

# KRAMER



## Installation Instructions

### MODELS:

**CLS-AOCH/60-XX** (Low Smoke & Halogen Free Version)

**CP-AOCH/60-XX** (Plenum Version)

Active Optical UHD Pluggable HDMI Cable



P/N: 2900-300646



Rev: 1



### SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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## CLS-AOCH/60-XX / CP-AOCH/60-XX Active Optical UHD Pluggable HDMI Cable

Congratulations on purchasing your Kramer **CLS-AOCH/60-XX / CP-AOCH/60-XX** Plug and Play active Fiber Optic UHD Pluggable HDMI Cable which is suited for critical and versatile installations.

The **CLS-AOCH/60-XX / CP-AOCH/60-XX** provides an extremely high quality signal over a wide range of resolutions, up to 4K@60Hz (4:4:4). This cable is available in different lengths from 33ft (10m) to 328ft (100m). The **CLS-AOCH/60-XX / CP-AOCH/60-XX** has a slim design to let you pull the cables easily (together with the supplied pulling tool) through small-sized conduits.



Figure 1: HDMI Connector plugs (Source and Display)

The **CLS-AOCH/60-XX / CP-AOCH/60-XX** is ideal for long distance transmission in professional AV systems, indoor and outdoor digital signage and kiosks, home theater systems, surgical theaters, facility automation systems and whenever high resolution video and audio are required.

### Features

The **CLS-AOCH/60-XX / CP-AOCH/60-XX**:

- Supports a wide range of resolutions up to 4K@60Hz (color space 4:4:4) 3D and Deep Color
- Supports Multi-channel audio, Dolby True HD, DTS-HD Master Audio
- Is HDMI compliant: EDID, CEC, HDCP (2.2), HDR (High Dynamic Range)
- Reduced EMI and RFI
- Includes a micro USB port to optionally connect an external 5V power supply (if required, this is typically connected on the display side)
- Has high pulling strength and compression load
- Has Source / Display clearly printed on the connector as well as tagged on the cable for easy identification

### Cable Dimensions

The **CLS-AOCH/60-XX / CP-AOCH/60-XX** includes four optical fibers and six AWG 28 wires with compact size HDMI connectors. On the source side, the micro HDMI connector enables smooth pulling of the cable. The SOURCE end connects to the source (for example, a DVD, Blu-ray or game console box) and the DISPLAY end to the acceptor (for example, a projector, an LCD display or a tablet device), see [Figure 2](#) (note that SOURCE appears here as an example).

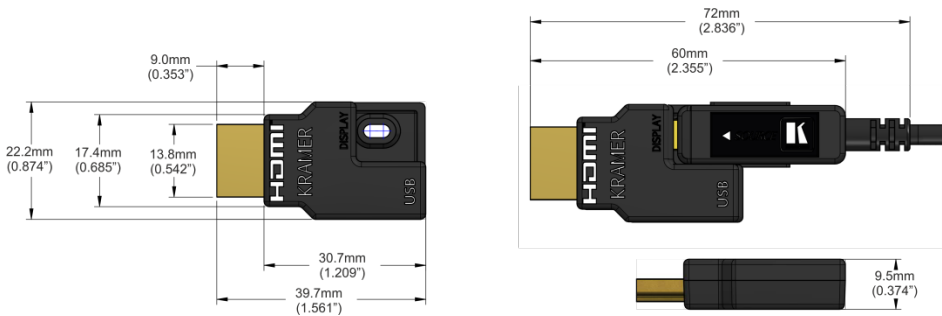


Figure 2: HDMI Connectors – SOURCE and DISPLAY (with Dimensions in mm)

## CLS-AOCH/60-XX / CP-AOCH/60-XX Plug and Play Installation

Before installing the cable, make sure that you have an HDMI graphic card or devices with an HDMI port (for example, a PC, laptop, DVD/Blue-ray player or any other video/audio signal source device).



