

Project Number

Project Name

## SECTION 11135 - METAL MESH MEDIA SCREEN

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes woven metal mesh media screen, with LED light sources fabricated integral to metal fabric, and accessories.

- 1. System Design:

- a. The Work of this Section shall include all engineering, labor, materials, tools, equipment, appliances and services required to manufacture, deliver, and furnish all items necessary for the proper execution and completion of the Work as shown on the Contract Documents, as specified herein, and/or as required by job conditions.
- b. The extent of the woven metal mesh media screen is shown on the building elevations, sections, floor plans and details of the Contract Documents.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design woven metal mesh media screen system to be self-supporting, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Rigging shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

- 1. Design Loads: Weight of screens and anticipated live loads.

#### 1.4 SUBMITTALS

- A. Product Data: For Mediamesh panel, LED-tube, PLR (**Pro Link Router**), PSU (**Power Supply Unit**), Control equipment, Power and fiber optic cable

- B. Shop Drawings: Show fabrication and installation details for woven metal mesh media screen, including supporting equipment. Include plans, elevations, sections, details, attachments to other work, and the following:

- 1. Operating clearances for serviceable components, to include:

- a. Power Boxes
- b. ProLink Routers
- c. Server Rack

Project Number

Project Name

2. Requirements for supporting structures and components. Verify capacity of each component to support loads.
3. Locations of equipment components, switches, and controls. Differentiate between manufacturer-installed and field-installed wiring.
4. Wiring Diagrams: For power, signal, and control wiring.

C. Coordination / Equipment Layout Drawings:

1. Indicate locations of mesh media screen equipment and connections to utilities.
2. Key equipment using designations indicated on other Submittals.
3. Include plans and elevations; clearance requirements for equipment access and maintenance; details of equipment supports; and utility service characteristics.
4. Include details of seismic bracing for equipment.
5. Coordinate all work under various Sections of the Specifications to assure that no interferences occur in the rooms or areas for which such drawings have been required and that necessary clearances are provided.
6. Installation of the equipment of this Section shall not proceed until required drawings have been reviewed and approved.
7. Minimum Drawing Scale: 1:50.

D. Delegated-Design Submittal: For woven metal mesh media screen indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

E. Qualification Data: For qualified Installer and professional engineer.

F. Project Testing Schedule: Description of methodology for performance testing prior to completion.

G. Operation and Maintenance Data: For metal mesh media screen to include in maintenance manuals.

1. Provide schematic drawings that depict all wire labeling.

H. Warranty: 2 Year Parts included; years 3-5 at additional cost.

## 1.5 QUALITY ASSURANCE

A. Unless accepted otherwise by the Engineer, use manufacturers and installers that employ a Quality Management System complying with the program described in ISO 9001-2000, or similar system.

B. Installer Qualifications: Fabricator of woven metal mesh media screen.

C. Electrical Components, Devices, and Accessories: Listed and labeled as listed in UL Class II, and marked for intended location and application or equivalent Standard (ETL, CE, NFPA70).

D. Pre-installation Conference: Conduct conference at Project site.

Project Number

Project Name

## 1.6 SOFTWARE SERVICE AGREEMENT

- A. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrade shall include new or revised licenses for use of software.
1. Provide 30 days' notice to Employer to allow scheduling and access to system and to allow Employer to upgrade computer equipment if necessary.

## 1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings and construction contiguous with woven metal mesh media screen by field measurements before fabrication and indicate measurements on Shop Drawings.

## 1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of woven metal mesh media screen that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, faulty operation of LED equipment.
  2. Warranty Period: Two (2) years from date of Initial Acceptance of Installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers / Products:
1. Basis-of-Design Product: Subject to compliance with requirements, provide product and manufacturer listed as (Basis-of-Design) or comparable product by listed manufacturer:
    - a. GKD - Gebr. Kufferath AG, Germany
      - 1) Contact: Sebastian Rick GKD – Gebr. Kufferath AG, Metallweberstraße 46, D-52353 Düren; Phone: +49 2421 803343; Fax: +49 2421 803227; E-Mail: [Sebastian.rick@gkd.de](mailto:Sebastian.rick@gkd.de)
      - 2) Contact: Goran Rakocija GKD – Gebr. Kufferath AG, Metallweberstraße 46, D-52353 Düren; Phone: +49 2421 803324; Fax: +49 2421 803227; E-Mail: [Goran.rakocija@gkd.de](mailto:Goran.rakocija@gkd.de)
    - b. Or approved equal.

### 2.2 WOVEN METAL FABRIC

- A. Woven Metal Mesh: Woven fabric of stainless steel and its woven-in round profiles, open along the front into which light emitting diodes are integrated.

Project Number

Project Name

1. Product: GKD Mediamesh; or equal.
  - a. Mediamesh, Flexible, one direction.
  - b. Material: AISI Type 316 stainless steel.
  - c. Open Area: 58.1%
  - d. Nominal Thickness: 25mm +/- 1mm
  - e. Cable: 3 cables that are 2.0mm
  - f. Rod: 3.0mm
  - g. Center to Center, Cable: 100mm
  - h. Maximum Width: 4m
  - i. Vertical LED Pitch: X mm
  - j. Horizontal LED Pitch: 50mm
  - k. NITS: To be coordinated

B. Fabricated Media Screen:

1. Product: GKD 6 LED per Pixel Mediamesh; or equal.
  - a. LEDs: LEDs installed in mesh's woven-in round profiles with a waterproof seal.
2. Properties:

