



Wireworld 48 GHz HDMI Cables

Silver Sphere 48 & Stellar 48 Fiber Optic

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I don't very often review HDMI cables because I've never experienced an HDMI cable that makes the slightest difference in video image quality—better or worse was non-existent, they have all been the same. HDMI cables, boiled down to their most basic function, transmit NUMBERS representing pixel values. Other things are going-on of course: digital audio signals are also transmitted on HDMI cables; power is now available to signal equalizer chips or other signal boosting; audio can now be sent “backwards” on an HDMI cable, back to an AVR or processor. For an HDMI cable to change the image, the cable would have to change a pixel number in order to change a pixel. And that just does not happen. A pixel value of 534 cannot be made “better” by a cable... it can only be 534 or some other wrong number. Wrong numbers don't happen in properly working cables with properly working HDMI transmitter and receiver circuits.

Some years ago, I had several HDMI cables here for review from a fairly well-known east-coast cable manufacturer that owns the wire drawing and insulation equipment used to create their cables. This cable company sold low-ish priced cables as well as extremely expensive cables. But their focus of reviews and product announcements has always been the expensive cables. When the manufacturer rep called about the progress of the review, I explained that the cables made no difference in video image quality, subjectively or objectively. Nor has any other HDMI cable I ever used (hundreds of them probably) improved image quality in any detectable way. In less than 48 hours, a company rep was at my door “repossessing” the HDMI cables from the charlatan who dared say their \$800+ HDMI cable did not make any difference at all in image quality compared to a \$35 generic Asian-sourced HDMI cable.

Enter David Salz, president and cable designer of Wireworld Cable Technology. Their newest HDMI cables say right on the packaging that the cables improve image quality. My inclination was to decline to review them, but Editor Gary encouraged me to at least have a look, then decide what to do about a review. So the cables arrived, and I promptly had two and a half months of medical issues including a hospital stay. When I finally got back to the cables, I was not enthusiastic about the prospects for finding an HDMI cable that did something positive for image quality. My first “test” was to connect one of the Wireworld 48 HDMI cables, the Silver Sphere™ 48. The Silver Sphere 48 cable has 20 conductors of silver plated oxygen-free copper (according to Wireworld's graphic drawings). Some of those may be ground wires that may or may not be connected on both ends. Wireworld also credits their new COMPOSILEX 3 insulation used in the Silver Sphere 48 cables with contributing to the performance of their HDMI cables. I had another 48 GHz cable connected to HDMI 1 of an 85-inch, 3,000 nit micro-LED TV. I connected the Silver Sphere 48 cable to HDMI 2 on the TV, then set about confirming that HDMI 1 and HDMI 2 had every setting in the TV's menu system the same so there could be no differences in images due to settings being different. This allowed me to switch cables easily by switching between HDMI 1 and HDMI 2.

Surprise! The Silver Sphere 48 cable did make images look better. That set me off to install the Stellar™ 48 Fiber-Optic cables so I could determine if these cables produced the same improvement I saw with the Silver Sphere 48 cable. The Stellar 48 cables did, indeed, produce images with the same appearance as the Silver Sphere 48 cable.

What does the “48” mean in the name of these cables? It

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means the cables support a bandwidth up to 48 GHz. That provides full support for 8K video at any supported refresh rate up to 120 Hz. There are no streaming or disc sources for 8K video content yet, except for the odd YouTube or other online-videos. There are some 8K video displays being sold, but without a content-library of 8K video, the usefulness of those displays' higher resolution mode is difficult to exercise. But if you are buying HDMI cables now, it makes sense to buy 48 GHz cables for everything. That's what I thought when a mail order cable vendor started carrying 8K/48 GHz cables. I gave 48 GHz cables a year to sort problems out and got several different sets of 48 GHz cables to see what would happen when replacing 18 GHz HDMI cables with the latest 48 GHz cables. What I found was random 48 GHz cables would fail to provide video, in spite of the audio part of the content playing fine. A flurry of swapping in other cables was required to find the cable that was not playing nice with some device in the system. Using some different 48 GHz cable would solve the "no video" problem. The Wireworld 48 HDMI cables worked perfectly with every device. Switching resolutions, modes, refresh rates, and inputs was all done perfectly with the Wireworld HDMI cables in the system. It was very satisfying to have the Wireworld 48 HDMI cables work with components that choked with random other HDMI cables I've used over the years. Even the oldest devices I have, all the way back to HDMI version 1.4, worked reliably with these Wireworld 48 GHz cables.

