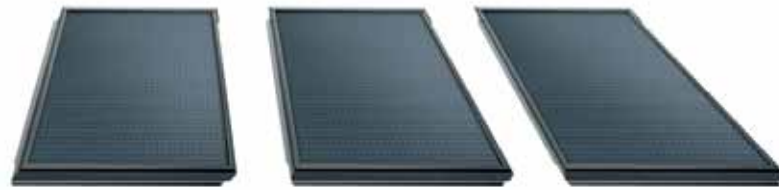
Need an installer?

- Use our installer locator at veluxusa.com/installer.
- Check with your local VELUX solar water heating dealer.
- Contact VELUX Solutions at 1-866-998-3589.

VELUX solar water heating offers a Solar Specialist program for local independent installers. A VELUX Solar Specialist is:

- Carefully screened by VELUX.
- Required to complete an extensive training program.

VELUX solar collector



Measurements (inches)	Width			Height			Depth		
	Code	U12	S06	M08	Code	U12	S06	M08	All
Gross	S	54.1	46.2	32.0	T	72.0	47.5	56.2	3.9
Frame	W	52.8	44.9	30.7	H	70.7	46.2	54.8	
Glass	I	51.5	43.6	29.4	J	69.4	44.9	53.5	
Aperture	E	49.5	41.6	27.4	F	67.4	42.9	51.6	
Absorber	K	49.8	41.9	27.8	L	67.7	43.2	51.9	

Technical specifications		CLR U12 4000	CLI U12 4000	CLI S06 4000	CLI M08 4000
Weight (lbs.)	Collector weight	130	130	73	57
	Weight w/fluid	141	141	79	64
Collector area (sq. ft.)	Gross area	271	271	15.2	12.5
	Aperture area	23.1	23.1	12.4	9.8
	Absorber area	23.4	23.4	12.6	10.0
Fluid volume (gal.)		0.58	0.58	0.34	0.24
Max operating pressure (psi)		87	87	87	87
Test pressure (psi)		145	145	145	145
Stagnation temperature (°F)		374	374	374	365
Thermal performance rating - warm climate (1000s btu/day)	Clear day	29	29	15	12
	Mildly cloudy day	20	20	11	8
	Cloudy day	11	11	6	5
Thermal performance rating - cool climate (1000s btu/day)	Clear day	19	19	10	8
	Mildly cloudy day	11	11	6	4
	Cloudy day	4	4	2	1
Efficiency	eta0 (start efficiency)	0.6960	0.6960	0.6610	0.6390
	a1 (Btu/hr*ft2*°F)	0.4747	0.4747	0.4666	0.4603
	a2 (Btu/hr*ft2*°F2)	0.0020	0.0020	0.0019	0.0018
Structural performance design pressure (DP)	Downward load (psf)	+70	+125	+200	+255
	Uplift load (psf)	-60	-70	-87.5	-55

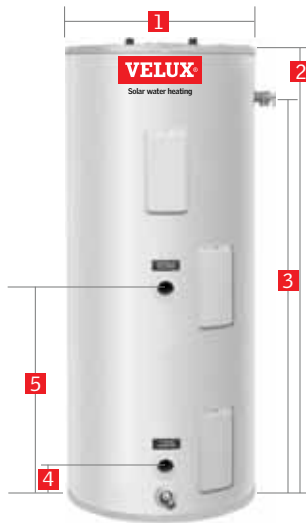
		Total length of flextubes (ft)					
Maximum collectors in series		50	80	110	140	170	200
CLI/CLR U12 4000	Max. # collectors (n)	4	4	4	3	3	3
	Gross area (sq. ft.)	108.4	108.4	108.4	81.3	81.3	81.3
CLI S06 4000	Max. # collectors (n)	7	6	6	5	5	5
	Gross area (sq. ft.)	106.4	91.2	91.2	76	76	76
CLI M08 4000	Max. # collectors (n)	8	7	7	6	6	6
	Gross area (sq. ft.)	100	87.5	87.5	75	75	75



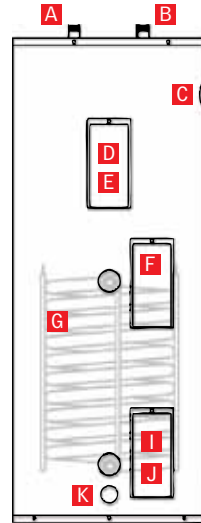
Specifications & Data

VELUX solar storage tanks

Solar storage tank with electric backup



- Glass lined steel tank
- Two protective aluminum anode rods
- 2" non-CFC foam insulation (R-17)
- Double wall solar heat exchanger
- Sensor wires for solar thermistor connections
- Dual backup heating elements
- 3/4" solar supply and return connections
- 3/4" potable water connections
- Direct heat transfer with immersed incoloy elements
- T & P relief valve
- Brass drain valve

