

# DATA SHEET

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# Optical USB Extension Cable

## - Point-to-point Fiber Cable -

### Description

Opticis optical extension cables link the USB signal up to 130feet (40 meters) without any repeater. They provide the simplest way to link the USB device far from the host. Owing to the advanced VCSEL and PD, USB protocol could be maintained over such a long-distance connection with cost effective. Opticis provides two models according to cable types, one of which is all pure fiber cable (M2-1xx) and the other of which is hybrid cable of fiber and copper wire to supply DC power from the controller along the cable (M2-2xx).

The all fiber cables are supplied with A plug-in to A receptacle (M2-100) as a basic model and as an option supplied with A plug-in to B plug-in (M2-110). The excellence of the cable is to give perfect galvanic electrical isolation of USB devices from the USB controller. In addition, the hybrid fiber cable jacketed with electrical wires together in a cable gives convenient extension such applications where power supply is not available adjacent at the end of devices to be supplied to a USB device and Opticis downstream module. The model named as M2-210 supplies DC power, running through copper wire in the hybrid cables, from the host end to the downstream module as well as to USB devices.

### Features

- ◆ Extend the USB signal up to 130feet (40 meters)
- ◆ No software to be installed: Easy to use; plug and play.
- ◆ Compatible with USB 1.1(12Mbps, 1.5Mbps)
- ◆ Cables are light-weight, almost zero EMI/RFI emissions, no spark hazard and data secure
- ◆ Wide variety models: DC power supply along cable to Rx module and Integral hub for multiple ports to be designed in by customer's inquiry.

### Applications

- ◆ PC link of peripherals in factory & office
- ◆ USB camera interfaces for surveillance system
- ◆ USB interface of automatic motion controls
- ◆ PC interface of digital audio systems

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	Tstg	- 30	+ 70	°C
Supply Voltage	VCC	- 0.3	+ 6.0	V
Input Voltage	Vin	- 0.3	VCC	V
Storage Humidity	RHsh	10	85	%

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Ambient Operating Temperature	TA	0		+50	°C	M2-1xx
		0		+50	°C	M2-2xx
Power Supply Rejection (Note1)	PSR		50		mVpp	*1
Supply Voltage	VCC	+4.5	+5	+5.5	V	
Full Speed Mode Data Rate	FS		12		Mbps	
Low Speed Mode Data Rate	LS		1.5		Mbps	

**\*Note1** Tested with a 50mVp-p sinusoidal signal in the frequency range from 500Hz to 500 MHz on the VCC supply with the recommended power supply filter in place. Typically less than a 0.25 dB change in sensitivity is experienced.

## Power Adapter

### 1) M2-100

Parameter	Symbol	Min.	Typical	Max.	Units
Power Input	Vccp	100		240	V
Power output	Vcc	4.5	5	5.5	V
Supply Current	ITcc	-	-	2600	mA

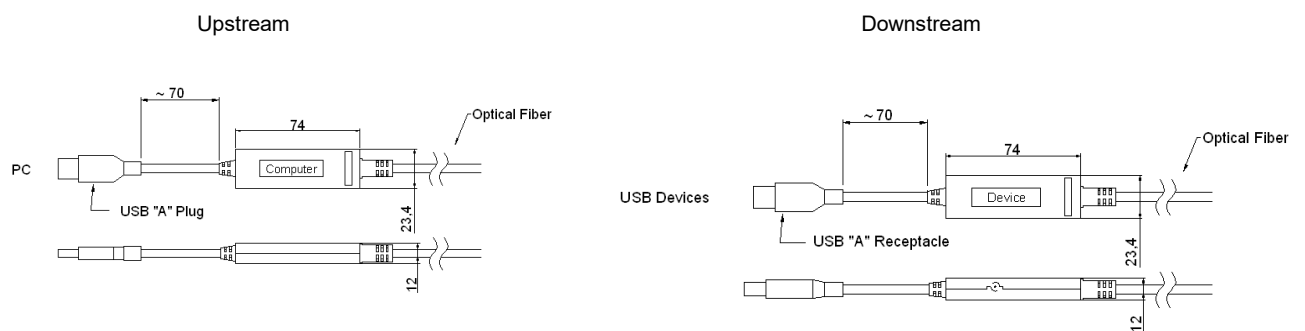
## Specification of Fibres

Parameter	M2-100 / 110
Fiber type	MMF 62.5um/ 4 fibres
Out Diameter	∅ 5.7mm
Use	Indoor & Outdoor
Flame	Retardant
Jacketing	PVC

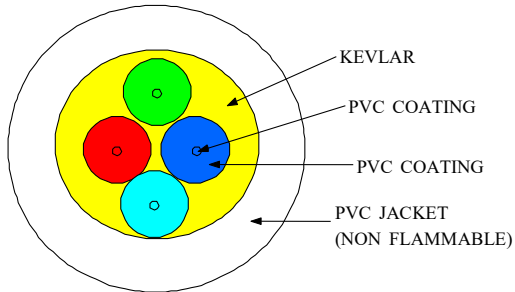
## Drawing

Dimension [mm]

**Model name: M2-100**



## Optical Cables for M2-100 / 110



## Ordering Information

### **Model Name: M2-XYZ-xx**

**X=1:** use optical cable and plug DC power adapter in the downstream module.

**Y=0:** A plug-in in the upstream module to A receptacle in the downstream module

**Y=1:** A plug-in to B plug-in

**Z=0:** Window/Mac

**Z=S:** Solaris SUN

**ZZ:** the length of fiber cable in meter being available every 10 meters. For instance, 10 for 10 meters (32.8feet) and 30 for 30 meters (97.6feet)

#### **Caution**

Multiple Optical USB Extension Module connected in a row to a USB device may result in the device not working properly, user should verify that adding cables or devices do not affect the operation of the USB devices. Also note that only one hub can be connected with Optical USB Extension Module and more extension cable or repeater connection will make encounter improper work.