

**MIDDLESEX COUNTY COLLEGE
DIGITAL MEDIA PRESENTATION SYSTEM and PROJECTOR
SPECIFICATIONS**

1.0.0 GENERAL

The purpose of this specification is to replace the existing Extron Plenum Vault System with a new Crestron DM 3.0 system comprising of a DMPS3-4K-100-C (totaling 4 HDMI inputs). The purpose is also to reconfigure existing classroom with Crestron DM 3.0 system and install new projectors. The system includes scaling switch, HDMI transmitter plates, projector, speakers, amplifier, button plate, screen and cabling. The Contractor will remove all the Extron equipment in South Hall and return the equipment to Crestron.

The projector shall be ceiling mounted and fully operational. The Contractor must provide plenum rated cabling run in the ceiling/floor/walls between the wall plate and the Crestron RMC receiver box located in the ceiling next to the projector. The college will provide a 120v AC receptacle located within the ceiling and in the faculty workstation.

The Contractor shall be responsible for locating, mounting, focusing, and setting up the projector in a manner that will fill the screens without any KEYSTONE EFFECT.

The Contractor shall securely mount the projector, using the manufacturer's recommended mounting brackets and extension tubes as needed. The extension tubes and mounting brackets must be secured to the roof deck or ceiling structure not attached or suspended from the drop ceiling. Connect all cables, and test the screen image. The manufacturer's security plate and lock are to be provided and installed.

In the LH Building, surface mounted wire mold must be used to cable the Faculty workstation. No holes can be drilled into these walls. Any other rooms with block walls are to use wire mold. Wire mold shall match the wall color as close as possible. Any other building with stud walls shall have the cable run inside the wall cavity.

The Contractor must be Crestron certified partner. The Contractor must program and label the Crestron MP-B10 button panel. The Contractor also must supply and connect all cables and equipment to the Crestron DigitalMedia Presentation System. The system equipment must be tested and fully functional.

The Contractor will supply Crestron Certified HDMI Interface cable or equivalent, for all four HDMI inputs to connect the Crestron DMPS3-4K-100-C to each source.

In rooms where an audio amplifier and speakers are needed, the contractor will connect the Crestron MP-AMP30 & Crestron FSDI8 speakers.

The Contractor shall be responsible that ensuring all connections, video, audio and HDMI pass the appropriate signals successfully.

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1.1.0 SYSTEM OPERATION

1.1.1 LAB INSTALLATIONS (South Hall)

- a) Remove all existing Extron equipment from the teacher's workstation & ceiling. Contractor must return this equipment to Crestron.
- b) There is one Cat 6 cable existing inside of the faculty workstation cabinet that runs to the projector.
- c) Install one Crestron Cresnet cable from DMPS3-4K-100-C to the Crestron MP-B10 button panel
- d) Install the Crestron DMPS3-4K-100-C that will provide four HDMI inputs inside of faculty workstation cabinet. The Contractor will supply Crestron Certified HDMI Interface Cable, for all four HDMI inputs to connect the Crestron DMPS3-4K-100C to each source.
- e) Connect the Crestron DMPS3-4K-100-C to the Crestron DM-RMC-4K-100-C-1G over Cat 6.
- f) Connect the Crestron DM-RMC-4K-100-C-1G to input 1 of the EPSON Powerlite 955WH projector with an HDMI cable.
- g) Connect the Middlesex County College (MCC) supplied computer to input 4 of the DMPS3-4K-100-C. Connect the HDMI output of the DMPS3-4K-100-C to the computer display.
- h) Connect the MCC supplied Blu-ray player to input 1 of the Crestron DMPS3-4K-100-C. Also Connect IR Sensor from Crestron DMPS3-4K-100-C to Blu-ray player.
- i) Connect the MCC supplied document camera to input 2 of the Crestron DMPS3-4K-100-C. Note the Elmo MO-1 document camera has a micro HDMI output and requires a micro HDMI to HDMI cable.
- j) Connect the HDMI cable for external device to input 3 of the Crestron DMPS3-4K-100-C.
- k) Install, program and label the Crestron MP-B10 button panel to select each of the four HDMI inputs above, to interact with the DMPS3-4K-100-C, EPSON Powerlite 955WH projector, network and the Sony BDP-S6700 Blu-ray player. Also Program buttons 5 thru 8 to control the 4 VGA inputs.

LOCATIONS: SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

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1.1.2 CLASSROOM/LAB INSTALLATIONS

- a) Install one Crestron DM-CBL-ULTRA-P shielded twisted pair plenum cable from the ceiling location of the Crestron DM-RMC-4K-100-C-1G above projector to the DMPS3-4K-100-C under mounted to the teacher's workstation.
- b) Install one Crestron Cresnet cable from DMPS3-4K-100-C to the Crestron MP-B10 button panel.
- c) Connect Crestron DMPS3-4K-100-C to new network connection. Note the network connection will be supplied by the college's IT department.
- d) Install new EPSON Powerlite 955WH projector. Remove existing projector and return to Middlesex County College.
- e) Install the Crestron DMPS3-4K-100-C that will provide four HDMI inputs to the faculty workstation under mounted to desk. The Contractor will supply Crestron Certified HDMI Interface Cable, for all four HDMI inputs to connect the Crestron DMPS3-4K-100C to each source.
- f) Connect the Crestron DMPS3-4K-100-C to the Creston DM-RMC-4K-100-C-1G over Crestron DM-CBL-ULTRA-P cable.
- g) Connect the Creston DM-RMC-4K-100-C-1G to input 1 of the EPSON Powerlite 955WH projector with an HDMI cable.
- h) Connect the MCC supplied computer to input 4 of the DMPS3-4K-100-C. Connect the HDMI output of the DMPS3-4K-100-C to the computer display.
- i) Connect the Blu-ray player supplied by contractor to input 1 of the Crestron DMPS3-4K-100-C and undermount to desk with the Crestron DMPS3-4K-100-C. Also connect IR Sensor from Crestron DMPS3-4K-100-C to Blu-ray player.
- j) Connect the document camera supplied by contractor to input 2 of the Crestron DMPS3-4K-100-C. Note the Elmo MO-1 document camera has a micro HDMI output and requires a micro HDMI to HDMI cable.
- k) Connect the HDMI cable for external device to input 3 of the Crestron DMPS3-4K-100-C.
- l) Install, program and label the Crestron MP-B10 button panel to select each of the four HDMI inputs above, to interact with the DMPS3-4K-100-C, EPSON Powerlite 955WH projector, network and the Sony BDP-S6700 Blu-ray player. Also Program buttons 5 thru 8 to control the 4 VGA inputs.

