

MIDDLESEX COUNTY COLLEGE
BID # 16- 37 – CEILING MOUNTED MULTIMEDIA PROJECTOR SYSTEM
SPECIFICATIONS

1.0.0 GENERAL

The purpose of this specification is to provide and install a color video projector system in various rooms throughout the College. The system includes the projector, speakers, amplifier, lock, custom wall plate, remote control, screen and cabling. The Contractor shall provide equipment that meets or exceeds the specifications.

This projector shall be ceiling mounted and fully operational. The Contractor must provide plenum rated cabling run in the ceiling/walls between the wall plate, control module and the projector location. The College has provided a quad 120VAC receptacle located within the ceiling, for the projector, amp and HDMI receiver; an additional receptacle will be provided if an electric screen is to be installed.

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 shall be responsible that ensuring all connections, Video, Audio and HDMI pass the appropriate signals successfully.

1.1.0 SYSTEM OPERATION

1.1.1 CLASSROOM/LAB INSTALLATIONS

The projector shall operate with inputs from the faculty workstation, a VCR/DVD source, a RF broadband signal, and MPEG-2 multimedia signal.

The cable run between the wall plate and the projector shall be the highest quality shielded Plenum SXGA cable that allows no degradation of the signal.

The installation shall include stereo audio cables for video source and for computer audio between the wall plate and projector.

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The above shall be terminated with coupler type, not soldered connections in a Two Gang Stainless Steel or Aluminum Flush Wall Mounted Plate (Attachment A). The wall plate will include a female 15 pin HD VGA input, stereo mini jack and video RCA jacks; yellow, white and red. In rooms where the plate is located on a block wall or in the teacher's desk a quad box for the plate to be mounted in shall be supplied. The system shall be provided with an Extron P/2 DA2 plus 2 VGA/XGA distribution amplifier to display the image on the faculty workstation and video screen simultaneously.

The system shall be equipped with a fully functional remote control.

New cables, wall plate and Extron amplifier shall be provided.

LOCATIONS: IR 225

1.1.2 CLASSROOM/LAB INSTALLATIONS

HDMI connection to projector via 3' HDMI cable connected to Kramer PT-572+ HDMI receiver to be fixed to the projector mounting bracket; Kramer BCP-DGKat623 shielded twisted pair plenum Cable, both ends of the shield must be soldered to ground; Kramer WP-571 HDMI Wall plate; with 15' HDMI cable connected to the output of the wall plate.

LOCATIONS: BH 104, BH 106, BH 108, BH 205, BH 207, CC 109, ED107, ED109, ED117, ED118, IR 107, IR 108, IR 111, IR 112, IR 113, IR 114, IR 115, IR 225, LH 103, LH 135, LH 137, LH 171A, LH201, LH255, MH 103, MH 109, MH 111, MH 112, MH 116, MH 209, MH 210, PAC 303 (Control Room) to PAC Theater

EQUIPMENT REQUIREMENTS

1.2.0 HIGH RESOLUTION PROJECTOR

1.2.1 SPECIFICATIONS: EPSON Powerlite 955W– or EQUIVALENT

Display Resolution (Native): WXGA (1280 x 800) Native Resolution up through UXGA (1600 x 1200)

Device 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®

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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)
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 1 – 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.

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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: BH 106, ED107, ED109, ED117, ED118, IR 112, IR 225, LH 171A, LH201, LH255, MH103, MH 109, MH 111, MH 112, MH 116, MH 209, MH 210

1.2.2 SPECIFICATIONS: PowerLite Pro Z10000UNL

MODEL: V11H610920

Projection System: High-aperture Epson 3-chip, 3LCD technology

Projection Method: Front / rear / ceiling mount

LCD Driving Method: Epson Poly-silicon TFT Active Matrix

Pixel Number: 2,304,000 pixels x 3LCDs

Color Brightness (Color Light Output): 10,000 lumens¹

White Brightness (White Light Output): 10,000 lumens¹

Aspect Ratio: Native 16:10 (supports 4:3, 16:9, 5:4)

Native Resolution: WUXGA (1920 x 1200)

