

Installation, Operation and Maintenance Manual

SmartStream™ UV 254 Nanometer Germicidal UV Disinfection Systems

Models

WB001 WB002 WB006 WB008 WB012 WC012 WC016
WC020 WC025 WC040 WC050 WD012 WD016 WD020
WD025 WD040 WD050

SmartStream™ UV Chemical Free Disinfection of Water

⚠ WARNING



Read this Manual BEFORE using this equipment. Failure to read and follow all safety and user information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Lé présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Any changes or modifications of this product not approved by the manufacturer could void the user's authority to operate the equipment.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.



Industry
Canada

Industrie
Canada



SmartStream™ UV is certified by the Water Quality Association (WQA) to NSF/ANSI Standard 372 for lead free.



⚠ WARNING

This appliance contains a UV-C emitter (UV lamp). Unintended use of the appliance or damage to the housing may result in the escape of dangerous UV-C radiation. UV-C radiation may, even in little doses, cause harm to the eyes and skin. Appliances that are obviously damaged must not be operated. Do not operate the UV-C emitter when it is removed from the appliance enclosure. The appliance must be disconnected from the power supply before replacing the UV-C emitter. **DO NOT** look directly at the UV-C emitter while it is ON. Permanent serious eye injury could occur.

Table of Contents

Installation Precautions	3
System Specifications	4-7
Product Specification Tables	5-7
Dimensions	8
Feed Water Requirements	9
Installation Procedure	9-10
Maintenance	11
Lamp and Quartz Sleeve Replacement	11
Disinfection Procedure	11
Parts List	12-13
Troubleshooting	14
Controller Identification	15
Overview of Screens	16-20
Controller Wiring	21
Warranty and Conditions	24

NOTICE

This system should only be installed and maintained by a qualified professional. Observe all national, state, and local plumbing and building codes when installing the system.

Introduction

The Watts SmartStream™ line of ultraviolet disinfection systems provide protection against microbiological contamination in water for residential and commercial applications.

Disinfection of water with SmartStream™ is a simple, rapid physical process. When contaminated water is exposed to SmartStream's™ 254 nanometer UV light, the UV light penetrates the cell walls of microorganisms and disrupts their genetic deoxyribonucleic acid (DNA) material. This quickly inactivates microorganisms by destroying their ability to replicate and infect.

NOTICE

Watts SmartStream™ UV systems are engineered with the highest quality components. If at anytime a component needs to be replaced, use only parts recommended and supplied by Watts. **DO NOT** add components to or remove components from this system.

The UV lamp is rated for 9000 hours under normal operating conditions and should be replaced annually to keep the UV intensity at the highest possible output. Quartz sleeves should be cleaned as needed or replaced as needed to guarantee the highest possible UV transmittance into the water.

Use only Watts supplied UV lamps and quartz sleeves for your specific model. Failure to do so may result in system failure and will void all warranty.

DO NOT use this system in a manner that it is not intended for. This purifier is only for use in water applications where the feed water, installation environment and installation method meets the requirements within this manual.

The system must be properly sized. **DO NOT** exceed the rated flow rate capacity of the system. Flow controllers are available from Watts to ensure system's rated flow is not exceeded.

Follow all product safety labeling.

- **DO NOT** let the system freeze. System damage may result.
- Install the system on a flat, and level surface.
- The quality of the water to be treated must meet the feed water guidelines within this manual. Failure to ensure proper pretreatment will result in inadequate disinfection.

⚠ WARNING

DO NOT rely solely on this system to make water safe to drink. SmartStream™ UV disinfection systems are intended to be used as part of a well designed water treatment system. Water that contains microbiological contamination should be tested regularly to ensure its quality and safety at the point of use.

NOTICE

This appliance can be used by people aged from 18 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children.

This device conforms to the applicable provisions of the Code of Federal Regulations (CFR) requirements including, Title 21, Chapter 1, Subchapter J, Radiological Health.

⚠ WARNING

Using SmartStream™ with other water treatment equipment

SmartStream™ UV units can be installed as a final disinfection method within a water treatment system train or as pretreatment to protect sensitive components, such as reverse osmosis membranes, from bio-films.

The injection of chemicals into the water should be done on the outlet of the SmartStream™ system to ensure UV light degradation of the chemical or the introduction of turbidity within the UV feedstream does not occur.

A 5 micron particle filter should always be installed immediately before the SmartStream™ system.

Be certain that the feed water meets all criteria within the Feed Water Specifications section of this manual.

