

# DisplayPort 1.4 Active Optical Cable (AOC)

## DP 1.4 to DP 1.4 AOC

Model: VDC-DF14-XXXM



### PRODUCT OVERVIEW

The **DisplayPort 1.4 Active Optical Cable** (DP 1.4 AOC) is a cutting-edge audio/video cable designed for high-definition signal transmission using optical fiber. This technology allows for extended lengths of over 100 meters while maintaining superior signal quality and complete immunity to electromagnetic interference (EMI) and radio frequency interference (RFI). The cable supports an impressive 8.1 Gbps bandwidth per channel, resulting in a total bandwidth of up to 32.4 Gbps across four lanes. This enables the delivery of 8K resolution with exceptional clarity and performance, fully compliant with the DP1.4 standard. Such high bandwidth ensures smooth and reliable transmission for even the most demanding applications, making it a mature and competitive solution in the high-speed data transmission market. Its optical fiber design not only enhances signal stability but also ensures that there is no degradation in signal quality over long distances. The DP 1.4 AOC features plug-and-play functionality with no need for external power. This versatile optical fiber cable can be used with computers featuring USB Type-C interfaces, outdoor displays, LED signboards in streets and stadiums, and security systems, providing reliable audio and video signal transmission.

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## KEY FEATURES

- **8K Support:** Capable of supporting resolutions up to 8K@60Hz. Fully compatible with HBR3, HDCP 1.4 and HDCP 2.2 standards, ensuring excellent compatibility with various devices.
- **High Bandwidth:** Adheres to the DP 1.4 standard, providing a bandwidth of up to 8.1Gbps per channel, and total 32.4Gbps bandwidth.
- **Extended Length:** Supports length up to a maximum of 100 meters, with customizable length option available.
- **Hybrid Construction:** Fiber and copper hybrid construct makes the cable slimmer and lighter.
- **Flexible Design:** Features a 4.8mm outer diameter, offering great flexibility.
- **Low Interference:** Designed with a low RFI/EMI profile making it suitable for sensitive applications.
- **Easy Installation:** Plug and play functionality for hassle-free setup.

## APPLICATIONS

- **Professional AV Installations:** Ideal for conference rooms, auditoriums, and broadcast studios requiring high-quality long-distance signal transmission.
- **Digital Signage:** Suitable for retail displays, public information systems, and large-scale advertising boards.
- **Home Theatre Systems:** Enhances home entertainment setups with superior video and audio quality.
- **Gaming Setups:** Provides gamers with the highest quality graphics and sound with minimal latency.
- **Medical Imaging:** Ensures high-definition image transmission in medical environments.
- **TV Broadcast Stations:** Delivers high-definition video signals, essential for live broadcasting and studio productions with minimal latency and interference.
- **Conference Room Video Systems:** Supports seamless video presentations and conferencing, ensuring clear and uninterrupted communication in meetings and corporate events.
- **Factory Automation Systems:** Supports high-resolution video and data transmission for monitoring and controlling automated production lines, ensuring efficiency and reliability in industrial environments.

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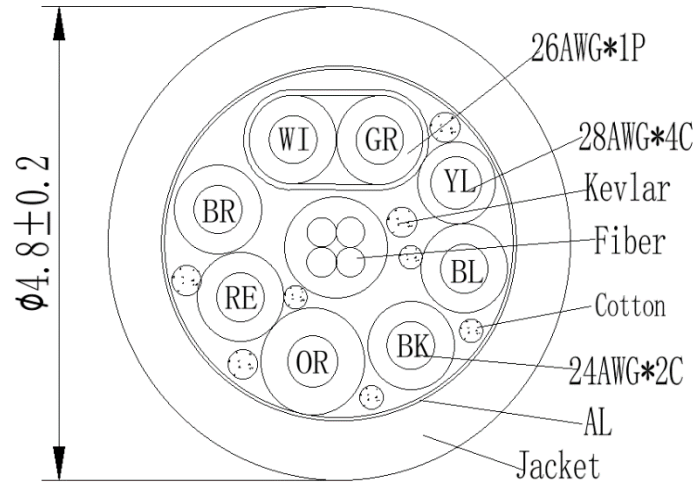
## PRODUCT SPECIFICATIONS

