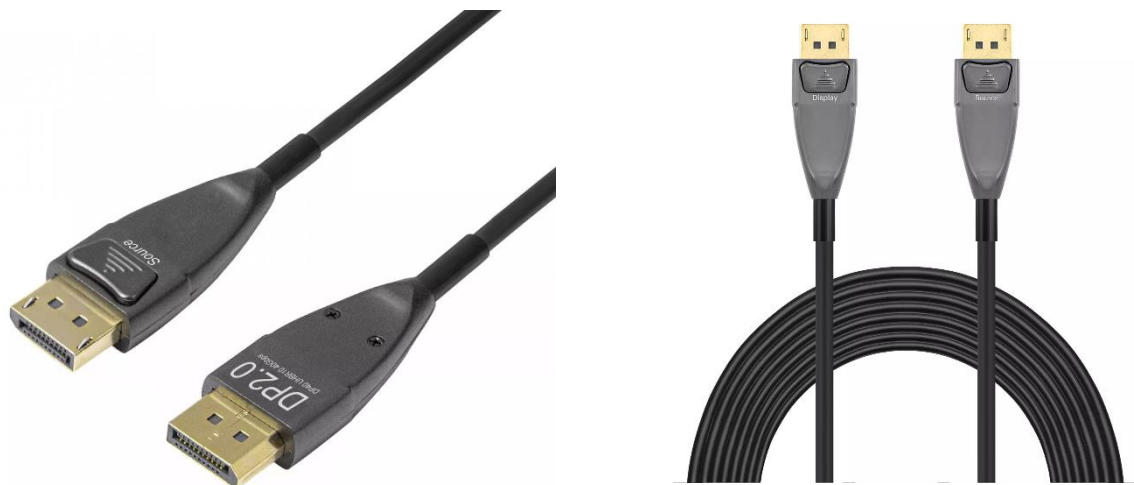


# DisplayPort 2.0 Active Optical Cable (AOC)

## DP 2.0 to DP 2.0 AOC

Model: VDC-DF20-XXXM



### PRODUCT OVERVIEW

**DisplayPort 2.0 Active Optical Cable (DP 2.0 AOC)** represents a cutting-edge Audio/Video solution utilizing optical fiber for ultra-high-definition signal transmission. This technology supports extended lengths exceeding 100 meters while ensuring superior signal stability and reduced electromagnetic interference (EMI). With a robust bandwidth of 10 Gbps per channel and a total of 40 Gbps across four lanes, DP 2.0 AOC accommodates demanding applications with ease. It supports resolutions up to 8K at 60Hz and 4K at 144Hz, meeting the DP2.0 UHBR10 standard. This makes it a mature and competitive choice for high-speed signal transmission applications. Ideal for computers with DP interfaces, outdoor displays, LED signboards in streets and stadiums, as well as gaming computers requiring high fluid motion, DP 2.0 AOC excels in delivering high-fidelity audio and video signals.

# DisplayPort 2.0 Active Optical Cable (AOC)

## KEY FEATURES

- **8K Support:** Capable of supporting resolutions up to 8K (7680 x 4320) at 60Hz, ensuring ultra-high-definition video output with exceptional clarity and detail. Supports High Bit Rate 10 (HBR10) for high-bandwidth requirements and HDCP 1.4 / 2.2 for content protection, ensuring compatibility with a wide range of devices.
- **High Bandwidth:** Adheres to the DP2.0 UHBR10 standard, offering a bandwidth of 10 Gbps per channel and a total of 40 Gbps, enabling high-speed data transmission.
- **Extended Length:** Supports lengths up to a maximum of 100 meters, with customizable length options available to suit specific installation needs.
- **Hybrid Fiber and Copper:** Utilizes a combination of optical fiber and copper, featuring an ultra-slim 4.8 mm diameter for enhanced flexibility, portability, and ease of installation.
- **Support for 4K 144Hz:** Capable of delivering 4K resolution at a refresh rate of 144Hz, providing smooth and fluid motion in high-resolution gaming and multimedia applications.
- **Ease of Use:** Features plug-and-play functionality with no firmware required and no need for external power supply, simplifying setup and use.
- **Reduced Interference:** Designed to minimize electromagnetic interference (EMI) and electromagnetic compatibility (EMC), making it ideal for use in sensitive applications.