⚠ WARNING

Installation Guidelines

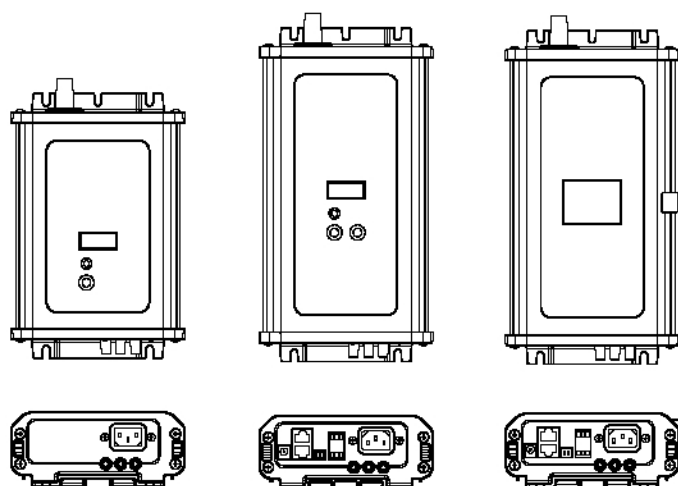
- **DO NOT** allow this system to remain ON without water in it for extended periods of time.
 - **DO NOT** install the system near any source of heat. Also, **DO NOT** install the system near any device or break out area that would be adversely effected by water.
 - **DO NOT** install this system higher in elevation than 10,000 feet above sea level.
 - **DO NOT** install the system backwards with the feed water line connected to the outlet.
 - **DO NOT** install where system is exposed to harsh chemicals or may be subjected to being struck by moving equipment, carts, mops or any other item that may cause damage.
 - **DO NOT** install the system outdoors. Keep system away from moisture, rain, and direct sunlight. Ambient air temperature must remain below 122°F and relative humidity must remain below 95%.
 - **DO NOT** allow the system to freeze.
 - The system **MUST** be mounted on a surface and with mounting hardware that is sturdy enough to support the weight of the wetted system.
 - The system **MUST** be plugged into an uninterrupted power supply that matches the rated power requirement of the system. In European installations, the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 milliamps.
 - The system **MUST** be installed in accordance with all applicable national, state and local codes.
 - A prefilter with a 5 micron minimum particle size reduction must be installed on the inlet line to the system. Additional pretreatment may be necessary so that the feedwater conforms to the Feed Water Specifications section on page 8.
 - Plumbing materials sensitive to UV light, typically plastic materials, should not be connected directly to the system. To prevent UV degradation at the plumbing connection points on the system, use one foot minimum of copper or stainless steel plumbing material to connect to the inlet and to the outlet of the system.
 - **IF** water hammer is evident, install water hammer arrestors before the system.
 - Always back-up valves and fittings with a wrench when constructing plumbing to reduce unnecessary stress on the system and its plumbing.
- Position the system in a suitable location. Make sure there is enough clearance between the end of UV chamber and any obstructions, to allow for the removal of the lamp and quartz sleeve.
- SmartStream™ UV disinfection systems should be installed as close as possible to the treated water's point of use.

System Specifications

SmartStream™ UV System Part Number Identification Key						
Prefix "W"	"Controller Series"	"GPM"	"Connection Type"	"Pipe Size"	"Plug"	"Accessories"
Watts	Controller Type B: Controller B C: Controller C D: Controller D	GPM of System (3-Digits)	Connection Port Types: A: NPT B: BSP-Tapered	Pipe Size B: 3/8" C: 1/2" D: 3/4" E: 1" F: 3/4" Female X 1" Male Combination Fitting G: 1" Female X 1 1/2" Male Combination Fitting	A: North American B: European C: British U.K. D: Australian	Accessories X: No Accessories (Accessories only available for systems using the C and D type controllers.) A: UV Sensor

Controller Features

Three different controllers are available on various SmartStream™ UV systems. The controllers are identified as "B" "C" or "D" series. Each controller has unique features and are outlined as follows:



Model B

Model C

Model D

B- Basic controller with lamp dimming, flow switch, lamp out audible alarm, multicolor LED system status indicator, glow cap lamp indicator, lamp life timer with 3 digit LED display, radio frequency communication to lamp to verify correct lamp and remaining life of the lamp. Lamp life timer resets when a new lamp is inserted.

B Series controllers are certified by the Federal Communications Commission (FCC) listed under identification number FCC ID: 2AFJT-SMARTSTREAM-B and Industry Canada (IC) listed under identification number IC: 20623-SMARTSTRMB.

C- All features of the of the B controller plus alarm output for solenoid valve, UV sensor input, 4-20 milliamp output for UV Intensity (When UV Sensor is used).

