

# DESIGN STANDARD

## 274100D01 Standard Single Projection Classroom Equipment List

Revision: 0  
Modified: 9/17/2024



Engineered By:

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This document in addition to the attached set of plans and Section 274000 of the Project Specification Book serve as an Audio/Visual Reference Design Standard for the University of Kentucky's Single Projection Classroom. This document is separated into system categories with a product list and functional description of each.

Items marked as [UKFE] and printed in blue indicate they are being furnished by the University. The AV Contractor is responsible for providing any related accessories, wiring, and installation labor for all items.

### Revision History

Rev 0, 2024-9-13

- Initial Release of new document format and revision numbering scheme.
- Changed AV switching from Extron IN1608 Series to IN1808 Series and DTP2 peripherals.
- Added USB-C DisplayPort connection for laptops and mobile devices.
- Added Crestron Airmedia as a wireless presentation source.
- Changed equipment rack size from 18RU to 21RU.
- Changed projection screen aspect ratio from 16:10 to 16:9

Several AV sources shall be provided in the classroom. A dedicated in-room PC will be the primary source. UK AV Services will provide a turnkey PC solution for the AV contractor to install. A simple cable connection will allow laptops and other mobile devices to be connected. This includes both HDMI and USB-C DisplayPort connectivity. A wireless presentation gateway will allow laptops and mobile devices to present via Wi-Fi. Lastly, a document camera will reside on top of the equipment rack to allow instructors to show other documents and objects.



- 1**     **CRESTRON AM-3100-WF**  
AirMedia Wireless Presentation Receiver with Wi-Fi Network Connectivity



- 1     COMMSCOPE CO166S2-0ZF005  
Category 6 U/UTP Reduced Diameter Patch Cable, Blue, 5ft



- 1     COMPREHENSIVE MHD48G-3PROGRY  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Gray, 3ft



- 1     MIDDLE ATLANTIC LBP-6A  
L-Shaped Lacer Bar, 6" Offset



- 1     MIDDLE ATLANTIC UMS1-5.5  
1 RU Universal Mounting Rackshelf, 5.5 Inches Deep



- 1**     **DELL PRECISION 3440**  
[\[UKFE\] - Small Form Factor PC Workstation](#)



- 1     ANKER A7505  
7-Port USB 3.0 Hub



- 1     COMMSCOPE CO166S2-0ZF005  
Category 6 U/UTP Reduced Diameter Patch Cable, Blue, 5ft



- 1     COMPREHENSIVE DP8K-6PROBLK  
Pro AV/IT Integrator Series Certified DisplayPort 1.4 8K Cable with ProGrip, Black, 6ft



- 2     COMPREHENSIVE USB3-AA-MF-10ST  
Standard Series USB 3.0 A Male To A Female Cable, 10ft



1 [DELL KB216-BK-US](#)  
[UKFE] - Wired Keyboard



1 [DELL MS116](#)  
[UKFE] - Wired Optical Mouse



1 [KENSINGTON K64068F](#)  
Microsaver Keyed Notebook Lock



1 [MIDDLE ATLANTIC LBP-4A](#)  
L-Shaped Lacer Bar, 4" Offset



1 [MIDDLE ATLANTIC U2V](#)  
2 RU Utility Rackshelf, 14.75 Inches Deep, Vented



**1** [GENERIC LAPTOP](#)  
[UKFE] - Generic Laptop



1 [COMPREHENSIVE HD-4K-6SP](#)  
Pro AV/IT Specialist Series High Speed 4K60 HDMI Cable, Black, 6ft



2 [COMPREHENSIVE HDJ-J](#)  
HDMI Coupler, F to F



2 [COMPREHENSIVE MHD48G-15PROBLKA](#)  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Jet Black, 15ft



1 [COMPREHENSIVE USBC-HD4K-6SP](#)  
Pro AV/IT Specialist Series USB-C to HDMI 4K Adapter Cable, Black, 6ft



**1** [LUMENS PC193](#)  
20x Zoom Document Camera



1 [COMPREHENSIVE MHD48G-6PROBLK](#)  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Jet Black, 6ft



