CLARITY MATRIX G3 LCD VIDEO WALL SYSTEM

Product Overview – January 2020

PLANAR

Clarity Matrix G3 LCD Video Wall System

Industry-Leading Performance and Value

- Enhanced video wall processing and software

- Mission-critical design with off-board electronics, hot-swappable redundant power supply

- Industry's thinnest installed depth as small as 3.5" (88mm)

- Intuitive 6-axis mounting system with micro adjustments for perfect alignment and easy serviceability

- The most advanced and comprehensive line up of LCD video wall models

- 46", 55" and 65" LCD Displays with Tiled bezel widths of 0.88 mm, 1.7 mm and 3.7 mm
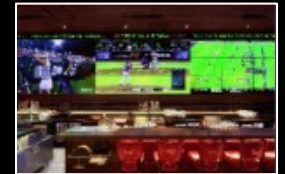
PLANAR

Audiences and Applications

Primary Audiences:

- Public venue
- Corporate
- Higher education
- Military

Common Applications:

- Digital signage
- Command and control
- Corporate communications
- Entertainment

PLANAR

System Components

1 **Clarity® Matrix® G3 LCD Video Wall System**
- 46", 55" and 65" LCD displays
- World's smallest tiled bezel width down to 0.88 mm
- Slim, lightweight design
- Includes Planar® EasyAxis™ mounting and alignment system

2 **Planar® Video Controller (VC)**
- 1U rack-mountable controller drives up to 9 Full HD (1920 x 1080) sections
- 5 4K@60Hz inputs available with each VC
- Embedded video and control extension
- Planar® Big Picture Plus™ Processing with Planar® WallSync™ genlock technology

3 **Planar® Remote Power Supply (RPS)**
- 1U rack-mounted power supply powers complete system (up to 24 LCD displays & video controllers)
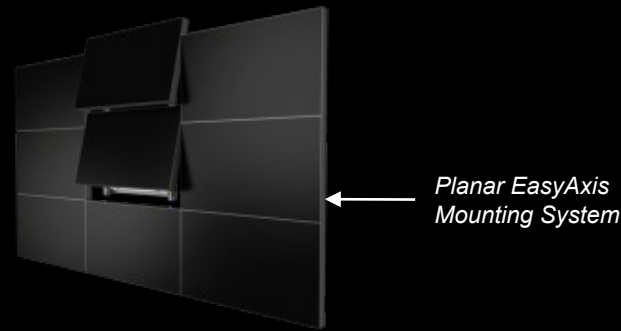- Hot-swappable redundant supply option

4 **Planar® WallDirector™ Software**
- Tool to setup, monitor and operate your video wall
- Web-based browser interface

PLANAR

Clarity Matrix G3

Key Features

- Advanced off-board video wall processing with Planar Video Controller:
    - Windowing, scaling, Picture-in-Picture (PiP), layout storage and recall
    - HDMI 2.0 and DisplayPort 1.2 inputs (4K@60Hz)
    - DisplayPort 1.2 loop output
    - Drives up to (9) Full HD (1920 x 1080) display sections
    - Up to 200ft (61m) transmission distance over Cat6*

- Off-board Planar Remote Power Supply:
    - Redundant hot-swappable power supply module
    - Compact power density
    - Low power standby mode

- Planar® EasyAxis™ Mounting System offers the industry's thinnest available mounting depth

*MX65U-4K maximum transmission distance = 40 m over Cat6a

Planar Video Controller

Planar Remote Power Supply

Planar EasyAxis Mounting System

PLANAR.

Off-Board Electronics Architecture

Key Benefits

- Rack-mountable components keep heat, weight, depth, noise and points of failure away from the video wall

- G3 components can be co-located with sources and processing equipment for simplified connectivity, security, and maintenance

- Redundant power supply option maintains operation in the case of a power supply failure

Planar Video Controller

Planar Remote Power Supply
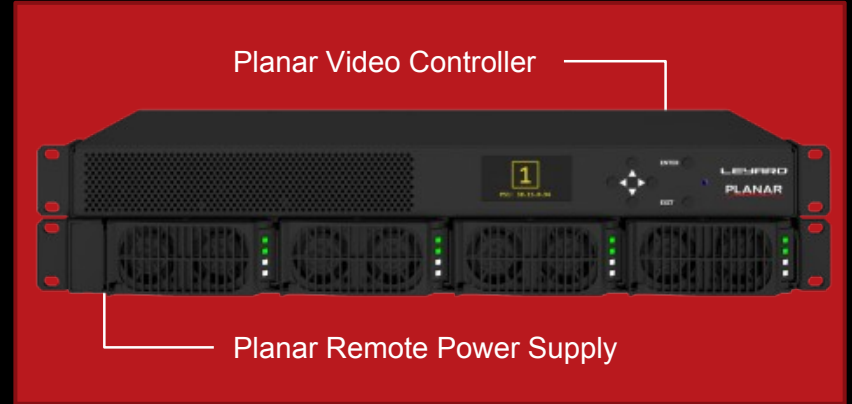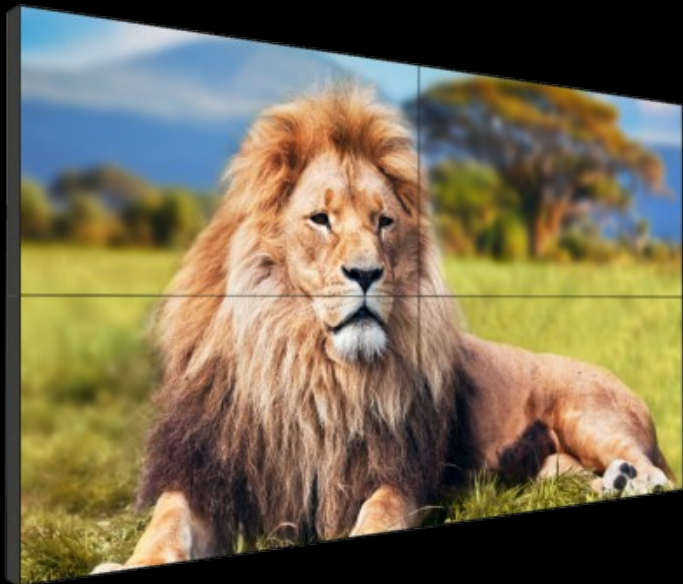
PLANAR

