

# Clarity Matrix Fiber Video Extension User Guide



**PLANAR**

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### RoHS Compliance Statement

The Clarity Matrix Video Walls are fully RoHS compliant.

### ADA Compliance Statement

The Clarity Matrix Video Walls are compliant with the Americans with Disabilities Act.

Part Number: 020-1300-00A

# Introduction

The Clarity® Matrix™ with G2 Architecture has added to its mission-critical capabilities with the Fiber Video Extension option. The Clarity® Matrix™ Fiber Video Extension option provides a more secure and longer distance option for extending the video signal from the off-board electronics to the Clarity Matrix LCD modules.

Features of the Fiber Video Extension option include:

- Utilizes fiber optic cable to extend the Matrix G2 video signal
- Allows the Quad Controller module and the Fiber Video Extension module to be placed up to 1000 feet/300 meters away from the Matrix wall with standard duplex multi-mode fiber cable or up to 10 kilometers with duplex single-mode fiber cable
- Extends the IR remote control over the fiber cable
- Extends the USB signal for the Matrix MultiTouch sensor and can power the touch sensor from the Matrix LCD module

## Manual Scope

This manual covers the unpacking, installation and troubleshooting of the Fiber Video Extension option.

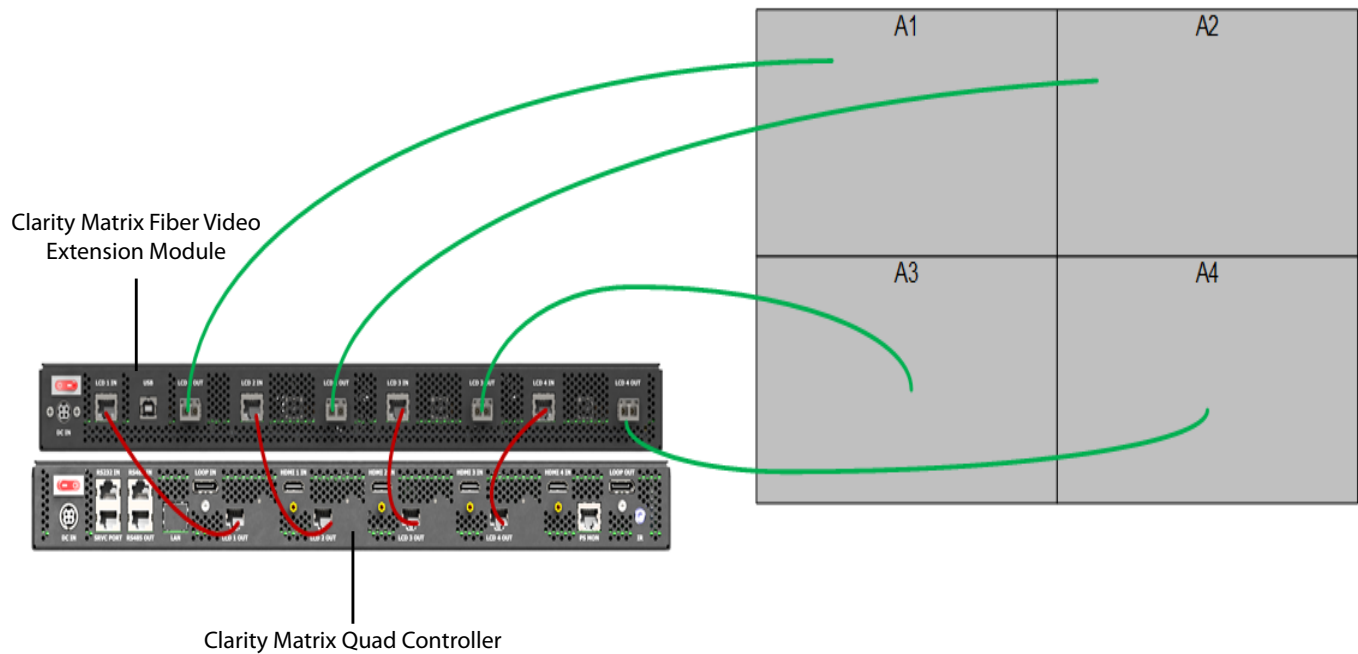
General and technical information regarding fiber optics can be found here: <http://www.thefoa.org>.

For specific fiber termination details, please reference the information supplied by the termination kit and/or fiber cable manufacturer.

