



SolarDuct® 2-Stage system delivers maximum temperature rise for rooftop applications

SolarDuct® is based on the highly efficient and award-winning SolarWall® system. The technology has been specifically engineered for roof settings and for applications in which a traditional wall-mounted system is not feasible.

Like the original SolarWall technology, the SolarDuct technology heats ventilation air before it enters the air handling units, which reduces the on-site heating load. Traditional SolarDuct® systems use an all-metal collector as the solar absorber. Micro-perforations in the panels allow the heat that normally collects on a dark surface to be uniformly drawn in through the SolarDuct system, where the air is heated and then ducted into the conventional HVAC system.

The SolarDuct technology is now also available in a "2-Stage" configuration in which the solar collector is partially glazed to deliver higher temperature rises by heating the air twice. SolarDuct 2-Stage produces up to 50% more energy than a conventional SolarDuct system which helps drive a faster return-on-investment.

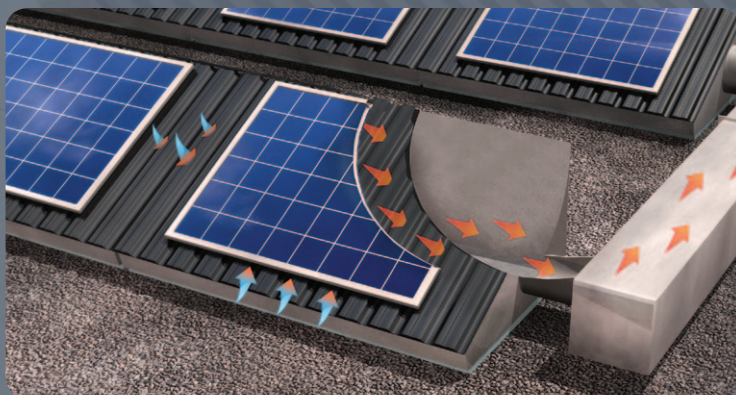
### Features & Advantages

- Displaces the traditional heating load, and targets one of the largest usages of building energy
- High efficiency SolarDuct modules heat ventilation air to improve indoor air quality
- Compelling ROI
- Substantial CO<sub>2</sub> displacement
- Modular units simplify array layouts and connections to HVAC units
- Typical array length is up to 60 feet (18m) long (10 units) and will deliver up to 1000 cfm (1700 m<sup>3</sup>/h) of heated ventilation air



### SolarDuct® Options

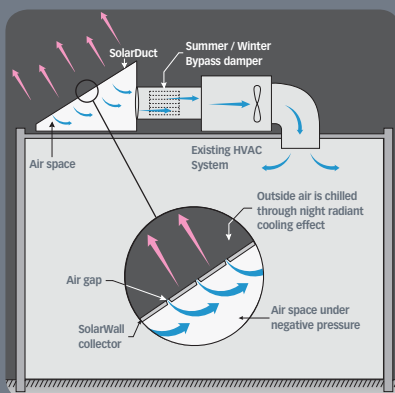
#### PV/T Hybrid System; Heat+Electricity



The SolarDuct® product can also be used for PV/thermal co-generation systems. With a SolarDuct PV/T system, the all-metal SolarWall® absorber doubles as the PV-racking system and draws heat away from the PV modules. This heat energy is then ducted to the nearest rooftop air handling unit and then into the building's conventional HVAC system to offset the heating load. The removal of the PV heat cools the modules and enhances the electrical operating efficiency of the PV (up to 10%).

#### Summer Night Cooling Option

During the air conditioning season, SolarDuct can pre-cool night air. When clients use an economizer cycle during summer nights, SolarDuct will save even more energy by chilling the night air a few degrees below ambient between sunset and sunrise. Nocturnal radiation cooling cools the SolarDuct panel facing the night sky by as much as 10 C (18 F) below ambient. Using the HVAC economizer control strategy, the SolarDuct system allows outside air passing through it to radiate heat to the night sky which cools the air below ambient.



### SolarDuct® Performance

SolarDuct® systems are optimized to meet site conditions in terms of orientation towards the sun and proximity to rooftop air handling units. Whether the systems are glazed or unglazed, or combined with PV for solar cogeneration, the modular arrays are sized according to the energy requirements of the facility. SolarDuct® systems are suitable for most flat-roofed commercial, industrial and institutional buildings. The modular rooftop SolarDuct units are either ballasted or fastened, which is quick to assemble and simple to integrate into the existing air intake system.

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