1 [KENSINGTON K64068F](#)  
Microsaver Keyed Notebook Lock

The control and AV switching will be performed using an Extron all-in-one presentation switcher coupled with a hard button keypad. All AV sources, displays, and speakers will connect through the AV switcher. The switcher shall support 4K video, stereo or mono audio, and signal transmission via traditional connections as well as Category cable. The switcher shall also have a built-in control processor providing the necessary logical and physical connectivity to control all devices in the system. A drop-in ceiling tile speaker will provide sound reinforcement for the AV sources. A hard button keypad will reside on the desktop to provide power control, source selection, and volume adjustment with feedback.

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\*SPEAKER TO BE INSTALLED BY?????



**1    EXTRON EBP 200**  
eBUS Button Panel, 10 Button, Black and White



2    COMPREHENSIVE USB3-AB-15ST  
Standard Series USB 3.0 A Male To B Male Cable, 15ft



1    EXTRON 60-1936-02  
Two AC Outlet AAP AV Connectivity Module with Power Cord, US, Black



1    EXTRON 70-090-11  
AAP AV Connectivity Module, Single Blank, Black



1    EXTRON 70-1235-02  
Two USB A 3.2 Female AAP AV Connectivity Module, Black



1    EXTRON MLM 200 AAP  
5-Gang Faceplate with AAP Opening for 3-Gang Button Panels, Black and White



1    EXTRON SMB 115 B  
5-Gang Surface Mount Box, Black



15    EXTRON STP20-2/1000  
20/4 Serial Control/Audio Cable, Black



**1    EXTRON IN1808 IPCP Q MA 70 LL**  
8 Input 4K/60 Seamless Presentation Switcher with Control Processor, 70V Amplifier, and LinkLicense



1 COMMSCOPE CO166S2-0ZF005  
Category 6 U/UTP Reduced Diameter Patch Cable, Blue, 5ft



1 MIDDLE ATLANTIC LBP-6A  
L-Shaped Lacer Bar, 6" Offset



**1 PURE RESONANCE SD5**  
Drop-in Ceiling Tile Speaker Array, 2' x 2', White



75 EXTRON SPK16P/1000  
16/2 Speaker Wire, Plenum Rated, Blue

A single laser projector will be the primary display device in the room. The projector will be mounted using a drop-in tile kit. The projector will be connected to the AV switcher using an HDMI over Category cable extender. A motorized screen will be hung on the wall as a projection surface. A University provided monitor will reside on the desktop to display the video for the in-room PC.

NOTE: This document outlines the most likely screen to be used in a room with a 9 foot tall ceiling. An alternate screen is also noted which provides ambient light rejection.

Actual screen size and material selection is dependent on ceiling height, viewing distance, and ambient light levels.

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\*PROJECTOR PAN AND SCREEN TO BE INSTALLED BY???



- 1**     **DELL P2219H**  
[UKFE] - 21.5" Full HD LCD Monitor



- 1     CHIEF K1D120B  
Height-Adjustable Desktop Monitor Mount, Single Display, Black



- 1     COMPREHENSIVE HDJ-J  
HDMI Coupler, F to F



- 1     COMPREHENSIVE MHD48G-15PROBLKA  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Jet Black, 15ft



- 1     COMPREHENSIVE MHD48G-6PROBLK  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Jet Black, 6ft



- 1**     **DRAPER 101305TF**  
Motorized Projection Screen, 16:9 Aspect, 119" Diagonal, TecVision XT1000X White



- 2     DA-LITE 40932  
Motorized Screen Extension Mounting Bracket, White, No. 6



- 1     DRAPER 121225  
LVC-S & LV-IV Control Station



- 50     EXTRON STP22P/1000  
22/2 Serial Control/Audio Cable, Plenum Rated, Blue

274100D01 Standard Single Projection Classroom Equipment List

Dated: 10/2024

Applies to: All Projects

University of Kentucky



20 EXTRON STP22P/1000  
22/2 Serial Control/Audio Cable, Plenum Rated, Blue

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**Alternates**

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**1 DRAPER 101305TE** Subtract \$0.00  
Motorized Projection Screen, 16:9 Aspect, 119" Diagonal,  
TecVision XH900X ALR