## 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.

# DisplayPort 2.0 Active Optical Cable (AOC)

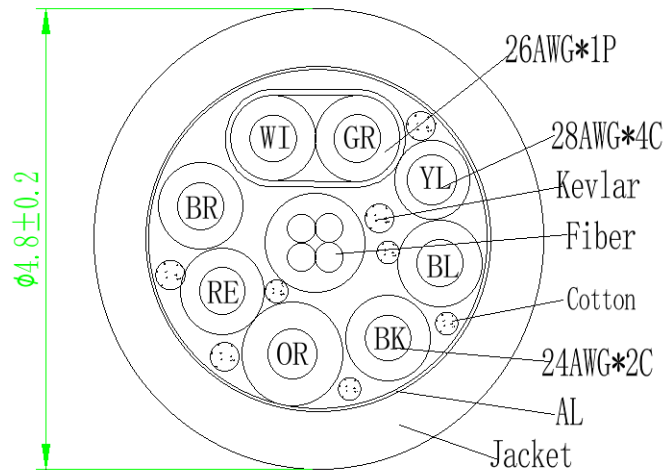
## PRODUCT SPECIFICATIONS

Parameter	Descriptions
<b>SKU Code</b>	VDC-DF20-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 2.0 / HBR3, HDCP 1.4 and 2.2
Maximum Pixel Clock Frequency	810MHz
Maximum Video Bit Rate	Supports up to 10Gbps per lane, 40Gbps 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.

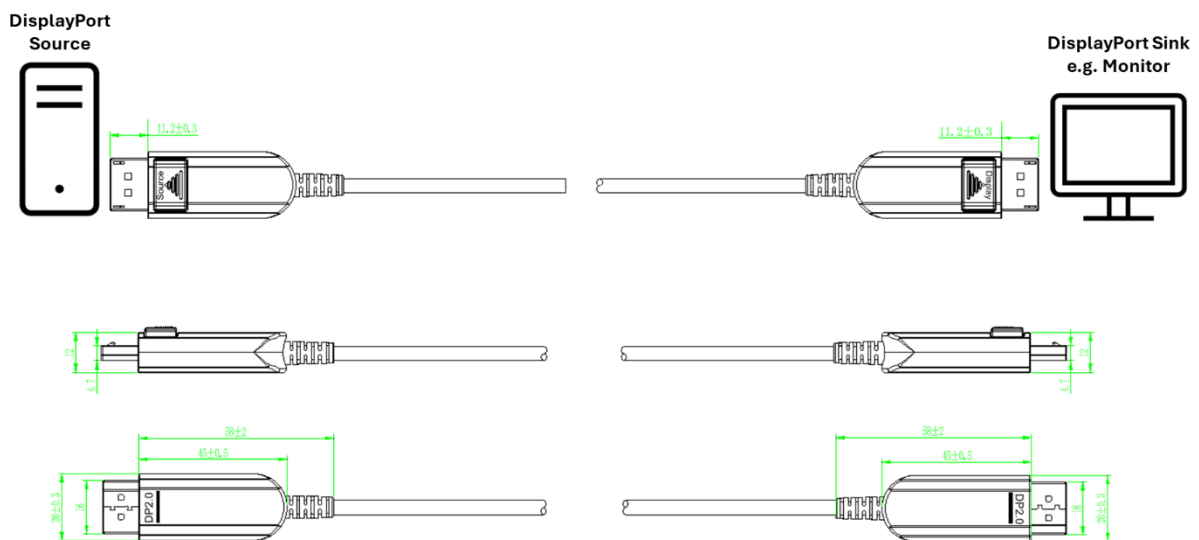
\* Ready stock is based on default 15m and 30m. Other lengths and jacket types, such as CMP, LSZH, may require build on demand and subject to a minimum order of quantity e.g. 2 to 5 pieces.

# DisplayPort 2.0 Active Optical Cable (AOC)

## CABLE STRUCTURE



## CONNECTION DIAGRAM



# DisplayPort 2.0 Active Optical Cable (AOC)

## 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 2.0 Active Optical Cable

## WARRANTY

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

# DisplayPort 2.0 Active Optical Cable (AOC)

## ORDERING INFORMATION

Part Number	Descriptions	Length*
<b>VDC-DF20-010M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 10m	10m
<b>VDC-DF20-015M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 15m	15m
<b>VDC-DF20-020M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 20m	20m
<b>VDC-DF20-025M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 25m	25m
<b>VDC-DF20-030M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 30m	30m
<b>VDC-DF20-040M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 40m	40m
<b>VDC-DF20-050M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 50m	50m
<b>VDC-DF20-070M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 70m	70m
<b>VDC-DF20-090M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, PVC, 90m	90m
<b>VDC-DF20-100M</b>	DP 2.0 to DP 2.0 AOC, 8K60Hz and 4K@144Hz, 40Gbps, 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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