

AOC optical cable length



Summary of Content

AOC cables are fixed-length optical cables that typically range from a few meters up to 100 meters, depending on design and application.

Fixed-Length Design

AOCs are pre-assembled cables with integrated transceivers at both ends, meaning the optical fiber and electronics form a single unit. Because of this, AOC cables cannot be cut or spliced in the field, and their length is fixed during manufacturing. This design ensures high signal integrity and reliable performance over longer distances compared to copper cables.

Typical Lengths

- Short runs: 1-10 meters, commonly used for top-of-rack (ToR) connections in data centers.
- Medium runs: 10-30 meters, suitable for rack-to-rack links or AI/HPC clusters where copper DACs are insufficient.
- Longer runs: 30-100 meters or more, depending on the cable's optical design and supported data rate. The exact maximum length depends on the data rate, connector type (SFP+, QSFP28, QSFP-DD, OSFP), and acceptable latency. Higher-speed AOCs (e.g., 100G, 200G, 400G) may have slightly shorter maximum lengths due to signal integrity requirements.

Practical Considerations

- Choose slightly longer than needed: Always select a cable length just above the required run to minimize slack and maintain neat cable management.

Article Content

Active Optical Cables AOC SFP QSFP 10G 25G 100G 400G Fiber

Pivotal Optics AOC cables deliver 10G–400G fiber performance up to 50m with low power draw and zero connector cleaning. OEM

The Ultimate Guide to AOC Cables: From Optical Transceivers to

Relative to Direct Attach Copper (DAC) connections, AOCs have more benefits. While DAC cables are cheaper for

What is an AOC Cable? Complete FAQ for Network Engineers

ABPTEL offers AOC cables from 25G SFP28 to 800G QSFP-DD in standard and custom lengths, with compatibility

Ultimate AOC Cable Guide: Active Optical Cables Explained

Pick a length just slightly above your needed run, minimizing extra slack. Too much excess can cause signal

Active Optical Cables (AOC)

QSFP+ AOC cables available in standard lengths up to 300.0m and custom lengths up to 4.0km: Longer reach than copper and multi

Understanding AOC Cables: The Ultimate Guide to Active Optical Cables ...

The performance of Active Optical Cables (AOCs) is affected by the length of the cable. This is because there are

Active Optical Cables (AOC) Explained: Advantages,

They combine the lightweight nature of fiber optics with the plug-and-play convenience of

Active Optical Cables (AOC) Explained: Advantages, Limitations, and ...

They combine the lightweight nature of fiber optics with the plug-and-play convenience of DAC. AOCs are widely

DAC vs AOC Cables: The Complete Data Center Guide (2025)

Discover the differences between DAC, AEC, and AOC cables for data centers. Compare length, speed, power, cost,

Active Optical Cables (AOC) | High-Speed Connectors | Data Rates

Designed to support data rates from 12G to 400G, AOCs integrate fiber-optic transceivers directly into the cable to

Understanding AOC Cables: The Ultimate Guide to

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Contact Us

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