



HDMI  
ACTIVE OPTICAL CABLE  
With Active Optical Filter™ Technology



# QED HDMI Guarantee

QED has won more What Hi-fi? Awards than any other single audio brand and one reason for this is that our cables do the job for which they were intended better than any other manufacturer and that's guaranteed. When it comes to the demands of high quality HDMI transmission we take the appropriate steps to ensure that the technology we use delivers the same high standard of signal transfer that you expect at **whatever length you need**. All QED cables support the latest HDMI standard and this is backed up by Authorized Test Centre reports which even allow some of our shorter length cables to bear the **Premium HDMI** logo.

## Longer cables require clever solutions

Our passive cables up to 5 m are more than able to fulfill our promise of meeting the top HDMI standard, however longer length cables require one or other of our proprietary technologies. For instance our **Active Filter Technology™** sees each cable assembly individually monitored at the construction stage by built-in active electronics which self-adjusts its onboard emphasis filter to the specific cable assembly into which it is permanently installed. This technology gives a perfect performance up to 15 m, but what about instances where you need to go further?

## Beyond 15 m

Our shorter length HDMI cables use a carefully designed impedance controlled data lane which is constructed from four, fully shielded, twisted pairs made from large gauge, 99.999% oxygen free copper conductors. These work really well up to a maximum of 15 m but eventually the inherent losses due to impedance mismatch and timing differences between pairs and within pairs (known as inter-pair and intra-pair skew) cause the HDMI signal to break down to the point where it can no longer be reliably decoded at the far end.

This is where new **QED Active Optical Filter™ Technology** comes in. Instead of using copper data lanes twelve of the nineteen cores are replaced by just four optical fibers. These have the advantage of being unaffected by loss (due to impedance mismatch) or timing variances (due to cross-talk). Although this medium does have its limitations, much longer HDMI cable runs can be usefully produced before these begin to have an adverse effect. In the oscilloscope trace (Figure 1) it can be seen that even at the speeds demanded by the HDMI 2.1 standard the 100 m cable still has a perfectly readable data stream, as evidenced by the open and clearly defined high and low levels described by the "eye diagram".

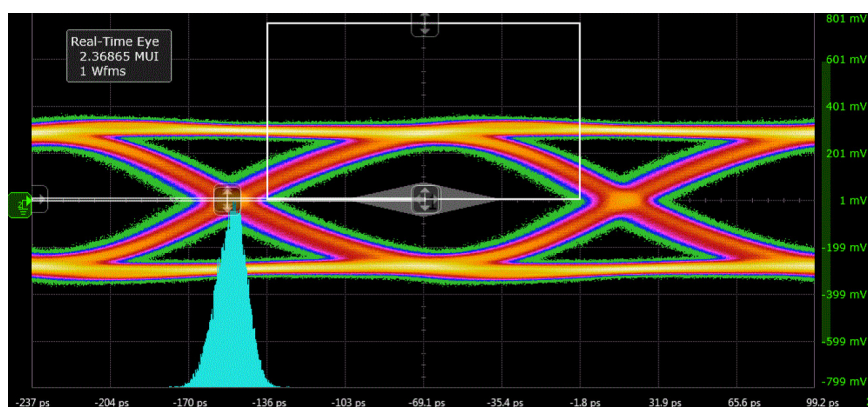
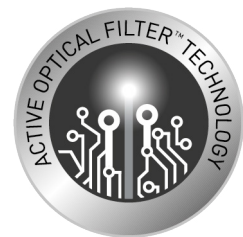
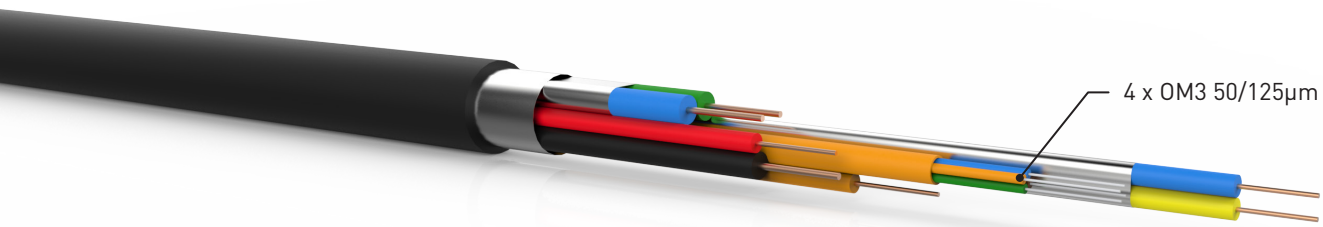