C Series controllers are certified by the Federal Communications Commission (FCC) listed under identification number FCC ID: 2AFJT-SMARTSTREAM and Industry Canada (IC) listed under identification number IC: 20623-SMARTSTREAM.

D- All features of the C controller. The display changes from a 3 digit LED display to a graphic touch screen. Total system hours are displayed along with key operational data.

D Series controllers are certified by the Federal Communications Commission (FCC) listed under identification number FCC ID: 2AFJT-SMARTSTREAM and Industry Canada (IC) listed under IC: 20623-SMARTSTREAM.

System Features

		B Series Controller With Lamp Dimming				
FCC ID: 2AFJT-SMARTSTREAM-B	GPM Rating	1	2	6	8	12
IC: 20623-SMARTSTRMB	System Model #	WB001	WB002	WB006	WB008	WB012
Universal Power Input		✓	✓	✓	✓	✓
316 SS Chamber		✓	✓	✓	✓	✓
Audible Alarm		✓	✓	✓	✓	✓
Lamp On Indicator		✓	✓	✓	✓	✓
Glow Cap Lamp Indicator		✓	✓	✓	✓	✓
Lamp Life Timer with 3-digit display		✓	✓	✓	✓	✓
Automatic Lamp Shut Off when Removed from the Chamber (wireless)		✓	✓	✓	✓	✓
Lamp Dimming		✓	✓	✓	✓	✓
Integrated Bracket Mounting				✓	✓	✓
Alarm Contact Relay (for solenoid valve)						
UV Sensor Input						
4-20mA Output						
12V Power for Chamber Cooling Fan						
Graphic Display						
Total System Hours Indicator						

Product Specifications Table

MODEL		WB001	WB002	WB006	WB008	WB012
FLOW RATE @ 16mJ (95%UVT @ EOL) (may be hydraulically limited)	usgpm liters/min	2.8 gpm 10.6 lpm	4.7 gpm 17.8 lpm	11.4 gpm 43.1 lpm	15.0 gpm 56.8 lpm	23.4 gpm 88.6 lpm
FLOW RATE @ 30mJ (95%UVT @ EOL)	usgpm liters/min	1.5 gpm 5.7 lpm	2.5 gpm 9.5 lpm	6.1 gpm 23.1 lpm	8.0 gpm 30.3 lpm	12.5 gpm 47.3 lpm
FLOW RATE @ 40mJ (95%UVT @ EOL)	usgpm liters/min	1.1 gpm 4.2 lpm	1.9 gpm 7.2 lpm	4.6 gpm 17.4 lpm	6.0 gpm 22.7 lpm	9.4 gpm 35.6 lpm
STANDARD NPT INLET / OUTLET PORTS		3/8"NPT-M		3/4"NPT-M		1" NPT-M / 3/4" NPT-F Combo Ports
OPTIONAL BSP-T INLET / OUTLET PORTS		3/8"BSP-M		3/4"BSP-M		1" BSP-M / 3/4" BSP-F Combo Ports
CHAMBER MATERIAL		316L SS				
CONTROLLER MOUNTING		Remote from chamber		On chamber bracket or remote from chamber		
INPUT VOLTAGE		100 to 240VAC 50/60Hz				
SYSTEM MAX NOMINAL INPUT POWER (Watts)		11	15	26	34	34
LAMP MAX NOMINAL ELECTRICAL POWER (Watts)		10	14	25	32	32
LAMP TECHNOLOGY		Quartz glass low pressure lamp / ozone free / true pre-heat starting / glow-cap indicator				
WIRELESS LAMP KEY		Standard				
LAMP DIMMING / FLOW SWITCH		Standard				
CHAMBER COOLING FAN		Not Applicable				
SYSTEM DISPLAY TYPE		Seven segment three digit LED				
LAMP LIFE MONITOR		3-digit LED Display, auto-reset with new lamp				
UV SENSOR		Not Applicable				
4-20mA OUTPUT		Not Applicable				
VISUAL ALARM		Multi-color status LED				
AUDIBLE ALARM		Yes				
AUDIBLE ALARM MUTE		Yes				
ALARM RELAY / SOLENOID CONTACTS		Not Applicable				
ALARM RELAY MANUAL OVER-RIDE		Not Applicable				
MAXIMUM AMBIENT AIR TEMPERATURE / HUMIDITY		50°C (122°F) / 95% RH (non-condensing)				
INLET WATER TEMPERATURE RANGE		34°F (1°C) to 113°F (45°C)				
MAX WATER PRESSURE		125psi (861 kPa)				
SHIPPING WEIGHT		11LB (5KG)	11LB (5KG)	17LB (8KG)	18LB (8KG)	19LB (9KG)

