## Specification

| | | |
|---|---|---|
| Model No. | | B31105 |
| Dimensions (mm) | | Ø 4.9 x 1.7 |
| Orientation | | Front View |
| Camera Type | | Board Type |
| Video Format | | MJPEG / YUV / H.264 |
| Image Sensor | | 1/6" Color CMOS Camera Module |
| Resolution | USB 2.0 | 1920 x 1080 @ 15~30 fps MJPEG / 5 fps YUV<br>1280 x 720 @ 15~30 fps MJPEG / 10 fps YUV<br>960 x 540 ; 848 x 480 @ 15~30 fps MJPEG / 20 fps YUV<br>640 x 360 ; 424 x 240 @ 15~30 fps MJPEG / 30 fps YUV |
| | USB 3.0 | 1920 x 1080 @ 60 fps Standard / Fixed MJPEG / YUV<br>1280 x 720 @ 60 fps Standard / 90 fps Fixed MJPEG / YUV<br>640 x 360 @ 60 fps Standard / 90 fps Fixed MJPEG / YUV<br>320 x 240 @ 240 fps Fixed MJPEG / YUV |
| Pixel Size (um) | | 1.4 x 1.4 |
| Image Area (mm) | | 2.73 x 1.55 |
| Sensitivity (Lux.Sec) | | 553 mV |
| Dynamic Range | | 73.3 dB @ 15.5x gain |
| S/N Ratio | | 38.3 dB |
| Scan Mode | | Progressive |
| Shutter | | Rolling |
| 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 (Not Environment Temperature.)<br>-30 to 80 Degree C (Subject to discussion) |
| Interface | | USB 2.0 / USB 3.0 |
| Power Supply | | DC 5 V |
| Power Current | | 160mA (No LED) / 190mA (LED x 6) |
| Microphone | | N/A (Optional) |
| Frame Sync | | N/A (Optional) |
| Operation System | | Win XP, Win Vista, Win 7, Win 8, Win 10<br>Win 11, Win 11 Pro (USB 2.0 Only)<br>Linux, MAC OSX |

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

Unit: ± 0.5 mm

## Feature

- Miniature size.
- Outstanding quality.
- 1080p image pixel.

5.0 Bluetooth | H.264 Video Format | RPi Libcamera | Low Low Temperature | Dual Lens



Sensor Board

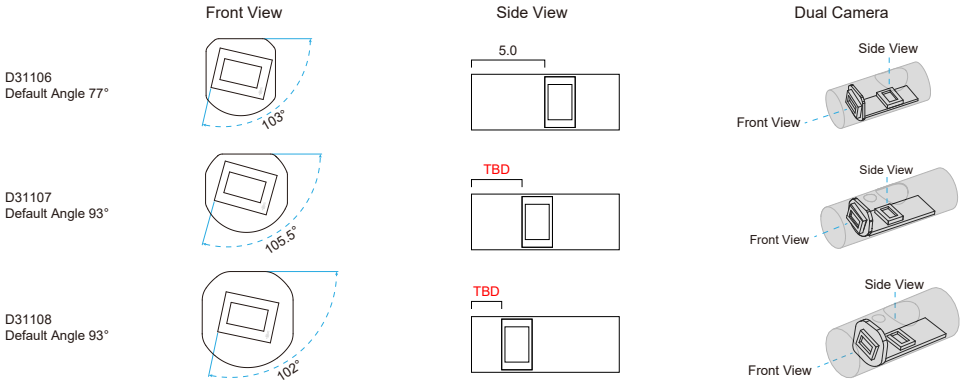


1080p Resolution



Low Temperature

**D31106 / D31107 / D31108** Tilt Sensor for Dual Tube Camera




K



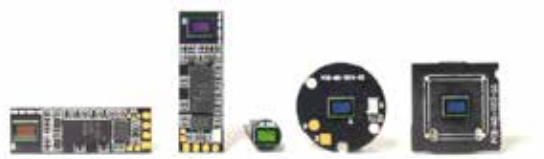
Y X H



T



M





B31105-77



B31105L-77



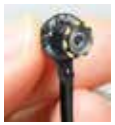
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B31105U-77



