

Rainwater Harvesting - Rainwater Control Station

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Tag _____

D3-BFD-VC

Rainwater Control Station

Specification

Rainwater Control Stations are packaged skid based systems that integrate filtration, treatment, and control of a commercial rainwater harvesting system in a compact and easily serviceable footprint. The series D3-BFD-VC Rainwater Control Station includes a UL 508a listed control panel with programmable logic controller and 6 inch color touchscreen interface. The programmable logic controller includes additional spare inputs and outputs (I/O) to manage sensors, valves and other non-standard equipment via a customizable sequence of operation. Communication with a building management system is available using Modbus RS-485 or an optional BACnet IP gateway. Rainwater is filtered in two stages using a 50 micron high capacity strainer and duplex 5 micron #2 bag filters. The system is factory assembled and tested on a 304 stainless steel baseplate. Optional disinfection systems are configurable based upon flow rate.

When ordered with a Watts RainCycle booster pump package, variable frequency drives for the pump(s) are provided within the control panel for ease of installation and operation. This system is configured for use with booster pump(s) installed before the Rainwater Control Station.

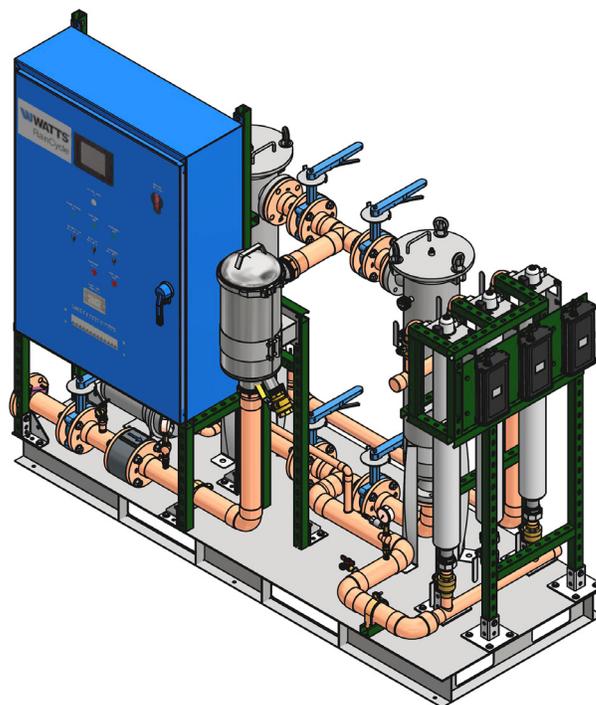
Features

- Rated for up to 150 GPM and 125 PSI*
- UL 508a control panel with programmable logic controller and 6" color touchscreen interface
- Compact footprint serviceable from two sides
- Single Point Power Connection
- 50 Micron High Capacity Strainer
- Duplex 5 Micron #2 Bag Filters
- Modbus RS-485 Building Management Communication
- 1.5 CFM Aeration Compressor
- 304 Stainless Steel Baseplate
- Tank Level and Flow Monitoring

**125 PSI max pressure at booster pump discharge. The pressure drop across the Rainwater Control Station is typically 25 PSI max. Refer to the engineering submittal package for additional information.*

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.



Configurable Options

- 3" PVC, Copper, or Stainless Steel piping
- Input Voltage (US & Canada)
- Automatic Flushing Strainer
- Filtration Differential Pressure Monitoring
- UV and Chlorine Disinfection
- BACnet IP Building Management Communication
- Secondary Water Supply Flow Monitoring
- Magnetic Flow Meters
- Customized programming, monitoring, and control of additional equipment

⚠ WARNING

Rainwater supplied by Watts rainwater systems is non potable water and is not intended for potable water applications. **DO NOT DRINK WATER** supplied from Watts rainwater systems and related equipment. Users shall determine the suitability of the product for the intended application before using.