System Features

		C Series Controller With Lamp Dimming					
FCC ID: 2AFJT-SMARTSTREAM	GPM Rating	12	16	20	25	40	50
IC: 20623-SMARTSTREAM	System Model #	WC012	WC016	WC020	WC025	WC040	WC050
Universal Power Input		✓	✓	✓	✓	✓	✓
316 SS Chamber		✓	✓	✓	✓	✓	✓
Audible Alarm		✓	✓	✓	✓	✓	✓
Lamp On Indicator		✓	✓	✓	✓	✓	✓
Glow Cap Lamp Indicator		✓	✓	✓	✓	✓	✓
Lamp Life Timer with 3-digit display		✓	✓	✓	✓	✓	✓
Automatic Lamp Shut Off when Removed from the Chamber (wireless)		✓	✓	✓	✓	✓	✓
Lamp Dimming		✓	✓	✓	✓	✓	✓
Integrated Bracket Mounting		✓	✓	✓	✓	✓	✓
Alarm Contact Relay (for solenoid valve)		✓	✓	✓	✓	✓	✓
UV Sensor Input		✓	✓	✓	✓	✓	✓
4-20 mA Output (If UV Sensor is used)		✓	✓	✓	✓	✓	✓
12V Power for Chamber Cooling Fan		✓	✓	✓	✓	✓	✓
Graphic Display							
Total System Hours Indicator							

Product Specifications Table

MODEL		WC012	WC016	WC020	WC025	WC040	WC050
FLOW RATE @ 16mJ (95%UVT @ EOL) (may be hydraulically limited)	usgpm liters/min	24.0 gpm 90.8 lpm	31.5 gpm 119.2 lpm	39.0 gpm 147.6 lpm	46.9 gpm 177.5 lpm	75.0 gpm 283.9 lpm	93.8 gpm 355.0 lpm
FLOW RATE @ 30mJ (95%UVT @ EOL)	usgpm liters/min	12.8 gpm 48.4 lpm	16.8 gpm 63.6 lpm	20.8 gpm 78.7 lpm	25.0 gpm 94.6 lpm	40.0 gpm 151.4 lpm	50.0 gpm 189.3 lpm
FLOW RATE @ 40mJ (95%UVT @ EOL)	usgpm liters/min	9.6 gpm 36.3 lpm	12.6 gpm 47.7 lpm	15.6 gpm 59.0 lpm	18.8 gpm 71.2 lpm	30.0 gpm 113.6 lpm	37.5 gpm 141.9 lpm
STANDARD NPT INLET / OUTLET PORTS		1"NPT-M / 3/4"NPT-F Combo Ports			1.5"NPT-M / 1"NPT-F Combo Ports		
OPTIONAL BSP-T INLET / OUTLET PORTS		1"BSP-M / 3/4"BSP-F Combo Ports			1.5"BSP-M / 1"BSP-F Combo Ports		
CHAMBER MATERIAL		316L SS					
CONTROLLER MOUNTING		On chamber bracket or remote from chamber					
INPUT VOLTAGE		100 to 240VAC 50/60Hz					
SYSTEM MAX NOMINAL INPUT POWER (Watts)		47	58	67	67	100	118
LAMP MAX NOMINAL ELECTRICAL POWER (Watts)		45	55	64	64	95	112
LAMP TECHNOLOGY		Quartz glass low pressure lamp / ozone free / true pre-heat starting / glow-cap indicator					
WIRELESS LAMP KEY		Standard					
LAMP DIMMING / FLOW SWITCH		Standard					
CHAMBER COOLING FAN		Applicable Option					
SYSTEM DISPLAY TYPE		Seven segment three digit LED					
LAMP LIFE MONITOR		3-digit LED Display, auto-reset with new lamp					
UV SENSOR		Available Option					
4-20mA OUTPUT		With UV Sensor Option					
VISUAL ALARM		Multi-color status LED					
AUDIBLE ALARM		Yes					
AUDIBLE ALARM MUTE		Yes					
ALARM RELAY / SOLENOID CONTACTS		Yes - 24V 5 Amp Maximum					
ALARM RELAY MANUAL OVER-RIDE		Yes					
MAXIMUM AMBIENT AIR TEMPERATURE / HUMIDITY		50°C (122°F) / 95% RH (non-condensing)					
INLET WATER TEMPERATURE RANGE		34°F (1°C) to 113°F (45°C)					
MAX WATER PRESSURE		125psi (861 kPa)					
SHIPPING WEIGHT		19LB (9KG)	19LB (9KG)	20LB (9KG)	25LB (11KG)	27LB (12KG)	29LB (13KG)

