# DATA SHEET

## *Stretch* HDMI<sup>TM</sup>
## HDMI2.0 – Active Optical Cable
# LHM2-P

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OPTICIS
www.opticis.com

## ■ Description

OPTICIS active optical HDMI 2.0 cable, LHM2-P is designed for critical display applications that demand flawless HDMI signal integrity and it provides transparent signal transmission over plenum graded, LSZH graded, or TPU hybrid cable.

It enables to deliver 4K DCI(4096x2160) at 60Hz signal up to 100m(328feet). It avoids any scaling or data compression for lessening a burden of data transmission.

LHM2-P offers perfect flexibility during installation by separating HDMI connector part and Active Optical Cable part. It gives slim, light, easy installation like a general copper HDMI cable. LHM2-P is powered by external 5V micro USB power supply cable

It passes CEC, EDID & HDCP (High Definition Contents Protection) for better installation flexibility and compatibility.

## ■ Features

- Extends 4K DCI(4096x2160) at 60Hz, (RGB & YCbCr : 4:4:4)
- Transmits HDMI data up to 100m(328feet) over hybrid cable
- Cable options available:
    - LHM2-PPxx : Plenum Jacket
    - LHM2-PLxx: LSZH Jacket
    - LHM2-PTxx:TPU Jacket
  *Note: "xx" stands for the length of the cable.
   Ex: 10m of LHM2-PP → LHM2-PP10 ("A0" for 100m)
- Offers perfect flexibility during installation by separating HDMI connector from cable
- Offers 500N pulling and crush load strength with bending radius of 6mm
- Supports 3D contents transmission
- Supports HDMI2.0 standards feature
- Complies with CEC, EDID, and HDCP 2.2
- Supports HDR at 10 bit or 12 bit speeds respectively within its maximum bandwidth, 18Gbps

## ■ Applications

- Home AV system
- Digital Signage
- Control Room
- Conference Room
- Rental staging
- Flight Simulation

## ■ Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these of any other conditions in excess of those given in the operational sections of the datasheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

| Parameter | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Storage Temperature[1] | $T_{ST}$ | -30 | | 70 | °C |
| Supply Volt [1] | $V_{CC}$ | -0.5 | | 6 | V |
| Operating Humidity[2] | RH | 5 | | 85 | % |
| Electrostatic Discharge* | ESD | -8 | | +8 | KV |

\* test environment standard: "Air: ≥±8KV, Contact : ≥±4KV"

## ■ Recommended Operating Conditions

| Parameter | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Bitrate/Channel | B | - | - | 6 | Gbps |
| Operation Temperature Range | To | 0 | - | 50 | °C |
| Supply Voltage | $V_{CC}$ | 4.8 | 5 | 5.3 | V |
| Operating Current | $I_{CC}$ | | 52 | | mA |
| Power Consumption* | Po | | 0.26 | | W |
| Differential Impedance | R | | 100 | | ohm |

\* The result may vary depending on the device that it is connected to. Above data was collected from a connection with a 4K DVD Player.

## ■ Physical Characteristics

| Parameter | Description | |
|---|---|---|
| Cable Type | Hybrid Cable MMF(OM2) + 6C Electrical Wires | |
| Cable Jacket | LSZH/Plenum | TPU |
| Cable Dimensions | 3.4 mm (±0.2) | 4.5 mm (±0.3) |
| Pull Strength | 10 kg | |
| Minimum Bend Radius | 6 mm | 9mm |

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[1] Stresses listed may be applied without causing damage. Functionality at or above the values listed is not implied. Exposure to these values for extended periods may affect reliability.
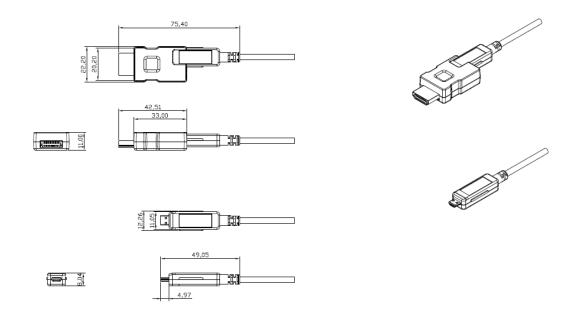
[2] Non-condensing environment.

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■ **HDMI PIN Description**

| Pin Number | Symbol | Functional Description |
|:---:|:---:|:---:|
| 1 | D2+ | TMDS data 2 positive |
| 2 | GND | TMDS data 2 shield |
| 3 | D2- | TMDS data 2 negative |
| 4 | D1+ | TMDS data 1 positive |
| 5 | GND | TMDS data 1 shield |
| 6 | D1- | TMDS data 1 negative |
| 7 | D0+ | TMDS data 0 positive |
| 8 | GND | TMDS data 0 shield |
| 9 | D0- | TMDS data 0 negative |
| 10 | CLK+ | TMDS clock positive |
| 11 | GND | TMDS clock shield |
| 12 | CLK- | TMDS clock negative |
| 13 | CEC | Device control |
| 14 | N.C | - |
| 15 | SCL | DDC clock |
| 16 | SDA | DDC data |
| 17 | GND | DDD/CEC shield |
| 18 | 5V | DC +5V |
| 19 | HPD | Monitor detector signal |

## ■ Dimensions



Dimensions (L*W*H): 75.4 x 22.2 x 11 mm

## ■ Connection Diagram