Unit: ± 0.5 mm

Feature

- Global shutter.
- Miniature Size.

Global Shutter

NEW PRODUCT ANNOUNCEMENT
Product appearance may be changed.
Final product appearance will be updated on datasheet.

176M4 No Lens



Low Working Temperature
Typically 41°~45°C Range

176M4 No Lens



Specification

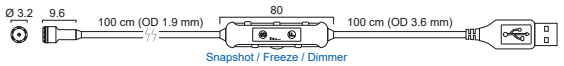
Model No.	B176M4	
Series	K	Y X
Dimensions (mm)	Ø 4.3	Ø 4.3 x 5.6
Orientation	Front View	
Camera Type	Board Type	
Video Format	MJPEG / YUV	
Image Sensor	1/10" B/W CMOS Camera Module	
Resolution	640 x 480 @ 240 fps	
Pixel Size (um)	2.2 x 2.2	
Image Area (mm)	1.44 x 1.09	
Sensitivity (Lux.Sec)	20000 e- / Lux-sec @ 530 nm 110000 e- / (μW.cm^{-2}.sec) @ 850 nm 79000 e- / (μW.cm^{-2}.sec) @ 940 nm	
Dynamic Range	71 dB @ 16x	
S/N Ratio	39 dB	
Scan Mode	Progressive	
Shutter	Global	
Lens	Please Check Model Information Table	
View Angle	Please Check Model Information Table	
Focus Distance (mm)	Infinity	
LED	N/A (Optional)	
Storage Temp.	-30 to 60 Degree C	
Working Temp.	-10 to 60 Degree C	
Interface	USB 2.0 / USB 3.0	
Power Supply	DC 5 V	
Power Current	TBD mA	
Microphone	N/A	
Operation System	Win XP, Win Vista, Win 7, Win 8, Win 10 Linux, MAC OSX	

* Working temperature means the camera device, not environment temperature.

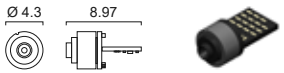
B176M4



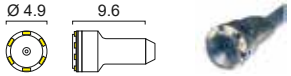
▲ FYD-VB176M4L9-52



B176M4-62 (62°)



VB176M4L9-52 (52°)



Global Shutter



Means that all pixels of the array are exposed simultaneously.

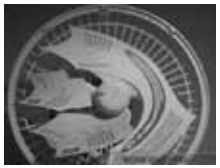
Advantage

- No Distortion of straight lines with fast-moving objects
- No limit on flash sync speed

Disadvantage

- Higher noise levels
- Lower frame rates
- Lower dynamic range

Rolling Shutter



Means that adjacent rows of the array are exposed at slightly different times as the readout 'waves' sweep through each half of the sensor.

Advantage

- Lower noise levels
- Higher frame rates
- Higher dynamic range

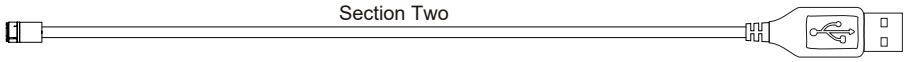
Disadvantage

- May cause image distortion of moving objects
- Limited flash sync speed

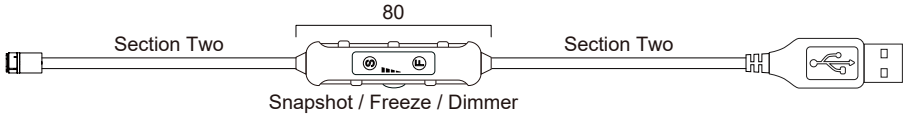
Unit: ± 0.5 mm

CABLE Please check cable information for Section One and Section Two.

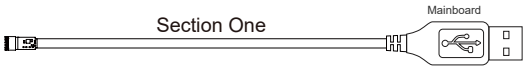
Y



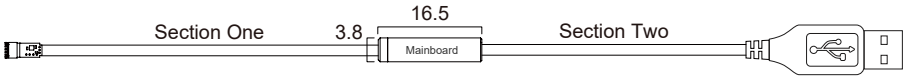
FY



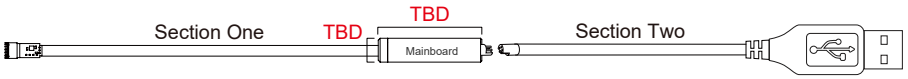
X



Mainboard assembled in connector when cable length is within 500 cm.