System Features

D Series Controller With Lamp Dimming and Graphics Display							
FCC ID: 2AFJT-SMARTSTREAM	GPM Rating	12	16	20	25	40	50
IC: 20623-SMARTSTREAM	System Model #	WD012	WD016	WD020	WD025	WD040	WD050
Universal Power Input		✓	✓	✓	✓	✓	✓
316 SS Chamber		✓	✓	✓	✓	✓	✓
Audible Alarm		✓	✓	✓	✓	✓	✓
Lamp On Indicator		✓	✓	✓	✓	✓	✓
Glow Cap Lamp Indicator		✓	✓	✓	✓	✓	✓
Lamp Life Timer with 3-digit display		✓	✓	✓	✓	✓	✓
Automatic Lamp Shut Off when Removed from the Chamber (wireless)		✓	✓	✓	✓	✓	✓
Lamp Dimming		✓	✓	✓	✓	✓	✓
Integrated Bracket Mounting		✓	✓	✓	✓	✓	✓
Alarm Contact Relay (for solenoid valve)		✓	✓	✓	✓	✓	✓
UV Sensor Input		✓	✓	✓	✓	✓	✓
4-20 mA Output (if UV Sensor is used)		✓	✓	✓	✓	✓	✓
12V Power for Chamber Cooling Fan		✓	✓	✓	✓	✓	✓
Graphic Display		✓	✓	✓	✓	✓	✓
Total System Hours Indicator		✓	✓	✓	✓	✓	✓

Product Specifications Table

MODEL		WD012	WD016	WD020	WD025	WD040	WD050
FLOW RATE @ 16mJ (95%UVT @ EOL) (may be hydraulically limited)	usgpm liters/min	24.0 gpm 90.8 lpm	31.5 gpm 119.2 lpm	39.0 gpm 147.6 lpm	46.9 gpm 177.5 lpm	75.0 gpm 283.9 lpm	93.8 gpm 355.0 lpm
FLOW RATE @ 30mJ (95%UVT @ EOL)	usgpm liters/min	12.8 gpm 48.4 lpm	16.8 gpm 63.6 lpm	20.8 gpm 78.7 lpm	25.0 gpm 94.6 lpm	40.0 gpm 151.4 lpm	50.0 gpm 189.3 lpm
FLOW RATE @ 40mJ (95%UVT @ EOL)	usgpm liters/min	9.6 gpm 36.3 lpm	12.6 gpm 47.7 lpm	15.6 gpm 59.0 lpm	18.8 gpm 71.2 lpm	30.0 gpm 113.6 lpm	37.5 gpm 141.9 lpm
STANDARD NPT INLET / OUTLET PORTS		1"NPT-M / 3/4"NPT-F Combo Ports			1.5"NPT-M / 1"NPT-F Combo Ports		
OPTIONAL BSP-T INLET / OUTLET PORTS		1"BSP-M / 3/4"BSP-F Combo Ports			1.5"BSP-M / 1"BSP-F Combo Ports		
CHAMBER MATERIAL		316L SS					
CONTROLLER MOUNTING		On chamber bracket or remote from chamber					
INPUT VOLTAGE		100 to 240VAC 50/60Hz					
SYSTEM MAX NOMINAL INPUT POWER (Watts)		47	58	67	67	100	118
LAMP MAX NOMINAL ELECTRICAL POWER (Watts)		45	55	64	64	95	112
LAMP TECHNOLOGY		Quartz glass low pressure lamp / ozone free / true pre-heat starting / glow-cap indicator					
WIRELESS LAMP KEY		Standard					
LAMP DIMMING / FLOW SWITCH		Standard					
CHAMBER COOLING FAN		Available Option					
SYSTEM DISPLAY TYPE		Color Touch Screen with multiple languages, intuitive screen navigation, detailed system status messages, maintenance/diagnostic, and dealer programmable with website/contact information/QR codes					
LAMP LIFE MONITOR		Display on graphic touch screen, auto-reset with new lamp					
UV SENSOR		Available Option					
4-20mA OUTPUT		With UV Sensor Option					
VISUAL ALARM		Animated icons and text messages on graphic display					
AUDIBLE ALARM		Yes					
AUDIBLE ALARM MUTE		Yes					
ALARM RELAY / SOLENOID CONTACTS		Yes- 24V 5 Amp Maximum					
ALARM RELAY MANUAL OVER-RIDE		Yes					
MAXIMUM AMBIENT AIR TEMPERATURE / HUMIDITY		50°C (122°F) / 95% RH (non-condensing)					
INLET WATER TEMPERATURE RANGE		34°F (1°C) to 113°F (45°C)					
MAX WATER PRESSURE		125psi (861 kPa)					
SHIPPING WEIGHT		19LB (9KG)	19LB (9KG)	20LB (9KG)	25LB (11KG)	27LB (12KG)	29LB (13KG)

Dimensions

All dimensions are in inches.

