



Sola-vent

Solar powered ventilation and natural daylight
from rooftop...to bathroom!

*Winner of the Interbuild 2006
"Best Interior Product of the Show"*



by Monodraught



Part of the VKR Group

July 2008

Two designs – two sizes:

The 230 Sola-vent system

Monodraught's fully integrated natural daylight and ventilation system, incorporating a 230mm diameter SunPipe, a solar powered extract fan and two halogen downlighters. The system is ideally suited to internal bathrooms and shower rooms to meet current Building Regulations to provide 15l/s extract ventilation.

The 300 Sola-vent system

This is designed for larger areas, such as kitchens and utility areas, utilising the 300mm diameter SunPipe, which provides approximately twice as much natural light as the smaller 230 Sola-vent system. It also incorporates a higher rated fan providing between 30 and 60l/s extract.

When the systems are to be used during winter months on commercial applications such as in a School or Office area, the Sola-vent system is provided with a mains back-up facility to ensure continued operation should the batteries become discharged due to low sun conditions.



Advantages of the Monodraught Sola-vent system

- Meets ventilation requirements to current Building regulations.
- Patented Diamond Top Dome is self-cleaning and eliminates condensation.
- Sola-vent system is guaranteed for 10 years.
- No solar gain in summer months nor heat loss in winter.
- Mains back-up facility for winter use or where low sun conditions are predicted.
- Ultra low noise design.
- Choice of internal finishes.
- Unbreakable, vandal-proof security dome.
- Natural daylight is known to combat SAD conditions.
- Complete installation service available Nationwide.

The Power Unit

The Sola-vent is driven by a photovoltaic panel utilizing polycrystalline silicon technology which gives a high performance to size ratio and provides power even under overcast skies. The 230 Sola-vent uses a 15 Watt panel which is 350mm x 400mm and the 300 Sola-vent uses a 40 Watt panel which is 550mm x 620mm.

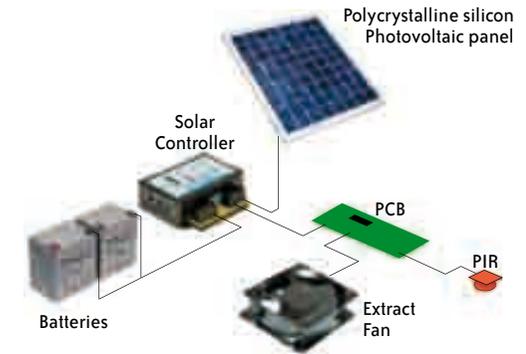
Photovoltaics is a proven technology used globally for reliable solar power generation and is particularly suitable for smaller installations of the size used for the Sola-vent.

The solar panel is housed in a robust aluminium/ABS frame, which allows easy mounting to a variety of roof types using the supplied fittings, which interface discretely with the roof construction. The unit is pre-wired, requiring simple connection to the control unit and no maintenance is required.



The Control Unit

The control unit for the Sola-vent is housed in a specially moulded, ABS housing in the ceiling void. This unit has a controller for the solar components, which directs power from the solar panel to the fan when in use, and charges the solar batteries when the Sola-vent is not in use. A controller regulates the battery charge, preventing over and under-charging of the unit to prolong battery life and function.



The ABS unit houses fully sealed solar batteries, which run at 12V. These batteries are designed to allow operation for up to 7 days without any charge from the solar panel.

The special low noise fan is mounted below the roof flashing, thus minimising fan noise. The high-efficiency DC motor has a very long life of 50000 hours, which is in excess of 50 years under normal usage of 2 hours per day. The system includes a mains backup facility to ensure continued operation should the batteries become discharged due to excessive use and/or low sun conditions.

A separate timer control is connected to the PIR unit to provide fully automatic operation of the extract fan. The timer control is configured to provide an overrun of 15 minutes as required by building regulations but is adjustable.

All fittings within the ABS unit are pre-wired and installed with connectors to facilitate easy wiring to external components, simplifying installation.

PIR Control

The integral miniature PIR motion sensor automatically triggers the ventilation extract when PIR detects movement in the bathroom. This design ensures the correct level of ventilation is maintained without occupant input. The PIR is just 26mm diameter with a clear plastic housing.

The Super Silver SunPipe

The essential complement to the solar powered extract fan is the SunPipe, which provides soft, diffused, soothing, natural light. A true energy-free integrated system. The Sola-vent utilises



Monodraught's Super Silver SunPipe, which is a high purity, silver coated aluminium. The specular aluminium surface carries a 10-year guarantee and is coated using PVD (Physical Vapour Deposition)

and being UV stable, provides outstanding QUV durability, with no decrease in total reflectance. The special surface treatment provides excellent colour rendition of natural light and is maintenance free.