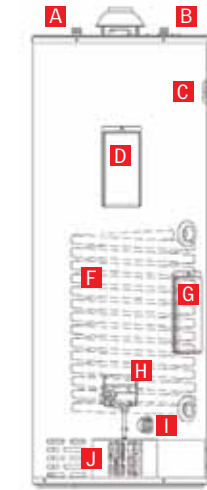


- A** Hot water outlet
- B** Cold water inlet
- C** Temperature and pressure relief valve
- D** Upper element thermostat
- E** Upper backup electric element
- F** Lower element thermostat
- G** Solar heat exchanger
- H** Aluminum jacket
- I** Surface mounted solar sensor
- J** Lower backup electric element
- K** Drain valve

Solar storage tank with gas backup



- Glass lined steel tank
- Two protective aluminum anode rods
- 2" non-CFC foam insulation (R-17)
- Double wall solar heat exchanger
- Sensor wires for solar thermistor connections
- Honeywell self diagnostic gas control
- Flammable vapor ignition resistant technology
- Backup low NOx burner
- 3/4" solar supply and return connections
- 3/4" potable water connections
- T & P relief valve
- Brass drain valve



- A** Hot water outlet
- B** Cold water inlet
- C** Temperature and pressure relief valve
- D** Gas control sensor
- E** Aluminum jacket
- F** Solar heat exchanger
- G** Surface mounted solar sensor
- H** Gas control valve
- I** Drain valve
- J** Backup burner

VELUX solar storage tank dimensions						
MODEL #	GAL	Dimensions				
		1	2	3	4	5
TFF 060 0205US	60	22"	59 1/4"	53"	7 3/8"	29 1/2"
TFF 080 0205US	75	24"	59 1/4"	53"	7 3/8"	29 1/2"
TFF 120 0205US	115	28 1/4"	62 3/4"	55 3/4"	7 3/8"	29 1/2"

VELUX solar storage tank connections and weight			
MODEL #	Solar heat exchanger inlet/outlet connection sizes	Hot/cold potable water connection sizes	Shipping weight (lbs)
TFF 060 0205US	3/4" NPT	3/4" NPT	217
TFF 080 0205US	3/4" NPT	3/4" NPT	241
TFF 120 0205US	3/4" NPT	3/4" NPT	345

VELUX solar storage tank specs								
MODEL #	Backup elements * input (Watts)	Voltage	Solar HX volume (gal)	Heated water volume of back up	Recovery (gph)		First hour supply (gal)	
					77° rise	90° rise	77° rise	90° rise
TFF 060 0205US	4,500	240V / 1 Φ	2.5 gal	60 gal	24	20	66 gal	62 gal
TFF 080 0205US	4,500	240V / 1 Φ	2.5 gal	75 gal	24	20	77 gal	73 gal
TFF 120 0205US	4,500	240V / 1 Φ	2.5 gal	115 gal	24	20	105 gal	101 gal

* Two 4,500 watt elements, non-simultaneous operation

Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into the potable side of this system. The potable side may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance.

VELUX solar storage tank dimensions								
MODEL #	GAL	Dimensions						
		1	2	3	4	5	6	7
TFF 060 2205US	60	24"	63"	59 1/2"	11 5/8"	10 1/8"	32 1/4"	53 1/2"
TFF 080 2205US	70	26"	62 3/8"	59"	14 3/8"	12 1/2"	34 5/8"	52"
TFF 060 3205US	60	24"	63"	59 1/2"	11 5/8"	10 1/8"	32 1/4"	53 1/2"
TFF 080 3205US	70	26"	62 3/8"	59"	14 3/8"	12 1/2"	34 5/8"	52"

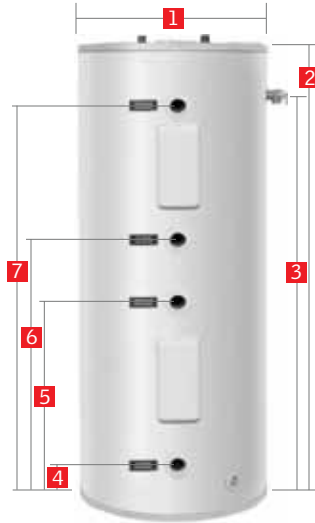
VELUX solar storage tank connections and weight				
MODEL #	Solar heat exchanger inlet/outlet connections	Hot/cold potable water connections	Vent connection	Shipping weight (lbs)
TFF 060 2205US	3/4" NPT	3/4" NPT	4"	272
TFF 080 2205US	3/4" NPT	3/4" NPT	4"	306
TFF 060 3205US	3/4" NPT	3/4" NPT	4"	264
TFF 080 3205US	3/4" NPT	3/4" NPT	4"	306