Planar WallDirector Software

Intuitive Software Simplifies Configuration, Servicing, Monitoring & Operating
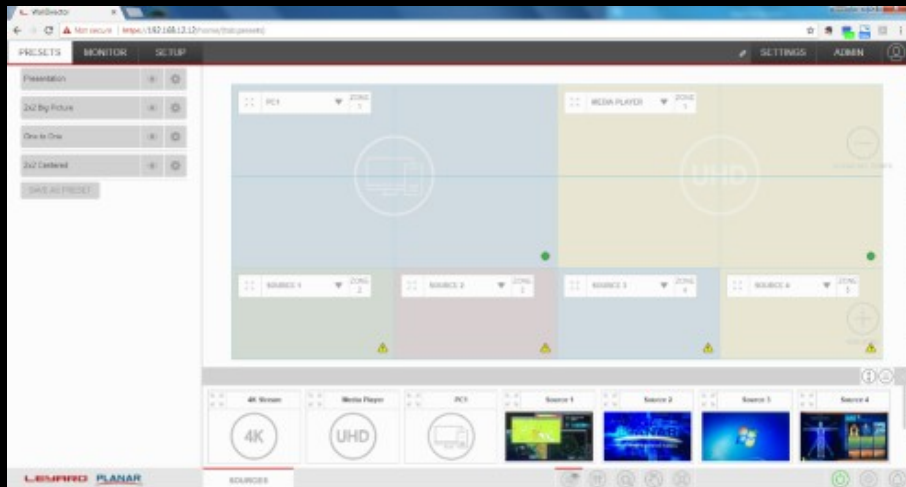
- Cross-platform web browser-based software locally hosted on remote equipment

- Modern, user-friendly interface controlled from PC or mobile device

- Intelligently detects components in the system

- Processing and system management capabilities: Windowing layout creation, storage and recall, source scaling and switching, system scheduling and monitoring with customizable email and SNMP alerts

- Administrative privileges and control

PLANAR

Planar Big Picture Plus Video Processing

Flexibility and Enhanced Capabilities with Clarity Matrix G3

- Clarity Matrix G3 supports a variety of different source configurations

- Allows scaling an image across the entire video wall or in sections of the video wall

- Clarity Matrix G3 adds PiP overlapping of sources

- Planar WallSync technology used to eliminate video tearing and deliver genlock synchronization

- How your wall is cabled and which VC your source is plugged into can limit where you can place content on the screens

- Planar WallDirector software is used to configure and operate the source configuration

- Also supports third-party processing solutions

PLANAR

Planar WallSync

Industry's First Fully Integrated Synchronized Video Wall Technology

- Supports video wall synchronization to both customer-selected connected video sources and external house syncs

- Incorporates Smart Genlock feature to ensure perfectly synchronized video display without misalignment or tearing

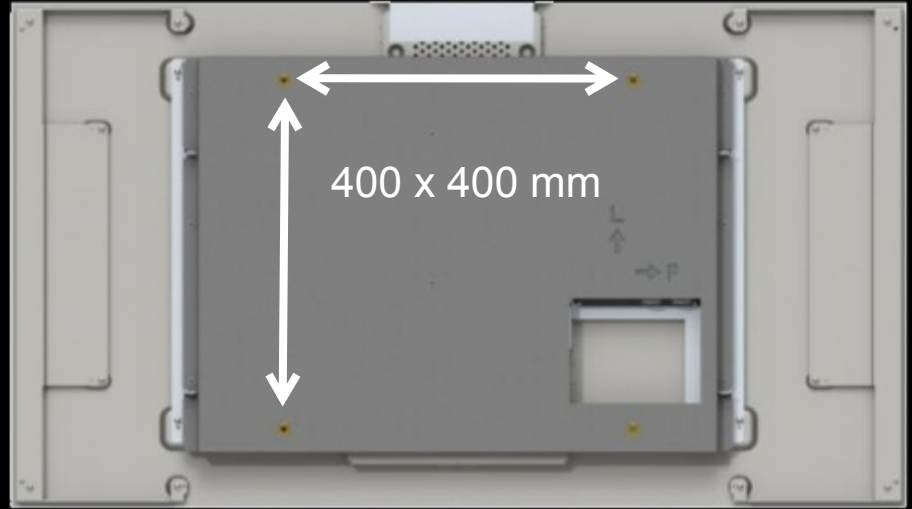- Accessible through Planar WallDirector Software

WallSync™

PLANAR

Mounting for Clarity Matrix G3

Mounting Options
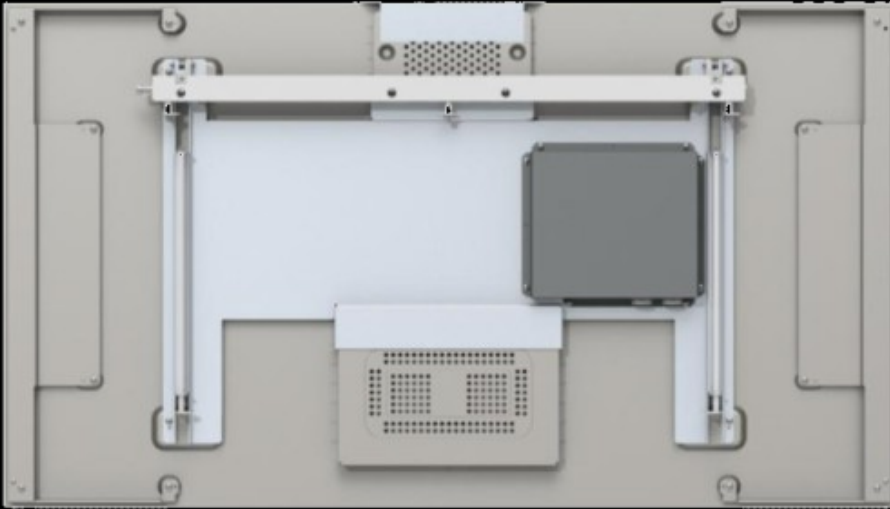
Planar EasyAxis Mounting System

400 x 400 mm

VESA mount hole pattern (optional)

PLANAR.

# Mounting for Clarity Matrix G3

Planar EasyAxis Mounting System

- Industry's thinnest LCD video wall

- Perfect display-to-display alignment with alignment cams for 6-axis of adjustment

- ADA-compliant mounted depth as small as 3.5" (88mm)

- Reduces alignment time

- Easy front access — All adjustments are done from the top

- Built-in service mode

- Mounts are included with the displays

PLANAR.