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC

171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215

1.1.3 CLASSROOM/LAB AUDIO INSTALLATIONS

- a) Install and connect Crestron MP-AMP30 Media Presentation Audio Amplifier and Crestron FSDI8 Drop-in Ceiling Speaker.
- b) Connect the Crestron MP-AMP30 to the Crestron DMPS3-4K-100-C.

It is the contractor responsibility to make sure the Audio system is connected and fully intergraded with the Crestron Digital Media Presentation System.

LOCATIONS: RH 215, SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

EQUIPMENT REQUIREMENTS

1.2.0 DIGITAL MEDIA CONTROL

1.2.1 CRESTRON DMPS3-4K-100-C or EQUIVALENT

Operating System

Crestron® 3-Series®; real-time, preemptive, multi-threaded/multitasking kernel; Transaction-Safe Extended FAT file system; supports up to 10 simultaneously running programs; preloaded DMPS3 .AV Framework™ Base Program; out-of-the-box "Crestron Connect It™" functionality

Control System Memory

SDRAM	1 GB
Flash	4 GB

Communications

Ethernet	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, industry-standard TCP/IP stack, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), FIPS 140-2 compliant encryption, IEEE 802.1X, SNMP, BACnet™/IP ^[10] , IPv4 or IPv6, Active Directory authentication, IIS v.6.0 web server, SMTP e-mail client, RSTP, Private Network Mode
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Cresnet®	Cresnet master mode
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USB	USB host ports for Crestron Connect It devices and firmware update via USB flash drive; USB device port for computer console (setup)
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RS-232	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking
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IR/Serial	1-way device control via infrared up to 1.2 MHz or serial TTL/RS-232 (0-5 Volts) up to 115.2k baud; built-in RC-5 compatible IR receiver
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DigitalMedia™	DM 8G+®, HDCP, EDID, CEC, PoDM, Ethernet
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HDBaseT®	HDCP, EDID, CEC, RS-232, PoH, Ethernet
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HDMI® HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI and HDBaseT devices and the control system

Video

Switcher	8x1 (organized as multi-format 4x1), auto-switching, auto-detecting multi-format digital/analog source inputs, QuickSwitch HD™ technology
Scaler	4K video scaler, motion-adaptive deinterlacer, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion ^[7] , content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1)
Input Signal Types	HDMI w/Deep Color, 3D, & 4K (DVI & Dual-Mode DisplayPort compatible ^[4]); RGB/VGA (RGBHV, RGBS, RGsB); component (YPbPr); S-Video (Y/C); composite (NTSC, PAL) ^[5]
Output Signal Types	HDMI w/Deep Color, 3D, & 4K (DVI compatible ^[4]); DM 8G- & HDBaseT w/Deep Color, 3D, & 4K
Analog-To-Digital Conversion	10-bit 165 MHz per each of 3 channels

Maximum Pass-Through Resolutions

Input Type	Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
HDMI	Progressive	4096x2160 4K DCI	24 Hz	4:4:4	30 bit
		or	30 Hz	4:4:4	24 bit
		3840x2160 Ultra HD	30 Hz	4:2:2	36 bit
	Interlaced	2560x1600 WQXGA	60 Hz	4:2:0	24 bit
		1920x1080 HD 1080p	60 Hz	4:4:4	36 bit
		1920x1080 HD 1080i	30 Hz	4:4:4	36 bit
RGB/VGA	Progressive	1600x1200 UXGA	60 Hz	n/a	
		1920x1200 WUXGA	60 Hz	n/a	
Component ^[5]	Progressive	1920x1080 HD 1080p	60 Hz	n/a	
		Interlaced	1920x1080 HD 1080i	30 Hz	n/a
Composite or S-Video ^[5]	Interlaced	480i NTSC or 576i PAL	60 Hz	n/a	

Maximum Scaler Input Resolutions

Input Type	Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
HDMI	Progressive	4096x2160 4K DCI	24 Hz	4:4:4	30 bit
		or	30 Hz	4:4:4	24 bit
		3840x2160 Ultra HD	30 Hz	4:2:2	36 bit
		2560x1600 WQXGA	60 Hz	4:4:4	36 bit

