

CSL™ Series

High Performance UV Systems

For 60 years, hospital and hotel installations worldwide, as well as Life Sciences and Microelectronic applications have relied on the quality and proven performance of Aquafine's CSL™ series.

SHOWN
CSL™
12R 60

INDUSTRIES | Food & Beverage, Life Sciences, Microelectronics

FLOWRATES: 40-260 GPM @ 94% UVT,
50-315 GPM @ 99% UVT



The CSL™ series medium-flow models are engineered for indoor installation and controlled operating environments in numerous markets and applications.

APPLICATIONS

While disinfection is the most common application for ultraviolet (UV) technology in water treatment, ozone destruction and TOC reduction are also common. After considering the appropriate variables, a properly designed and sized UV unit can be guaranteed and customized to suit your application needs, ensuring the integrity of the process and product.

UV TECHNOLOGY

Aquafine UV systems are engineered to focus the power of UV light, utilizing specially designed Aquafine Colorguard™ lamps, recognized in the industry for unsurpassed performance and reliability.

SAFE & EFFECTIVE

UV does not 'add' anything to the water stream such as undesirable color, odor, chemicals, taste or flavor; nor does it generate harmful by-products. UV only imparts energy to the water stream in the form of ultraviolet to reduce chemical compounds present in the water.

APPLICATIONS | Disinfection, Ozone Destruction,

DESIGN CAPABILITIES | Multi-Unit Skid Systems

CSL™ SERIES

Aquafine CSL™ series features medium-flow models for numerous markets and applications. At 60 years, the series continues to be a popular choice, allowing features to be customized to customer specifications and industry requirements.

The CSL™ series consists of 316L stainless steel treatment chamber and a 304 stainless steel control panel in one integral unit. Complete with standard Lamp Status Indicator, the compact size maximizes installation flexibility and preserves floorspace. Single-ended (SE) lamps allow quick change-outs without tools. Upgrades for legacy models are available. CE rated for 240V only.

Flow rates are also available for other applications. For questions regarding your application needs, please contact your local Authorized Distributor or Aquafine Corporation for more information.



Aquafine®
60 Years of Pure Quality

CSL™ Series

High Performance UV Water Treatment System

Model: CSL™	4R	6R	8R	12R	8R 60	10R 60	12R 60
MAXIMUM FLOW RATE							
DISINFECTION (@94% UVT) GPM (M ³ /HR)*	40 (9)	60 (14)	80 (18)	130 (30)	166 (38)	215 (49)	260 (59)
DISINFECTION (@99% UVT) GPM (M ³ /HR)*	50 (11)	78 (18)	100 (23)	156 (36)	200 (46)	260 (59)	315 (72)
NUMBER OF UV LAMPS (SINGLE-ENDED)	4	6	8	12	8	10	12
ELECTRICAL REQUIREMENTS							
ELECTRICAL SUPPLY	120 or 240V/50-60Hz, SINGLE PHASE, 2 W + GND						
OPERATING POWER WATTS	190	265	370	540	590	730	865
BALLAST TYPE	ELECTRONIC						
CONTROLLER/DETECTOR							
UV & TEMPERATURE MONIT. SYSTEM	OPTIONAL						
LAMP STATUS INDICATOR	STANDARD						
LAMP OUT ALERT (LOA)	OPTIONAL						
RUNNING TIME METER	STANDARD						
HAND OFF AUTO (HOA)	OPTIONAL						
CONTROL CABINET							
CONTROL CABINET SYSTEM RATING	NEMA 1						
MATERIALS OF CONSTRUCTION	304 STAINLESS STEEL						
TREATMENT CHAMBER							
MATERIALS OF CONSTRUCTION	316L STAINLESS STEEL						
INTERNAL SURFACE FINISH	Ra 32 (Ra 15 OPTIONAL)						
OPERATING TEMPERATURE °F (°C)	Water: 50° - 100° (10° - 38°) Ambient Air: 50° - 110° (10° - 43°)						
MAX. OPERATING PRESSURE PSI (BAR)	120 (8) (150 (10) OPTIONAL)						
INLET/OUTLET FLANGE SIZE** INCHES (MM)	2 (50)		3 (80)		4 (100)		
SANITARY FITTINGS	OPTIONAL						
DIMENSIONS - FOR REFERENCE ONLY							
OVERALL DIMENSIONS INCHES (MM) L X W X H	40 X 10 X 23 (1016 X 254 X 584)		44 X 11 X 28 (1118 X 280 X 712)		68 X 11 X 28 (1727 X 280 X 712)		

* Dose Level: >30 mJ/cm² after 8,000 hours of operation, for Disinfection only.