Clarity Matrix G3 LCD Video Wall System

Planar EasyAxis Mounting System
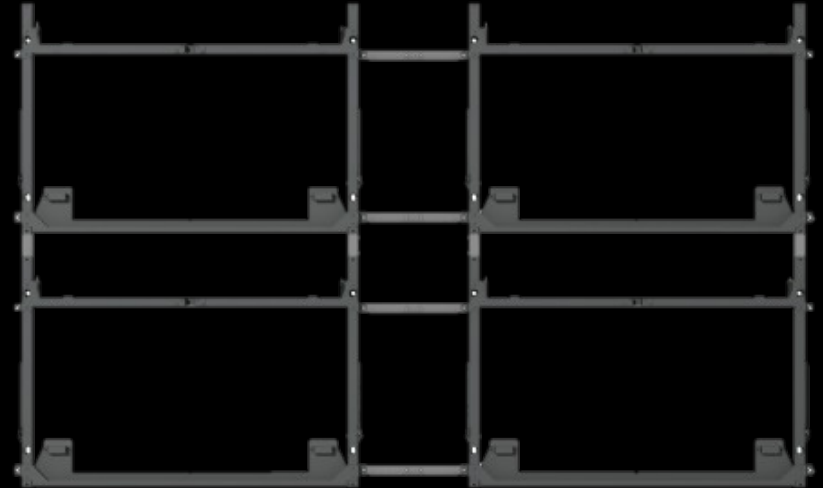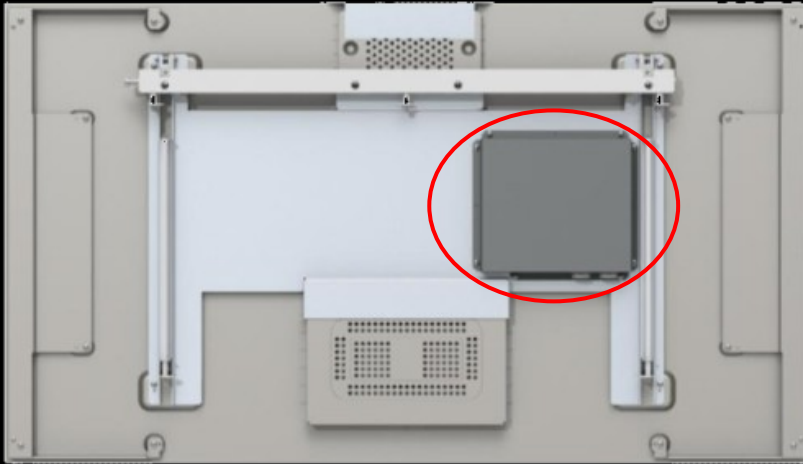
Same wall brackets and spacers as Clarity Matrix G2

- New Interface Board— Provides shorting protection for improperly terminated power cables

- Memory chip— stores SN, color calibration values for each panel

PLANAR.

Additional Features and Options for Clarity Matrix G3

- Fiber Video Extension

- LEDs at display and Video Controller aid diagnostics and troubleshooting

- Video extension cable integrity sensing

- Mullion compensation

- EDID Management

- Serial number capture

- Configuration and settings export/import

- Standard Video Controller now offers 9 outputs to drive up to (9) 1080p displays

- 6-point and 32-point multi-touch option kits available

PLANAR.

Clarity Matrix G3 Complete

Pre-packaged 2x2, 3x3 or 4x4 LCD Video Walls with Everything

Models:

- Clarity® Matrix® G3 Complete™ LX55M-L 2x2

- Clarity Matrix G3 Complete LX55M-L 3x3

- Clarity Matrix G3 Complete LX55M-L 4x4

Video Wall Display:

- 55" diagonal

- 0.88 tiled bezel width

- 1920x1080 resolution

- 500 nit brightness

PLANAR®

Clarity Matrix G3 Complete

Pre-packaged 2x2, 3x3 or 4x4 LCD Video Walls with Everything

Includes:

- 55" Clarity Matrix G3 LX55M

- 4, 9 or 16 Full HD video wall displays

- Video controller and power supply electronics with redundancy option

- Display interconnect and 200' homerun cables

- Trim

- Mounts

- Spare displays

    - 2x2 = 1 spare

    - 3x3 = 2 spares

    - 4x4 = 3 spares

PLANAR.

Clarity Matrix G3 LCD Video Wall System

Naming & Branding

Naming	
Company	Planar
Logo Branding	Planar
Family	Clarity® Matrix® G3 LCD Video Wall System
Models	LX/MX46U, LX/MX46X, LX/MX55U, LX/MX55X, LX/MX55M, MX65U-4K
Electronics	Planar® Video Controller (VC)
Power Supply	Planar® Remote Power Supply (RPS)
Software	Planar® WallDirector™ Software

PLANAR.

Clarity Matrix G3 LCD Video Wall System

LCD Model Name Legend

Product Family: Clarity Matrix G3 LCD Video Wall System							
Product Models: LX, MX, 3D							
Product Options:							
Brightness	Diagonal	Tiled Bezel Width	4K	Orientation	ERO	Fiber	3D
LX – 500 Nit MX – 700 Nit / 800 Nit	46" 55" 65"	U – 3.7mm X – 1.7mm M – <1 mm	4K – 3840 x 2160 Resolution	L – Landscape P – Portrait V – VESA	ERO	F	3D

MX55X-L
MX55X-P-ERO
MX46U-L-ERO

LX55U-L-F
LX55X-V
LX46U-P-ERO
LX46U 3D

PLANAR

Clarity Matrix G3 Models

MX65U-4K
- High Performance
- 65" diagonal
- 3840x2160
- 800 nits
- ADA-Compliant
- 3.7mm tiled bezel

MX55M
- High Performance
- 55" diagonal
- 1920x1080
- 700 nits
- ADA-Compliant
- 0.88 mm tiled bezel

MX46X MX55X
- High Performance
- 46" & 55" diagonals
- 1920x1080
- 800 nits
- ADA-Compliant
- 1.7 mm tiled bezel

MX46U MX55U
- High Performance
- 46" & 55" diagonals
- 1920x1080
- 800 nits
- ADA-Compliant
- 3.7mm tiled bezel

LX55M
- High Performance
- 55" diagonal
- 1920x1080
- 500 nits
- ADA-Compliant
- 0.88 mm tiled bezel

LX46X LX55X
- Standard Performance
- 46" & 55" diagonals
- 1920x1080
- 500 nits
- ADA-Compliant
- 1.7mm tiled bezel

LX46U LX55U
- Standard Performance
- 46" & 55" diagonals
- 1920x1080
- 500 nits
- ADA-Compliant
- 3.7mm tiled bezel

LX46U 3D
- Standard Performance
- 46" diagonal
- 1920x1080
- 500 nits
- 3.7mm tiled bezel

PLANAR

Planar ERO-LCD (Extended Ruggedness and Optics)

Protective Surface Technology for LCD Displays

- Protective soda-lime glass optically bonded to the LCD

- Improved contrast, clarity, and legibility

- Added protection and durability

- Reduced glare and parallax error

- Keeps out dust and moisture

- Modular touch surface, maintains serviceability

Clarity Matrix G3 MultiTouch

Interactive LCD Video Wall System

- Modular impact-resistant touch surface with Planar ERO-LCD technology

- Up to 32 simultaneous touch points

- Allows multiple users to interact simultaneously

- Pinpoint touch accuracy

- Capable of wall sizes up to ~500" diagonal

- HID-compliant option for walls <150" diagonal

- Available with 46", 55" or 65" Clarity Matrix G3 Models

- Mounted depth 4.5" *(not ADA compliant)*

- Power to touch frame provided by LCD display no additional outlets required at wall

PLANAR.