NOTICE

Inquire with governing authorities for local installation requirements

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



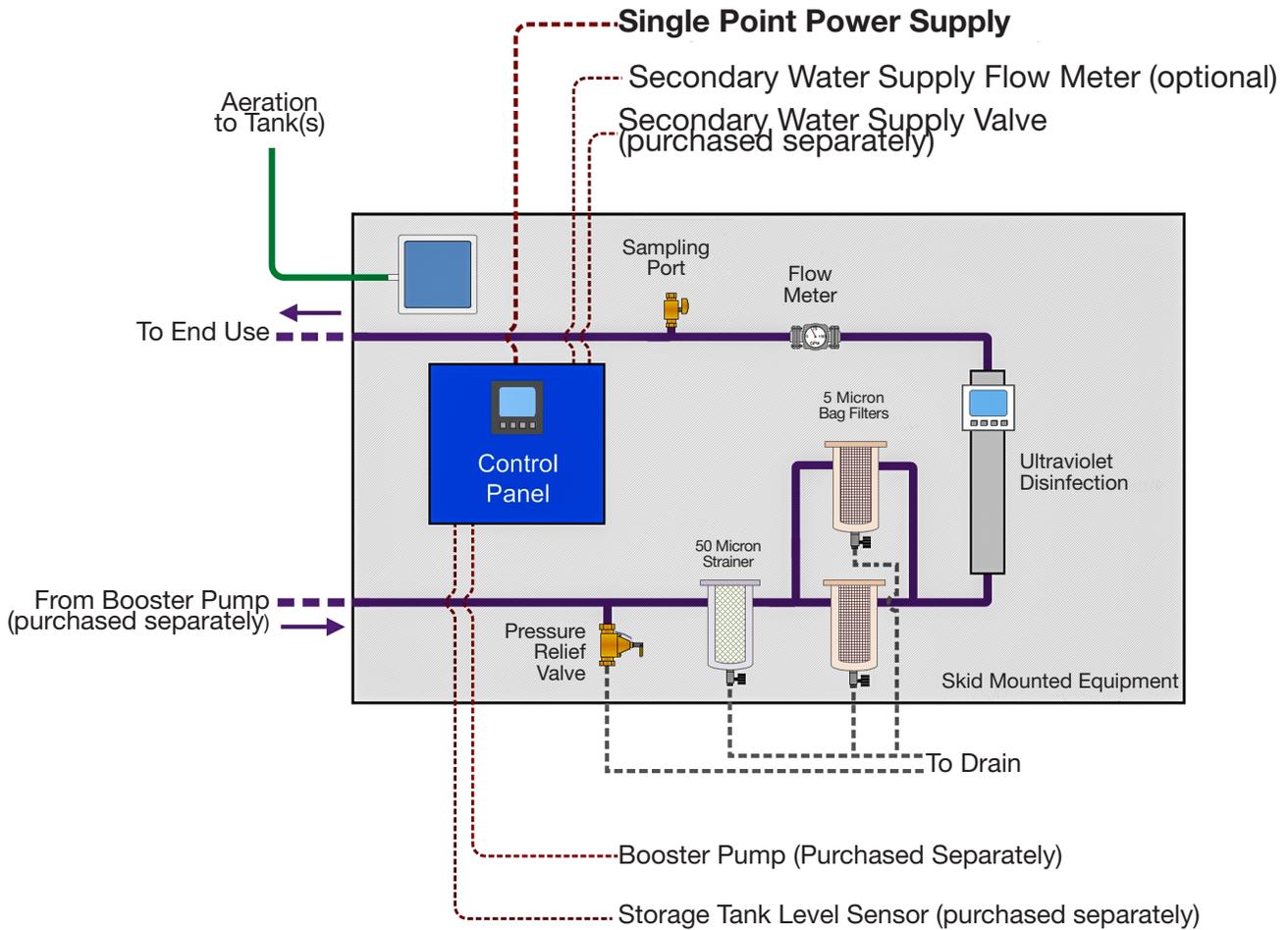
Principles of Operation

Rainwater is filtered using (1) 50 micron high capacity strainer, (1) 5 micron Big Bubba cartridge filter, and (optional) water disinfection equipment. Water is then discharged to the end use. Isolation valves, pressure relief valve, flow meter, and sampling port are included. The rainwater control station is plumbed using 2 IN pipe and fittings. A UL508a control panel operates the rainwater control station using a customized sequence of operation based upon the complete system design and equipment selected. Users manage and operate the system through the 6 IN color touchscreen interface. Building Management System communication is provided using Modbus RS-485 as standard, with optional BACnet IP or other protocols upon special request.

Watts offers a variety of additional equipment including pre-filters, booster pumps, secondary supply valves, flow meters, cistern inlet control valves, diaphragm tanks, and other equipment as necessary for a fully functional rainwater harvesting system. Contact Watts engineering for a comprehensive project submittal package.

Equipment Diagram

(Example diagram of D2-BFD-VC with single ultraviolet disinfection system)



NOT FOR CONSTRUCTION
 Valves And Other Appurtenances Have Been Omitted From This Guide. Equipment Configuration May Change Based Upon Project Configuration. Contact Watts Engineering For A Submittal Package.