Controller Mounted on Chamber- 6 to 50 GPM									
GPM	A	B	C	D	E	F	G	H	I
6	2.85	27.75	28.77	5.90	8.29	3.00	4.50	13.67	27.00
8	2.85	32.87	33.89	5.90	8.29	3.00	4.50	13.67	32.00
12 (B)	3.34	33.37	34.40	5.90	8.29	3.00	4.50	16.00	32.00
12 (C&D)	3.34	23.92	24.95	7.63	8.29	3.00	4.50	16.00	22.00
16	3.34	27.86	28.89	7.63	8.29	3.00	4.50	16.00	26.00
20	3.34	31.40	32.43	7.63	8.29	3.00	4.50	16.00	30.00
25	3.34	31.64	32.67	8.13	8.29	3.00	4.50	16.00	30.00
40	3.34	43.02	44.05	8.13	8.29	3.00	4.50	16.00	41.00
50	3.34	50.14	51.17	8.13	8.29	3.00	4.50	16.00	48.00

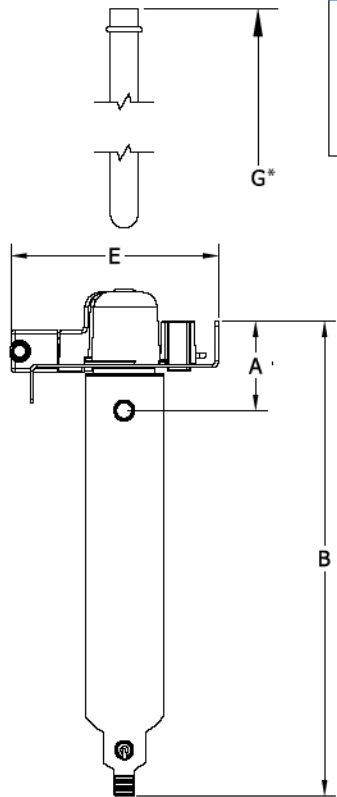
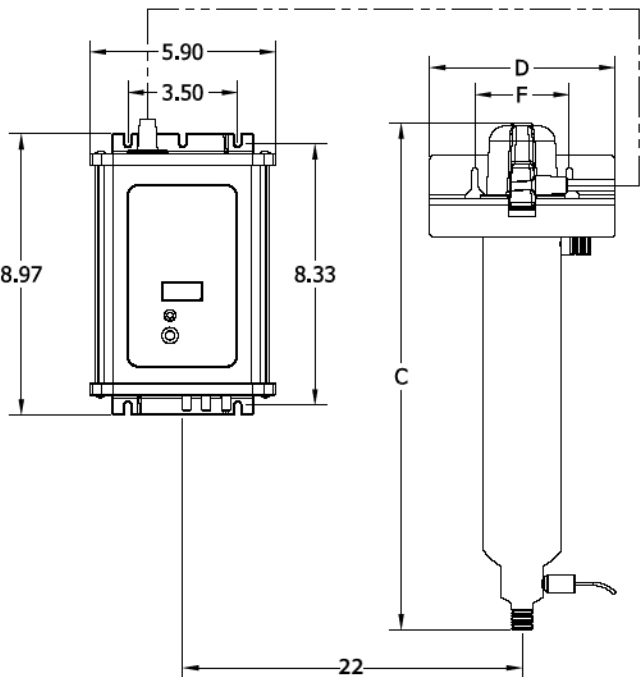
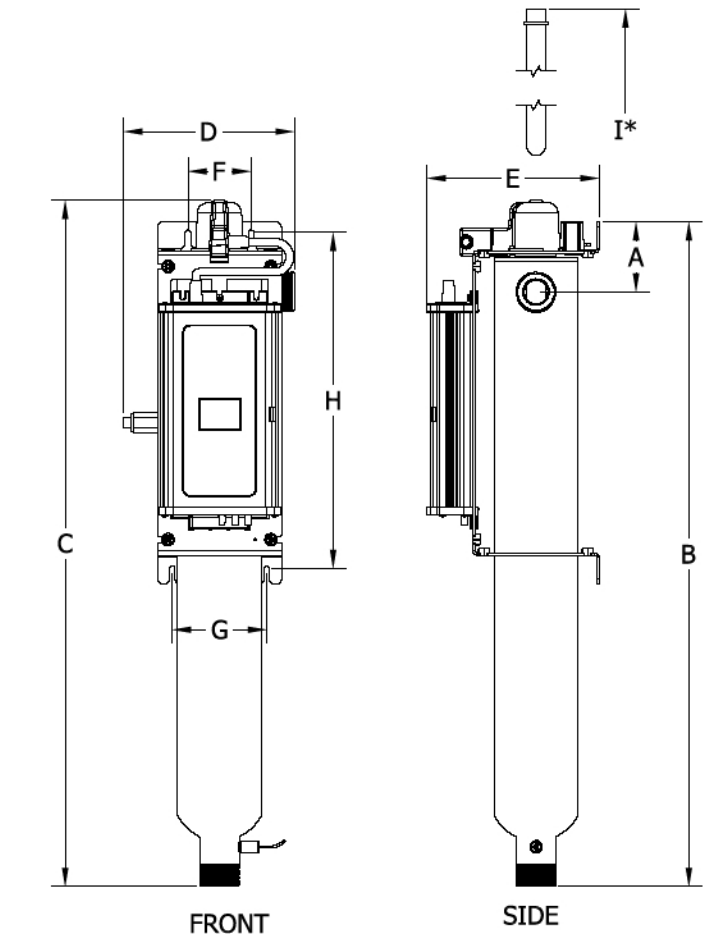
NOTICE