New Clarity Matrix G3 Packaging Carton

The newly designed Clarity Matrix G3 Shipping Carton holds two Clarity Matrix G3 LCD displays and incorporates a number of key features, including:

- Additional and redesigned foam inserts to survive impact, drop and tip tests

- In-box test process and viewing cutouts to quickly identify and report any shipping damage without removing the display from the packaging

- Individual display carriages to easily and safely move each display to a convenient location while keeping it fully protected until mounting to the wall

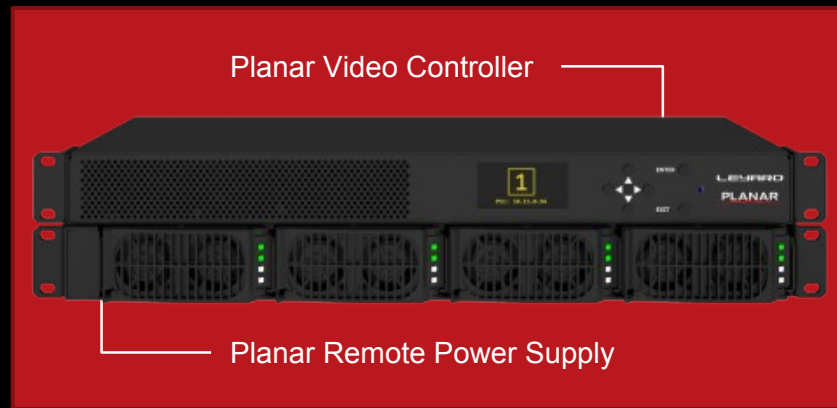**PLANAR**

OFF-BOARD RACK COMPONENTS

Clarity Matrix G3

PLANAR

Clarity Matrix G3 Off-Board Electronics Architecture

Key Benefits

- Components fit in standard racking units

- Removes heat, weight, depth, noise and points of service from the video wall
  - Removing heat allows our displays to be 800 nits vs 700 nits for competitors' same class displays

- Rack can be co-located with sources and processing for convenient cabling, security, and climate control

- Maintenance is easy to access and does not interfere with video wall

- Redundant power supply option maintains operation in the case of a power supply failure

Planar Video Controller

Planar Remote Power Supply
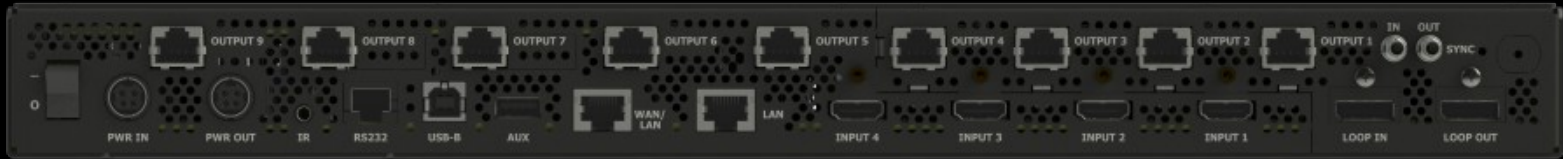
Planar Video Controller (VC)

Key Features

- Purpose built, OS-agnostic video wall processing platform

- Built-in video and control signal extension

- Modern connectivity

- Works with Redundant Remote Power Supply

- LEDs and front-panel LCD for system status and easy troubleshooting

- Configuration storage and recall

Available Models:
9-Output Model (VC9H-BP+)
4-Output Model (VC4H-BP+)

PLANAR

Available Video Controller Models

VC9H-BP+ 9-Output VC *(Standard Controller for 1080P displays)*

VC4H-BP+ 4-Output VC *(Optional Controller for 1080P displays, Standard Controller for MX65U-4K)*

PLANAR

Video Controller Models

Choosing the Right Model

VC9H-BP+ 9-Output Unit

Best for applications where:

- Rack space is a concern
- Planar Big Picture Plus is used
- Relatively small number of sources are required
- Matrix switcher is used
- Video processor with 4K outputs is used

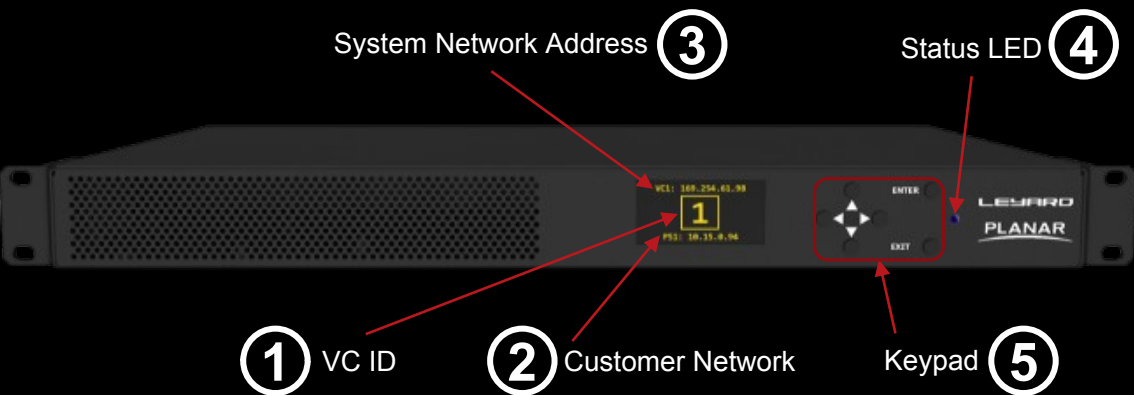## VC4H-BP+ 4-Output Unit

Best for applications where:

- Rack space is not a concern
- Larger number of directly-attached sources are required
- More content zones or windows on the video wall are desired
- Fiber applications
- MX65U-4K video walls

PLANAR

Planar Video Controller

Front Panel View

System Network Address ③   Status LED ④

VC1: 169.254.63.90
1
PS1: 10.15.0.96

LEYARD
PLANAR

ENTER
EXIT

① VC ID   ② Customer Network   Keypad ⑤

Front of Video Controller is the same for 9-Output and 4-Output models.