Roof Flashing Systems

Pitched Roof Kit

An integral ABS flashing plate based on the proven SunPipe technology, incorporates an integral ventilation cowl. The ABS flashing plate is supplied either as a slate or tiled system complete with a weathering skirt to suit any type of roof tiles or slates and is available as a standard granite grey but special colours can be supplied to order. For installations to metal profiles roofs please contact Monodraught Head Office.



Flat Roof Kit

The flat roof flashing plate incorporates an aluminium/galvanised flashing plate which includes a 150mm high upstand for the SunPipe system and ventilation extract. The flat roof system enables the solar panel to be mounted at the optimum angle to the sun.

SunPipe light output

on a typical flat roof application measured approximately 1.5m below Sola-vent fascia

Diameter (mm)	Full Summer Sun 105klux		Overcast Summer 45klux		Overcast Winter 20klux		Area Lit (to a normal daylight level)
	Lux Value	Lumen output of system	Lux Value	Lumen output of system	Lux Value	Lumen output of system	
230 (9")	360	2160	170	1045	65	370	7.5 sq.m (approx 80sq.ft)
300 (12")	760	4460	330	1940	130	760	14 sq.m (approx 150sq.ft)

Sola-vent Natural daylight and solar powered extract ventilation system.

- Designed to comply with current Building Regulations "Part F" to supply extract ventilation.
- Two new ceiling fascia designs available to suit individual room décor and layout.
- Miniature PIR controlled. Ensures the correct level of ventilation to bathrooms, shower rooms, utility areas etc, without user input.
- Low voltage uses just 4W of electrical power allowing the PV panel to provide all the power for ventilation even during winter months.
- Solar powered. Photovoltaic panel charges internal batteries to provide up to 7 days usage.
- Two integral halogen downlighters provide light during evening use and are easily connected to existing electrical wiring
- Ultra low noise design, ball raced fan is fitted within ABS housing on vibration damping gaskets and is mounted within roof void.
- ABS or Aluminium flashing plate to suit any roof type and roof pitch with integral ventilation cowl and all fixings provided.
- An individual 230 Sola-vent system saves annually 4.8kg of CO₂ emissions compared to mains power.*

An individual 300 Sola-vent system saves annually 8kg of CO₂ emissions compared to mains power.*

*(Based upon official UK data from the Department of Environment, Food and Rural Affairs, March 2001.)

Ceiling Fascia Systems

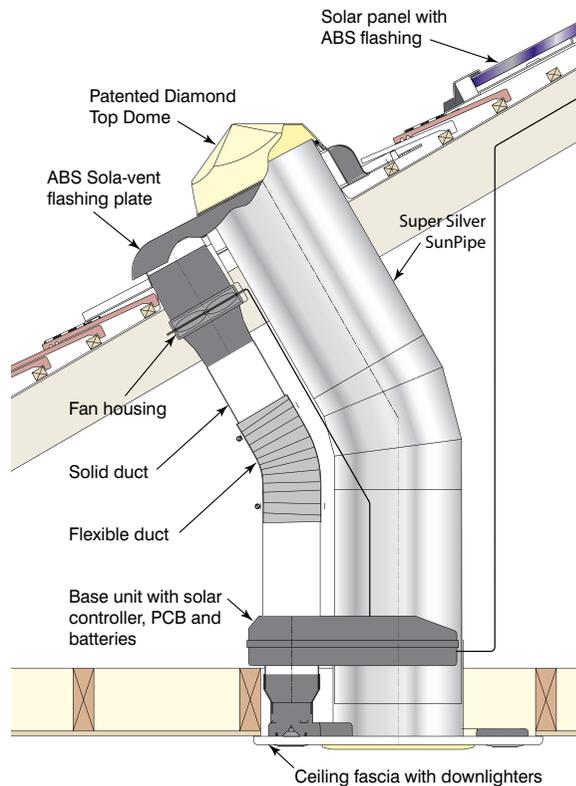
There is a choice of two ceiling fascias compatible with the Sola-vent system.

Sirroco The Sirroco, a considered, ultramodern design which incorporates the SunPipe ceiling diffuser and ceiling bezel to suit all modern bathrooms or shower rooms. Manufactured in white ABS, with a pinseal texture which provides a very high quality finish. The two downlighters are supplied with satin finish stainless steel trims and are matched by the SunPipe diffuser trim. One side of the louvred grilles provides the ventilation extract with the other side blanked off internally.



Mistral Mistral, a sophisticated and refined fascia, which again incorporates the SunPipe ceiling diffuser and ceiling bezel. Designed with more conservative bathrooms or shower rooms in mind, the system

provides a discreet finish. The fascia is manufactured in white ABS with a pinseal texture which provides a very high quality finish. The two downlighters and ventilation diffuser are supplied with satin finish stainless steel trims and are matched by the SunPipe diffuser trim.

