

# DATA SHEET

## USB 3.0 Active Optical Cable USB-FC30AA

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## Description

OPTICIS USB extension cable, USB-FC30AA, links the USB data up to 100m (328ft) without any repeater. USB-FC30AA provides the simplest way to link the USB device far from the host. Owing to the advanced VCSEL and PD, the USB protocol is capable of transmitting fully secured data with high cost efficiency by adapting hybrid fiber cable. Connected device must be self-powered to grant normal operation.

USB-FC30AA provides A plug to A plug. In addition, instead of using a pure fiber optical cable, to enhance its affordability, hybrid fiber cable with electrical wire is used, yet it meets Plenum grade. This offers convenient extension where there is no AC power supply adjacent at the end of the device. Furthermore, bi-directional transmission increases the convenience in such users do not need to distinguish TX/RX side of the connector. The cable is designed to be insensitive on the side.

A to B copper cable (15cm) and a locking housing are provided as an options for Type B device such as Camera, USB hub and etc.

Shipping Group:

- 1) One (1) USB-FC30AA AOC cable
- 2) User's Manual
- 3) USB A to USB B adapter copper cable (15cm)
- 4) Locking Housing

## Features

- Compatible with USB 3.0 standards
- Transmits USB 3.0 data to 100m (328 feet) over hybrid cable.
- TX / RX insensitive design (two-way port)
- SuperSpeed USB 5Gbps data rate
- Operated by 5V source power
- USB 3.0 A type plug-in to A type plug
- No software installation required: Plug and Play

## Applications

- Security / Monitoring over USB Camera
- Conference Room
- Control Room
- Offices / Factories
- Government
- Military

## Technical Specifications

| Parameter         | Specification |
|-------------------|---------------|
| Standard          | USB 3.0       |
| Power consumption | 2W            |
| Dimension (WDH)   | 40 x 16 x 9mm |

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these of any other conditions in excess of those given in the operational sections of the datasheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

| Parameter                              | Symbol          | Min | Typ | Max | Unit |
|--|-----------------|-----|-----|-----|------|
| Supply Volt <sup>1</sup>               | V <sub>CC</sub> | -   | 5   |     | V    |
| Storage Temperature <sup>1</sup>       | T <sub>st</sub> | -20 |     | +70 | °C   |
| Storage Relative Humidity <sup>2</sup> | RH              | 10  |     | 90  | %    |

Note:

1) Stresses listed may be applied without causing damage. Functionality at or above the values listed is not implied. Exposure to these values for extended periods may affect reliability.

2) Non-condensing environment.