1. **Video Controller ID**

2. **Customer or Direct Connection Network Address** –
   Default Address is 196.168.12.12

3. **System Network Address –**
   for that VC

4. **Status LED** –
   Blinks when receiving a command

5. **Keypad Menu**
   - System On/Off
   - Factory Reset
   - System Reset
   - Set IP for VC

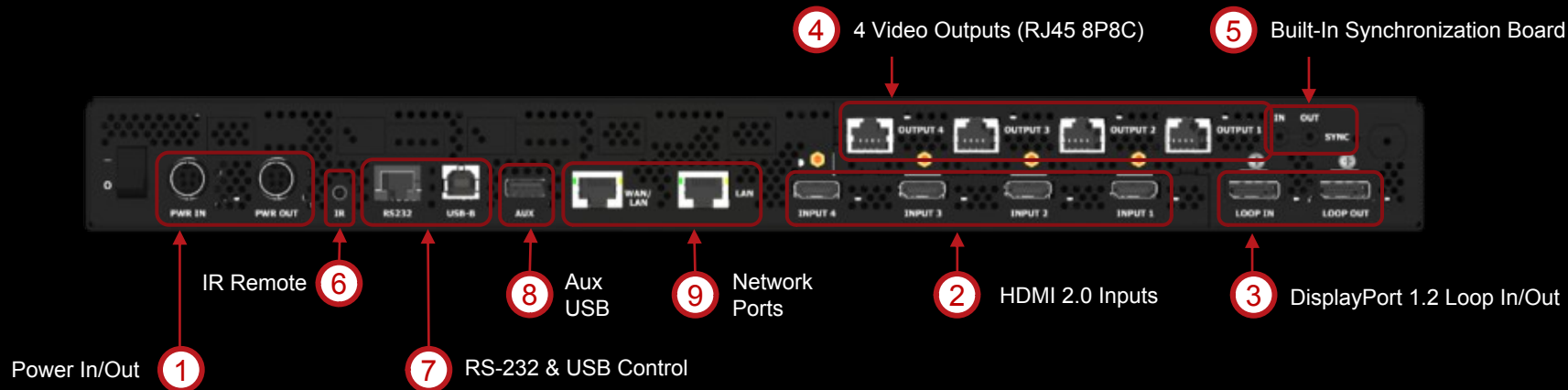PLANAR.

9-Output Planar Video Controller

Back Panel View - VC9H-BP+
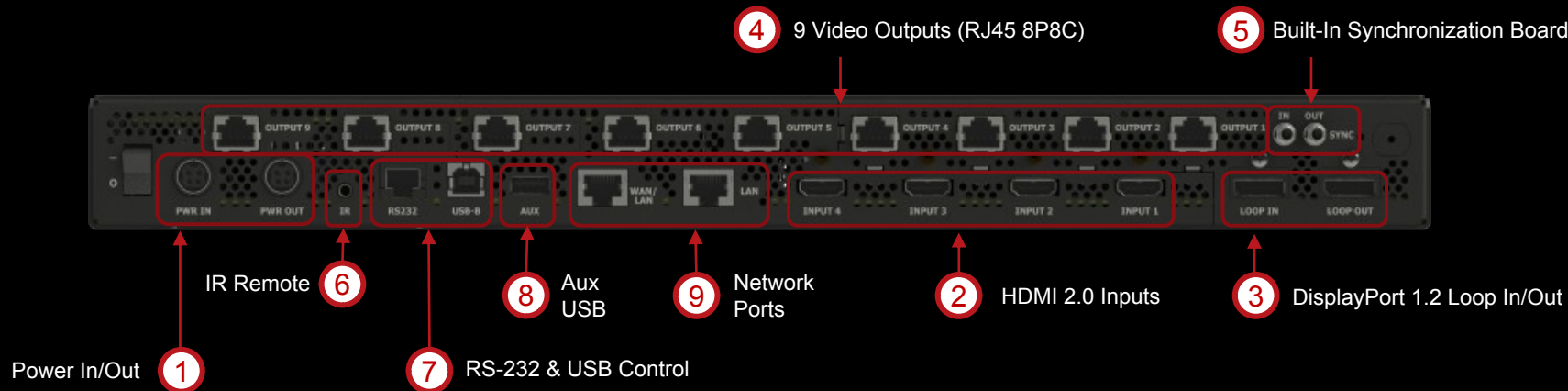
1. **Power In/Out** – Can loop up to 2 additional VCs
2. **HDMI 2.0 Inputs** – Each input capable of up to 4K at 60Hz
3. **DisplayPort 1.2 Loop In/Out** –
   Input capable of up to 4K at 60Hz
4. **9 Video Outputs (RJ45 8P8C)**–
   - Shielded CAT6 or greater
   - Up to 200ft / 60m

5. **Built-In Synchronization Board**
6. **IR Remote**
7. **RS-232 and USB Control**
8. **Aux USB-** Used for firmware download
9. **Network Ports**
   - System communication

PLANAR

4-Output Video Controller

Back Panel View - VC4H-BP+

4 Video Outputs (RJ45 8P8C)

Built-In Synchronization Board

IR Remote

Aux USB

Network Ports

HDMI 2.0 Inputs

DisplayPort 1.2 Loop In/Out

Power In/Out

RS-232 & USB Control

1. **Power In/Out** – Can loop up to 2 additional VCs
2. **HDMI 2.0 Inputs** – Each input capable of up to 4K at 60Hz
3. **DisplayPort 1.2 Loop In/Out** –
   Input capable of up to 4K at 60Hz
4. **4 Video Outputs (RJ45 8P8C)** –
   - Shielded CAT6 or greater
   - Up to 200ft / 60m

5. **Built-In Synchronization Board**
6. **IR Remote**
7. **RS-232 and USB Control**
8. **Aux USB-** Used for firmware download
9. **Network Ports**
   - System communication

PLANAR

Video Controller Models

Key Differences

	VC9H-BP+	VC4H-BP+
	9-Out VC	4-Out VC
Usage/Implementation	Standard for 1080P Models	Standard for MX65U-4K, Fiber Applications, Optional for 1080P Models
Video Outputs *(Full HD sections)*	9	4
Inputs	4x HDMI, 1x DP	4x HDMI, 1x DP
Zones	9	9
Rack Space	1RU	1RU

PLANAR

Planar Remote Power Supply

Efficient, Reliable and Mission-Critical Off-Board Power Solution

- Same physical design as Remote Power Supply (RPS) for Planar DirectLight X LD Video Wall System

- 3-4 times higher power density – fewer RUs

- Redundant and hot-swappable modules

- 110V or 220V support to further reduce circuits used

- Ultra-low standby power mode (< 3 Watts)