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		1920x1080 HD 1080p	60 Hz	4:4:4	36 bit
	Interlaced	1920x1080 HD 1080i	30 Hz	4:4:4	36 bit
RGB/VGA	Progressive	1600x1200 UXGA	60 Hz	n/a	
		1920x1200 WUXGA	60 Hz	n/a	
Component ^[5]	Progressive	1920x1080 HD 1080p	60 Hz	n/a	
	Interlaced	1920x1080 HD 1080i	30 Hz	n/a	
Composite or S-Video ^[5]	Interlaced	480i NTSC or 576i PAL	60 Hz	n/a	

Maximum Scaler Output Resolutions

Input Type	Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
HDMI, DM, or HDBaseT	Progressive	4096x2160 4K DCI	24 Hz	4:4:4	30 bit
		or	30 Hz	4:4:4	24 bit
		3840x2160 Ultra HD	30 Hz	4:2:2	36 bit
		2560x1600 WQXGA	60 Hz	4:4:4	36 bit
		1920x1080 HD 1080p	60 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz for digital inputs and outputs, or 165 MHz for analog inputs

Audio – General

8x1 (organized as multi-format 4x1) stereo source switcher, auto-detecting digital/analog source inputs, single-channel gated mic preamp w/DSP, two independent mic/source mixers (one for analog output, one for digital outputs), stereo DSP for analog output, 4x1 multichannel source switcher, digital audio mixer bypass mode for multichannel pass-through to digital outputs

	Analog-To-Digital Conversion	24-bit 48 kHz
	Digital-To-Analog Conversion	24-bit 48 kHz
Switcher/Mixer	Frequency Response	20 Hz to 20 kHz ±0.5 dB (digital source); 20 Hz to 20 kHz ±0.5 dB (analog line source); 20 Hz to 20 kHz ±0.7 dB (microphone source)
	S/N Ratio	>108 dB, 1 kHz, A-weighted (digital source); >103 dB, 1 kHz, A-weighted (analog line source)
	THD+N	<0.002%, 20 Hz to 20 kHz (digital source); <0.005%, 20 Hz to 20 kHz (analog line source); <0.05%, 20 Hz to 20 kHz (microphone source)
	Stereo Separation	>108 dB (digital source); >103 dB (analog source)

Audio – Microphone Input

Input Signal Type	Mono analog mic level
Phantom Power	Enable/Disable

Gain	0 to +60 dB Gain adjustment, plus Mute
EQ Center Frequencies	50 to 200 Hz (Band 1); 200 to 800 Hz (Band 2); 800 to 3.2k Hz (Band 3); 3.2k to 12.8k Hz (Band 4)
EQ Gain	±12.0 dB per band
Gating Threshold	-80 to 0 dB
Gating Depth (Attenuation)	-80 to 0 dB
Gating Attack	1 to 250 ms
Gating Release	1 to 1000 ms
Gating Hold	1 to 200 ms
Compression Threshold	-80 to 0 dB
Compression Ratio	1:1 to 10:1
Compression Attack	1 to 250 ms
Compression Release	1 to 1000 ms
Compression Hold	1 to 200 ms
Compression Curve	Hard or soft knee

Audio – Source Inputs

Typical of 8 source input channels	(Audio Inputs 1 – 4, HDMI Inputs 1 – 4)
Input Signal Types	Analog 2-channel ^[6] , HDMI (Dual-Mode DisplayPort compatible ^[4])
Analog Formats	Stereo 2-channel
Digital Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels ^[8]
Input Compensation	±10.0 dB ^[8]

Audio – Analog Line Output

Output Signal Type/Format	Stereo 2-channel
Mic	-80 to +10 dB Level adjustment range, plus Mute and Pan
Source	-80 to +10 dB Level adjustment range, plus Mute and Balance
Master Volume	-80 to +10 dB Level adjustment range, plus Mute and Mono
Bass	±12.0 dB
Treble	±12.0 dB
Equalization	10-band graphic
GEQ Center Frequencies	31.5, 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k Hz
GEQ Gain	±12.0 dB per band

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Delay	0.0 to 80.0 ms
Limiter Threshold	-80 to 0 dBz
Limiter Ratio	1:1 to 10:1
Limiter Attack	1 to 250 ms
Limiter Release	1 to 1000 ms
Limiter Curve	Hard or soft knee

Audio – Digital Output

Output Signal Types	HDMI, DM 8G+ & HDBaseT
Formats	Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, LPCM up to 8 channels ^[8]
Mic	-80 to +10 dB Level adjustment range, plus Mute and Pan ^[8]
Source	-80 to +10 dB Level adjustment range, plus Mute and Balance ^[8]
Master Volume	-80 to +10 dB Level adjustment range, plus Mute ^[8]

Connectors – Audio/Video Inputs

VGA IN 1 – 4	(4) HD15 female; Analog VGA/RGB video inputs; Signal Types: VGA, RGB, component, S-Video, or composite ^[5] Formats: RGBHV, RGBS, RGsB, YPbPr, Y/C, NTSC or PAL; Input Level: 0.5 to 1.5 Vp-p with built-in DC restoration; Input Impedance: 75 Ohms nominal; Sync Detection: RGBHV, RGBS, RGsB, YPbPr; Sync Input Level: 3 to 5 Vp-p; Sync Input Impedance: 2.2k Ohms
AUDIO IN 1 – 4	(4) 3.5 mm TRS mini phone jacks; Unbalanced stereo line-level analog audio inputs; Input Impedance: 32k Ohms unbalanced; Maximum Input Level: 2.8 Vrms unbalanced; <i>Note: If an HDMI input is selected but no digital audio signal is detected, the corresponding analog audio input is activated (AUDIO 1 for HDMI 1, etc.). Please note, the analog audio inputs do not pass audio if the HDMI video input resolution is higher than 1920x1200.</i>
HDMI IN 1 – 4	(4) 19-pin Type A HDMI female; Digital video/audio inputs; Signal Types: HDMI, DVI, or Dual-Mode DisplayPort ^[4]
MIC IN	(1) 3-pin 3.5 mm detachable terminal block; Balanced microphone audio input; Input Level: -60 to 0 dBV, 1 Vrms maximum; Input Impedance: 6.5k Ohms balanced; Phantom Power: 48 Volts DC, software enabled/disabled

