

MINI-SAS HD ACTIVE OPTICAL CABLE (AOC) ASSEMBLY

OVERVIEW

FCI's Mini-SAS HD Active Optical Cable is the first active optical cable (AOC) in the market that is fully compliant to SAS 2.1 and SAS 3.0 industry standards as well as the SFF-8643 interface standard. Used primarily for external Enterprise storage applications – box-to-box, server to storage, server to switch – this cable is part of FCI's comprehensive mini-SAS HD product offerings that address all board connector and cabling applications – from 0.5 to 100 meters. This wide offering gives system architects full flexibility and a complete range of products to meet all high speed storage and high density IO system needs.

This 4 channel AOC features low power (800 milliwatts – typical) optical components, plug and play operation, and seamless backwards compatibility between the SAS 2.1 (6Gb/s) legacy equipment and SAS 3.0 (12Gb/s) next generation equipment. The managed interface includes connection discovery functionality, I2C bus communication, and the capability to customize labeling and EEPROM memory map extensions.

A small 3.0 mm diameter helix based 8 fiber cable construction allows the cable to be routed in any direction required without concern of signal loss. The cable exit at the back of the connector end can be either a straight cable exit or a 90 degree cable exit using a fiber optic boot. The cable end features a rugged die cast body and latching system to assure product reliability and retention.

PCI Express Gen3 (8Gb/s) applications are also possible with FCI's mini-SAS HD AOC when used in conjunction with PLX Technology's PCIe switches.



FEATURES & BENEFITS

- Optical connectivity enables much longer connections than copper – up to 100m
- Full SAS 3.0 compatibility ensures plug and play operation
- Supports four SAS channels per connection for efficient installations
- Low power consumption – 800 mWatts (typical)
- Twice as dense as Legacy Mini-SAS systems
- Backwards compatible one generation for interoperability with SAS 2.1 equipment. Hybrid connections are possible between SAS 3.0 and SAS 2.1 at 6 Gb/s speeds.
- Managed interface allows for connection discovery, cable management, and improved serviceability
- Fiber optic connectivity enables box-box, server-storage, server to switch configurations not possible with copper cabling
- Links up to 100m allow for more flexible installation and build-out options;
- Data is securely transferred with no potential for eavesdropping and storage can even be protected in a safe.
- The multi-fiber cable features a round jacket and loose fibers to allow for easy cable routing in any direction
- Narrow 3.0 mm cable jacket improves airflow versus bulky copper cables
- Boots can accommodate right-angle cable exit for additional flexibility in tight cabinets
- Part of FCI's complete Mini-SAS HD IO Catalog including board connectors, cages, copper and optical based cable assemblies
- OEM Label/EEPROM customizations available

TARGET MARKETS / APPLICATIONS

- Enterprise Storage
- SAS 3.0 (12 Gb/s) and SAS 2.1 (6 Gb/s)
- External Storage Connections

TECHNICAL INFORMATION

MATERIALS

- Fiber cable:
 - Helix based 8 fiber Multi-mode cable
 - OFNP (Optical Fiber Non-conductive Plenum)
 - LSZH (Low Smoke Zero Halogen)
- Die cast covers: Zinc with nickel plating
- Metal latch: Stainless steel

ELECTRICAL PERFORMANCE

- Power supply voltage: 3.3V
- Data rate per lane: 12 Gb/s
- Power consumption: 0.75 W (typ.) per end
- Transmitter type: VCSEL
- Receiver type: PIN-diode

ENVIRONMENTAL

- Conforms to RoHs requirements per EU directive 2002/95/EC
- Laser Class 1
- Halogen free (LSZH cable used)
- Operating temperature range: 0°C to 70°C

MECHANICAL PERFORMANCE

- SAS 2.1 and SAS 3.0 compliant (6G & 12G signal speeds)

SPECIFICATIONS

- SFF- 8449: Shielded Cables Management Interface for SAS
- SFF- 8636: Common Management Interface
- SFF-8644: Mini-Multilane Shielded Integrated High Density Connector
- GS-12-1122: Mini-SAS HD Active Optical Cable (AOC) product specification

CERTIFICATIONS & APPROVAL

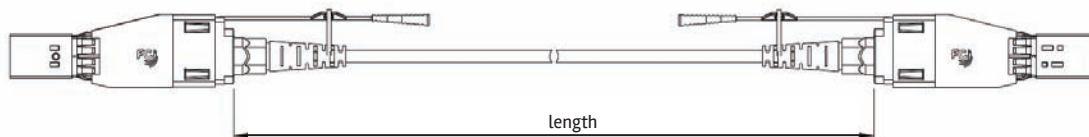
- UL: E251142-42
- TW: DE2-015589
- FDA: Accession number 0312716-411

PACKAGING

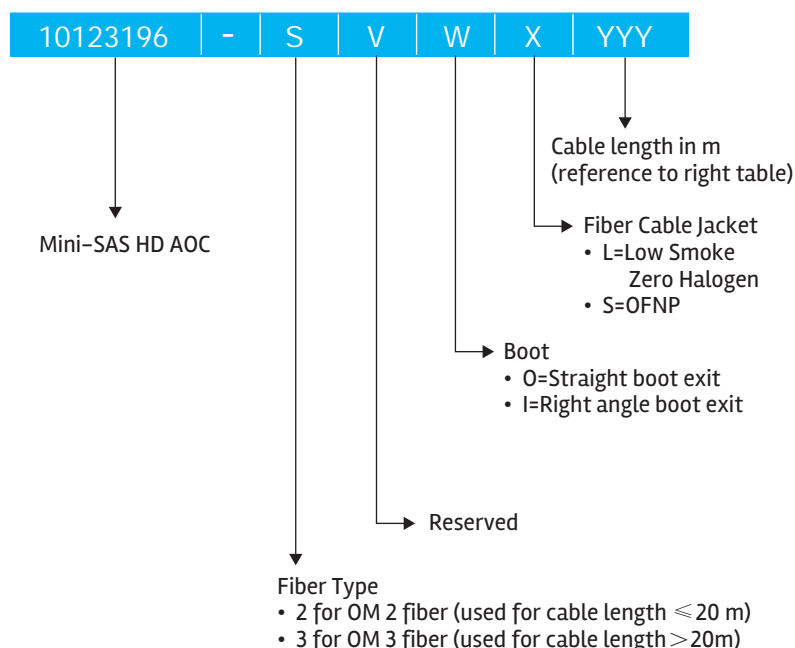
- High shield ESD bubbly wrap bag

OPTICAL MODE

- SAS2.1 and SAS 3.0 compliant in optical mode capable systems



PART NUMBERS CODING SCHEME



Suffix YYY	Cable length(m)	Category	Colour
001	1	OM2	Orange
003	3	OM2	Orange
005	5	OM2	Orange
010	10	OM2	Orange
015	15	OM2	Orange
020	20	OM2	Orange
030	30	OM3	Aqua
050	50	OM3	Aqua
100	100	OM3	Aqua

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