- Added monitoring functionality

PLANAR

Planar Remote Power Supply Models

Two Form Factors, Configured Per Installation

RPS110
100-240V. Maximum 3,600 Watts out. 1 RU – *Standard*
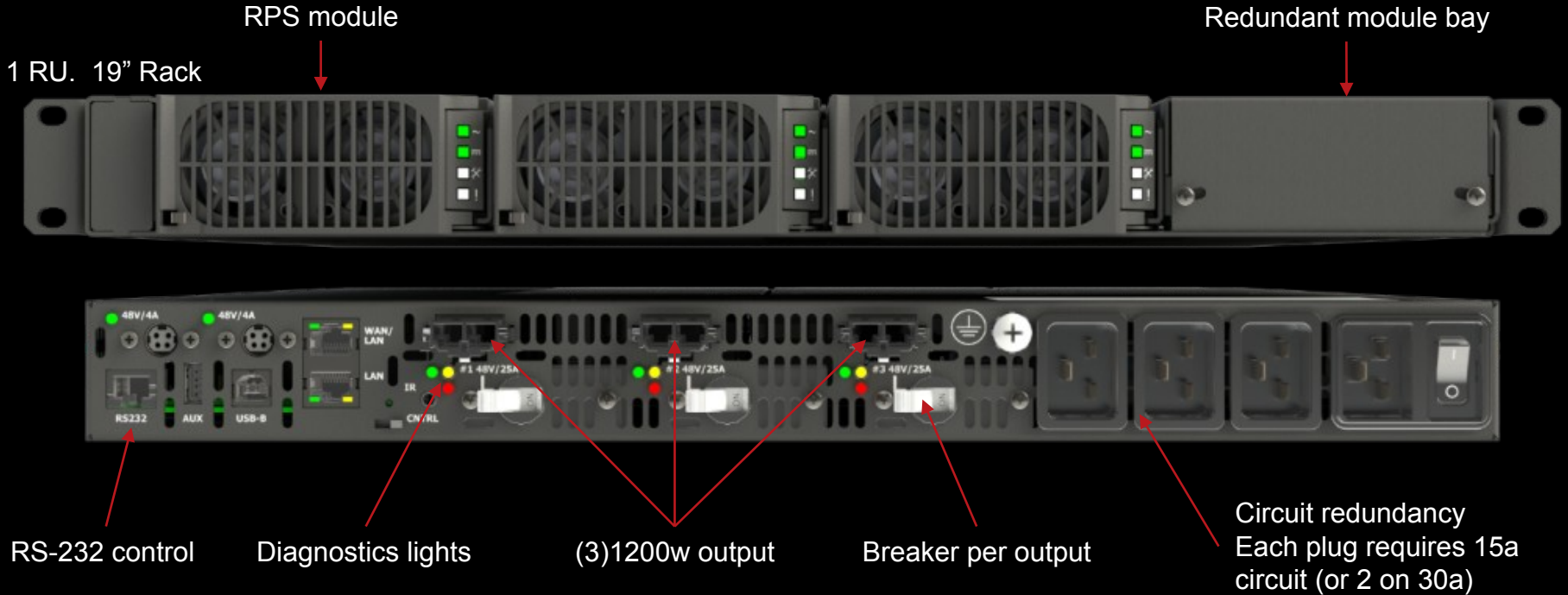

RPS220
200-240V. Maximum 7,200 Watts out. 1.5 RU - Greater power density - *Optional*

PLANAR.

Planar Remote Power Supply Models

RPS110

RPS module

Redundant module bay

1 RU. 19" Rack

RS-232 control

Diagnostics lights

(3)1200w output

Breaker per output

Circuit redundancy
Each plug requires 15a
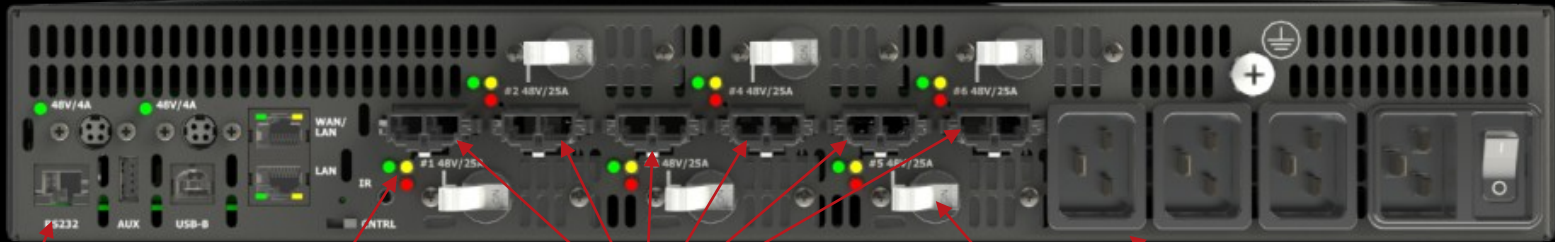circuit (or 2 on 30a)

PLANAR.

Planar Remote Power Supply Models

RPS220

1.5 RU. 19" Rack

RPS module
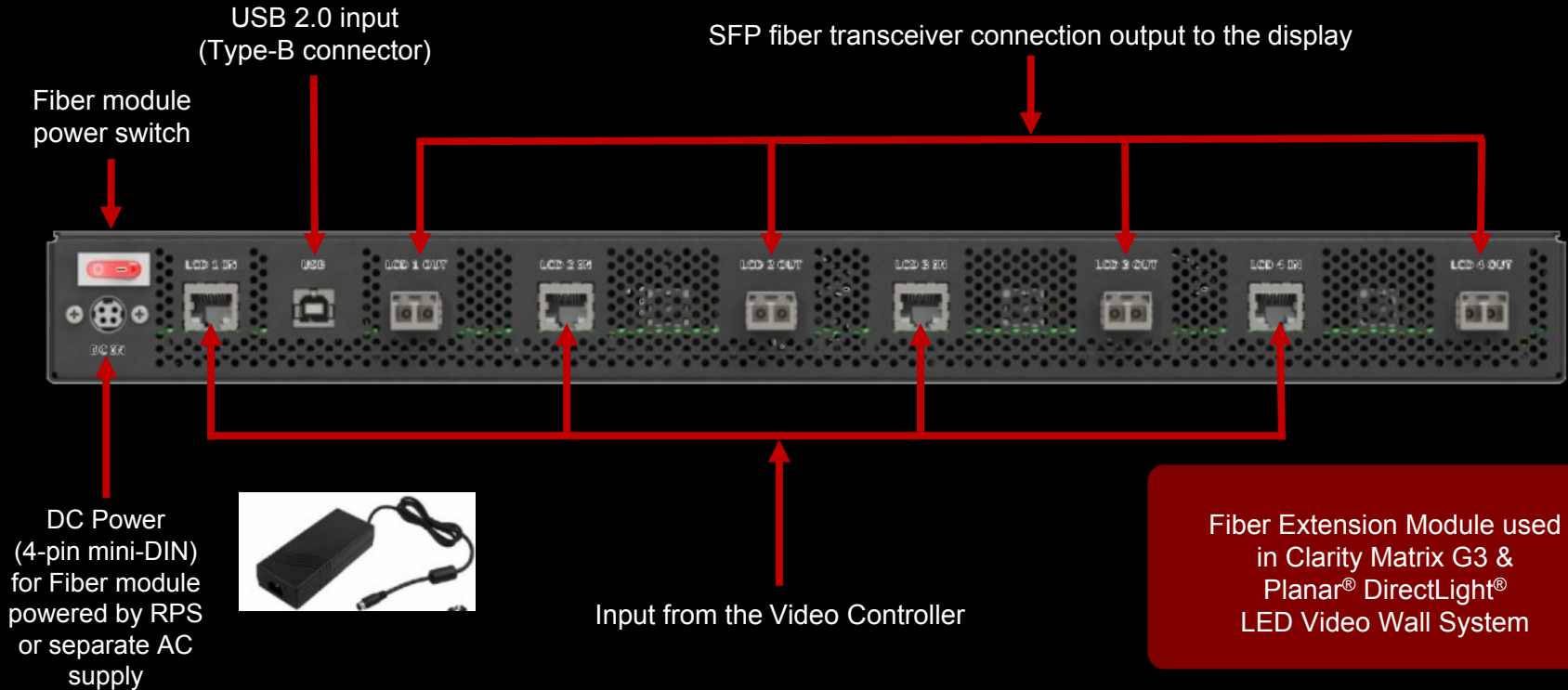
Redundant module bay

RS-232 control

Diagnostics lights

(6) 1200w output

Breaker per output

Circuit redundancy

PLANAR®

Fiber Video Extension Module

USB 2.0 input
(Type-B connector)