** ANSI class 150 flange.



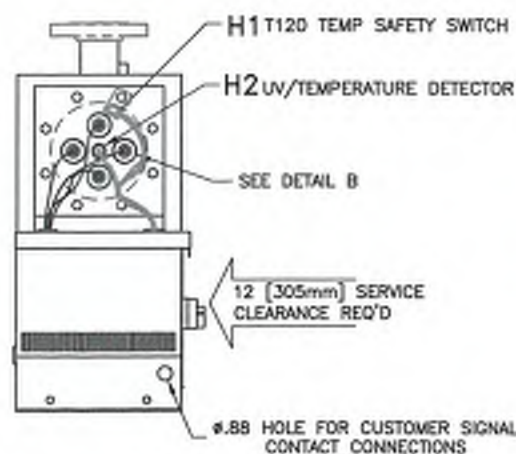
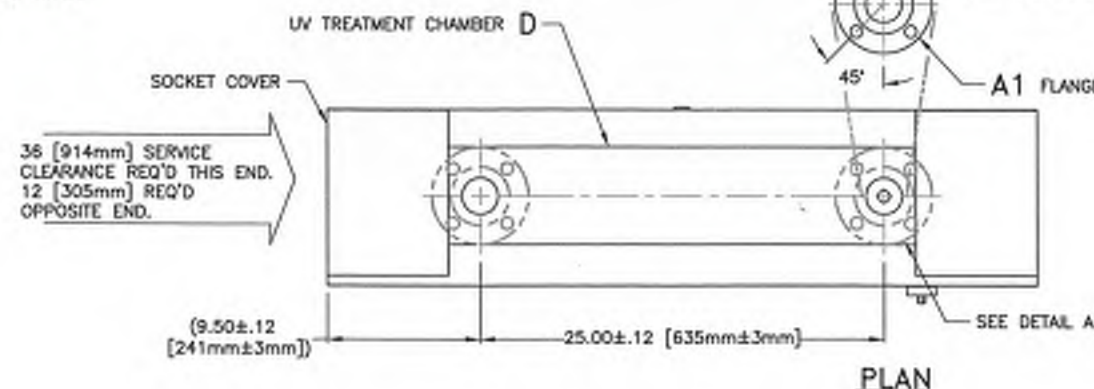
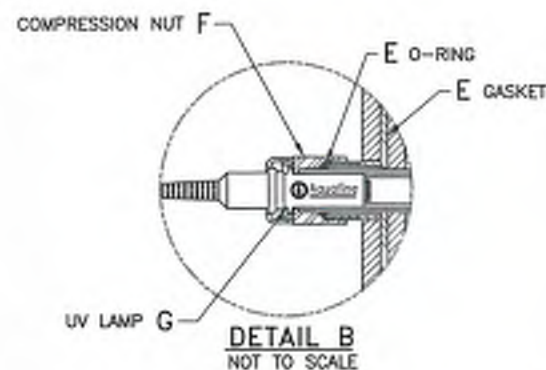
North America & International
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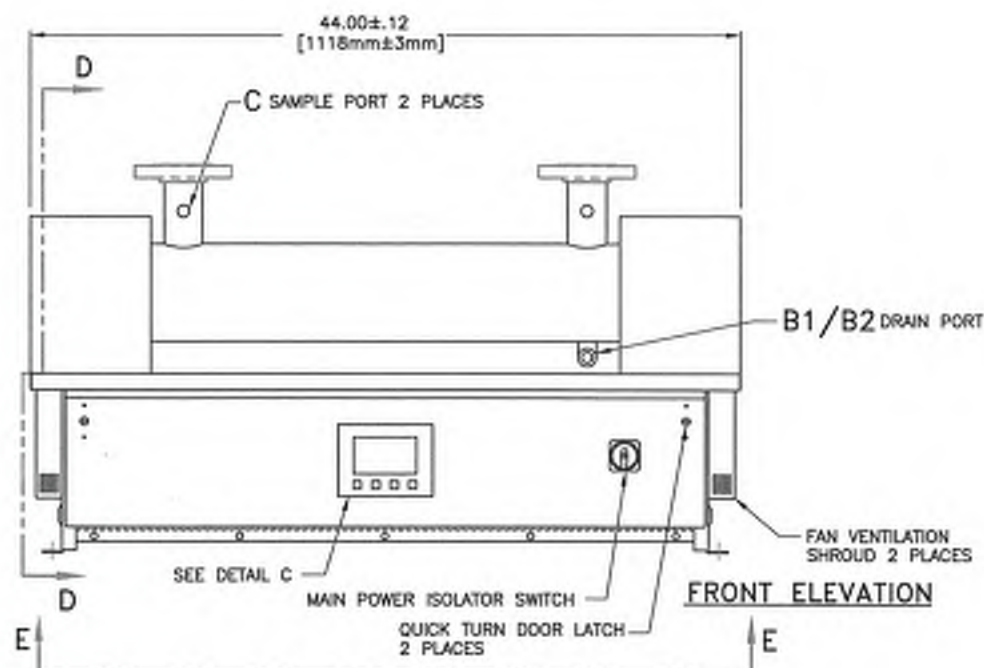
Aquafine is an
ISO 9001:2008
certified company.