There is also the issue of audio quality when dealing with HDMI cables. HDMI cables carry digital audio as well as digital video. It used to be that HDMI cables did affect sound quality noticeably. But there were some changes to how digital audio was transmitted over HDMI cables sometime around 2012. Since that time, I've not noticed any differences in sound quality based on the HDMI cable being used with movies. I believe changes were made to digital audio signal transmission over HDMI connections that eliminated high levels of jitter (time-based distortion) in the digital audio signal. I did some brief audio evaluations comparing other HDMI cables and didn't encounter audio differences significant enough to pursue any further evaluations using movies as the source material. The cables didn't all produce identical sound with movies, but they were very close. There was no better or worse sounding HDMI cable, they all sounded equally good, though not identical.

Movies, though, are not the best source material to use for sound quality evaluations. When your brain is dealing with both video images and sound from 6 to 13 loudspeakers, picking out subtle differences in sound quality ranges from difficult to impossible. Music listening in a dark room with just two active channels lets more of your brain-power to focus on sound quality where you can hear differences that had been missed with the complexity of video and multi-channel sound distracting you from being able to identify subtle sonic differences. With high-res music files as the source, cable differences become more apparent, especially with eyes closed and no other distractions. In this evaluation, it was easier to hear that the Silver Sphere 48 cable was producing "cleaner" sound than other cables. These were not differences in pitch, decay, timing, or texture. Instead the changes reminded me of what a really good power conditioner does for sound quality. Even though you may not consciously hear the noise floor in your system, when the noise floor gets "cleaner," the result is a little more purity and clarity in each instrument or voice. And properties of recordings can become more "visible" inside your head. Some

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MSRP of size reviewed - \$500
Warranty – Lifetime
Designed in the United States
Made in: China

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recordings, for example, have excellent reproduction of the physical performance space. You can tell if the recording space is large or small and how far forward or back each instrument is located from the "front" of the performance venue. Some recordings can even place instruments outboard the left or right loudspeakers. When the audio signal noise is reduced, the subtle masking of "details-of-details" becomes more inaudible, allowing the lovely subtle details in the recording to become more audible. It's not that these "details-of-details" get louder, it's that they are simply "clearer"—emanating from more silence than you've heard before. That extra bit of silence isn't audible, by itself. You have to have musical details and good recording quality to pick-up on these improvements in clarity. Once you have the recording and equipment and the setup is finally getting close to ideal, you try a cable like the Silver Sphere 48 and hear a more natural string-sound from pianos, guitars, and violins. Not that the sound was unnatural before, but the extra clarity gives the sound more of a "you are there" feeling. Noises that you may have noticed but were not specifically identifiable turn out to be the sound of turning the pages of the score, or a foot tap that was just a little too loud, an intake of breath, or the valves on a trumpet or sax opening or closing. This clarity boost also lets you hear the sound of the strings, the body, and the bow all separately if you wish to "zoom in" on the sound of a well-recorded violin. But you can also take in the fully integrated sound comprised of the three individual elements by not focusing so specifically on the violin. The Silver Sphere 48 cable produced all those effects with various recordings. The high res remaster of the Cat Stevens album *Tea for the Tillerman* brought some of that clarity to Cat Stevens' guitar and voice. Piano tone, detail, and dynamics were quite impressively reproduced, bringing a fresh sound to this 50-year old favorite. The impressively-present bass in Taylor Swift's song "Welcome to New York" was tighter and less fuzzy compared to the other cables. Her vocals aren't buried during dense and energetic mixes, even when the music gets quite loud. The clarity and freedom from background noise keep all the elements of the mixes audible from quieter moments to the loudest and most complex moments. The other cables used for comparisons, don't sound obviously bad. It's not until you hear the same song through both cables, eyes closed, two loudspeakers; it's not all that difficult to hear the difference. Though no rational person would call the difference huge. Have

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you ever had the experience of being in a room enjoying the peace and quiet only to have a refrigerator or a fan or some other equipment that makes very little noise shut off? You may not have even noticed it until it stopped running until it turned-off. That's the sort of experience I had with the Wireworld 48 cables. Nothing was obviously in need of improvement with other cables in the system. But the Silver Sphere 48, and to a similar degree, the Steller 48, revealed that while the previous sound was OK, it could be better.

