COMOSS ELECTRONIC Co., Ltd.
昕鈺實業股份有限公司

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COMOSS®

COMOSS Website

Index

Product Series :

Product	Standard	Premium	High Flex	Long Haul
USB Type C		V	V	V
USB2.0	V		V	
USB3.0	V	V	V	V
1394b	V		V	V
GIGE	V	V	V	V
CAMERA LINK		V		
CoaXPress		V	V	

COMOSS®

Company Profile

Date Established : October, 1988

Head Quarter : Taiwan

Founder : Mr. Stanley

Sites :

Taiwan R&D center

China Factory

Philippine Factory

HK Office

Japan Office (COMSCIENCE)
www.comscience.jp

US Office (ELECTRONIC-LINKS)
www.electronic-links.com

- 1988 - COMOSS Taiwan
- 1995 - China factory - (connector, cable assembly and PCB assembly)
- 1998 - Hong-Kong office
- 1999 - Build Philippine factory (connector & cable assembly)
- 2006 -1394B cable and connector solution
- 2012
  - USB3.0 product line
  - 1394b coax extension long haul solution
- 2013 - Machine Vision cable series
- 2014 & 2015
  - Water Proof product
  - HDMI & DVI Long Haul Optical Cable
  - USB3.0 Active Cable
- 2016
  - USB3.1 Type C
  - CoaXPress

Membership :

1394TA

USB Association

AIA (ELECTRONIC-LINKS)

CMVU (COMOSS)

JIIA (COMSCIENCE)

Plastic Optical Fiber Trade Organization

Taiwan Electrical and Electronic Manufacturers' Association

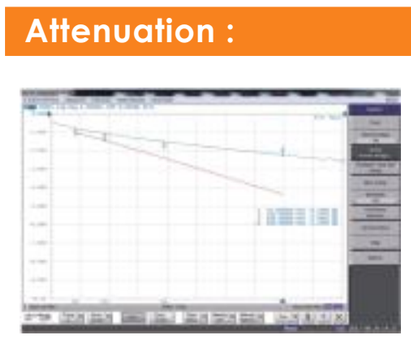
USB2.0 Cable Assembly

USB 2.0

Key Features :

1. Designed for industrial application.
2. Maximum data transfer rate up to 480Mbps.
3. Screw-lock mechanism (optional).
4. Signal well protection by double shielding.
5. Cable Option : Standard / High Flex (robotic grade).
6. Variety of plug angle orientation available.
7. RoHS / Reach / UL compliant.

Attenuation :



General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Static	5m Max.	3.5~4.4	PVC	Black	High Reliability
High Flex OKI	5m Max.	5.0	Heat Resistant PVC	Black	High Slideing (U-bending)

Order Information :

USBC - A / 1 - B / 1 - (X)M - X

(1) (2) (3) (4) (5) (6)

(1)(3) Contact Type :

Type	Description
A	A plug
AF	A socket
B	B plug
BF	B socket
BS	B plug with screws
MiA	Mini A plug
MiAF	Mini A socket
MiB	Mini B plug
MiBS	Mini B plug with screws
MiBF	Mini B socket
MiBFS	Mini B socket with screws
MicB	Micro USB plug

(2)(4) Overmold Type :

Type	Description
1	Straight
UA	Up Angle
DA	Down Angle
LA	Left Angle
RA	Right Angle

Straight

BS MiBS

(5) Cable Length : by meter

(6) Cable Type :

Type	Description
STD	Standard Static
HF	High Flex

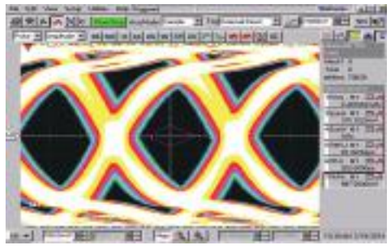
USB3.0 Cable Assembly

USB 3.0

Key Features :

1. Designed for industrial application.
2. Maximum data transfer rate up to 5Gbps.
3. Screw-lock mechanism (optional).
4. Signal well protection by double shielding.
5. Length : up to 20m (active cable).
6. Cable Option : Standard / Premium / High Flex (robotic grade).
7. Variety of plug angle orientation available.
8. RoHS / Reach / UL compliant.