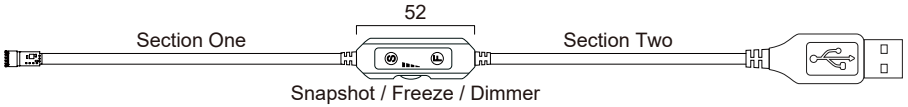


Mainboard assembled in between camera head and connector when cable length is more than 500 cm.



Mainboard assembled in between camera head and connector when cable length is more than 500 cm.

FX



Section One (Max. 13 Pin)

OD (mm)	Length (cm)	Series
1.9 #36 x 15C	10~150	Y
	10~550	X
2.8 #32 x 15C	10~450	Y
	10~600	X
2.8 #34 x 13C	10~500	Y
	10~800	X
3.8 #30 x 17C	10~450	Y

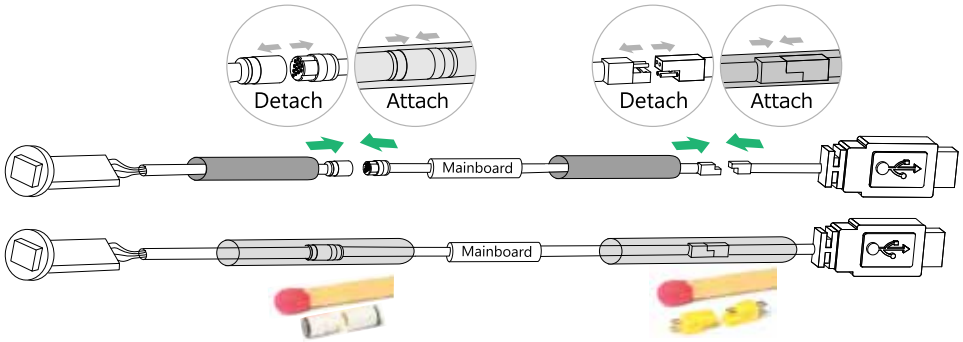
Section Two (Max. 7 Pin)

OD (mm)	Length (cm)	Series
1.4 #28 x 4C	10~1000	X
1.4 #30 x 4C	10~600	
1.6 #28 x 4C	10~1000	
1.7 #36 x 9C	10~500	
2.8 #30 x 7C	10~900	
3.1 #32 x 5C	10~800	
3.6 #28 x 7C	10~900	
4.5 #24 x 9C	10~1000	
3.6 #28 x 11C	10~250	Y

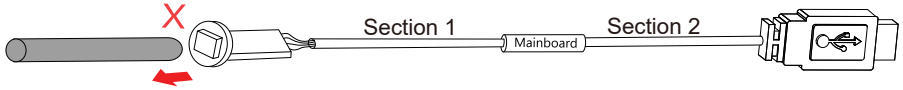
Detachable Nano Connectors *(Customize Option)*

Specifically designed to overcome the big size of connector and camera head.

With detachable Nano connectors,
a tube can go through the thin cable from halfway.



Without detachable Nano connectors,
camera head cannot go through the tube.



★Each segment can be modified by customer request.

Unit: ± 0.5 mm

FYD-VB176M4LH-62Z

SERIES	CONNECTOR	CAMERA BODY	DISPLAY	MICROPHONE	LED	LENS
USB 3.0 (F)Y Low Temp. **USB 2.0** (F)K Short Head (F)X Low Temp. *F Snapshot and Freeze Frame	**UVC (USB)** D Type A T Type C E TE Industrial Mini I/O Type II (2040008-2) (USB 2.0 Only)	**Front View** (V)B Board Type T Tube Type V Tube Type *V Dimmer Controller	**Color**: - **B/W**: 176M4 **Dimensions**: Ø 4.3 (K); Ø 4.3 x 5.5 (Y / X)	N/A None	N/A None **White** L Normal LH High-Intensity **Infrared** L9 IR 940 nm L8 IR 850 nm	**Code** / **Specification** / **View Angle** 52 — 1.83 mm / F 2.0 — 52° 62 — 1.498 mm / F 3.1 — 62° 1.498 mm / F 5.0

FILTER
N/A None **Wavelength (nm)** Y 640~940nm，645~850nm cut 430~600nm & 850~940nm pass Z 940 nm (ZR9)

* IR 940nm or IR 850nm LED is suggested to choose B/W camera type.
* Camera with LED light source is suggested to use lens with larger F-Stop number.
* Camera appearance or other requirements are applicable for customization.
* TE Industrial Mini I/O Type II connector does not support USB 3.0 output.

Connector Information


USB Type A


USB Type C


TE Industrial Mini I/O Type II (2040008-2) (USB 2.0 Only)