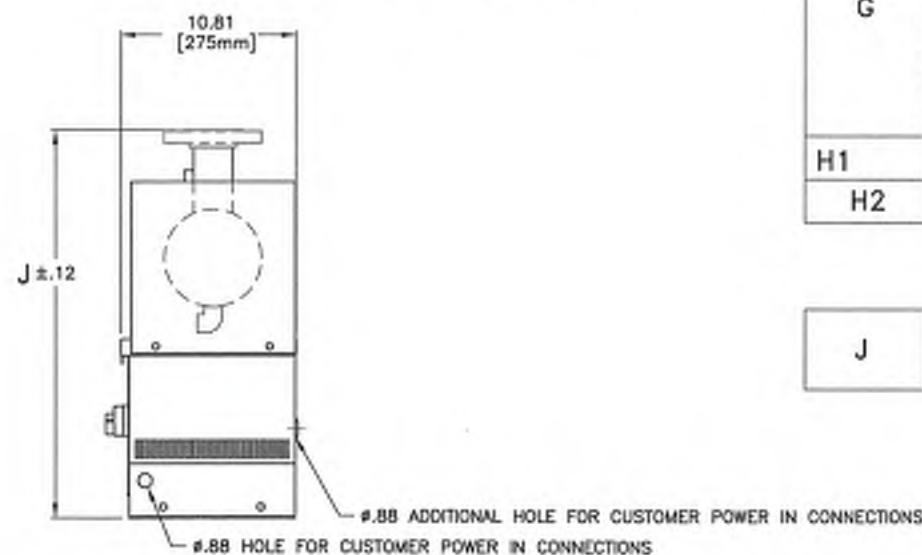
All specifications are subject to change without notice.
For additional requirements, please contact Aquafine Corporation.