SFP fiber transceiver connection output to the display

Fiber module
power switch

DC Power
(4-pin mini-DIN)
for Fiber module
powered by RPS
or separate AC
supply

Input from the Video Controller

Fiber Extension Module used
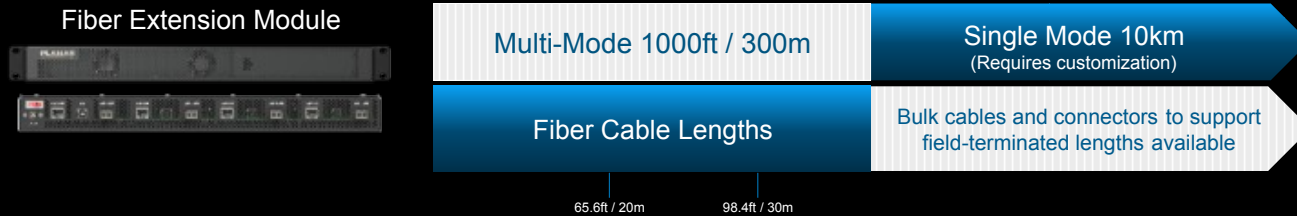in Clarity Matrix G3 &
Planar® DirectLight®
LED Video Wall System

PLANAR

# Clarity Matrix Fiber Video Extension Module

Display Interface Board

IR and Ambient Light
Sensor Outputs

USB 2.0 Output-
Matrix MultiTouch

Power for
Matrix MultiTouch

SFP Input from
Fiber Module

Power Input and
Loop Through
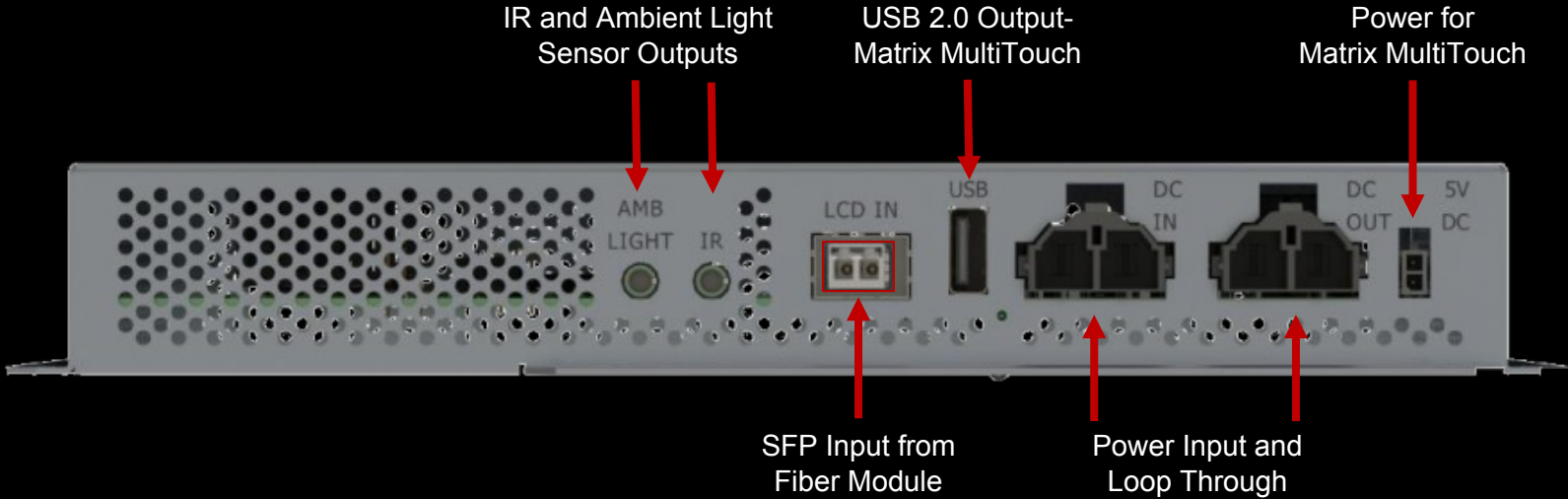
Supported Cable Lengths

Planar Video Controller

Standard length 200ft / 60m	Fiber Extension Module
Cat 6 Cable Lengths	Bulk cables and connectors support field-terminated lengths

25ft / 7.6m   50ft / 15.2m   75ft / 22.8m   100ft / 30.4m   200ft / 60m

Planar Remote Power Supply

Standard configuration support – 500ft / 152m	
Power Cable Lengths	Bulk cables and connectors support field-terminated lengths

25ft / 7.6m   50ft / 15.2m   75ft / 22.8m   100ft / 30.4m   200ft / 60m

Fiber Extension Module

Multi-Mode 1000ft / 300m	Single Mode 10km (Requires customization)
Fiber Cable Lengths	Bulk cables and connectors to support field-terminated lengths available

65.6ft / 20m   98.4ft / 30m

PLANAR.