Eye Pattern :



Impedance :

General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Static	6m Max.	3.8-6.0	PVC	Blue	High Reliability
High Flex OKI	5m Max.	6.8-8.2	Oil & Heat Resistant PVC	Black	High Slideing (U-bending)
Active	15m Max.	3.8-8.2	PVC/ Oil & Heat Resistant PVC	Blue/ Black	Low Power Consumption Low Drop Voltage
AOC	20m Max.	4.8	TPE	Black	Hybrid(optical+copper)

Order Information :

Standard Cable: **USB3C**

Active Cable: **USB3AC**

AOC Cable: **USB3AOC**

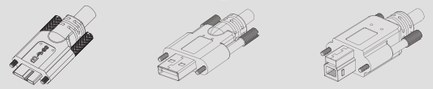
- A / 1 - CS / 1 - (X)M - X

(1) (2) (3) (4) (5) (6)

(1) (3) Contact Type :

Type	Description
A	A plug
AF	A socket
B	B plug
BF	B socket
C	Micro - B plug
AS	A plug with screws (or single screw)
BS	B plug with screws
BRS	Angled B plug with screws
CS	Micro - B plug with screws
CRS	Angled Micro - B plug with screws

Straight



CS AS BS

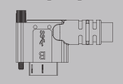
(2) (4) Overmold Type :

Type	Description
1	Straight
UA	Up Angle
DA	Down Angle
LA	Left Angle
RA	Right Angle

Up Angle (UA)

CRS

Left Angle (LA)



CRS

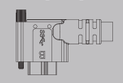
Up Angle (UA)

BRS

Down Angle (DA)

CRS

Right Angle (RA)



CRS

Down Angle (DA)

BRS

(5) Cable Length : by meter

(6) Cable Type :

Type	Description
STD	Standard Static
PMR	Premium
HF	High Flex

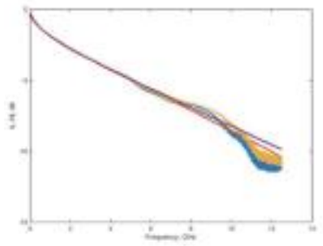
Type C Cable Assembly

Type C

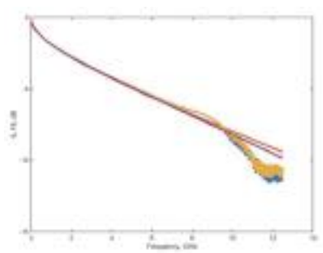
Key Features :

1. Data speed in USB2.0 / USB3.0 (3.1Gen1) / USB3.1 (3.1Gen2)
2. Designed for industrial application.
3. With or without E-mark chip (optional).
4. Transmission rate up to 10Gbps.
5. Maximum current with 3A-5A.
6. Screw-lock mechanism (optional).
7. Signal well protection by double shielding.
8. RoHS / Reach / UL compliant.
9. USB3.1 GEN2 TID (1M): 52500000389
10. USB2.0 TID (3M): 200000283

Attenuation :



Insertion Loss Fit at Nyquist Frequencies (ILfitatNq) TX1/RX1



Insertion Loss Fit at Nyquist Frequencies (ILfitatNq) TX2/RX2

General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Static	Up to 1M	3.5~5.0	PVC	Black	High Reliability
Active	up to 5M (Gen1)	3.8	PVC	Black	High Reliability

Order Information :

Gen 2: 10G
USB3.1C

Gen1: 5G
USB 3C - **A / 1 - CS / 1 - (X)M - X**
(1) (2) (3) (4) (5) (6)

USB2.0: 480MB
USB C

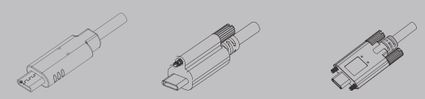
(1) (3) Contact Type :

Type	Description
TC	Type C plug
TCS	Type C plug with screws (or single screw)
A	USB2.0 A plug / USB3.0 A plug
B	USB2.0 B plug / USB3.0 B plug
C	USB3.0 Micro - B plug
MiB	USB2.0 Mini B plug
MicB	USB2.0 Micro - B plug

(2) (4) Overmold Type :

