



RST NightWash™ Systems for Commercial Applications

RST NightWash™ is a fully automated solar panel cleaning system designed to increase solar energy production and preserve panel warranties.

How it works

RST NightWash™ utilizes drip irrigation technology on solar arrays in fields, parking lots, and on commercial building rooftops. On commercial systems, the system operates entirely outside the envelope of the building.

RST NightWash™ connects via ¾" - 3" water feed lines that deliver water to a filtration system containing an electrolysis filter and a 130 micron disk filter. From the filtration system, water is delivered to the solar panels via polyethylene tubing. The tubing connects to proprietary nozzles and both are affixed to the panels with patented stainless steel clips that do not react to the aluminum solar panel frame. The nozzles spray soft, filtered water onto the panels at night when there is virtually no risk of thermal stress.



Ideal for commercial solar arrays

Optimizes solar production

Cleans panels regularly to prevent losses from dirt, pollution, leaves, and bird excrement.

Protects panel warranties

Cleans at night with filtered, low pressure water to avoid thermal stress. No brushes, no chemicals, no human error..

Low-profile design

Nozzle extends about 1 inch above the panel making the system nearly invisible.

Advanced water filtration

State-of-the-art water filtration technology eliminates lime scale buildup.

Water efficient

High efficiency nozzles mean minimal water is used per cleaning (1-1.5 quarts per panel per cleaning).

Increases safety

Automation and low-impact design reduces labor hazards and damage to rooftops.

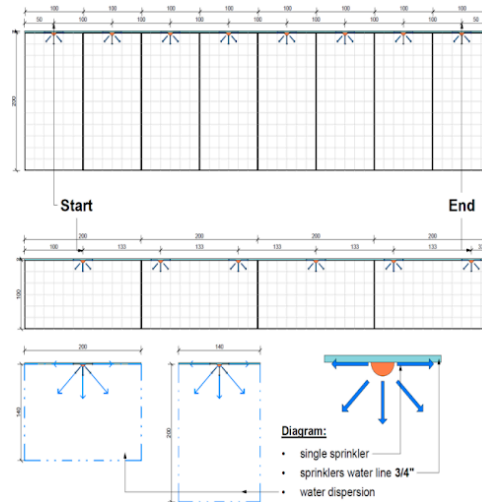
Improves aesthetics

Keeps panels beautifully blue / black, as if they were just installed.

System Specifications

Environmental
Operating Temperature Range ¹ - 32F to 100F
Mechanical - Weight per Panel in Portrait ²
Without water: 0.254 lbs
Fully Pressurized with Water: 0.944 lbs
Standby: 0.599 lbs
Mechanical - Weight per Panel in Landscape ²
Without water: 0.508
Fully Pressurized with Water: 1.888 lbs
Standby: 1.198 lbs
Mechanical - Weight of Filter and Control System
70 lbs, with rack 100 lbs over 18 ft ²
Electrical Requirements
120V/20A outlet
Hydraulics
Maximum Input Water Pressure - 130 psi
Standard Operating Pressure - 40 to 60 psi
Maximum Water Temperature - 122 F

Sample Nozzle Layouts



¹ NightWash™ only runs at night.

² Assumes standard solar panel size is 2104 x 1048 mm.

Water Usage and Flow Rates

System (# of Valves)	Max. # of Panels	Max. # of Nozzles	Max system flow rate (gpm) ³	Max system run time (min)	Max System Water Usage per clean (gal)	Min. Outlet Pipe Size ⁴	Preferred Outlet Pipe Size ⁴
16	450	450	3.75	16	60	3/4"	1"
32	930	930	3.75	32	120	3/4"	1"
48	1410	1410	3.75	48	180	1"	1"
64	1890	1890	3.75	64	240	1"	1"
80	2370	2370	3.75	80	300	1"	2"
96	2850	2850	3.75	96	360	1"	2"

³ Nozzle flow rate is approx. 0.5 qt/min at 50 psi. Flow rate will vary with pressure. ⁴ Minimum Outlet Volume is 50 GPM, Preferred Outlet Pressure is 60 PSI.