## System Architecture

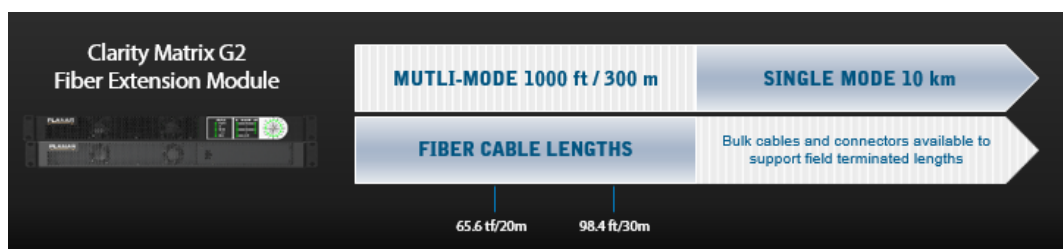
The Fiber Video Extension module is the main component of the Fiber Video Extension option. It works with the Quad Controller module to send images to the LCD modules.

The following example shows the connections for a basic video wall.



## Supported Fiber Cable Lengths

The following graphic illustrates the supported fiber cable lengths for the Fiber Video Extension module. Planar supplies multi-mode transceivers, but the Fiber Video Extension module is also compatible with single-mode transceivers available from third parties.



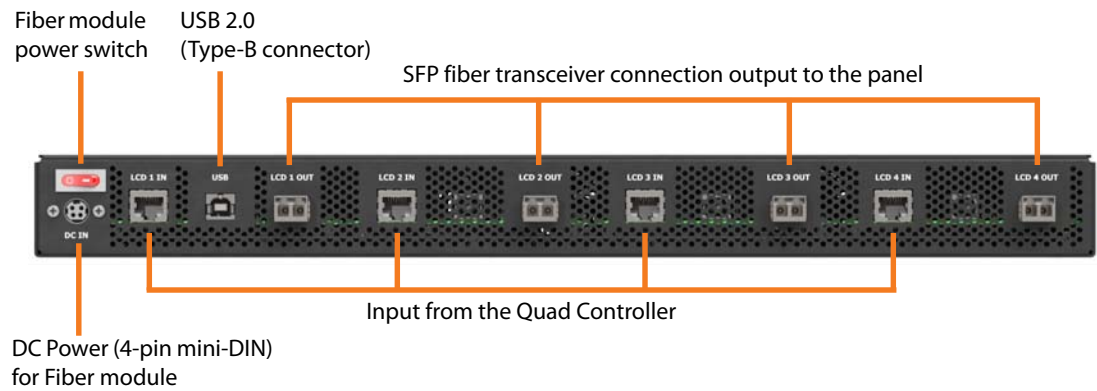
**Note:** To accommodate the Fiber Video Extension module extended distance difference from the maximum Power Supply distance, Quad Controllers may need to be separated from the Power Supply module and powered from an optional DC Power Brick. See the *Clarity Matrix LCD Video Wall System with G2 Architecture Installation Guide* for information.

## Fiber Video Extension Module – Front View



Air intake – keep clear

## Fiber Video Extension Module – Rear View



# Installing the Fiber Video Extension

## Unpacking the Box

The following items are included with the Fiber Video Extension module:

Part	Description	Number	Picture
Fiber Video Extension module	Extends the Quad Controller with fiber optic cable out to the LCDs.	1	
Transceiver	Connections for the fiber optic cable.	4	
CAT6 patch cables (1 m)	Connects the Quad Controller module to the Fiber Video Extension module.	4	
DC power brick (4 ft)	Powers the Fiber Video Extension module. Includes AC cable (2.5 m).	1	
USB cable (3 m)	Connects a PC to the Fiber Video Extension module for USB devices located at the panel, such as a touch sensor.	1	

## Optional Accessories

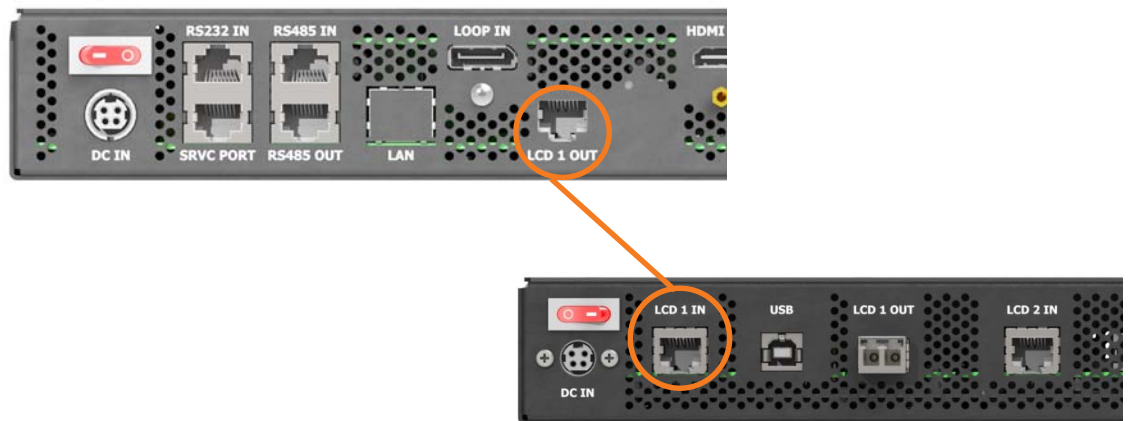
Part Number	Description
159-0055-00	10G OM3 50/125 micron multi-mode duplex Plenum fiber optic cable – 20 m / 65.6 ft.
159-0054-00	10G OM3 50/125 micron multi-mode duplex Plenum fiber optic cable – 30 m / 98.4 ft.
903-1474-00	Bulk Matrix multi-mode fiber cable – 1640 ft./500m spool.
159-0057-00	50 um multi-mode LC Unicam, OM3 pre-polished fiber connector – 1 piece.
159-0058-00	Connector trigger, narrow pitch. Used to create a duplex connector using 2 159-0057-00 single connectors.
541-0139-00	Pre-polished kit for field termination of multi-mode and single-mode LC, SC and ST® compatible connectors. Includes precision flat cleaver, 1.25 and 2.50 mm VFL ferrule adapters and all required fiber preparation, cleaning tools and materials.
175-1068-00	Cable Assy, PWR, AUX, TOUCH. Used to connect the optional touch sensor to the LCD panel for DC power.