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**1 EPSON L630U**  
PowerLite Series WUXGA 3LCD Laser Projector, 6,200 Lumens, 1.35-2.20:1 Throw  
Ratio



1 BTX CD-MX915H  
MaxBlox Hood With Strain Relief



1 BTX CD-MX9F  
MaxBlox 9-Pin D-Sub Connector, Female



1 CADDY MP2  
Low Voltage Mounting Plate, 2 Gang



1 CHIEF CMS012W  
12 Inch Fixed Extension Pole, White



1 CHIEF CMS445  
Speed-Connect Suspended Ceiling Tile Replacement Kit



1 CHIEF RPMAUW  
RPA Elite Universal Projector Mount with Keyed Lock, White



150 COMMSCOPE UN874043004/10  
Category 6 U/UTP Cable, Plenum Rated, Blue



1 COMPREHENSIVE MHD48G-3PROWHT  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, White,  
3ft



1 EXTRON DTP HDMI 4K 230 RX  
DTP Receiver for 4K HDMI



5 EXTRON STP22P/1000  
22/2 Serial Control/Audio Cable, Plenum Rated, Blue





75      EXTRON XTP DTP 24P/1000  
Category 6A S/UTP Cable, Plenum Rated, Blue



1      MIDDLE ATLANTIC RLNK-215  
Select Series PDU with RackLink, 2 Outlet



2      NIGEL B DESIGN NB-DMSS-W  
Dual-Mount Small Platform Shelf, White

The room shall be equipped for lecture capture and distance learning. The room is capable of both of the following scenarios:

Scenario 1: An Echo360 appliance will enable the AV source displayed on the projector to be captured and broadcast on the Echo360 platform. Simultaneously, a ceiling-mounted camera and desktop boundary microphone will capture and broadcast the instructor on the Echo360 platform.

Scenario 2: An HDMI capture device will enable the ceiling-mounted camera and desktop boundary microphone to be ingested by the in-room PC for use in the Zoom platform. The in-room PC will be the only source with Zoom capability.



- 1** **AXIS M4216-V**  
4 Megapixel Dome Camera, 3-6mm lens



- 75** COMMSCOPE UN874043004/10  
Category 6 U/UTP Cable, Plenum Rated, Blue



- 2** COMPREHENSIVE HDJ-J  
HDMI Coupler, F to F



- 1** COMPREHENSIVE MHD48G-3PROBLU  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Blue, 3ft



- 1** COMPREHENSIVE MHD48G-3PROORG  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Orange, 3ft



- 1** COMPREHENSIVE MHD48G-3PROWHT  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, White, 3ft



- 1** EIPHAN AV.IO HD+  
HDMI Video Capture Appliance



- 1** EXTRON A MINI/6  
3.5 mm Male to Male Stereo Audio Cable, 6ft



- 1** EXTRON CSM 6  
Captive Screw to Female 3.5 mm Mini Stereo Jack Adapter



- 1** EXTRON DA2 HD 4K PLUS  
2 Output 4K/60 HDMI Distribution Amplifier



1 EXTRON HD PRO P/75  
Premium High Speed HDMI Optical Cable, Plenum, 75ft



1 STARTECH HDMIADMM6  
Micro HDMI to HDMI Cable, Black, 6ft



**1 ECHO360 ES-HW-PRO002**  
[UKFE] - EchoVideo Pro Lecture Capture Appliance, 2nd Generation



1 COMMSCOPE CO166S2-0ZF005  
Category 6 U/UTP Reduced Diameter Patch Cable, Blue, 5ft



1 COMPREHENSIVE MHD48G-6PROBLK  
MicroFlex Pro AV/IT Integrator Series 8K 48G HDMI Cable, Jet Black, 6ft



5 EXTRON STP22-2/1000  
22/4 Serial Control/Audio Cable, Black



1 MIDDLE ATLANTIC LBP-4A  
L-Shaped Lacer Bar, 4" Offset



**1 SHURE MX393/O**  
Microflex Series Boundary Microphone, Omnidirectional



5 EXTRON STP22/1000  
22/2 Serial Control/Audio Cable, Black



1 NEUTRIK NC3FXX  
3-Pole XLR Connector, Female

UK ITS Networking will provide and install a pre-configured network switch for ethernet connectivity to all devices. This switch will be configured with multiple VLANs and must be connected in accordance with the attached plans.