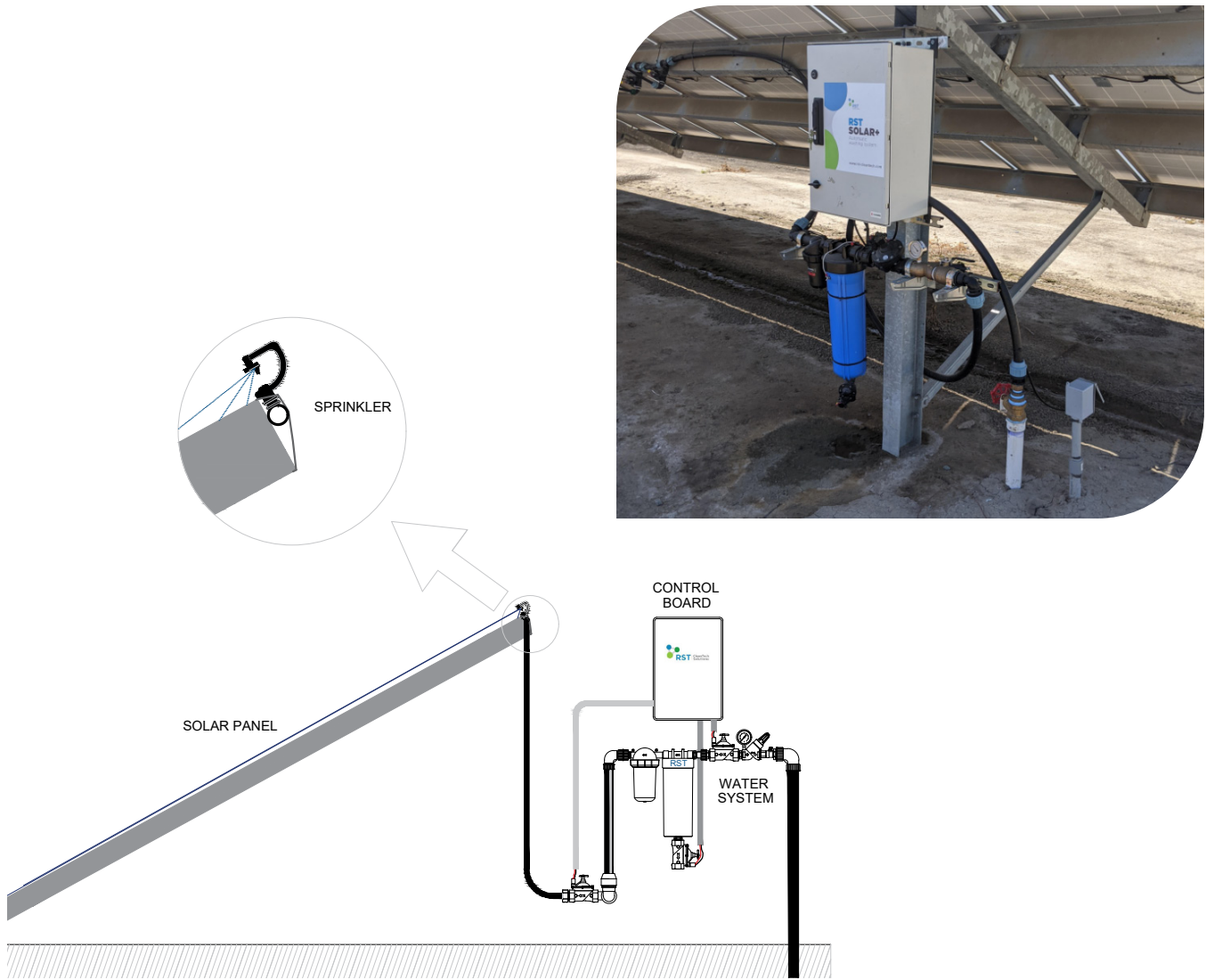
Consideration in Design

1. 2" gap between panel rows to allow sufficient space for nozzles
2. 5 degree tilt minimum for max efficiency; 2 degree tilt minimum - requires special drainage clips



System Arrangement

RST CleanTech NightWash™ automated solar panel washing system.



Your solar panels could be producing **up to 30% more energy.**

For sales information, call 1-866-RST-USA-2 or visit www.rst-cleantech.com

For product and technical information, visit www.rst-cleantech.com/our-solution or email info@rst-cleantech.com

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