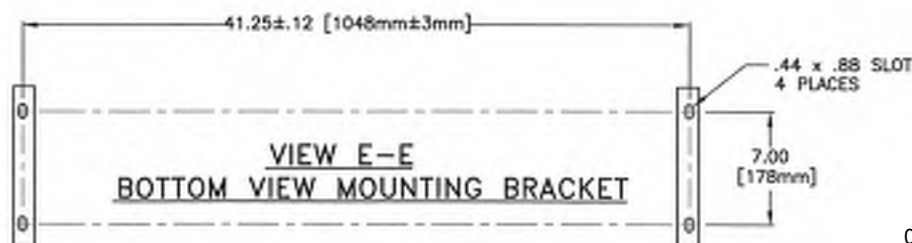
SECTION D-D



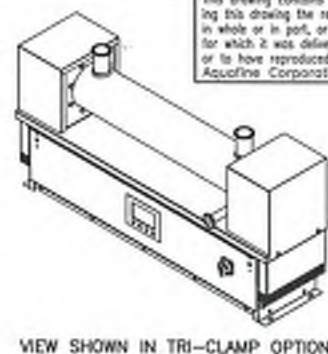
FRONT ELEVATION



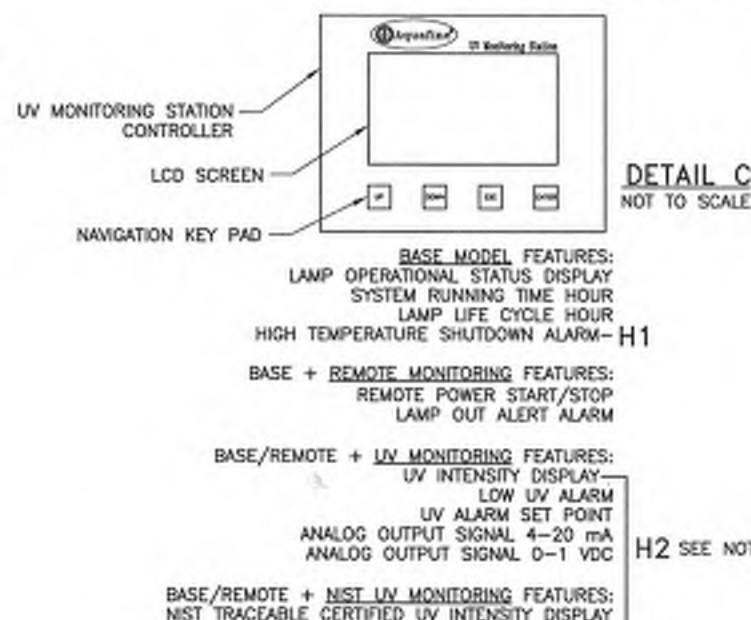
SIDE ELEVATION



VIEW E-E
BOTTOM VIEW MOUNTING BRACKET



VIEW SHOWN IN TRI-CLAMP OPTION



DETAIL C
NOT TO SCALE

CUSTOMER CONNECTIONS

A1	2 [51mm] RAISED FACE FLANGE	STANDARD
B1	3/8 NPT FEMALE ELBOW	EQUIPPED W/ A1
C	1/4 NPT COUPLING	EQUIPPED W/ A1
A2	2 [51mm] SANITARY TRI-CLAMP FERRULE	OPTIONAL
B2	1 [25mm] SANITARY TRI-CLAMP FERRULE	EQUIPPED W/ A2

OPTIONAL FEATURES

D	UV CHAMBER INTERNAL RA32 FINISH	STANDARD
	UV CHAMBER INTERNAL RA15 FINISH	OPTIONAL
E	EPDM O-RINGS & GASKETS	STANDARD
	VITON O-RINGS & GASKETS	OPTIONAL
	SILICONE O-RINGS & GASKETS	OPTIONAL
F	CPVC COMPRESSION NUT	STANDARD
	STAINLESS STEEL COMPRESSION NUT	OPTIONAL
G	DISINFECTION UV LAMP	STANDARD
	VALIDATED DISINFECTION UV LAMP	OPTIONAL
	TOC REDUCTION UV LAMP	OPTIONAL
	VALIDATED TOC REDUCTION UV LAMP	OPTIONAL
	OZONE REDUCTION UV LAMP	OPTIONAL
	VALIDATED OZONE REDUCTION UV LAMP	OPTIONAL
H1	T-120 TEMPERATURE SAFETY SWITCH	STANDARD
H2	UV INTENSITY/TEMPERATURE DETECTOR	OPTIONAL

DIMENSION SPECIFICATION

J	2 [51mm] FLANGE HEIGHT	23.88 [607mm]
	2 [51mm] FERRULE HEIGHT	22.25 [565mm]

This drawing contains proprietary information of Aquafine Corporation. By accepting this drawing the recipient agrees that this drawing will not be used, reproduced in whole or in part, or its contents revealed to others, except to meet the purposes for which it was delivered. It is understood that no right is conveyed to reproduce or to have reproduced any item herein disclosed without express permission from Aquafine Corporation.

REV.	DESCRIPTION	BY	DATE
A2	RELEASE #2	C.F.	5/10/15

DIMENSIONS ARE IN INCHES PER ASME Y14.5-1994 UNLESS OTHERWISE SPECIFIED DO NOT SCALE DIM.	DRAWN BY FIORIELLO	DATE 3/18/15	Aquafine Corporation 23010 AVENUE PALME VALERIE, CA. 91355-4198 U.S.A.
FRACTIONS DECIMALS ANGLES 1/16 .0625 30°	CHECK V. J. J.	DATE 5/18/15	TITLE GENERAL OUTLINE CSL PLUS 4R
TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS DECIMALS ANGLES 1/16 .0625 30°	ENG. FIORIELLO	DATE 5/12/15	
THIRD ANGLE PROJECTION	APPROVED A	DATE 3/18/15	
REFERENCE	SCALE 1/8	SHEET 1 OF 1	DWG. NO. GO-37200-5
			REV. A2



Submittal

Prepared For:

Webster University, Webster Grove, MO
C/O CW Boiler Supply

October 28, 2016

Description:

High Purity RO/DI Water Skid

Job Number: S-100516001

Submittal pages have been numbered to aid in referencing

All equipment and components shall be sized to fit in the available allocated space with the required working clearances.