Type	Description
1	Straight

Straight



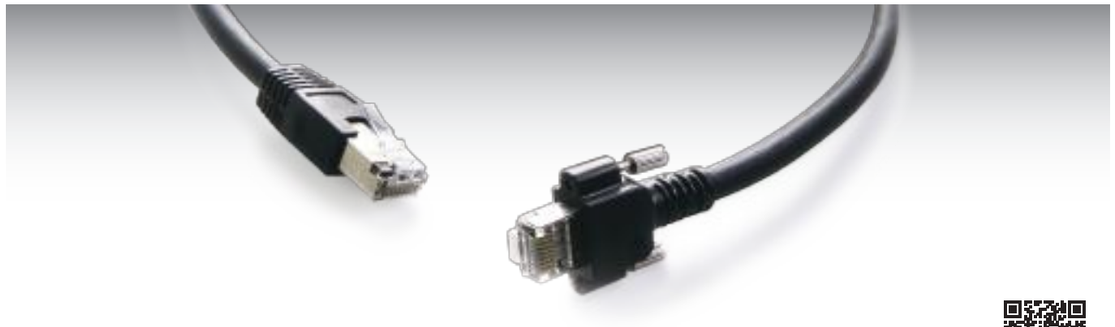
TC | TCS (Single Screw) | TCS (Double Screws)

(6) Cable Type :

Type	Description
STD	Standard Static
HF	High Flex

(5) Cable Length : by meter

GIGE Cable Assembly

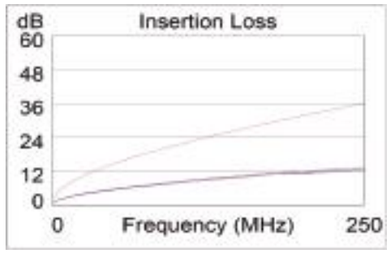


GIGE

Key Features :

1. Suitable for industrial application.
2. Overmolded strain relief.
3. Latch type or screw-lock type.
4. Signal well protection by double shielding.
5. Length: up to 100m.
6. Cable Option: Standard / Premium / High Flex (robotic grade).
7. Variety of plug angle orientation available.
8. RoHS / Reach / UL compliant.

Attenuation :



General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Static	50m Max.	6.5	PVC	Black	High Reliability
Premium	80m Max.	7.2	PVC	Black	High Reliability
High Flex OKI	40m Max.	6.8	Oil Resistant PVC	Black	High Slideing (U-bending)
Category	Cat5e / Cat6a / Cat7				

Order Information :

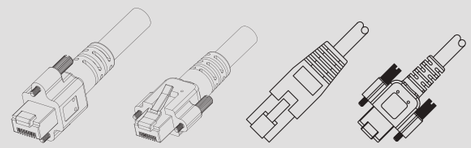
GigE - 8P8CS / 1 - 8P8CS / 1 - (X)M - X

(1) (2) (3) (4) (5) (6)

(1)(3) Contact Type :

Type	Description
8P8C	8P8C plug with shell
8P8CS	Horizontal 8P8C plug with screws
8P8CVS	Vertical 8P8C plug with screws
8P8CRS	Angled 8P8C plug with screws

Straight



8P8CVS 8P8CLS 8P8C 8P8CS

(2)(4) Overmold Type :

Type	Description
1	Straight
UA	Up Angle
DA	Down Angle
LA	Left Angle
RA	Right Angle

Up Angle (UA) **Down Angle (DA)** **Down Angle (DA)**

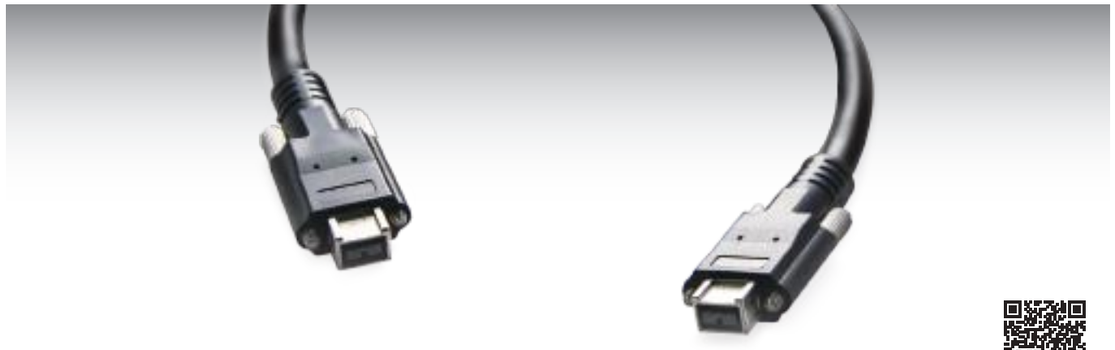
8P8CRS 8P8CRS 8P8CRLS/DA

(5) Cable Length : by meter

(6) Cable Type :

Type	Description
STD	Standard Static
PMR	Premium
HF	High Flex

1394B Cable Assembly



1394B

Key Features :

1. Suitable for industrial application.
2. Screw-lock mechanism (optional)
3. Signal well protection by double shielding.
4. Length: up to 40m. (active cable)
5. Cable Option: Standard / Premium / High Flex (robotic grade).
6. Variety of plug angle orientation available.
7. RoHS / Reach / UL compliant.