## Connecting Cables

This procedure provides steps for how to connect the Fiber Video Extension module to the Quad Controller module and the LCDs.

It does not cover how to install the LCDs, Quad Controller modules, and power supply. For detailed installation instructions, refer to the *Clarity Matrix LCD Video Wall System with G2 Architecture Installation Guide*.

- 1 On the Quad Controller module, plug one end of the CAT 6 video cables into the LCD Out connections. Plug the other end into the LCD In connections on the Fiber Video Extension module.

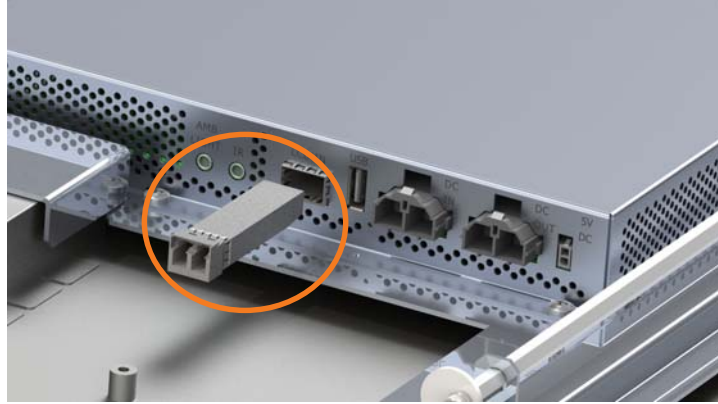


- 2 On the Fiber Video Extension module, do the following:
  - a Insert the transceivers into the LCD Out connections.
  - b Remove the black cap from the end of each of the transceivers.
  - c Plug one end of the fiber optic cables into the transceivers.





- 3** On the Panel Interface Board of each LCD, do the following:
  - a** Insert a transceiver into the LCD In connection.
  - b** Remove the black cap from the transceiver.
  - c** Plug the other end of the fiber optic cable into the transceiver.



- 4** Connect the DC power brick to the Fiber Video Extension module and plug the AC power cord into the power source.

## Connecting the USB Option

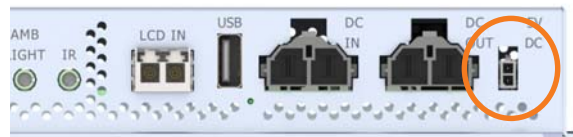
The Fiber Video Extension also incorporates an embedded USB extension in the fiber optic cable, eliminating the need for a third party USB extension when using Clarity® Matrix™ MultiTouch interactive LCD video wall displays and other USB devices at the video wall. The LCD modules can also provide power for Clarity Matrix MultiTouch, eliminating the need for separate AC power connection at the video wall.

Follow these steps to set up the USB option.

- 1 Connect the touch sensor USB cable to a USB port on the LCD Panel Interface Board that is connected to LCD 1 on the Fiber Video Extension module.



- 2 Use the power adapter cable to connect all points of power on the touch sensor to the 5V Aux port on any convenient LCD Panel Interface Board.