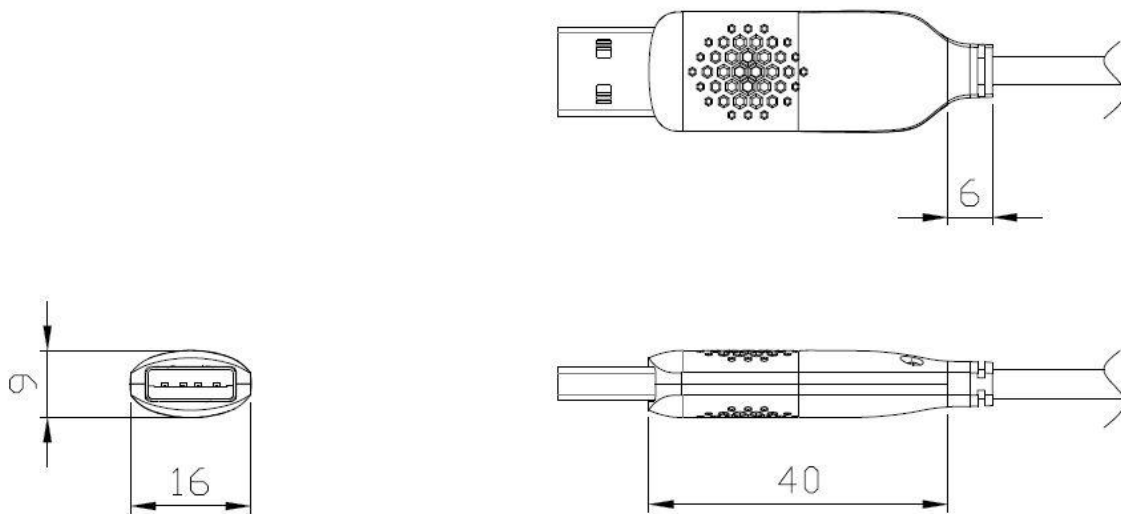
## Recommended Operating Conditions

| Parameter                   | Symbol          | Minimum | Typical | Maximum | Units |
|-----------------------------|-----------------|---------|---------|---------|-------|
| Bit rate                    | B               | -       | 5.0     | -       | Gbps  |
| Operation Temperature Range | T <sub>o</sub>  | 0       | -       | 50      | °C    |
| Supply Voltage              | V <sub>CC</sub> | 4.8     | 5       | 5.2     | V     |
| Operating Current           | I <sub>CC</sub> | -       | -       | 400     | mA    |
| Differential Impedance      | R               | -       | 90      | -       | Ohm   |

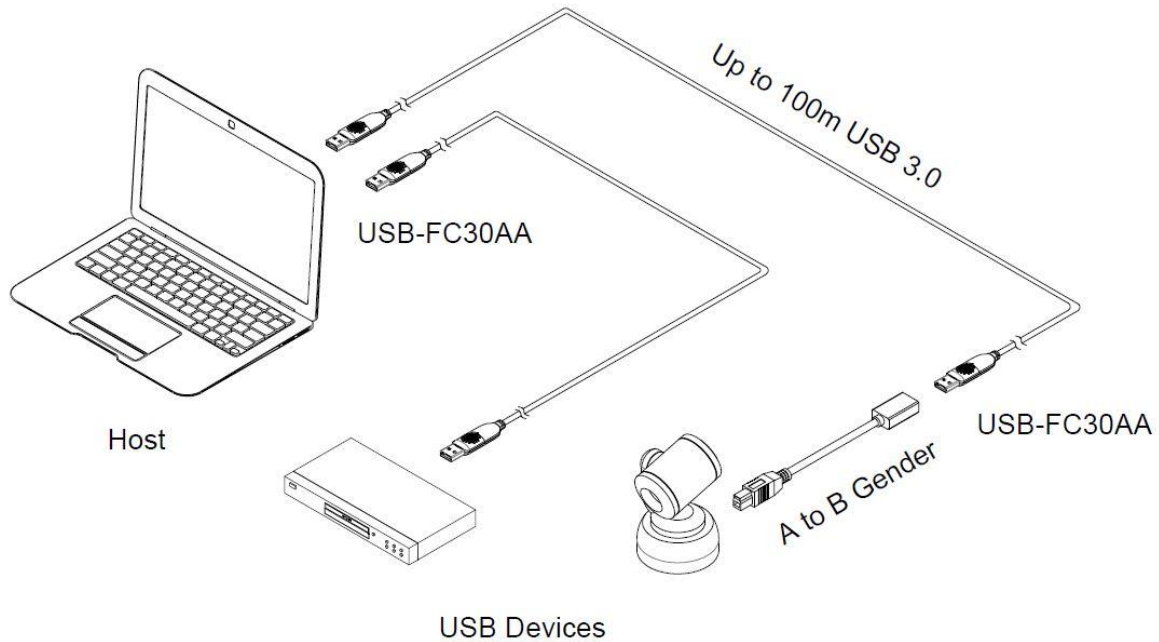
### Physical Characteristics

| Parameter           | Description                                       |
|---------------------|---|
| Cable Type          | Hybrid Cable<br>MMF(OM3*4C) + 6C Electrical Wires |
| Cable Jacket        | PVC Plenum  |
| Cable Dimension     | 3.8 mm  |
| Pull Strength       | 15 Kg   |
| Minimum Bend Radius | 38 mm (Under Load)                                |

### Drawing of Module



## Drawing of Cable Connection



## USB Pin Description

| Pin | Symbol    | Functional Description |
|-----|-----------|------------------------|
| 1   | VBUS      | Power                  |
| 2   | Data-     | NC                     |
| 3   | Data+     | NC                     |
| 4   | GND       | Ground for Power       |
| 5   | SSRX-     | SuperSpeed Receiver    |
| 6   | SSRX+     | SuperSpeed Receiver    |
| 7   | GND DRAIN | Ground for signal      |
| 8   | SSTX-     | SuperSpeed Transmitter |
| 9   | SSTX+     | SuperSpeed Transmitter |

## Revision History

| Version | date    | History                   |
|---------|---------|---------------------------|
| 1.0     | 2020-07 | Official version released |
| 1.1     | 2020-11 | Description modified      |