All equipment and components shall be sized to fit within the service elevator.

General Specifications

Job Name: Webster University, Webster Grove, MO

Job No.: S-100516001

Items: High Purity RO/DI Water Skid

RO/DI Skid Consisting of the Following:

- MAT-60-1" Twin Alt Softener with SXT Digital Timer
- ACA-10G-1" Single Activated Carbon Filter with SXT Digital Timer/ RO Lockout Switch
- MRO-3600-4V" Deluxe RO System with Digital Conductivity
- 460V/3-Phase/60 Hz , 120V /1phase/60 Hz
- (2) 14" x 47" DI Bottles with 3.6 ft3 Mixed Bed Resin and Reslite (Piped in Series)
- 300 Gallon Polyethylene Conical Bottom Storage Tank, PRV Valve, Float Switches
- 5 GPM Flow Control for Slip Stream Recirculation
- (2) Grundfos CM 316 SS Re-press Pumps with VFD Drives & Sensors
- 35gpm @ 76 psi
- Motor Starter Panel with Disconnect
- Aquafine CSL-4R UV System
- Shelco 5FOS3 316 SS Final Filter with (5) 30" .2 Micron Filter Cartridges
- Master AB 1400 PLC with PV 800 Series 7" HMI Interface
- Ethernet Ports for Modbus Communication to BMS
- PLC to Display the Following Points
- (2) Recirculation Loop Flow Sensors
- (2) Recirculation Loop Resistivity Sensors
- (1) RO Conductivity Sensor
- Complete system less Permeate Tank to be Skid-Mounted, Pre-piped and Wired
- Split Skid Design
- Sch 80 PVC Piping to RO System
- Fused Poly Pro Piping Post RO

All components to be made to fit on service elevator. - icon Mechanical

Reference Drawings:

High Purity Skid General Arrangement Drawing
High Purity Water Treatment System P&ID

S-100516001-03-01
S-100516001-07-01

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 20, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	226700P01B	(Submittal No.'s:)
		(Cannon #22 6700-006) - (Paric #15051-0389) – (WES #607)
		➤ Processed Water System - Resubmittal

***Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel
Kpatel@cannondesign.com

☒ ***Reviewed**

☒ ***No Exceptions Taken**

☐

☐ *Make Corrections As Noted,
No Resubmittal Required

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: **wtashop@wmtao.com**

From: **Mike Whitworth**

Date: **December 20, 2016**

Re: **Webster University ISB**

WES No: **607**

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – (226700-006 REV002) 226700 Processed Water Systems for Laboratory Facilities	1	12-20-2016

•Signature: Mike Whitworth



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The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University ISB

LOCATION: St. Louis Missouri

CLIENT PROJ. No.: N/A

WES PROJ. No.: 607

SPEC SECTION: 22 6700
Processed Water System
for Laboratory Facilities

SUBMITTAL ITEM:: See Below -

CONTRACTOR: ICON Mechanical.

CTR. SUBMITTAL # 22 6700-006 REV002

SUBMITTAL DATE: December 19, 2016

DATE RECEIVED: December 20, 2016

RECEIVED VIA: E-Mail

RECEIVED FROM: WTA

DATE RETURNED: DECEMBER 20, 2016

RETURNED VIA: E-MAIL

RETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NEC	MCN	AAR	REJ	REV	NO EXCEPTION TAKEN	
					MAKE CORRECTIONS NOTED, NO RESUBMITTAL:	
					AMEND AND RESUBMIT	
					REJECTED, SEE REMARKS:	
					REVIEWED ONLY	
					ITEM	REMARKS
Submittal pages have been numbered to aid in referencing						
All equipment and components shall be sized to fit in the available allocated space with the required working clearances.						
All equipment and components shall be sized to fit within the service elevator.						
					Page 001 Cover Page	
X					Page 002 Marlo General Specifications	
X					Page 003 Marlo P&I Diagram	
X					Pages 004 - 005 Marlo Skid General Arrangement	
X					Pages 006 – 008 Marlo MAT Series Softener Systems Model – MAT 60M-1	
X					Pages 009 – 011 Marlo MFG Series Media Filter Systems Model – ACG-10G-1 Activated Carbon Filter	
X					Page 012 – 022 Marlo MRO-4V Reverse Osmosis Systems Model – MRO-3600-4V with pump	