| Parameter                       | Descriptions   |
|---------------------------------|--|
| <b>SKU Code</b>                 | VDC-DF14-XXXM (XXX denotes length in meters)                                     |
| <b>Cable Lengths Available*</b> | 10m, 15m, 20m, 25m, 30m, 40m, 50m, 70m, 90m, 100m                                |
| <b>Performance</b>              |  |
| Standards Compliance            | DisplayPort 1.4 / HBR3, HDCP 1.4 and 2.2   |
| Maximum Pixel Clock Frequency   | 810MHz   |
| Maximum Video Bit Rate          | Supports up to 8.1Gbps per lane, 32.4Gbps total                                  |
| Maximum Color Depth             | 48 bits  |
| Maximum Supported Resolutions   | 8K@60Hz  |
| <b>Connections</b>              |  |
| DisplayPort Input / Output      | 20-pin DisplayPort   |
| Power                           | No external power supply is required   |
| <b>AUX Channel Support</b>      |  |
| AUX Channel Communications      | Supports bi-directional communications for EDID, HDCP, Link Training, etc        |
| HDCP Support                    | HDCP 1.4 and HDCP 2.2  |
| <b>Optical</b>                  |  |
| Optical Technology              | 4x Discrete Optical Channels, 10GHz, 850nm                                       |
| Optical Transmitter             | TX Module: 4x 850nm Multi-mode VCSELs  |
| Optical Receiver                | RX Module: 4x GaAs PIN Photo Diodes  |
| <b>Cable</b>                    |  |
| Fiber Cable Type                | Hybrid cable: 4x fiber and 8x copper wire  |
| Cable Jacket                    | PVC, Black   |
| Maximum Cable Length            | 100 meters   |
| <b>Mechanical - Cable</b>       |  |
| Product Weight                  | Varies with length   |
| Maximum Tensile Load            | 300N   |
| Minimum Bend Radius             | 48mm   |
| Cable Outer Diameter (W x H)    | 4.8mm  |
| <b>Environmental</b>            |  |
| Operating Temperature           | 0°C to 50°C (32°F to 122°F)  |
| Storage Temperature             | -20°C to 85°C (-4°F to 185°F)  |
| Operating / Storage Humidity    | 5 to 85% RH, noncondensing   |
| <b>Power Requirements</b>       |  |
| Power Source                    | Powered from DisplayPort source device   |
| Power Consumption               | <0.5 watt each end   |
| <b>Approval</b>                 |  |
| Compliance                      | CE, FCC, RoHS, REACH   |
| Warranty                        | 2-Year Limited Warranty. Advance Replacement Warranty is available and optional. |