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Connectors – Audio/Video Outputs

HDMI OUT	(1) 19-pin Type A HDMI female; Digital video/audio output; Signal Types: HDMI, DVI ^[4]
DM OUT	(1) 8-pin RJ45 female, shielded; DM 8G+ output, HDBaseT compliant; PoDM and PoH PSE (Power Sourcing Equipment) port; Connects to the DM 8G+ input of a DM receiver or other DM device, or to an HDBaseT device, via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable ^[9]
AUDIO OUT	(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio output; Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced; Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

Connectors - Control & Power

IR OUT	(1) 3.5 mm mini-phone jack; IR/Serial output port; IR output up to 1.2 MHz; 1-way serial TTL RS-232 (0-5 Volts) up to 115.2k baud
COM	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support
LAN	(1) 8-pin RJ45 female; 10Base-T/100Base-TX Ethernet port
USB 1 – 4	(4) USB Type A female; USB 2.0 host ports for TT-100 series Crestron Connect It Cable Caddies ^[1] ; Also enables firmware update via USB flash drive
G	(1) 6-32 screw, chassis ground lug
NET	(1) 4-pin 3.5 mm detachable terminal block; Cresnet Master port; Available Cresnet Power: 24 Watts
100-240V~1.4A 50/60Hz	(1) IEC 60320 C14 main power inlet; Mates with removable power cord, included
COMPUTER (front)	(1) USB Type B female; USB computer console port; For setup only
IR IN (front)	(1) Infrared sensor; IR Frequency: 36 to 38 kHz; IR Formats: Crestron format, RC5; Allows control from IR wireless remotes using the Crestron or RC-5 command sets

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Controls & Indicators

PWR	(1) Bi-color green/amber LED, indicates operating power supplied from AC line power, turns amber while booting and green when operating
NET	(1) Yellow LED, indicates Cresnet bus activity
MSG	(1) Red LED, indicates internal control system has generated an error message
HW-R	(1) Recessed pushbutton for hardware reset, reboots the control system
SW-R	(1) Recessed pushbutton for software reset, restarts the software program
AUTO INPUT SELECT	(1) Pushbutton and bicolor green/amber LED, selects auto-switching mode
VGA INPUT SELECT 1 – 4	(4) Pushbuttons for manual input selection, and (4) bicolor green/amber LEDs to indicate the current active input and signal presence at each corresponding VGA input
HDMI INPUT SELECT 1 – 4	(4) Pushbuttons for manual input selection, and (4) bicolor green/amber LEDs to indicate the current active input and signal presence at each corresponding HDMI input
VOLUME	(1) Continuous turn rotary encoder, adjusts the analog audio output volume
DM OUT (rear)	(2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence, for the DM output
LAN (rear)	(2) LEDs, bi-color LED (left) indicates Ethernet speed and activity, green LED (right) indicates Ethernet link status

Power Requirements

Main Power	1.4 Amps @ 100-240 Volts AC, 50/60 Hz
Power Consumption	36 Watts typical, 26 Watts idle
Available Cresnet Power	24 Watts
Power over DM (PoDM)	PoDM PSE (Power Sourcing Equipment), DM OUT port supplies up to 15.4W (Class 0-3) to one PoDM PD (Powered Device)
Power over HDBaseT (PoH)	PoH PSE (Power Sourcing Equipment), DM OUT port supplies up to 15.4W (Class 0-3) to one PoH PD (Powered Device)

Environmental

Temperature	41° to 104° F (5° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	122 BTU/hr typical, 89 BTU/hr idle

Enclosure

Chassis	Metal, black finish, fan-cooled, vented sides
Front Panel	Metal, black finish with polycarbonate label overlay

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Mounting Freestanding, 1 RU 19-inch rackmount, or under-table mount (adhesive feet, rack ears, and under-table mounting brackets included)

Dimensions

Height 1.74 in (45 mm) without feet
 Width 17.28 in (439 mm);
 18.94 in (482 mm) with rack ears
 Depth 10.47 in (266 mm)
 Weight 6.4 lb (2.9 kg)

DM 8G+ & HDBaseT Maximum Cable Lengths

Resolution	Cable Type		
	DM-CBL-ULTRA DigitalMedia™ Ultra Cable	DM-CBL-8G DigitalMedia 8G™ Cable	CAT5e (or better) UTP or STP [9]
1080p60 Full HD			
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI	330 ft (100 m) [ALL RESOLUTIONS]	330 ft (100 m) [2K RESOLUTIONS]	330 ft (100 m) [2K RESOLUTIONS]
2560x1440 WQHD			
2560x1600 WQXGA		230 ft (70 m) [4K RESOLUTIONS]	165 ft (50 m) [4K RESOLUTIONS]
3840x2160 Ultra HD			
4096x2160 4K DCI			

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215, SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

1.2.2 CRESTRON DM-RMC-4K-100-C-1G or EQUIVALENT

Maximum Cable Lengths

Resolution	Cable Type		
	DM-CBL-ULTRA	DM-CBL-8G DigitalMedia 8G™ Cable	CAT5e (or better) UTP or STP [9]