For the Steller 48 HDMI fiber optic cables, Wireworld selected lasers made by II-VI (ii-vi). Those are combined with Silicon-Line German HDMI driver chips. OM3 optical fibers are optimized for transmission of laser light. Wireworld calls their technology responsible for making images look better "Vividtech NR System." Both the Steller fiber optic and Silver Sphere cables are designed in the United States by David Salz, and are manufactured in China. Both products support every HDMI 2.1 feature, plus HDCP 2.3. All resolutions up to 8K at 120 Hz refresh rate are supported. This includes 64 bit deep color, all types of HDR, Ethernet, ARC and eARC, and CMF/FT6 plenum rating. The lasers and chips all fit inside the compact housing on the ends of the cables. The cable ends are compact enough to not interfere with other HDMI cables that have large-ish end housings.

I made mention of the fact that both the Silver Sphere 48 and Steller 48 fiber optic cables both made images look better. But I haven't talked about what changes were visible. What I see is a reduction of noise in images. Edges are slightly cleaner and sharper and some areas appear less grainy even though you may not have noticed any grain on previous views. It's the sort of improvement that "you don't know what you've got till it's gone." In other words, you won't see the edges or grain if you go looking for them, but the Wireworld cables will show you that things like subtitles and any sort of edge in video content can be "cleaner" than you've seen in the past. Will the average non-trained person see this difference? Hmmm. That's difficult to say. I suspect there may be a few enthusiasts who have looked at images seriously enough and long enough that they probably could see the improvement. But most people who are "average" home theatre owners/users who had their system installed for them, who aren't constantly looking at every detail of every images... they probably won't be able to detect the difference. The magnitude of improvement is definitely in the "small" zone. But it's a miracle to me to see an HDMI cable do anything that improves video image quality. I was trained by image scientists to detect faults in both still and moving images. I am constantly seeing things in video that when I pause to show them to others, the others are constantly amazed that I could see that. A lot of people without my training and background are likely not going to see anything obviously improved by the Wireworld 48 cables, but many will. Even the edges on subtitle characters are ever so slightly more-perfect with the Wireworld 48 cables.

The Wireworld 48 HDMI cables have the usual features you want in good cables. There is reasonably good flexibility. But always use caution handling optical cables, as kinks can damage fiber-optic cables. The cable-ends are gold plated, including the contacts inside the connectors. The Wireworld 48 HDMI cables are directional with their cable ends identified with "Source" and "Display" to help you orient the cable during installation. The direc-

tional nature of the cables is especially critical with the Steller 48 fiber optic cables since the lasers must be on the transmit end of the cable.

It used to be that fiber-optic cables were the gold-standard for HDMI cables when runs longer than 20 feet were needed. But using them required a transmitter module on one end that had to be connected to a USB port for power. The other end of the fiber optic cable needed a receiver device that also required a USB port for power. Wireworld's Steller 48 fiber optic cables get all the power they need directly from the HDMI port. There are no extra USB power supplies or transmit/receive boxes needed. Just connect the Steller 48 fiber optic cables like any other HDMI cable—keeping the "Source" and "Destination" labels properly oriented, of course.

For the Silver Sphere 48, the available lengths are: 0.6 meters (20 inches); 1.0 meter (40 inches); 2.0 meters (6.5 feet); and 3.0 meters (10 feet). Retail prices are \$250 to \$500. The 3.0 meter cable used for this review sells for \$500. The Steller 48 fiber optic cable lengths are as follows: 1 m, 2 m, 3 m, 5 m, 10 m, 15 m, 20 m, and 30 m (100 feet). Prices range from \$330 to \$750. The 5 meter cable and 15 meter cables used for the review sell for \$500 and \$600 respectively. You can purchase Wireworld cables from Wireworld's Web site or from Wireworld Cable dealers. Wireworld cables have a lifetime warranty.

Conclusion

It was quite a surprise to see an HDMI cable that had an effect on video images after so many years of not seeing differences in images due to HDMI cable swaps. The difference was very small, but visible, improvement in the precision of the images. The edges between light and dark, and edges between two colors of similar or different luminances are where it is easiest to see the slightly "cleaner" edges. There is no change to color or to apparent resolution, but those slightly crisper edges make images look nice and sharp without anything artificial or over-emphasized. The fact that the Silver Sphere 48 and Steller 48 fiber optic cables worked with every device I tried them with from sound bars to very old Blu-ray Disc players and even an old 720p flat screen TV was much appreciated after my experiences with other 48 GHz HDMI cables that have been whimsical about which devices they will or won't work with. Highly recommended for systems where top performance is the DIY or custom install goal. **WSR**