Attenuation :

Impedance :

General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Static	10m Max.	7.0	PVC	Black	High Reliability
High Flex	7m Max.	7.5	Oil/Heat Resistant PVC	Black	High Slideing (U-bending)
Active	40m Max.	4.0	PVC	Black	Long-Haul

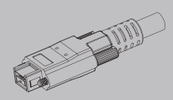
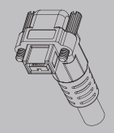
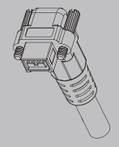
Order Information :

1394C - 9ARS - 9ARS - (X)M - X

(1) (2) (3) (4)

(1) (2) Contact Type :

Type	Description
6P	6 pin plug
4P	4 pin plug
6F	6 pin socket
4F	4 pin socket
9A	9 pin Beta plug
9AF	9 pin Beta socket
9B	9 pin Bilingual plug
9BF	9 pin Bilingual socket
9AS	9 pin Beta plug screw type
9ARS/UA	9 pin Beta plug Up Angle screw type
9ARS/DA	9 pin Beta plug Down Angle screw type

Straight	Up Angle (UA)	Down Angle (DA)
		
9AS	9ARS	9ARS

(3) Cable Length : by meter

(4) Cable Type :

Type	Description
STD	Standard Static
HF	High Flex

Camera Link Cable Assembly

Camera Link

Key Features :

1. Suitable for industrial application.
2. Overmolded strain relief.
3. Thumbscrew mechanism type.
4. Signal well protection by double shielding.
5. Length: up to 10m.
6. PoCL supported.
7. RoHS / Reach / UL compliant.

Order Information :

CMLK - M - S - (X)M - PMR

(1) (2) (3) (4)

(1)(2) Contact Type :

Type	Description
M	MDR Male
S	SDR/HDR Male
S14	14pin SDR for PoCL Lite Male

(3) Cable Length : by meter

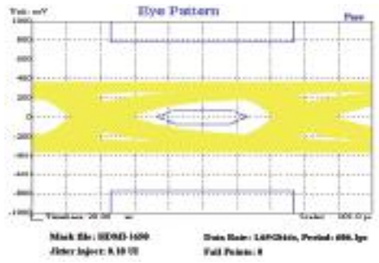
(4) Cable Type :

Type	Description
PMR	Premium
HF	High Flex

General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
High End Premium	Up to 10m	9.5	PVC	Black	High Reliability
High Flex	Up to 10m	9.5	PVC	Black	High Slideing

Eye Diagram :



Impedance :

CoaXPress Cable Assembly

Qualified!!
CoaXPress

CoaXPress

Key Features :

1. Designed for industrial camera application.
2. Data rates up to 6.25Gbps and the maximum 25Gbps (4 simultaneously).
3. Transmission of video, control signals and power supply simultaneously.
4. Precision 75 ohm impedence.
5. Cable Option : Single Coaxial conductor - RG59 / RG179 / RG6.
6. Certified by JIIA.

General Specification :

Application	Length	OD (mm)	Material	Color	Characteristic
Premium Slim	25m Max.	4	PVC	Black	Thin
Premium Slim 4 Ch.	25m Max.	13.6	PVC	Black	Thin
High Flex	20m Max.	6.1	PVC	Black	Bending and Sustainability
High Flex 4 Ch.	20m Max.	W13.5 x H5.0	PVC	Black	Bending and Sustainability

Order Information :

xCXPx - X / 1 - X / 1 - (X)M

(1) (2) (3) (4) (5) (6) (7)

(1) Channel :

Type	Description
1	1 Channel CXP
2	2 Channel CXP
3	3 Channel CXP
4	4 Channel CXP
5	5 Channel CXP

(2) Data Speed :

Type	Description
1	1.25Gbps
3	3.125Gbps
6	6.25Gbps

(3) (5) Contact Type :

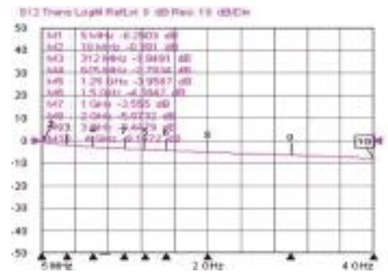
Type	Description
B	BNC
D	DIN1.0 / 2.3

(4) (6) Overmold Type :