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DigitalMedia™
Ultra Cable

1080p60 Full HD

1920x1200 WUXGA

1600x1200 UXGA

2048x1080 2K DCI

330 ft (100 m)
[2K RESOLUTIONS]

330 ft (100 m)
[2K RESOLUTIONS]

2560x1440 WQHD

330 ft (100 m)
[ALL RESOLUTIONS]

2560x1600 WQXGA

3840x2160 Ultra HD

230 ft (70 m)
[4K RESOLUTIONS]

165 ft (50 m)
[4K RESOLUTIONS]

4096x2160 4K DCI

Video

Input Signal Types DM 8G+® & HDBaseT® w/Deep Color, 3D, & 4K

Output Signal Types HDMI® w/Deep Color, 3D, & 4K (DVI compatible^[4])

Maximum Resolutions

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
	3840x2160 Ultra HD	30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
Interlaced	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
		60 Hz	4:4:4	36 bit
	1920x1080 HD 1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Input Signal Types DM 8G+, HDBaseT

Output Signal Type HDMI

Formats Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Communications

RS-232 2-way device control and monitoring up to 115.2k baud with software handshaking^[1]

IR/Serial 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud^[1]

DigitalMedia DM 8G+, HDCP 2.2, EDID, CEC^[6], PoDM

HDBaseT HDCP 2.2, EDID, CEC^[6], PoH

HDMI HDCP 2.2, EDID, CEC^[6]

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Connectors – Front

HDMI OUT	(1) 19-pin Type A HDMI female; HDMI digital video/audio output (DVI compatible ^[4])
IR OUT	(1) 2-pin 3.5 mm detachable terminal block, IR/Serial port ^[1] ; IR output up to 1.1 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud
COM	(1) 3-pin 3.5 mm detachable terminal block, bidirectional RS-232 port ^[1] ; Up to 115.2k baud, software handshaking support

Connectors – Rear

G	(1) 6-32 screw, chassis ground lug
DM IN	(1) 8-pin RJ45 female, shielded; DM 8G+ input, HDBaseT compliant; PoDM and PoH PD (Powered Device) port ^[5] ; Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to an HDBaseT device, via CAT5e, Crestron DM-CBL-8G , or Crestron DM-CBL-ULTRA cable ^[2]
24VDC 0.75A	(1) 2-pin 3.5 mm detachable terminal block; 24 Volt DC power input; PW-2407WUL power pack included

Indicators

PWR	(1) Green LED, indicates operating power supplied via PoDM, PoH, or local power pack
VIDEO	(1) Green LED, indicates video signal presence at the HDMI output
DM IN (rear)	(2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Pack	0.75 Amps @ 24 Volts DC; 100-240 Volts AC, 50/60 Hz power pack, model PW-2407WUL included
Power over DM (PoDM)	PoDM PD (Powered Device), capable of being powered by a PoDM PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W) ^[7]
Power over HDBaseT (PoH)	PoH PD (Powered Device), capable of being powered by a PoH PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W) ^[7]
Power Consumption	5.8 Watts typical; 2.5 Watts idle

Environmental

Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	19.8 BTU/hr

Enclosure

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

Construction	Metal, black finish with white or black polycarbonate label overlay
Flush Wall Mount	1-gang mountable in an extra-deep electrical box (3-1/2 inch deep minimum), requires a decorator style faceplate (not included)
Surface Mount	Surface mount bracket included
Rack Mount	Attachable to a single 19-inch EIA rack rail

Dimensions

Height	4.12 in (105 mm)
Width	1.72 in (44 mm)
Depth	2.35 in (60 mm)

Weight

6.3 oz (179 g)

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215, SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

1.3.0 CEILING MOUNTED SPEAKERS with AMP

1.3.1 CRESTRON MP-AMP30 or EQUIVALENT

Audio

Input Volume Range	-55dB to +20dB
Loudness	Active at volume settings below center detent
Bass Gain Range	±15dB @ 100Hz
Treble Gain Range	±15dB @ 10kHz
Frequency Response	20Hz to 20kHz ±0.5dB
S/N Ratio	75dB 20Hz to 20kHz A-weighted
THD+N	0.7% 20Hz to 20kHz
Output Power	15 Watts per channel at 8 or 4 Ohms
Amplifier Protection	Electronic short-circuit and overload protection

Connectors – Top Panel

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(2) 2-pin 3.5mm detachable terminal blocks;
 AUDIO OUT 8Ω Left & right channel speaker-level audio outputs;
 Wire Size: Connector accepts 16 AWG maximum;
 Output Power: 15 Watts per channel at 8 or 4 Ohms

Connectors – Bottom Panel

AUDIO IN (2) RCA female, unbalanced stereo line-level audio input;
 Maximum Input Level: 2 Vrms;
 Input Impedance: 18k Ohms;
 3 ft (0.9 m) stereo RCA-RCA cable included

PWR 24VDC (1) 2.1 x 5.5 mm DC power connector;
 2.0A 24 Volt DC power input;
 (power pack included)

Controls & Indicators

BASS Rotary low frequency boost/cut adjustment, flat at center detent
 TREBLE Rotary high frequency boost/cut adjustment, flat at center detent
 VOL Rotary input level adjustment
 ST, MO Mode selection jumpers, select stereo or mono-summed operation
 Power (1) green LED, indicates operating power supplied from external power pack

Power Requirements

Power Pack 2.0 Amps @ 24 Volts DC;
 100-240 Volts AC, 50/60 Hz power pack included