X					Pages 023 – 025 Wave Cyber DI Tank Model 14"x47"	
X					Pages 026 – 028 Pentair Pentek Filter Housings Model – Not specified	
X					Page 029 – 031 Water Storage Tank Den Hartog Model – 36" x 325 Gal. Cone Bottom	1. Includes – stand and vent filter assembly
X					Pages 032 – 033 SPDT Pump Switch SJE Rhombus Model – Not Specified	
X					Page 034 - 035 Pressure Relief Valve Plast-O-Matic Model – Not Specified	
X					Pages 036 – 048 PP Piping Georg Fischer	1. Reviewed for uses as shown on submittal page 003
X					Page 049 – 059 Distribution Pumps Grundfos Model – CM 10-3	1. Motor starter control panel not included in submittal.
X					Pages 060 – 062 Pressure Gauges PIC Gauges Model – 301LFW	
X					Pages 063 – 066 UV System Aquafine Model – CSL-4R	
X					Pages 067 – 069 Final Filter Shelco Filters Model – 5FOS3	
X					Pages 070 – 074 Conductivity/Resistivity Sensor Georg Fischer Model Signet 2850	
X					Pages 075 – 079 Flow meter Georg Fischer Model – Signet 2537	
X					Pages 080 – 082 Pressure Sensor Ifm Electronic Model – PX3234	
X					Pages 083 – 085 Micro Drive Yaskawa Model – Not Specified.	
X					Pages 086 – 087 PLC Allen - Bradley	



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X					Pages 088 – 089 HMI Interface Allen Bradley Model – Pane View 800 (7")	
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REVIEWED BY: Michael R. Whitworth DATE: December 20, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
	☐ CRITICAL

ITEM BEING SUBMITTED (check only one)

- | | | |
|---|--|--|
| ☐ Shop Drawings | ☐ Certification / Qualifications | ☐ Coordination Drawing |
| ☐ Samples (____ copies) | ☐ Record Documents | ☐ Calculations |
| ☐ LEED Submittal | ☐ Product Data | ☐ Schedules |
| ☐ Other _____ | ☐ O&M Manuals | |

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action
 ☐ Information Only
 ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION (SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:

Devin D. Gates

REVIEWED BY	DATE

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE
☐ A. No Exceptions Taken No further review of submittal is required.
☐ B. Make Corrections Noted Incorporate corrections in work; resubmission is not required.
☐ C. Revise and Resubmit Revise as noted, and resubmit for review.
☐ D. Rejected Submittal is not in compliance with Contract Documents; provide new submittal.
☐ E. For Record / Information Only Submittal was reviewed for Record / Information purposes only.
☐ F. Not Required for Review Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS

☐ See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0389

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 12/19/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Processed Water System Shop Drawing
and Product Data REV1

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		226700-006	2		12/19/2016	Processed Water System Shop Drawing and Product Data REV1	Submitted

NOTES:

CC:

Signed: _____
Devin Gates



Mechanical

LETTER OF TRANSMITTAL

TO: Paric Corporation

77 West Port Plaza #250

St. Louis, MO 63146

ATTN: Jason Szachnieski, Devin Gates

DATE: 12/8/16

JOB #: 5768

RE: Webster ISB

We are sending you

☒

Shop drawings

☐ Attached

☐ Prints

☐ Change order

☐ Under separate cover

☐ Plans

☐ Other

☐ Samples

☐ Specifications

☐ Copy of letter

COPIES	DATE	NO.	DESCRIPTION
1	12/8/16	226700	Processed Water System - Resubmittal

These are transmitted as checked below:

☐ For signature

☐ For your use

☐ As requested

☐ For bids due

☒ For review and comment

☐ Approved as submitted

☐ Approved as noted

☐ Returned for corrections

☐ Prints returned after loan to us

☐ Other

☒ Resubmit

☐ Submit

☐ Return

☐ copies for approval

☐ copies for distribution

☐ corrected prints

Remarks: Please return by 12/15/16

RESUBMITTAL WITH HIGHLIGHTED COMMENTS FROM MARLO BELOW WITHIN SUBMITTAL.

COPY TO: file

SIGNED:

Alex Chambers



Mechanical

Webster University ISB Webster Groves, MO

Submittal #:

226700

Submittal Description:

Processed Water System-Resubmittal

Return By:

12/15/16

Please Note: To avoid scheduling delays and equipment release delays, please submit by the "Return By" date.