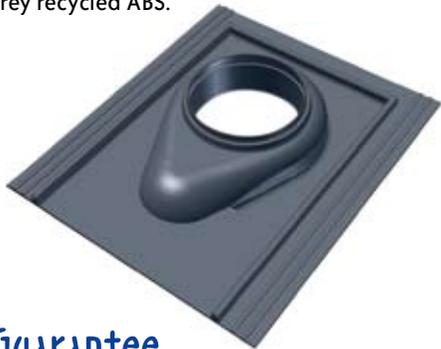


Mains Powered **Sola-vent**

With the advantages of low noise and automatic operation, a mains powered version of the Sola-vent is also available. All required power is taken from the lighting circuit, minimising installation complexity and time. A DC transformer takes the place of the solar components and provides power to the fan unit. The mains Sola-vent may be specified where fairly constant use is required or on occasions where roof installation of a solar panel is not possible.

Integrated Flashing Kit

Monodraught's new low profile flashing plate incorporates a concealed extract cowl within the flashing arrangement. The flashing system is available for all pitched roof flashing arrangements as standard. Supplied in dark grey recycled ABS.



Guarantee

The Sola-vent system is guaranteed for 10 years. This includes the Solar Cell, extract fan, solar controller, miniature PIR, overrun timer and all SunPipe components. The Solar Batteries have a 3 to 5 year life expectancy.

U-Value

Currently, testing is being carried out to determine the U-Values for the Sola-vent system. However, other work carried out on light pipes has produced a result of 0.315W/K.

Winter Operation

The Sola-vent has been designed for UK weather. Careful selection and sizing of the solar panel ensures that even during winter months the Sola-vent is designed to provide the required level of ventilation to meet building regulations. The built in batteries themselves will provide 7 days back up operation, after which the Mains Backup Facility will provide the charge to the batteries.

CAD Details

Full AutoCAD dwg or dxf CAD files are available for the Sola-vent system for all types of installations and roof types. These are available for download from www.sola-vent.com/download

Acoustic Performance

The Sola-vent system is designed to be an ultra low noise system. The low powered extract fan is mounted within a ball bearing assembly, which in turn is fitted to two anti-vibration gaskets and the arrangement is mounted within an ABS unit immediately beneath the roof flashing unit so as to ensure that it is at least 1m distance from the ceiling level.

NBS Specification

- Manufacturer: Monodraught Ltd, Halifax House, Cressex Business Park, High Wycombe, Bucks, HP12 3SE. Tel: 01494 897700 Fax: 01494 532465
- Type: Monodraught Sola-vent system.
- Glazing Detail: UV polycarbonate unbreakable Diamond top dome.
- Solar Cell: Polycrystalline silicon photovoltaic panel.
230 system - 15W size: (H)350mm x (W)400mm
300 system - 40W size: (H)550mm x (W)620mm
- Flashing System: Slate Pitched or Tiled Pitched Roof System: ABS universal flashing plate with integral ventilation cowl and weathering skirt.
Or
· Flashing System: Flat Roof System : Aluminium/Galvanised one piece universal flashing plate with integral ventilation cowl and ABS collar.
- Colour: Dark Grey.
- Lining: Super Silver 230 or 300 SunPipe system in 610mm lengths with flexible extract ducting.
- Mechanical Extract: ABS intelligent control unit. Comprising of solar controller, ball raced extract fan with anti-vibration gaskets, 12v batteries C/W mains backup facility, 15 minute overrun timer and PIR controller.
- PIR Control: Miniature PIR control with 10ft sensor range.
- Night-time lighting: two GU10 halogen downlighters in die-cast steel casings. IP 44 rated Zone 2.
- Ceiling Finish: Sirroco ceiling fascia with integral ventilation diffuser and three piece SunPipe ceiling diffuser.
Or
· Ceiling Finish: Mistral ceiling fascia with integral ventilation diffuser and three piece SunPipe ceiling diffuser.
- Fixing Kit: Installation instructions and all necessary fixings, brackets and supports
- Excluding: Mains wiring to downlighters and Mains Backup Facility (to be carried out by a Qualified Electrician).

This specification is available in word or pdf format from www.sola-vent.com/nbs

Monovent **SunCatcher**

Whereas the Sola-vent provides solar driven extract, the Monovent SunCatcher provides PSV (Passive Stack Ventilation) using wind power and the thermal rise of warm air as the only driving force. There are no fans incorporated with the Monovent system and this arrangement provides permanent back ground trickle ventilation, also to meet the Building Regulations requirements of 15l/s, assuming an external wind speed of 4m/s. The Monovent has been designed in accordance with BRE Paper, Reference 13/94, and provides in excess of the minimum ventilation requirement of 8000mm².