Environmental

Temperature 41° to 104°F (5° to 40°C)
 Humidity 10% to 90% RH (non-condensing)
 Heat Dissipation 21 BTU/Hr

Enclosure

Chassis Aluminum w/polycarbonate label overlay and (4) integral mounting flanges, meets the requirements of UL 2043 for installation in an environmental air-handling (plenum) space^[1]

Mounting Freestanding or surface mount

Dimensions

Height 5.85 in (149 mm)
 Width 3.91 in (100 mm)
 Depth 1.43 in (37 mm)

Weight

11.8 oz (335 g)

LOCATIONS: RH 215, SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

1.3.2 CRESTRON FSDI8 or EQUIVALENT

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Features & Performance

Driver	8 inch (203 mm) full-range w/secondary high-frequency cone
Impedance	8 Ohms nominal
Frequency Response	85 Hz to 18 kHz
Sensitivity	94 db SPL minimum @ 1W/1m
Dispersion	100° @ 2kHz (-6dB)
Power Handling	15 Watts maximum
Recommended Amplifier Power	5 to 30 Watts

Connections

Input	2 conductor red/black flying leads w/wire nuts behind cover; Wire entry via conduit knockout or notch
-------	--

Environmental

Temperature	41° to 104°F (5° to 40°C)
Humidity	10% to 90% RH (non-condensing)
For indoor use only	

Enclosure

Enclosure	Fully-enclosed, industrial grade steel, plenum-rated (complies with Requirements of Standard UL-2043)
Grille	Finely-perforated metal, textured white finish
Mounting	Designed for 2x2 or 2x4 ft suspended ceiling grid, includes four seismic attachment points and support rail crossbar for 2x4 applications

Dimensions

Height	5.00 in (127 mm)
Width	23.82 in (605 mm)
Depth	23.82 in (605 mm)

Weight

120 lb (5.5 kg)

LOCATIONS: RH 215, SH 101, SH 103, SH 105, SH 131, SH 135, SH 137, SH 139, SH 201, SH 203, SH 205, SH 212, SH 231, SH 235, SH 237, SH 239

1.4.0 HIGH RESOLUTION PROJECTOR

1.4.1 SPECIFICATIONS: EPSON Powerlite 955WH- or EQUIVALENT

Display Resolution (Native):	WXGA (1280 x 800) Native Resolution up through UXGA (1600 x 1200)
Devise Type:	Epson 3 LCD 3 chip optical engine. Driving Method Epson Poly-silicon TFT Active Matrix
Brightness:	3000 ANSI lumens (ISO 21118 Standard)
Aspect Ratio:	Native 16:10
Contrast Ratio:	10000:1
Data Compatibility:	PC, Mac®
Video Compatibility:	NTSC / NTSC4.43 / PAL / M-PAL / N -PAL/ PAL60/ SECAM
DTV / HDTV:	Compatibility including 480i, 480p, 576i, 576p, 720p, 1080i, 1080p
H & V Frequency:	fH 15-110 kHz / fV 45-85 Hz / 12-170 MHz
Lens Type:	Manual Optical Zoom: 1.0-1.6x Manual Focus F Number: 1:51-1.99
Throw Ratio:	1.38 - 2.24:1
Projection Distance:	29" – 280"
Wireless Remote Control:	Video, power, aspect, volume, freeze, menu, mouse functions
Built-in Audio System:	16 W monaural
Lamp Module:	V13H010L78
Estimated Lamp Life:	5,000 hours (standard mode); 6,000 hours (eco)
Fan Noise (standard/eco):	37dB/29dB
Power Source:	100V – 240V AC
Power Consumption:	299 W
Safety Approval:	UL, FCC Class A
Operating:	41°F - 95° (+5°C to 35°C)

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Inputs / Outputs: 2 – Computer/Component video: D-sub 15 pin;
1 – S-video: Mini DIN ;
1 - Composite video: RCA (Yellow)
1 – Audio in RCA (L and R)
2 – Mini stereo
2– HDMI
2 – USB
1 – RJ-45
1 – Serial: RS-232c;

LAN Connectivity: RJ-45x1 Wireless Lan Port 802.11 b/g/n
Optional module to be added at a later date

Weight / Dimensions (w x h x d): 6.4 lbs.
11.6 x 3.5 x 10.7 (W x H x D)

Warranty: 3 years parts/labor including 3 years of 24-hour
turnaround Express Repair. 90-day lamp warranty.

Included Accessories: Wireless remote control; two AA batteries; 6' AC power
cord; 10' RGB signal cable; attached lens cap; integrated
air filter; projector operation manual; RS-232C control
adaptor; storage bag

In locations that there is an existing projector and mount, these items are to be removed and
returned to the College. Please remount existing speaker amplifier and insure they are
properly connected to ceiling speakers and fully functional.

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB
212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC
171, CC 174, CC 319, JLC 131A, JLC 221, JLC 222, MH 117, MH 135, PA 215, PA 216,
PA 217, PA 219, PA 223, RH 001, RH 004, RH 209, RH 215

1.5.0 PROJECTOR & DESK MOUNTS

1.5.1 Chief RPAA1 Projector Security Mount or EQUIVALENT

Chief CMA—110 Mounting flange, vendor to supply appropriate unistrut, threaded rod, beam
clamps & pipe to complete installation. Security mount shall be as close as possible to the
drop ceiling.

LOCATIONS: RH 215

1.5.2 Cruxial URACK-4 Under Table Rack Mount or EQUIVALENT.

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Mount rack under faculty workstation and secure the CRESTRON DMPS3-4K-100-C to the bottom space of the rack and place the Blu-ray player above.