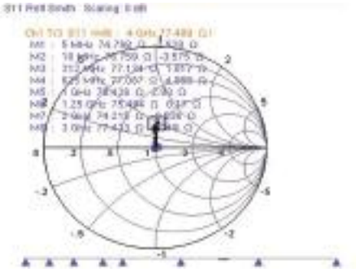
Type	Description
1	Straight

(7) Cable Length : by meter

Attenuation :



Impedance :



～ Precautions for wiring and laying

In order to maintain the high-speed transmission and high durability at the same time, the digital interface cable for machine vision should be given consideration to wiring and laying.

Allowable bending radius of cable

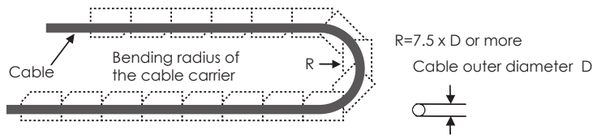
Due to the internal structure of the cable or the characteristics of the sheath, the performance of the cable may be deteriorated, When bending exceeding a certain limit is made to the cable.
Below is a reference standard allowable bending radius when fixing a general cable and using it for a long time. However, please be careful because there are special cables that require a larger radius than this for laying.

Classification of cables	Bending radius when connecting and supporting
Braided coaxial cable	More than 4 times the cable outer diameter
PE (PVC) Sheath cable (no shield)	More than 4 times the cable outer diameter
Cable with braided shield	More than 4 times the cable outer diameter

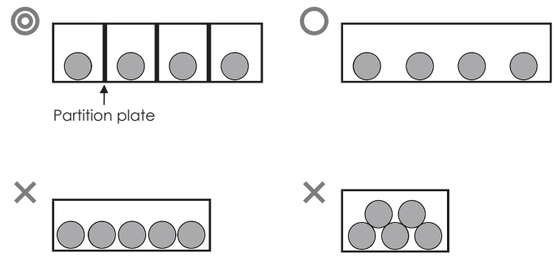
Cable carrier wiring

The wiring method is very important to improve the cable life and stability by making good use of the bending characteristics of the robot cable. Also to prevent unexpected disconnection accident. Please pay attention to the following when wiring the robot cable to the cable carrier.

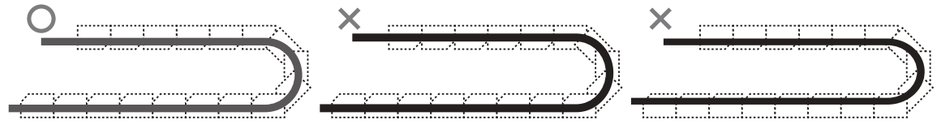
- Bending radius
  The bending radius of the cable carrier should be at least 7.5 times the cable outer diameter and should be as large as possible.



- Cable placement
  Cable be placed in a cable carrier should be routed in a flat state.
  Please make sure that cables do not cross each other or overlap.
  Choose a cable carrier with a sufficient margin and keep the cable occupancy to 30% or less.
  In addition, it is recommended to provide partition plate as many as possible to avoid interference between the cables.



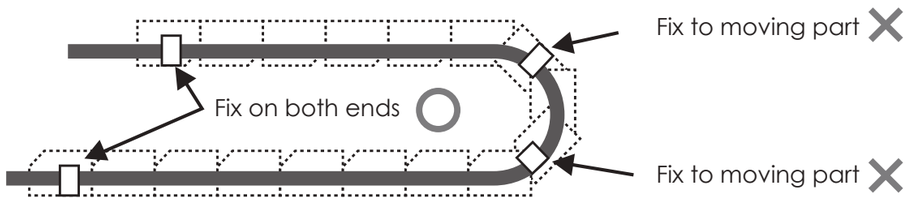
- Cable length
  If the cable is too short, it will become clumped in the cable carrier, and the cable and carrier rub against each other, resulting in troubles such as scraping of the sheath.
  Conversely, even if the cable is too long, the cable life will be shortened, because the sheath will be scraped and it will easily interfere with other cables etc. Please wire with the optimum cable length.