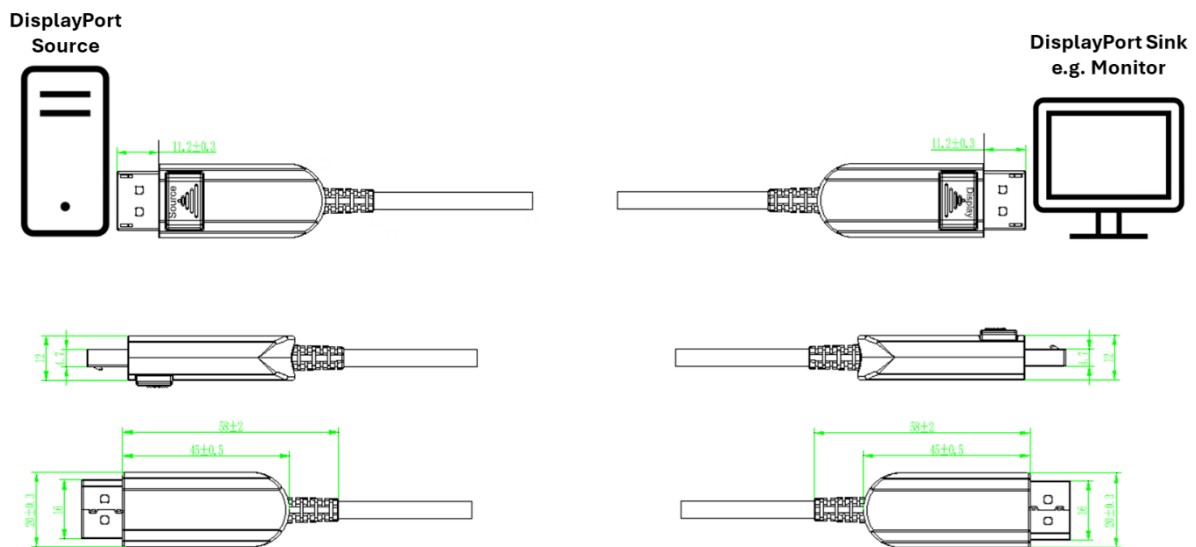
\* Ready stock is based on default 15m and 30m. Other lengths and jacket types, such as CMP, LSZH, may require build on demand and subject to a minimum order of quantity e.g. 2 to 5 pieces.

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## CABLE STRUCTURE



## CONNECTION DIAGRAM



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## Handling and Installation

Proper installation and handling of DisplayPort active optical cables are crucial to ensure optimal performance and longevity. When installing the cable, make sure to handle it with care, avoiding any sharp bends or kinks that could damage the delicate optical fibers inside. Securely connect one end of the cable to the DP source device, ensuring a snug fit to prevent any signal loss. Similarly, connect the other end to the display device, ensuring a secure connection. Avoid placing excessive strain on the connectors by providing adequate support and avoiding unnecessary tension. When handling the cable, avoid pulling or twisting it excessively, and always disconnect devices by gripping the connectors rather than pulling on the cable itself. Following these guidelines will help maintain signal integrity and ensure reliable transmission of high-definition content.

### Additional Notes:

- **Directional Use:** This cable can only be used in one direction. The connectors are marked with “Source” and “Display”. Each connector must be plugged into the correct port to avoid signal loss.
- **No Intermediate Adapters and Cables:** It is not recommended to use intermediate adapters or cables between the connections. This can attenuate signal transmission performance and may result in insufficient power being supplied to the DP connection, preventing the internal fiber optic module from functioning correctly.

## PACKAGE CONTENTS

- 1 × DisplayPort 1.4 Active Optical Cable

## WARRANTY

- 2-Year Limited Warranty
- Advance Replacement Warranty is available and optional

# DisplayPort 1.4 Active Optical Cable (AOC)

## ORDERING INFORMATION

| Part Number          | Descriptions                                    | Length* |
|----------------------|---|---------|
| <b>VDC-DF14-010M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 10m  | 10m     |
| <b>VDC-DF14-015M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 15m  | 15m     |
| <b>VDC-DF14-020M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 20m  | 20m     |
| <b>VDC-DF14-025M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 25m  | 25m     |
| <b>VDC-DF14-030M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 30m  | 30m     |
| <b>VDC-DF14-040M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 40m  | 40m     |
| <b>VDC-DF14-050M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 50m  | 50m     |
| <b>VDC-DF14-070M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 70m  | 70m     |
| <b>VDC-DF14-090M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 90m  | 90m     |
| <b>VDC-DF14-100M</b> | DP 1.4 to DP 1.4 AOC, 8K60, 32.4Gbps, PVC, 100m | 100m    |

\* Ready stock is based on default 15m and 30m. Other lengths and jacket types, such as CMP, LSZH, may require build on demand and subject to a minimum order of quantity e.g. 2 to 5 pieces.

## CONTACT INFORMATION

For more information, please visit our website or contact our customer service team:

- **Website:** [www.dsgio.com](http://www.dsgio.com)
- **Email:** [sales.apac@dsgio.com](mailto:sales.apac@dsgio.com)

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