Contrast Ratio: Normal, Dynamic Mode: Up to 15,000:1

Color Reproduction: Up to 1.07 billion colors

Color Processing: 10 bit

Lamp Type: Normal: 380 W x 2 UHE, Portrait: 304 W x 2 UHE

Lamp Life: Normal: ECO mode: Up to 4000 hours²

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	Normal mode: Up to 2000 hours ²
	Portrait: Normal mode: Up to 1000 hours ²
Brightness Uniformity:	90%
Pixel Arrangement:	Cross stripe
Inputs / Outputs:	HDMI x 1 DVI-D x 1 HDBase-T x 1 3G-SDI x 1 Computer: D-sub 15 pin x 2 Video: BNC x 5 Composite Video: BNC x 1 Serial: Rs-232c x 1 Hardwired Remote Jack x 1 Monitor-Out: D-sub 15 pin x 1 USB Type-A: For wireless only USB Type-B: For service only
Video Processing:	3D Y/C separation, 3D noise reduction, mosquito noise reduction
DCDi:	Directional Correlational Deinterlacing Motion compensated Interlace-Progressive conversion (2:2, 3:2 film detection)
Super Resolution:	FineFrame Interpolation 8:8 Pull-down Processing Closed Captioning
LAN Connectivity:	Wired Network: RJ-45 x 1 Wireless Network: Optional
Weight / Dimensions (w x h x d):	58 lb 21.02" x 29.17" x 7.76" (W x D x H)
Warranty:	Three-year projector limited warranty, 90-day limited lamp warranty, Epson Road Service Program and Epson PrivateLine® dedicated toll-free support.
Included Accessories:	Power cable, Computer cable, Projector remote control, Batteries, Cable cover, User manual CD,

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Quick setup sheet, PrivateLine support card,
Password protection sticker, Monitor and Control CD

In locations that there is an existing projector and mount, these items are to be removed and returned to the College. Please reconnect all existing connection to the new projector and insure they are fully functional.

LOCATIONS: PAC Theater

1.2.3 ADDITIONAL LENSES FOR PowerLite Pro Z10000UNL:

EPSON Middle Throw-1 Lens for All Pro Z Series (Throw Ratio: 2.68 - 4.10)

MODEL: V12H004M06

LOCATIONS: PAC Theater

1.2.4 ADDITIONAL LENSES FOR PowerLite Pro Z10000UNS:

EPSON Standard Lens for All Pro Z Series (Throw ratio: 1.74 - 2.82)

MODEL: V12H004S04

LOCATIONS: PAC Theater

1.3.0 PROJECTOR MOUNT

1.3.1 Chief RPAA1 Projector Security Mount, 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: BK 106, ED107, ED109, ED117, ED118, IR 112, IR 225, LH 171A, LH201, LH255, MH103, MH 109, MH 111, MH 112, MH 116, MH 209, MH 210

1.3.2 Chief MCM011E Heavy Duty Custom Ceiling Projector Mount, 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 ceiling.

LOCATIONS: PAC Theater

1.4.0 WALL MOUNTED CONTROL MODULE PXE-DCM+ or EQUIVALENT

1.4.1 SPECIFICATIONS:

IR control system for projectors
Single-Gang form factor

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Power, Source and Volume Control
Program IR codes from remote control
Backlight LED's
Provide a Decora™ Wall Plate
Supply and install a three-conductor plenum cable between the PixiePlus and the projector

LOCATIONS: BH 106, IR 225, LH 171A, PAC 303 (Control Room)

1.5.0 CEILING MOUNTED SPEAKERS with AMP

1.5.1 SPECIFICATIONS:

Atlas Sound DPA-102PM Networkable 2 Channel Power Amplifier

Rated Power Level: 100 watts per channel @ 4 ohm RMS .2% THD

Mounting: 2" Pole mounted

Frequency Response: 20Hz – 20KHz +/-3dB

Impedance: 4 ohms

Power Requirements: 120VAC, 60 Hz

Speco Technologies SPCT8T Ceiling Tile Stereo Speaker – Supply Two per Room

Material: 8" Polypropylene with rubber surround, 3/4" Mylar dome tweeter

Rated Power Level: 30 watts RMS / peak 60 watts

Frequency Response: 50Hz – 20KHz

Impedance: 8 ohms

Dimensions: 23 3/4" x 23 3/4" x 6" for drop ceiling mounting, supply crossbar

Connection: 14 gauge, shielded UL listed wire is to be used between amp and speakers push-button terminals

Mounting: Supply and install seismic support cable

Warranty: Limited 15 year

LOCATIONS: BH 104, BH 106, BH 208, BH 210, BH211, IR 112, IR 225, LH 103, LH 135, LH 171A, LH 255, LH 258.