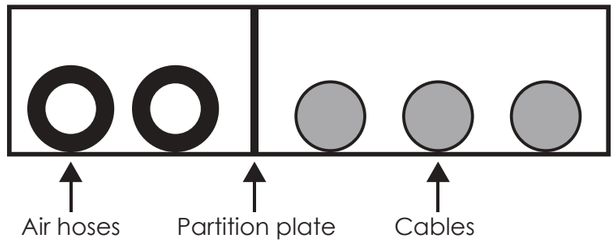
- Twist of cable
  When pulling out the cable from the braid and making it straight as it is, since twist remains in the cable, it may cause meandering, deterioration of bending characteristics, etc.
  Please pull out the cable using a turntable etc. and confirm that there is no twist on the cable and extend it straight out in the cable carrier and wire it.

Bulk cable material by associated partner **OKI Electric Cable Co., Ltd.**

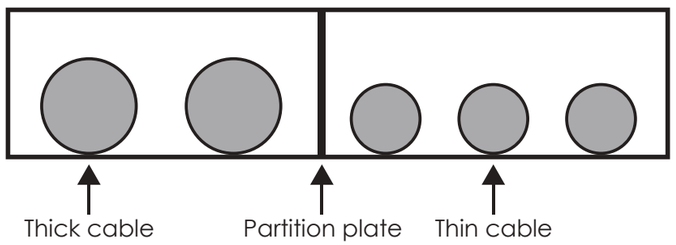
• Cable fixing method
When cable binding and fixing to the cable carrier are performed on the movable part of the cable carrier, as the bending and stress tend to concentrate, the life of the cable decreases.
Do not fix the cable to the moving part.
Please fix the cable to a non-moving part located on both ends of the cable carrier.



• Mixing with air hose etc.
When wiring hydraulic pipes, air hoses, etc., make sure to provide a partition plate, separate the cables and air hoses and wire them.



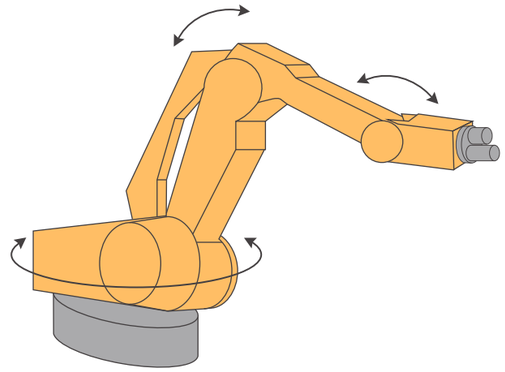
• Mixing cables with greatly different outer diameters.
If cables with greatly different outer diameters are placed together, there is a possibility that a cable with a small outer diameter may be damaged by load from a cable with a large outer diameter.
When placing cables with greatly different outer diameters, separate them by placing a partition plate between them.



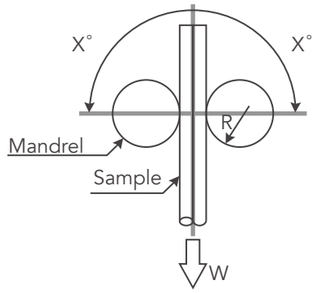
High Flex Cable Test

Oki Electric Cable present following 3 items as main moving method :

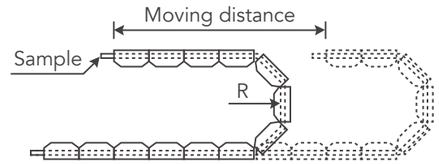
1. Bending
2. Sliding
3. Twisting



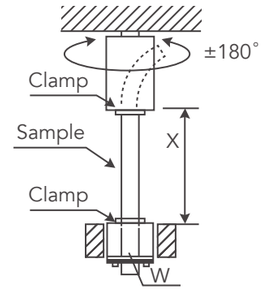
Flex cable for bending :



Flex cable for sliding :



Flex cable for twisting :



Bending Test Equipment	**Bending R**	10mm	**Sliding Test Equipment**	**Outer Diameter**	30φ or less	9φ or less	**Twisting Test Equipment**	**Twisted Angle**	+/-180degrees (Fixed)
		12.7mm		**Moving Distance**	1.5m	350mm		**Span X**	300mm, 500mm
		20mm		**Moving Speed**	15times/Min. (MAX)	70times/Min. (MAX)		**Twisted Speed**	15times/Min. (Fixed)
		30mm		**Bending R**	63mm	20mm to 60mm (5mm pitch)		**Count**	One back and forth
		50mm			100mm				
	Bending Angle	+/-90degrees			125mm				
		+/-120degrees			200mm				
		+/-180degrees		**Count**	One back and forth				
	Bending Speed	60times/min. (MAX)							
	Count	One back and forth							

Bulk cable material by associated partner **OKI Electric Cable Co., Ltd.**