Figure 1. Open eye diagram for 100 m QED Active Optical Cable at 48 Gb/s

## Up to 100 m

Due to the advantages of optical technology, QED can now offer fully certificated HDMI cables which perform at the 48 Gb/s data rate demanded by HDMI 2.1 in lengths up to **100 m**. The cables are all fully tested at an Authorized Test Centre and have been certified compliant with HDCP 2.2 and with full CEC, HDR, HEC and eARC compatibility.



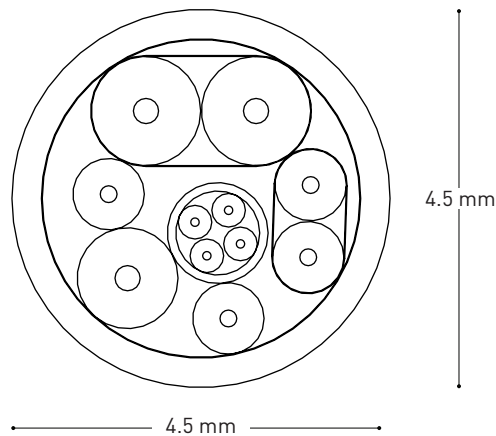
## Low Smoke Zero Halogen

QED recognize that because of the long lengths in question, the main users of the new cable will be professional installers or those wishing to conceal the cable within the structure of a building.

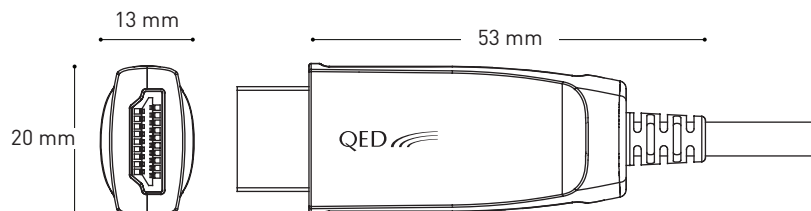
For this reason we have ensured that the cables have all been tested to EN 50575:2014 by a recognized product certification body and have been given a Reaction to Fire **Class Cca** designation. This means that the Low Smoke Zero Halogen jacket and the internal components are all fully compliant with the latest regulations covering cables for general applications in construction works subject to reaction to fire requirements which are now in force throughout the UK and EU area.



## Specification



- Compliance with 8K@ 60 Hz 4:4:4 resolutions
- Data transfer rates up to 48 Gb/s
- Compatible with HDMI 2.1 standard: EDID,CEC,HDCP (2.2), HDR (High Dynamic Range), HEC, eARC etc.
- Delivers dual video streams to compatible displays
- Supports up to eight PCM channels, DTS-HD Master and Dolby Atmos, Dolby Digital True HD surround sound audio
- Delivers multi-stream audio to up to four users
- Backward compatible with HDMI 2.0/HDMI 1.4
- Zinc-alloy HDMI connectors for enhanced durability and performance
- OM3 fiber technology greatly reduces EMI/RFI emissions
- Triple-shielding further protects against interference for optimal signal quality
- Hybrid construction utilizes both fiber and copper to supply power
- Extended temperature range from -40° to 70°C for installations in harsh environments or manufacturing floors
- LSZH Jackets comply with Reaction to Fire Class Cca –s1, d0
- Available in standard lengths 20, 30, 40 & 50 meters and custom lengths up to 100 m
- Has Source & Display clearly printed on the connector for easy identification
- Has high pulling strength and compression load
- Plug and Play, No external power required





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