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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

- 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: BH 106, IR 225, LH 171

1.6.2 CEILING MOUNTED

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

- 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

1.6.3 WALL MOUNTED

Da-Lite Automatic Electric Projection Screen, Model # 40823

- 12' (H) x 12'(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

- 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

LOCATION: N/A

1.6.4 CEILING MOUNTED

Da-Lite Automatic Electric Projection Screen, Model # 40818 L

- 9' (H) x 12'(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. For concealed ceiling recessed mounting

LOCATION: N/A

1.6.5 WALL MOUNTED

Da-Lite, Spring Roller-Type Screen, Model B, #33420

- Projection screen 6' x 6'
- 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.

LOCATIONS: N/A

1.7.0 HDMI COMPONENTS

1.7.1 SPECIFICATIONS:

Kramer WP-571

- OUTPUTS: 1 DGKat™ twisted pair on a RJ-45 connector.
- BANDWIDTH: Up to 4.95Gbps data rate (1.65Gbps per graphics channel).
- COMPLIANCE WITH HDMI STANDARD: Supports HDMI and HDCP.

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- **POWER CONSUMPTION:** 12V DC, 190mA (single device); 360mA total (when one device supplies the power to both devices).

Kramer PT – 572+

HDMI over twisted pair receiver

- **INPUTS:** 1 RJ-45 connector.
- **OUTPUTS:** 1 HDMI connector.
- **BANDWIDTH:** 4.95Gbps (1.65Gbps per graphic channel).
- **COMPLIANCE WITH HDMI STANDARD:** Supports HDMI and HDCP.
- **POWER CONSUMPTION:**12V DC, 250mA.

Kramer BCP-DGKat623

Plenum Rated Four-Pair U/FTP Data Bulk Cable (23AWG)

- Conductor Size 4 Pair 23 AWG
- Pair Color Code Chart 1: White/Blue Stripe & Blue
2: White/Orange Stripe & Orange
3: White/Green Stripe & Green
4: White/Brown Stripe & Brown
- Outer Jacket Color Black
- Outer Jacket Ripcord: for easy jacket stripping
Polyvinyl chloride 0.20 wall thickness.
- Outer Jacket Diameter 0.285 Inches
- Total wires 4 shielded twisted pairs.
- Braided Shield 38 AWG tinned copper, 65% minimum coverage.
- Conductor Color code Blue/white, brown/white, green/white, orange/white.
- Impedance 100Ω +/-10%
- Max. Conductor Resistance 27Ω/1000ft.
- Maximum Resistance Unbalanced 5%.
- Mutual Capacitance Unbalanced 160pF/100m @1kHz.
- Pair to Pair Skew 12ns/100m max.
- Capacitance (Cond-Cond) 40pF/m nominal.
- UL Listing
- RoHS Compliant

Kramer VS-44HN

4 x 4 HDMI Matrix Switcher

- | | |
|-------------------------|--|
| • Inputs | • 4 HDMI connectors |
| • Outputs | • 4 HDMI connectors |
| • Bandwidth | • Up to 6.75 Gbps data rate (2.25 Gbps per graphic channel) |
| • Compliant Standards | • HDMI and HDCP |
| • Resolution | • Up to UXGA, 1080p |
| • Power Consumption | • 100 to 240 VAC, 50 / 60 Hz, 21 VA |
| • Controls | • Front panel buttons, infrared remote control transmitter, & RS-232 |
| | • Ethernet |
| • Operating Temperature | • 32 to 131°F (0 to 55°C) |
| • Storage Temperature | • -49 to 162°F (-45 to 72°C) |
| • Humidity | • 10 to 90%, RHL (non-condensing) |

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- Dimensions
- Weight
- W x D: 19 x 7.24" (482.6 x 183.9 mm)
- Height: 1U
- Approximately 3.53 lb (1.6 kg)

LOCATIONS: PAC 303 (Control Room)

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. The Contractor shall provide, in a three-ring binder, close out documentation, instruction manuals, software drivers, and warranty certificates.

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:

Size
 Color Range
 Keystone
 Computer Interface
 Focus Range
 Video Performance

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 March 5 – 11, 2016 or between March 25 -27, 2016 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 April 22, 2016.

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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:

Faceplate / Wallplate
Room Plans

6.0 SCOPE OF WORK:

College to furnish "network", "ethernet" drops as noted on the floor plans.
College to furnish electric "outlets" as noted on the floor plans.
College to furnish all required above ceiling electrical receptacles.

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