Optical fiber cable is not robust physically compared to conventional copper cable materials. Even though this cable is designed to be resistant to artificial strengths on the cable, **CLS-AOCH/60-XX / CP-AOCH/60-XX** can be damaged if it is excessively pinched, twisted or kinked when being installed and after being installed. **Take care not to bend or twist the cable tightly.**

When **CLS-AOCH/60-XX / CP-AOCH/60-XX** is installed into the conduit, the fiber pulling strength and the bending radius are the key conditions to safe installation of the cable.

Do not disassemble or modify the products, especially the HDMI connector head parts.

To install the **CLS-AOCH/60-XX / CP-AOCH/60-XX**:

1. Unpack the cable from the package with care and remove the cable tie.
2. Place the micro-HDMI (Type D) connector inside the Pulling Tool and close its cover.



Note that you can pull the cable either from the display side or the source side (as shown in [Figure 3](#)), but you have to make sure that the cable polarity is correct (tagged Source if pulling the source side or Display if pulling the display side).

3. Attach the pulling cable to the Pulling Tool.



I: Place the micro HDMI connector inside the Pulling Tool.



II: Close the Pulling Tool cover.



III: Insert the pulling cable through the Pulling Tool ring.

Figure 3: Attaching the Pulling Tool

4. Carefully install the cable (for example, in the wall or conduit or under the floor).

5. Connect the:
  - **SOURCE** HDMI adaptor to the micro-HDMI connector **SOURCE** end of the cable.
  - **DISPLAY** HDMI adaptor to the micro-HDMI connector **DISPLAY** end of the cable.
6. Secure the connection on each side using the supplied locking screws.
7. Plug the SOURCE connector head of the cable into the source devices.  
**Do not plug the SOURCE connector to the display device.**
8. Plug the DISPLAY connector head of the cable into the display devices.  
**Do not plug the DISPLAY connector to the source device.**
9. Switch on the power of the source and display devices.
10. If required, connect an external power source via the micro-USB connector on the DISPLAY side.

## Troubleshooting

If you have encountered a problem, check that:

- The source and display devices are both switched on
- Both HDMI connector heads are fully plugged into the devices
- The cable or its jacket is not physically damaged
- The cable is not bent or kinked



Note that it is important to connect the cable correctly as marked on the end of each connector: SOURCE to the source side and DISPLAY to the acceptor side.

## Specifications

Audio and Power			
Video Resolution:	Up to 4K@60Hz (4:4:4)		
Embedded Audio Support:	PCM 8ch, Dolby Digital True HD, DTS-HD Master Audio		
HDMI Support:	HDCP 2.2, HDR, EDID, CEC		
Cable Assembly			
HDMI Connector:	Male HDMI Type A Connector		
Dimensions:	Micro HDMI port: 1.23cm x 4.9cm x 0.8cm (0.484" x 1.93" x 0.31") W, D, H Type A HDMI port: 3.1cm x 4cm x 0.95cm (1.22" x 1.57" x 0.37") W, D, H Assembly: 2.22cm x 7.1cm x 0.99cm (0.874" x 2.79" x 0.39") W, D, H		
Cable Structure:	Hybrid Optical Fiber Cable		
Cable Jacket Material:	UL Plenum (CMP-OF) and LSHF (Low Smoke Halogen Free)		
Cable Jacket Color:	UL Plenum: black; LSHF: black		
Cable Diameter:	3.4mm	Cable Bending Radius:	6mm
Cable Pulling Strength:	500N (50kg, 110lbs)	Micro USB Cable	External 5V power supply cable
Power			
Power Supply HDMI:	Power is supplied from an external USB connector on the display side		
Power Consumption:	0.75W max.		
General			
Operating Temperature:	0° to +50°C (32° to 122°F)	Storage Temperature:	-30° to +70°C (-22° to 158°F)
Operating Humidity:	5% to 85%, RHL non-condensing		
Available Length:	33ft (10m), 50ft (15m), 66ft (20m), 98ft (30m), 131ft (40m), 164ft (50m), 197ft (60m), 230ft (70m), 262ft (80m), 295ft (90m) and 328ft (100m)		