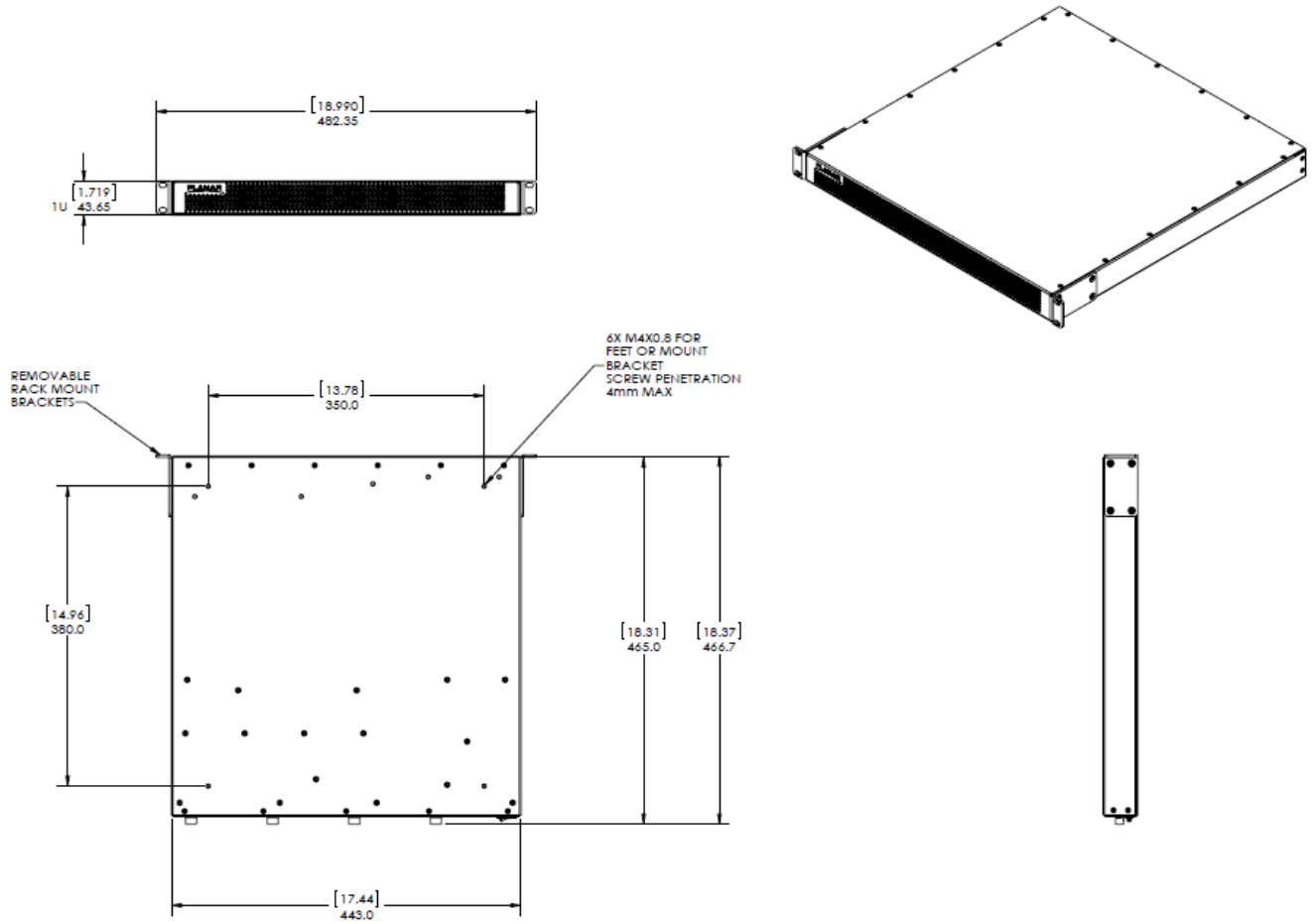


- 3 Connect the touch control PC to the Fiber Video Extension module that is connected to the LCD Panel Interface Board in step 1.

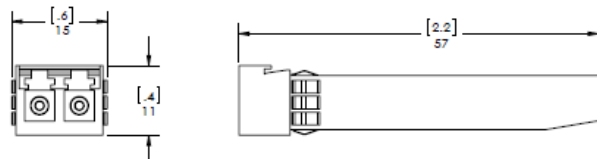


# Dimensions

## Fiber Video Extension Module



## Transceiver



# Specifications

## Fiber Video Extension Module Specification

Specification	MG2-FC		Connector	Notes
Dimensions	in/lbs	mm/kg		
Width	19"	482.4 mm		
Height	1.7"	43.7 mm		
Depth	20.4"	517.7 mm		
Weight	13.5 lbs	6.1 kg		
Power In			Mini DIN	24-48V, 5A max
Video Input			RJ45	
Video Out			LC SFP+	
USB			USB Type B	

## Environmental Specifications

Specification	Maximum	Minimum	Optimal	Notes
Temperature				
operating	40° C 113° F	10° C 50° F	20° C 68° F	All performance specifications are maintained within this temperature range.
non-operating	85° C 122° F	-20° C -4° F		
Fan Noise	45dB			
Altitude (barometric pressure)	2000m			Above sea level, or equivalent barometric pressure. De-rate temperature 10° for every 1km above 1000m.
Humidity operating	80% R.H.	20% R.H.		non-condensing