CHECKED BY:			
DESIGNER:		X	ENGINEER:
X	NO EXCEPTION TAKEN		MAKE CORRECTIONS NOTED
	SUBMIT SPECIFIED ITEM		REVISE AND RESUBMIT
	REJECTED		
Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Equipment supplier is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and satisfactory performance of his work.			
		Job #:	5768
		Date:	12/8/16
		By:	ARC

• 2227 South Street • P.O. Box 044170
• Racine, Wisconsin 53404-7003
• Phone: 262-681-1300 • Fax: 262-681-1318
www.marlo-inc.com



Date: 12-06-16
RE: Webster University RO/DI Skid
TO: CW Boiler

Paul,

The following letter is to confirm that the RO/DI system is designed based on the P&ID supplied. The system proposed meets and exceeds the demands and performance required per the written specification section 226700. The Marlo system proposed is a custom skid mounted system with PLC controls which will deliver the required RO/DI quantity and quality required. Any questions feel free to give me a call.

Thanks,

Erik Stirle
Commercial & Industrial Division
Marlo Incorporated

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: November 22, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	226700P01A	(Submittal No.'s:)
		(Cannon #22 6700-006) - (Paric #15051-0319) – (WES #607)
		➤ Processed Water System – (High Purity RO/DI Water Skid)
		(Resubmittal)

***Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel
Kpatel@cannondesign.com

☒ ***Reviewed**

☒ ***No Exceptions Taken**

☒ ***Make Corrections Noted,
No Resubmittal**

☒ ***Amend & Resubmit**

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: **wtashop@wmtao.com**

From: **Mike Whitworth**

Date: **November 22, 2016**

Re: **Webster University ISB**

WES No: **607**

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – Resubmittal 226700 Processed Water Systems for Laboratory Facilities	1	11-22-2016

•Signature: Mike Whitworth



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The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University ISB

LOCATION: St. Louis Missouri

CLIENT PROJ. No.: N/A

WES PROJ. No.: 607

SPEC SECTION: 22 6700
Processed Water System
for Laboratory Facilities

SUBMITTAL ITEM:: See Below -

CONTRACTOR: ICON Mechanical.

CTR. SUBMITTAL # 22 6700-006

SUBMITTAL DATE: October 28, 2016

DATE RECEIVED: November 16, 2016

RECEIVED VIA: E-Mail

RECEIVED FROM: WTA

DATE RETURNED: NOVEMBER 22, 2016

RETURNED VIA: E-MAIL

RETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NEC	MCN	AAR	REJ	REV	NO EXCEPTION TAKEN	
					MAKE CORRECTIONS NOTED, NO RESUBMITTAL:	
					AMEND AND RESUBMIT	
					REJECTED, SEE REMARKS:	
					REVIEWED ONLY	
					ITEM	REMARKS
Submittal pages have been numbered to aid in referencing						
All equipment and components shall be sized to fit in the available allocated space with the required working clearances.						
All equipment and components shall be sized to fit within the service elevator.						
					Page 001 Cover Page	
X					Page 002 Marlo General Specifications	
X					Page 003 Marlo P&I Diagram	
X					Pages 004 - 005 Marlo Skid General Arrangement	
X					Pages 006 – 008 Marlo MAT Series Softener Systems Model – MAT 60M-1	
X					Pages 009 – 011 Marlo MFG Series Media Filter Systems Model – ACG-10G-1 Activated Carbon Filter	
		X			Page 012 – 022 Marlo MRO-4V Reverse Osmosis Systems Model – MRO-3600-4V with pump	1. Verify assembly includes items and components as specified. Refer to specification section 226700, Part 2.2 – paragraph 7 in its entirety.