Resolution: V50mm x H50mm

Description	Value	Units
Display Size:	To be coordinated	Sq. m
Display Size (Vertical):	To be coordinated	m
Display Size (Horizontal):	To be coordinated	m
Display Height Above Grade:	To be coordinated	m
Pixel Configuration:	2-red, 2-green, 2-blue	RGB
Pixel Pitch (Vertical):	To be coordinated	mm
Pixel Pitch (Horizontal):	50	mm
Resolution (Vertical):	To be coordinated	Vertical Pix
Resolution (Horizontal):	To be coordinated	Horizontal Pix
Color Processing:	48 (3x16)	Bit
LED Refresh Rate:	1000	Hz
Pixel per Square Meter:	To be coordinated	Pix/sq. m
Total Pixels:	To be coordinated	Total Pixels
LED per Square Meter:	To be coordinated	LED/sq. m
Total LED:	To be coordinated	Total LED
Brightness:	To be coordinated	Nits
Max. Viewing Angle (Horizontal):	110	Degrees
Max. Viewing Angle (Vertical):	50	Degrees
Blended Viewing Distance:	To be coordinated	m
Voltage:	100 to 240	VAC
Max. Power Consumption:	To be coordinated	Watt/sq. m
Average Power Consumption:	To be coordinated	kWh
Total Max. Power Requirement:	To be coordinated	W
Protection Rate:	67	IP
Thermal Limitations:	-40 to 70	°C
Av. Weight per Unit Area:	To be coordinated	kg/sq. m
Weight of LED-tubes:	To be coordinated	kg
Weight of Mesh	To be coordinated	kg
Weight of LED-tubes and Mesh:	To be coordinated	kg

Project Number

Project Name

- C. Assembly: Horizontal profiles (LED sticks) that contain the pixels are inserted into the mesh. These LED sticks are daisy chained together with data cable that terminates in Pro Link Routers (PLR) at the top and the bottom of each Mediamesh panel. After installation of the Mediamesh panels, these LED sticks are also connected to Power Supply Enclosures integrated into the building's structure. The PLRs and Power Supply Enclosures are networked with a central server inside the building, which supplies the profiles with power and display data.
- D. ProLink Routers: Data distribution to horizontal assemblies. Waterproof boxes located within 6 meters of each Mediamesh panel.
- E. Power Box: Box with DC power distribution to LED stripes, with input from AC power source located within 30 meters of each Mediamesh panel.
- F. Server Rack: Middle Atlantic or comparable 19" Rack mount. Secured to floor with mechanical anchor system.
- G. Computer: Windows based PC with Digital Input Video Scaler
- H. Software: Media Content Controller with scheduling service. Capabilities to display standard format image and video. Included but not limited to JPG, GIF, MOV, AVI, MPG formats. Software to support standard market Video Codecs.

## 2.3 ATTACHMENT METHODS

- A. General:
  - 1. Attachment methods for woven metal mesh media screen shall be compatible with application, panel size, structural characteristic, scale, and design intent.
  - 2. Design includes woven metal mesh media screen and all hardware as well as engineering calculations and shop drawings.
  - 3. Methods for attaching metal fabrics:
    - a. Tensioned: This method in combination with flats with clevises, nuts and brackets apply the proper pre-tension to the metal fabric. This pre-tension force, in addition to the forces of impact, snow, ice and wind, must be considered when sizing the hardware and substructure.
      - 1) Round bar with eyebolts
      - 2) Others as Approved by Manufacturer

## PART 3 – EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for supporting members, blocking, installation tolerances, clearances, and other conditions affecting performance of stage-curtain work. Examine inserts, clips, blocking, or other supports required to be installed by others to support tracks and battens.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

Project Number

Project Name

### 3.2 INSTALLATION, GENERAL

- A. Install Mediamesh system according to System manufacturer's and System fabricator's written instructions.

### 3.3 WIRING

#### A. Power Wiring:

1. Install wiring as specified in Division 16 Sections for hardwired connections. Install wiring in raceways except cable and plug connections.
2. Install power wiring with a separate neutral for each output circuit from main dimmer and for each house and stage lighting circuit.

#### B. Signaling, Remote-Control and Power-Limited Circuits:

1. Comply with requirements specified in Division 16 Sections for installation of wiring. Install wiring in raceways except cable and plug connections.
2. Remote-control circuits associated with emergency lighting control shall be installed complying with Class 1 Circuit standards in NFPA 70.

#### C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points

#### D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes and in terminal cabinets and equipment enclosures.

#### E. Support components and accessories as specified in Division 16 Sections.

### 3.4 FIELD QUALITY CONTROL

#### A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installation, including connections.

#### B. Perform Tests and Inspections:

1. Schedule visual and mechanical inspections and electrical tests with at least seven days' advance notice.
2. Visual and Mechanical Tests and inspections:
  - a. Inspect each fixture, outlet, module, control, and device for defects, finish failure, corrosion, physical damage and nameplate.
  - b. Exercise and perform operational tests on mechanical parts and operable devices according to manufacturer's written instructions.
  - c. Check tightness of electrical connections.
  - d. Verify proper protective device settings, fuse types, and ratings.
  - e. Record results of tests and inspections.
3. Electrical Tests: Perform tests according to manufacturer's written Instructions.
  - a. Continuity tests of circuits.
  - b. Operational Tests: Comply with manufacturer's printed Project testing schedule. Record observations of media mesh performance.

Project Number

Project Name

4. Test Labeling: After satisfactory completion of tests and inspections, apply a label to tested components indicating test results, date, and responsible organization and individual.

C. Media mesh will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

1. 1. Prepare a schedule of connections by number; indicate circuits, connected components, and control-channel assignments. Prepare written reports of tests and observations. Report defective materials, workmanship, and unsatisfactory test results. Include records of repairs and adjustments made.

### 3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Employer's maintenance personnel to adjust, operate, and maintain woven metal mesh media screen system.

**END OF SECTION 11135**