**1 CISCO C9300L-24P-4X-E**

[UKFE] - 24-Port 1 Gbps Network Switch with 24-Port PoE+ and 4 10 Gbps SFP



1 MIDDLE ATLANTIC LBP-2A  
L-Shaped Lacer Bar, 2" Offset

# Power and Protection

Two intelligent PDUs will provide the power connectivity for all devices in and around the equipment rack. Each projector will have a locally-located intelligent PDU as well. UK ITS Networking will provide and install a power conditioner for the network switch. Lastly, the equipment rack must be bonded to a building electrical ground.

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\*BONDING TO BE PERFORMED BY????



**1 FURMAN M-8X2**

[UKFE] - 8-Outlet Power Conditioner



**2 MIDDLE ATLANTIC RLNK-915R**

Select Series PDU with RackLink, 9 Outlet















2 COMMSCOPE CO166S2-0ZF005  
Category 6 U/UTP Reduced Diameter Patch Cable, Blue, 5ft



2 MIDDLE ATLANTIC LBP-4A  
L-Shaped Lacer Bar, 4" Offset

Centralized equipment shall be mounted in a 21-space equipment rack. The attached plans outline all mounting locations and installation requirements.

	<b>1</b>	<b>EXTRON RSF 123</b> 1RU 3.5" Deep Rack Shelf Kit, Gray
	1	MIDDLE ATLANTIC LBP-6A L-Shaped Lacer Bar, 6" Offset
	<b>1</b>	<b>MIDDLE ATLANTIC ERK-2128LRD</b> 21 RU Floorstanding Rack, 28" Deep, Less Rear Door
	5	MIDDLE ATLANTIC EB1 1 RU Flanged Blank Panel, Steel
	1	MIDDLE ATLANTIC ERK-RR21 21 RU Rear Rackrail for ERK Series, Pair
	1	MIDDLE ATLANTIC ERK-VRD-21 21 RU Vented Rear Door for ERK Racks
	5	MIDDLE ATLANTIC EVT1 1 RU Vent Panel, Steel, 17% Open Area
	1	MIDDLE ATLANTIC HG 10-32 Rack Screw, Black Gloss, 100 Piece
	2	MIDDLE ATLANTIC LBP-6A L-Shaped Lacer Bar, 6" Offset
	1	MIDDLE ATLANTIC LF-ISO Leveling Feet, Isolating, Set of 4
	1	MIDDLE ATLANTIC LVFD-21 21 RU Vented Front Door for DWR and ERK Racks, 64% Open
	2	MIDDLE ATLANTIC QBP-2 1 RU BlowervPanel, 100 CFM, 32dB

An ADA compliant adjustable height desk will act as the instructor station for the room. The PC monitor will be mounted to an articulating mount which will be permanently attached to the worksurface. The control system keypad and several convenience outlets will be permanently attached as well.



- 1 FELLOWES 2R4830-HPL-GR**  
High Pressure Laminate Worksurface, 48" x 30", Light Gray



- 1 FELLOWES 2VT-LX-C36-30-BLK  
Two-Leg Electric Height Adjustable Table Base for 36-60" x 30" Worksurfaces, Black



- 1 FELLOWES TROUGH-DLX-KIT-BLK  
Deluxe Cable Management Trough, Black



- 1 FELLOWES TTMODACR-489-FST  
Modesty Panel, 48" x 9", Frosted



- 1 KI SPSNAP  
Strive Armless Task Stool, Black Poly Shell, Black Base/Frame



- 1 TRIPPLITE 602-15  
5 Outlet Industrial Power Strip