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215

1.6.0 SCREEN

1.6.1 SPECIFICATIONS:

WALL MOUNTED

Da-Lite, Spring Roller-Type Screen, Model B, #40197 or Da-Lite Model B #40208 Manual Projection Screen or EQUIVALENT

- Projection screen 7' x 7'
- Painted white 22-gauge octagonal steel case with flat back design with baked enamel finish and fitted with end caps concealing rollers ends with integral bearing surface
- Matte White surface with masking borders standard on flame retardant and mildew resistant seamless fabric.
- Provide manufacturers wall mounting brackets as required.
- Where there is an existing screen that is to be replaced, the existing screen shall be returned to the College.

LOCATIONS: RH 215

1.6.2 CEILING MOUNTED

Da-Lite Automatic Electric Projection Screen, Model # 40801L or EQUIVALENT

- 8' (H) x 8'(W), electrically operated 120 volt (60 Hz) 2.0 amp
- Motor mounted inside the roller with a patented noise silencer to be three wire quick reversal type
- Built in low voltage control
- Screen fabric is flame retardant and mildew resistant fiberglass, Matte White seamless
- Bottom of fabric is formed into a pocket holding a 3/8" diameter metal rod
- Case is white, 21-gauge steel
- Three position low voltage control switch with cover plate, wiring to screen
- Ceiling Trim Kit.

LOCATION: N/A

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1.7.0 CABLE

All cables utilized on this project shall comply with NEC article 800 for use on voice/data systems. These cables shall be UL listed for these applications. All cable runs shall comply with the layouts indicated in the building and site drawings unless otherwise agreed upon by the College Project Manager. The cable shall be equal to Belden Media Twist.

- Solid, annealed bare 23 AWG copper conductors.
- Pairs shall be bonded together in data communications cable.
- Conductor insulation color-coded to telephone industry standards.
- Insulated conductors shall be bonded into pairs and pairs shall be twisted with varying lay lengths to minimize crosstalk.
- Cable shall support digital and analog, voice, data, and video.
- Cable shall also support 10, 100, 1000 Mbps Ethernet and HDMI Video.

1.7.1 CRESTRON DM-CBL-ULTRA-P or EQUIVALENT

1.7.2 SPECIFICATIONS:

The vendor shall provide, install, and test, at each workstation designated in the drawings, cables complying with the following specifications for the worst pair.

Construction

S/FTP with four individually shielded twisted pairs, overall shield, and overall jacket

Electrical & Performance

Mutual Capacitance ≤ 5.6 nF / 100 m @ 1 kHz

Velocity of Propagation 74% nominal

Delay Skew ≤ 25 ns / 100 m

Conductor DC Resistance ≤ 95 Ohms / km @ 20°C

Conductor DC Resistance Unbalance $\leq 2\%$ @ 20°C

Pair to Ground Capacitance Unbalance ≤ 1600 pF / km

Characteristic Impedance 100 Ohms nominal

(4) Shielded Twisted Pairs

Colors Blue/white, orange/white, green/white, brown/white

Conductors 22 AWG solid bare copper

Insulation Foam FEP

Outer Diameter (per conductor) 0.056 inch (1.41 mm) nominal

Shield (per pair) AL foil

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Overall Shield	
Shield	Tinned copper braid (>50% coverage)
Outer Jacket	
Color	Blue
Material	Low Smoke PVC
Thickness	0.018 inch (0.45 mm)
Outer Diameter	0.304 inch (7.7 mm) nominal
Minimum Recommended Bend Radius	2.44 inches (62 mm)
Maximum Recommended Pull Tension	25 lbf (111 N)
Environmental	
Operating Temperature	-4° to 140°F (-20° to 60°C)
Weight	
Bulk Cable Weight	41.67 lb / 1000 ft (62 kg / km)
Compliance	
Type CMP, NEC Article 800, UL Subject 444, cUL, IEC 61156-5, ISO/IEC 11801, Category 7a	

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 207, RH 215

1.8.0 ADDITIONAL EQUIPMENT

1.8.1 ELMO MO-1 Visual Presenter or EQUIVALENT (Supplied By Contactor)

1.8.2 SPECIFICATIONS:

Power Source:	5V DC, 2A (AC 100 - 240V, 50/60 Hz)/Powered via USB(when in USB mode)
Power consumption:	4.2W (standby 0.25W)/USB 3.3W
Image pick-up device:	1/3.2" 5Megapixel CMOS sensor
Effective pixels:	2,048 (H) x 1,536 (V)
Optics:	Zoom 8x digital
Lens:	F2.9

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Shooting area:	Max. 257mmx 342 mm (10.1" x 13.4") (WXGA/XGA/VGA)
Focus:	Auto(one-push)/Manual
Flicker correction:	Provided
Image rotation:	Live camera image:0°/180° Saved image:0°/90°/180°/270°
Built-in Microphone:	Provided USB/HDMI)
SD card slot:	Provided
Illumination:	White LED

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215

1.9.0 VIDEO PLAYERS

1.9.1 Sony BDP-S6700 Blu-rayPlayer or or EQUIVALENT (Supplied By Contactor)

1.9.2 SPECIFICATIONS:

Video

System	NTSC
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Region	Blu-ray: A DVD: 1
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HD Upconversion	Yes, 720p, 1080i, 1080p, 4K
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Audio

Dolby Digital/DTS Compatibility	DTS, DTS-HD Master Audio, Dolby Digital, Dolby TrueHD
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Built-in Decoder	Yes
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LPCM	Yes
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A/V Playback Formats