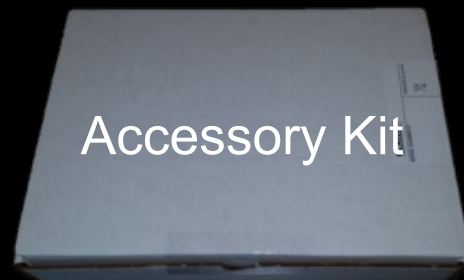# Clarity Matrix G3 Accessories

- Cat6 cables: 25, 50, 75, 100, 200ft

- DC power cables (plenum rated): 8, 25, 50, 75, 100, 200ft

- Bulk cables, connectors, tools

- Redundant power supply module

- Edge trim

- Floor stands

- Stud adapter bracket

- Clarity Matrix MultiTouch

- HDMI 2.0 input cables

PLANAR.
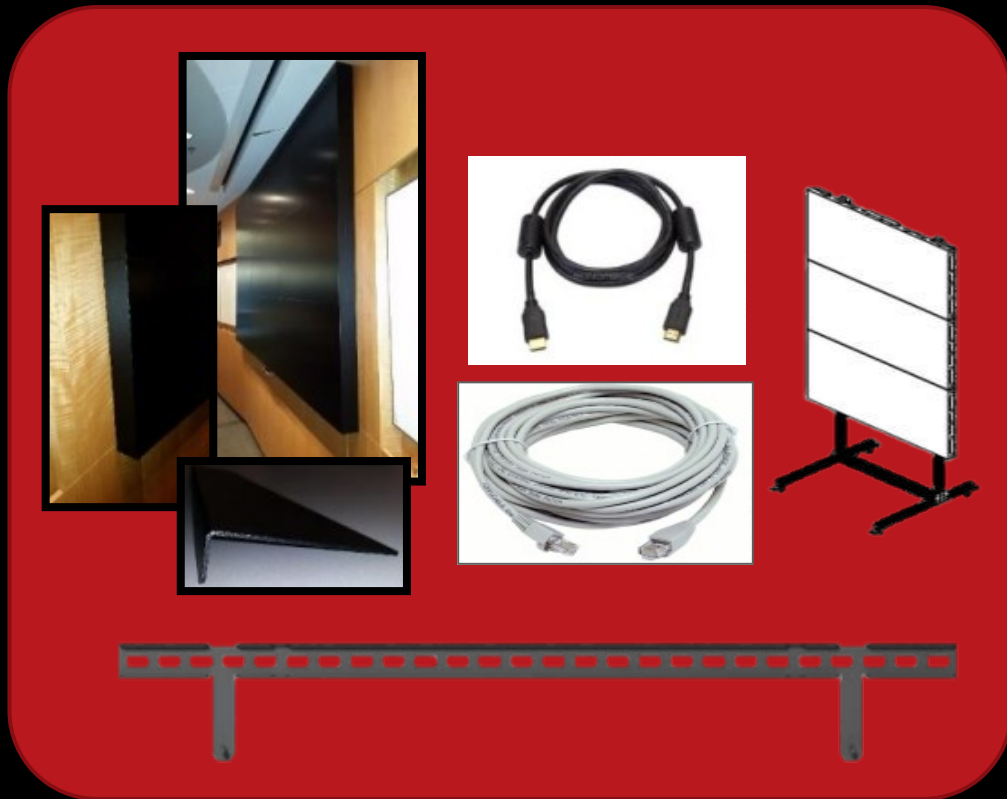
Clarity Matrix G3 Accessories Kit

The Accessories Kit contains:

- IR receiver
- Allen screwdrivers
- Remote control
- Fabric gloves
- Remote off connector
- USB drive with manual, etc.
- DP loop through cable (1m)
- Mini HDBNC cables for genlock

Accessory Kit

PLANAR.

Clarity Matrix G3 Accessory Box

The Accessories Box contains:

- Horizontal spacing brackets
- Vertical spacing brackets
- AC power cord (3 meters)
- CAT6 STP video cables (if ordered)
- Display power cables (if ordered)
- Display power loop cables (if ordered)

Landscape

Portrait

PLANAR
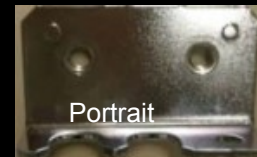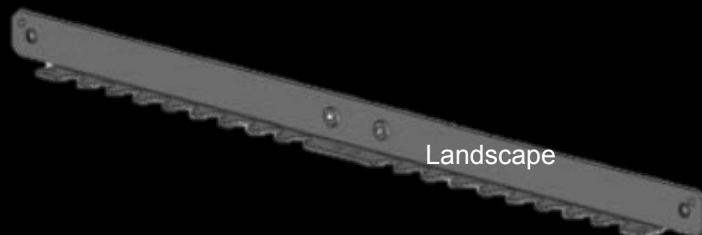
COMPETITION

Clarity Matrix G3

PLANAR

Clarity Matrix G3 Competitive Advantages

- The industry's most advanced and comprehensive video wall system

- World's thinnest tiled bezel width of .88 mm

- Off-board rack-mountable electronics architecture with:
  Hot-swappable power supply with redundancy option
  Cascadable video controller allows for system scaling

- Integrated web-based Wall Director control software

- Layout management, windowing, PiP, video scaling
  system scheduling, monitoring, email and SNMP alerts

- HDCP 2.2

- 4K downscaling

- Thinnest ADA-compliant installed depth

- Planar ERO-LCD Technology— protective glass
  for high-traffic and touch surface protection

PLANAR

LCD Video Wall Comparison

Feature	Benefit	Leyard Planar	NEC	Samsung	Barco	LG
Off-board Electronics	▪ Removes heat, weight, noise, and points of failure from the video wall ▪ Quicker to service, no disruption or cost associated with servicing at the video wall	● Meets	○ N/A	○ N/A	◐ Partial	○ N/A
Depth less than ≤ 3.6" / 93mm	▪ Maintain LCDs' slim profile ▪ ADA-Compliant	● Meets	○ N/A	○ N/A	○ N/A	○ N/A
Protective Glass Option	▪ Provides display protection for video walls placed in public spaces ▪ Provides a touch surface that is modular	● Meets	○ N/A	○ N/A	○ N/A	○ N/A
4K Picture-in-Picture Windowing	▪ Allows for creative layering of content ▪ Doesn't require additional hardware	● Meets	○ N/A	○ N/A	○ N/A	○ N/A
Fan-less LCD Design	▪ Less noise ▪ Less points of failure	● Meets	○ N/A	○ N/A	● Meets	○ N/A
Redundant Power Supply	▪ No downtime if power supply failure occurs	● Meets	○ N/A	○ N/A	● Meets	○ N/A
4K Resolution Video Wall Scaling	▪ Input sources of 4K (3840x2160) can be daisy-chained and scaled across the video wall	● Meets	◐ Partial	● Meets	● Meets	◐ Partial
HDMI 2.0 and HDCP 2.2	▪ Latest in connectivity for Media players, set top receivers, 4K Bluray ▪ 4K at 60Hz content	● Meets	● Meets	● Meets	● Meets	◔ Certain Models
DisplayPort 1.2 Input	▪ Input sources of 4K resolution at 60Hz can be input and display native resolution across 2x2 array	● Meets	● Meets	● Meets	● Meets	● Meets
Built-in Video Wall Scaling	▪ No additional scalers or processing needed to stretch an image over the entire video wall	● Meets	● Meets	● Meets	● Meets	● Meets
46" and 55" Ultra-narrow and Extreme narrow bezel LCD	▪ Narrow bezel LCD technology for near seamless video walls	● Meets	● Meets	● Meets	● Meets	● Meets

● Model Meets Specification   ◐ Partially Supported   ◔ Certain Models   ○ Not Available

PLANAR

THANK YOU

PLANAR