*Allow this amount of overhead clearance for the removal of lamp and quartz sleeve.

Remote Mounted Controller- 1 and 2 GPM Systems							
GPM	A	B	C	D	E	F	G
1	2.85	15.13	16.15	5.90	6.62	3.00	14.00
2	2.85	18.47	19.49	5.90	6.62	3.00	18.00

NOTICE

*Allow this amount of overhead clearance for the removal of lamp and quartz sleeve.



Feed Water Requirements

Please review operating pressures, temperatures and water chemistry limitations to ensure compatibility.

Hardness (maximum)	7 Grains (120 mg/L as CaCO ₃)
Water Pressure	5psi to 125psi (34.5 kPa to 861 kPa)
Water Temperature	34°F (1°C) to 113°F (45°C)
Turbidity	<5 Nephelometric Turbidity Units (NTU)
Total Suspended Solids	<10 mg/L
Iron (maximum)	0.3 mg/l
Manganese (maximum)	0.05 mg/l
Maximum Ambient Atmospheric Conditions	Temperature 122°F / 50°C 95% Relative Humidity Non-Condensing
Oil & H ₂ S	None allowed

⚠ WARNING

Support the Piping

The full weight of the piping and valves must be supported by uni-strut, pipe hangers or other means.

⚠ WARNING

Improper connection of the appliance-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance; if it will not fit the outlet, have a proper outlet installed by a qualified technician.

⚠ WARNING

Grounding Instructions

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an appliance-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