VELUX solar storage tank specs								
MODEL #	Backup fuel	Backup input rate (btu/h)	Solar HX volume (gal)	Heated water volume of back up	Recovery (gph)		First hour supply (gal)	
					77° rise	90° rise	77° rise	90° rise
TFF 060 2205US	Natural gas	55,000	2.5 gal	60 gal	67	57	109	99
TFF 080 2205US	Natural gas	76,000	2.5 gal	70 gal	92	79	141	128
TFF 060 3205US	LP	63,000	2.5 gal	60 gal	77	66	119	108
TFF 080 3205US	LP	76,000	2.5 gal	70 gal	92	79	141	128

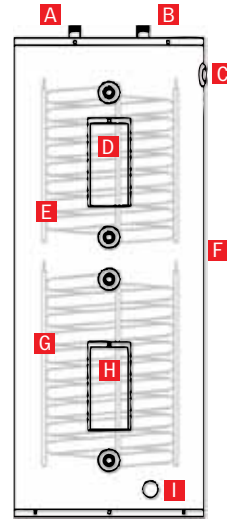
Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into the potable side of this system. The potable side may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance.

VELUX solar storage tanks

Solar storage tank with boiler backup



- Glass lined steel tank
- Three protective aluminum anode rods
- 2" non-CFC foam insulation (R-17)
- Double wall solar heat exchanger
- Sensor wires for solar thermistor connections
- Single wall backup heat exchanger
- 3/4" solar supply and return connections
- 3/4" potable water connections
- T & P relief valve
- Brass drain valve



- A** Hot water outlet
- B** Cold water inlet
- C** Temperature and pressure relief valve
- D** Backup electronic thermostat
- E** Backup heat exchanger
- F** Aluminum jacket
- G** Solar heat exchanger
- H** Surface mounted solar sensor
- I** Drain valve

VELUX solar storage tank dimensions

MODEL #	GAL	Dimensions						
		1	2	3	4	5	6	7
TFF 060 1205US	55	22"	59 1/4"	53"	5 3/8"	27 1/2"	37 1/2"	56"
TFF 080 1205US	70	24"	59 1/4"	53"	5 3/8"	27 1/2"	37 1/2"	56"
TFF 120 1205US	110	28 1/4"	62 3/4"	55 3/4"	5 3/8"	27 1/2"	39 1/4"	57 3/4"

VELUX solar storage tank connections and weight

MODEL #	Solar heat exchanger inlet/outlet connection sizes	Back-up heat exchanger inlet/outlet connection sizes	Hot/cold potable water connection sizes	Shipping weight (lbs)
TFF 060 1205US	3/4" NPT	1" NPT	3/4" NPT	282
TFF 080 1205US	3/4" NPT	1" NPT	3/4" NPT	313
TFF 120 1205US	3/4" NPT	1" NPT	3/4" NPT	442

VELUX solar storage tank specs

MODEL #	Solar HX volume gallons	Heated water volume of back up	Recovery of back up in minutes		Boiler output for test recovery	First hour supply (gal)	
			77° rise	90° rise		77° rise	90° rise
TFF 060 1205US	2.5 gal	27 gal	13 min	15 min	80,000 BTU/ HR	144 gal	126
TFF 080 1205US	2.5 gal	37 gal	16 min	18 min	90,000 BTU/ HR	166 gal	146
TFF 120 1205US	2.5 gal	67 gal	26 min	30 min	100,000 BTU/HR	203 gal	180

Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into the potable side of this system. The potable side may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance.

THE SUN CAN HEAT MORE THAN JUST THE EARTH.