-----	Electrical
-----	Drainage Piping
=====	Pressurized Rainwater Piping
=====	Low Pressure Air Tubing



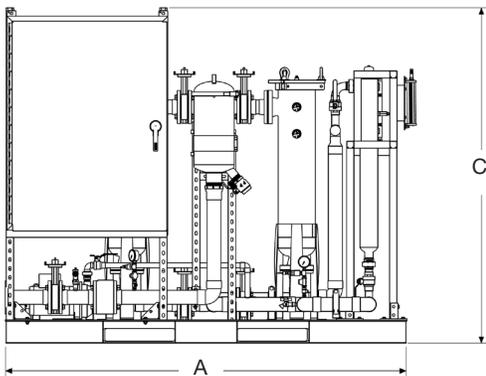
Water Disinfection Selection

Description	Ordering	Skid
	Code	Dimension
No Rainwater Disinfection	100	A
Single Watts SmartStream UV Disinfection System with Intensity Monitoring		
50 GPM	213	A
Dual Watts SmartStream UV Disinfection Systems with Intensity Monitoring		
80 GPM	222	B
100 GPM	223	B
Triple Watts SmartStream UV Disinfection System with Intensity Monitoring		
120 GPM	232	C
150 GPM	233	C
Dual Watts SmartStream UV Disinfection Systems with Intensity Monitoring and Flow Controlled Chlorine Dosing Kit		
80 GPM	322	B
100 GPM	323	B
Triple Watts SmartStream UV Disinfection Systems with Intensity Monitoring and Flow Controlled Chlorine Dosing Kit		
120 GPM	332	C
150 GPM	333	C

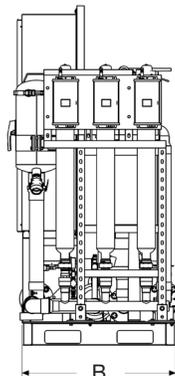
Contact Watts Engineering for filtration and disinfection recommendations based upon end use applications.

Ultraviolet (UV) disinfection system flow ratings are based upon 30mJ/cm². 40mJ/cm² upsizing available.

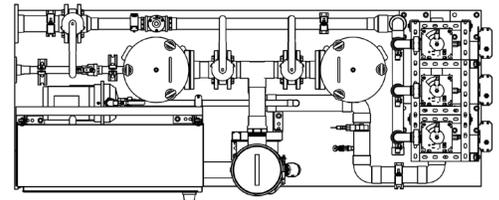
Dimensions



Front View



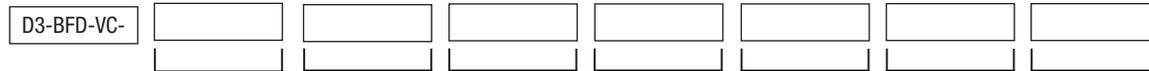
Side View



Top View

Skid Dimensions	A	B	C
Skid Size A	34	78	75
Skid Size B	34	90	75

Each rainwater control station is identified by a product code. Each digit in the code is described below.



Optional Equipment:	
-SSC	Add self-cleaning valve to 50 micron high capacity strainer
-DPM	Add differential pressure monitoring to cartridge filter
-RFM	Replace impeller flow meter with magnetic flow meter
-CWI	Add impeller flow meter for secondary water supply (shipped loose)
-CWM	Add magnetic flow meter for secondary water supply (shipped loose)

Water Treatment: (required)	
-100	No Rainwater Disinfection
Single Watts SmartStream UV Disinfection System with Intensity Monitoring	
-213	50 GPM
Dual Watts SmartStream UV Disinfection Systems with Intensity Monitoring	
-222	80 GPM
-223	100 GPM
Triple Watts SmartStream UV Disinfection System with Intensity Monitoring	
-232	120 GPM
-233	150 GPM
Dual Watts SmartStream UV Disinfection Systems with Intensity Monitoring and Flow Controlled Chlorine Dosing Kit	
-322	80 GPM
-323	100 GPM
Triple Watts SmartStream UV Disinfection Systems with Intensity Monitoring and Flow Controlled Chlorine Dosing Kit	
-332	120 GPM
-333	150 GPM

Electrical Supply: (required)	
-208V	208V/3ph/60hz Supply Power (Single Point Connection)
-240V	240V/3ph/60hz Supply Power (Single Point Connection)
-480V	480V/3ph/60hz Supply Power (Single Point Connection)
-575V	575V/3ph/60hz Supply Power (Single Point Connection)
"-OTH" Specify: _____	

Piping Material (required)	
-PVC	PVC Schedule 80
-CTL	Copper Type L
-304	304 Stainless Steel (Schedule 10)

Booster Pump Configuration (Ordered Separately)	Simplex	Constant Speed	Motor HP
	Duplex	Variable Speed	

Please contact Watts Engineering for a comprehensive submittal package based upon selected options



USA: Tel: (978) 689-6066 • Fax: (978) 975-8350 • Watts.com
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 Latin America: Tel: (52) 55-4122-0138 • Watts.com