Installation

⚠ WARNING

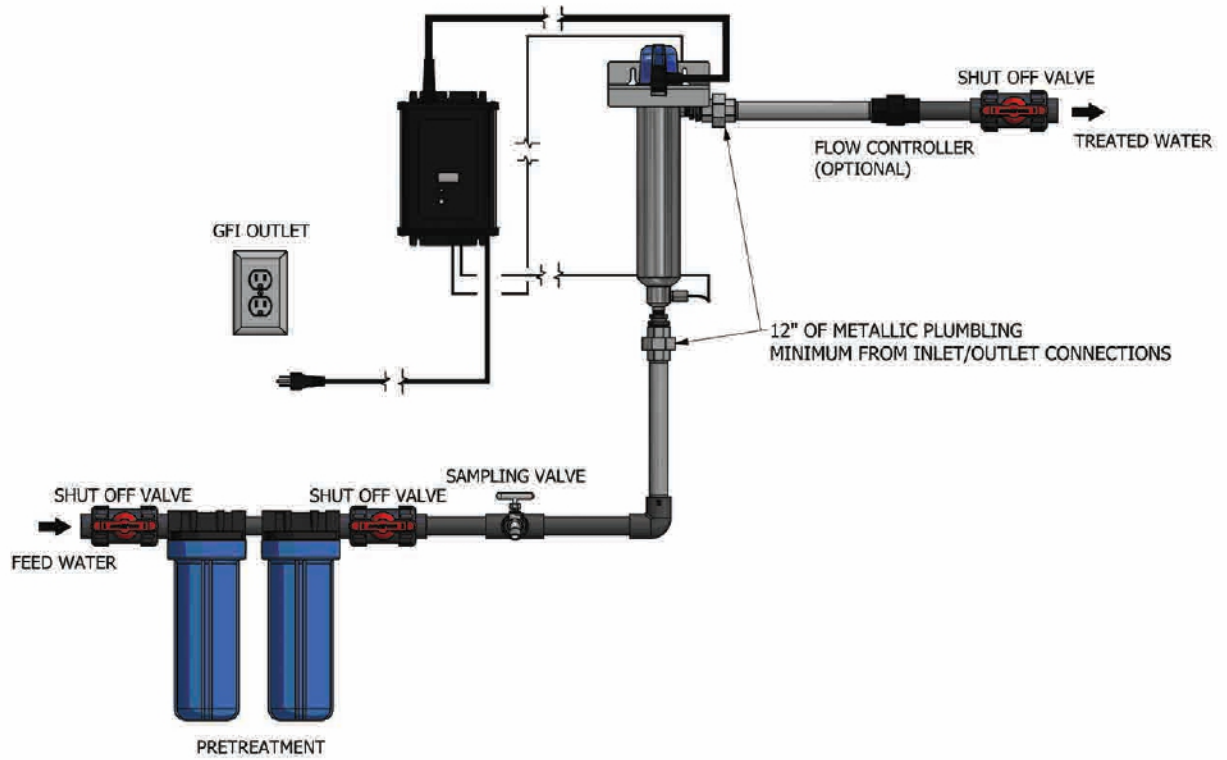
Inspect wall for hidden wiring before drilling any holes or installing screws.

1. Remove all system components from packaging and inspect for any damage. Confirm that the system being installed matches the flow rate for the application.
2. Turn off water heater(s).
3. Turn off the main water supply valve to the pipe the system will be installed in.
4. Relieve pressure within plumbing system by opening then closing both the hot and cold sides of a faucet until water ceases to dispense from faucet.
5. If equipped with isolation valves, isolate the water heater(s) by closing its inlet and outlet valves.
6. Mount the UV system on its installation surface using appropriate hardware for your mounting surface type. The system comes with 1" wood screws for mounting to wooden surfaces. If system is being mounted to anything other than wood then the installer must provide the appropriate mounting hardware. The mounting surface and hardware must be sturdy enough to support the weight of the wetted system.
7. Connect the water supply pipe to the inlet of the UV system.
8. Install a supply valve in this supply line.
9. Install an adequately sized 5 micron cartridge filter in this supply line after the supply valve. The cartridge filter must have a higher flow rate rating than the UV system.
10. Connect the outlet of the system to the outlet plumbing.
11. Install the solenoid safety shut off valve in this outlet plumbing line (optional).
12. Install a flow controller in this outlet plumbing line after the solenoid valve (optional).
13. Install an outlet valve in this outlet plumbing line. This valve should be located after any optional devices such as the solenoid valve or flow control.
- 14*. Install the quartz sleeve into the UV chamber. **DO NOT** touch the quartz sleeve with your fingers. Hold it with a paper towel.
- 15*. Install the quartz sleeve o-ring onto the visible end of the quartz sleeve. Screw the quartz sleeve nut onto the quartz sleeve port thread and tighten hand tight.
- 16*. Install the ultraviolet lamp into the quartz sleeve. **DO NOT** touch the lamp with your fingers. Hold it with a paper towel.
- 17*. Insert the lamp power lead wire into the receptacle on the lamp's glow cap.
- 18**. If using the solenoid valve safety shut off feature, connect the solenoid valve's power wires to the solenoid valve power output on UV system controller. Then plug the solenoid valve transformer into a power outlet. Use only Watts supplied solenoid valve kit part number T7401001 for 20 GPM systems and below and part T7401002 for 25 GPM systems and above.
19. Open water supply valves.
20. Check for leaks and repair as needed.
21. Plug in power cord.
22. Open outlet valve.
23. Purge air from plumbing system out of the nearest cold water faucet to the UV system.
24. Open inlet and outlet isolation valves on water heaters(s) and turn water heaters back on.
25. Perform the sterilization procedure within this manual.

*For assistance with installation steps 14, 15, 16 and 17 see replacement procedures for lamp and quartz sleeve within this manual.

**For assistance with installation step 18 see controller wiring diagram.

INSTALLATION TYPE: CONTROLLER REMOTE MOUNTED (B SERIES CONTROLLER SHOWN)



INSTALLATION TYPE: CONTROLLER MOUNTED TO SYSTEM (D SERIES CONTROLLER SHOWN)