X				Pages 023 – 025 Wave Cyber DI Tank Model 14"x47"	
		X		Pages 026 – 028 Pentair Pentek Filter Housings Model – Not specified	1. Provide manufacturers model/part number and list all accessories as applicable.
X				Page 029 – 031 Water Storage Tank Den Hartog Model – 36" x 325 Gal. Cone Bottom	1. Includes – stand and vent filter assembly
		X		Pages 032 – 033 SPDT Pump Switch SJE Rhombus Model – Not Specified	1. Verify electrical rating of SPDT switch is compatible with electrical characteristics of pump.
		X		Page 034 - 035 Pressure Relief Valve Plast-O-Matic Model – Not Specified	1. Provide manufacturers model/part number.
X				Pages 036 – 048 PP Piping Georg Fischer	1. Reviewed for uses as shown on submittal page 003
		X		Page 049 – 059 Distribution Pumps Grundfos Model – CM 10-3	1. Verify correct size and capacities of pumps and motors. 2. Motor starter control panel not included in submittal. 3. Refer to specification section 226700, Pat 2.2, paragraph 7a.
X				Pages 060 – 062 Pressure Gauges PIC Gauges Model – 301LFW	
X				Pages 063 – 066 UV System Aquafine Model – CSL-4R	
X				Pages 067 – 069 Final Filter Shelco Filters Model – 5FOS3	
	X			Pages 070 – 074 Conductivity/Resistivity Sensor Georg Fischer Model Signet 2850	1. All required patch cords and cables are to be included with sensor. Refer to specification section 226700, Part 2.2, paragraph 7d.
	X			Pages 075 – 079 Flow meter Georg Fischer Model – Signet 2537	1. Include all required patch cords and cables.
X				Pages 080 – 082 Pressure Sensor Ifm Electronic Model – PX3234	
		X		Pages 083 – 085 Micro Drive Yaskawa Model – Not Specified.	1. Provide manufacturers model/part number
		X		Pages 086 – 087 PLC Allen - Bradley	1. Provide manufacturers model/part number



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X					Pages 088 – 089 HMI Interface Allen Bradley Model – Pane View 800 (7")	
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REVIEWED BY: Michael R. Whitworth DATE: November 22, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICAL	☐

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings ☐ Certification / Qualifications ☐ Coordination Drawing
☐ Samples ☐ Record Documents ☐ Calculations
 (_____ copies) ☐ Product Data ☐ Schedules
☐ LEED Submittal ☐ O&M Manuals
☐ Other

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0319

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 11/11/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Processed Water System Shop Drawing
and Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:		SUBMITTED FOR:	ACTION TAKEN:
☒ Shop Drawings		☒ Approval	☐ Approved as Submitted
☐ Letter		☐ Your Use	☐ Approved as Noted
☐ Prints		☐ As Requested	☐ Returned After Loan
☐ Change Order		☐ Review and Comment	☐ Resubmit
☐ Plans			☐ Submit
☐ Samples		SENT VIA:	☐ Returned
☐ Specifications			☐ Returned for Corrections
☒ Other: Product Data			☐ Due Date:

<i>Item</i>	<i>Package</i>	<i>Code</i>	<i>Rev.</i>	<i>Copies</i>	<i>Date</i>	<i>Description</i>	<i>Status</i>
Submittal		226700-006	1		11/11/2016	Processed Water System Shop Drawing and Product Data	Submitted

NOTES:

CC:

Signed: _____
Devin Gates



Mechanical

LETTER OF TRANSMITTAL

TO: Paric Corporation

77 West Port Plaza #250

St. Louis, MO 63146

ATTN: Jason Szachnieski, Devin Gates

DATE: 11/11/16

JOB #: 5768

RE: Webster ISB

We are sending you

☒

Shop drawings

☐ Attached

☐ Prints

☐ Under separate cover

☐ Plans

☐ Samples

☐ Specifications

☐ Copy of letter

☐ Change order

☐ Other

COPIES	DATE	NO.	DESCRIPTION
1	11/11/16	226700	Processed Water System

These are transmitted as checked below:

☐ For signature

☐ For your use

☐ As requested

☐ For bids due

☒

For review and comment

☐ Approved as submitted

☐ Approved as noted

☐ Returned for corrections

☐ Prints returned after loan to us

☐ Other

☐ Resubmit

☒

Submit

☐ Return

☐ copies for approval

☐ copies for distribution

☐ corrected prints

Remarks: Please return by 11/25/16

COPY TO: file

SIGNED:

Alex Chambers



Mechanical

Webster University ISB Webster Groves, MO

Submittal #:

226700

Submittal Description:

Processed Water System

Return By:

11/25/16

Please Note: To avoid scheduling delays and equipment release delays, please submit by the "Return By" date.

CHECKED BY:			
DESIGNER:		X	ENGINEER:
X	NO EXCEPTION TAKEN		MAKE CORRECTIONS NOTED
	SUBMIT SPECIFIED ITEM		REVISE AND RESUBMIT
	REJECTED		
Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Equipment supplier is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and satisfactory performance of his work.			
		Job #:	5768
		Date:	11/11/16
		By:	ARC