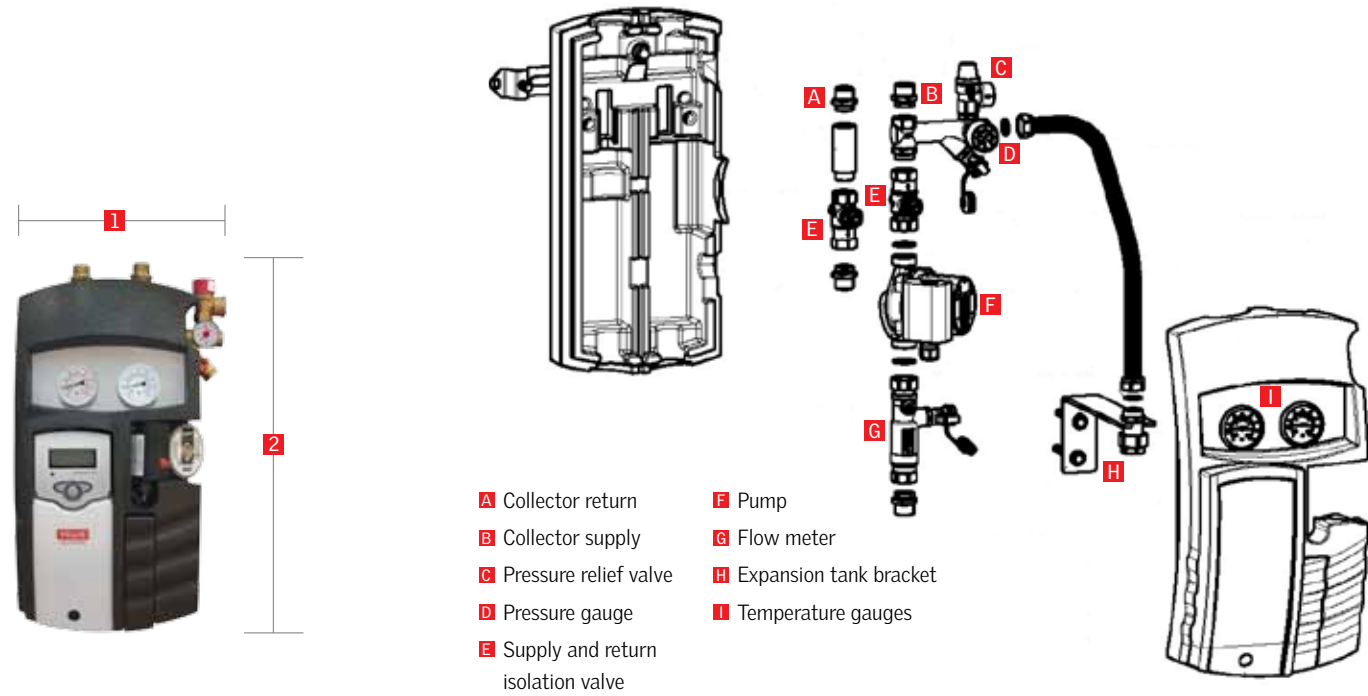
Specifications & Data



Let the free and environmentally safe power of the sun provide your home with hot water. With the sleek, reliable design of the VELUX solar water heating system, you can do just that. To find out more about this cost effective solar water heating system, from a company who's been utilizing the power of the sun for 65 years, visit velux.com/solar.



VELUX solar pump station



- A Collector return
- B Collector supply
- C Pressure relief valve
- D Pressure gauge
- E Supply and return isolation valve
- F Pump
- G Flow meter
- H Expansion tank bracket
- I Temperature gauges

VELUX solar pump station dimensions	
Height (2)	20 7/8"
Width (1)	11 13/16"
Center distance supply - return	3 17/32"
Supply - return connections	3/4" NPT

VELUX solar pump station technical data	
Power supply	120 Volt, 2 Amp
Maximum design pressure	145 psi
Maximum temperature (sustained)	250 °F
Maximum temperature (short-term)	320 °F

VELUX solar pump station component technical data	
Pressure relief valve	87 psi
Pressure gauge	0 - 87 psi
Temperature gauges	250 °F
Flow meter	0.5 - 3.5 gpm

VELUX solar pump station controller data	
Voltage	120 Volt
Inputs (4 temperature sensors)	Pt 1000
Outputs (2 electromechanical relays)	120 Volt (1 Amp)
Allowable ambient temperature	32 °F - 104 °F

VELUX solar pump station pump data				
Speed setting	Flow (gpm)	Head (ft)	Power consumption (Watts)	Current draw (Amps)
Max. speed	4.4	18.3	88	0.77
Mid. speed	4.4	12.4	73.3	0.66
Min. speed	4.4	3.9	54.6	0.50



- A Fuse
- B Power supply connection clamps
- C Pump connection clamps
- D Grounding clamps
- E Temperature sensor connection clamps

VELUX solar flex tubes



VELUX flexible pipe specifications	
Max operating pressure	145 psi
External diameter, pipe	7/8"
Internal diameter, pipe	5/8"
External diameter, insulation	1 7/8"
Liquid volume	0.02 gal./ft.
Material, pipe	Stainless steel / AISI 316 TI
Material, insulation	Foam EPDM
Temperature limit, insulation	+ 350 °F to - 40 °F
Insulation value	0.04 w/mK
R-Value	R-4



Specifications & Data

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