Video	BD-R, BD-RE, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, DVD-Video, VCD
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Audio	CD, CD-R, CD-RW
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Pictures	CD-R CD-RW DVD+R
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	DVD+R DL DVD+RW DVD-R DVD-R DL DVD-RW
File Formats Supported	3G2, 3GP, 3GPP, 3GPP2, AAC, AC3, ASF, AVCHD, AVI, FLA, FLAC, FLV, GIF, JPEG, LPCM, M2TS, M4A, MKA, MOV, MP3, MPEG-1 PS, MPEG1, MPEG2, MPEG2 PS, MPG, MTS, PNG, VC-1, WAV, WMA, WMA9, XVID
Convenience	
Slow Motion Playback	Yes
Frame-by-Frame Playback	Yes
Network & Internet Multimedia	
Network Access	Yes, Built-in Wi-Fi
BD-Live	Yes
Bonus View	Yes
Support for Streaming Services	Yes
Mobile Device Control	Yes
DLNA Home Network Sharing	Yes
Input/Output Connectors	
Digital	1x HDMI Output 1x USB Input 1x Digital Coaxial Audio Output 1x Ethernet Input
General	
Remote	Yes
Power Requirements	120 VAC, 60 Hz
Power Consumption	Operational: 12.0 W Standby: 0.3 W
Dimensions (WxHxD)	10.1 x 1.6 x 7.6" / 25.7 x 4.0 x 19.4 cm
Weight	1.98 lb / .90 kg
Packaging Info	
Package Weight	3.05 lb
Box Dimensions (LxWxH)	11.4 x 10.7 x 2.7"

LOCATIONS: CB 119, CB 121, CB 122, CB 123, CB 124, CB 200, CB 203, CB 204, CB 212, CB 214, CB 216, CB 217, CB 218, CB 219, CB 220, CB 221, CB 222, BH 201, CC 171, CC 174, JLC 221, JLC 222, MH 117, MH 135, PA 212, PA 215, PA 216, PA 217, PA 219, PA 223, PA 226, RH 001, RH 004, RH 209, RH 215

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2.0.0 ACCEPTANCE AND WARRANTY

2.1.0 WARRANTY

The Contractor shall provide a no-exception on-site parts and labor warranty for a period of three years from the date of acceptance except as noted in 2.1.1. The Contractor shall provide, in a three-ring binder, close out documentation, instruction manuals, software drivers, and warranty certificates.

2.1.1 CRESTRON A+ PARTNER 5 YEAR EXTENDED WARRANTY & ADVANCED REPLACEMENT or EQUIVALENT

MCC is a Crestron A+ Partner (Partner Number 1017919). As a Crestron A+ partner, MCC is entitled to all Crestron products maintaining a 5 year warranty as per the Crestron Five Year Extended Limited Warranty.

http://www.crestron.com/downloads/pdf/sales_terms_and_conditions_of_sale/extended_five_year_warranty_govt_enterprise_aplus.pdf

All Crestron 3-series DMPS products are entitled to the Crestron DMPS 3-series Extended 5 Year Limited Warranty and Advanced Replacement for A+ partners.

http://www.crestron.com/downloads/pdf/sales_terms_and_conditions_of_sale/dmps3_extended_support/dmps3_extended_support.pdf

All warranty repairs for Crestron products are eligible for direct RMA to MCC as per the Crestron Five Year Extended Limited Warranty.

MCC is entitled to Crestron direct technical support for system design and specification, and during and after installation.

MCC is entitled to use Crestron's training and showroom facilities and use Crestron Rewards points to pay for training.

2.2.0 ACCEPTANCE

The Contractor shall test all projectors prior to notifying the College for acceptance testing. The Engineer and College Representatives will witness tests. Tests shall include, but not be limited to, the following through all connections:

- Size
- Color Range
- Keystone
- Computer Interface
- Focus Range
- Video Performance

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After the testing, a training session shall be conducted to train personnel in use of equipment and user maintenance requirements.

3.0 CONTRACTOR QUALIFICATIONS:

The Contractor shall be an authorized dealer of the product bid upon.

4.0 INSTALLATION:

Any drilling, hammering or process generating any disruption shall be completed between May 9, and May 15, 2017 or Saturdays and Sundays or between 10:00 PM and 7:00 AM Monday through Friday when to building is not occupied. Coordinate installation schedule with the Media Department. Work hours in this section take precedent over, and will supersede any conflicting reference to hours elsewhere in these plans and specifications. Project shall be completed no later than June 30, 2017.

4.1 COMPLIANCE

The Contractor shall comply with all of the College's safety and work rules when performing work at the college. It is expected that all contractor employees will conduct themselves in a professional manner.

The buildings will be occupied during this project, classes may be in session. The contractor shall not interrupt or disturb any operations of this building during the completion of this project. Any work performed that the College deems could be loud or disruptive in nature must be done when the building is not occupied.

4.2. SITE CLEANUP

The work area shall be cleaned on a daily basis. Any items remaining shall be secured and surrounded with safety tape and/or barriers. Any damage caused by the contractor shall be repaired at no cost to the college.

The contractor is to remove all trash, excavated materials, and other waste off site and disposed of it in accordance with current regulations.

5.0 ATTACHMENTS:

Room Plans
Creston Equipment Drawings

6.0 SCOPE OF WORK:

College to furnish electrical receptacles as noted on the floor plans. New network connections (Cat 6) to be supplied by the College. College to furnish computer. The College will supply the Blu-ray player and Elmo document camera for South Hall only.

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