B31109R-77



B31109RUL-158



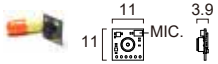
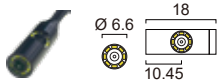
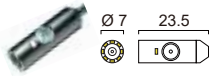
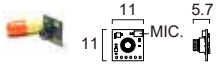
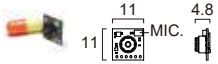
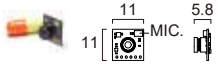
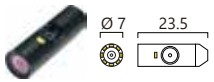
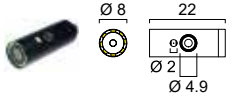
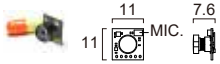
BL31105-158

Unit: ± 0.5 mm

## SERIES K Low Working Temperature Typically 41°~45°C Range

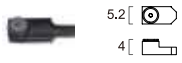
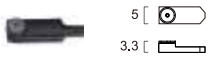
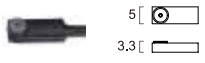
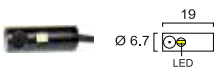
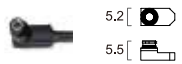
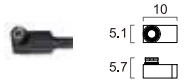
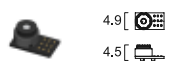
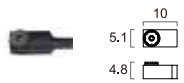
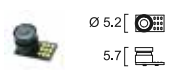
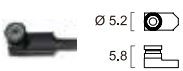
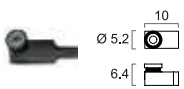
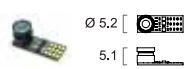
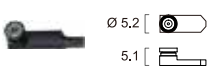
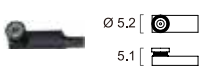
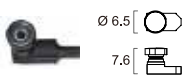
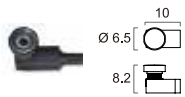
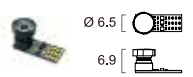
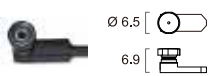
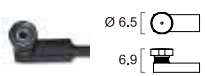
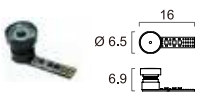
| Lens | Front View<br>B31105<br>Board Type |
|---|---|
| N/A |  Ø 4.9 1.7 |
| 77 |  Ø 4.9 3.7 |
| 88 |  Ø 4.9 5.2 |
| 88M |  Ø 4.9 4.3 |
| 93 |  Ø 5.2 5.5 |
| 158 |  Ø 6.5 6.7 |

## SERIES Y X H

| Lens | Front View<br>B31105<br>Board Type | Front View<br>B31106R<br>Board Type | Front View<br>B31111A<br>Board Type<br>(Microphone) | Front + Side View<br>D31106LH<br>Tube Type<br>(Dual Camera / LED Light) | Front + Side View<br>D31107LH<br>Tube Type<br>(Dual Camera / LED Light) | Front + Side View<br>D31108LH<br>Tube Type<br>(Dual Camera / LED Light) |
|---|---|---|---|---|---|---|
| N/A |  Ø 4.9 6.4 |  Ø 5.7 2 |  11 11 MIC. 3.1 0.6 | N/A | N/A | N/A |
| 77 |  Ø 4.9 8.4 |  Ø 5.7 4.7 |  11 11 MIC. 3.9 |  Ø 6.6 18 10.45 |  Ø 7 23.5 | Coming Soon |
| 88 |  Ø 4.9 9.8 |  Ø 5.7 6 |  11 11 MIC. 5.7 | Coming Soon | Coming Soon | Coming Soon |
| 88M |  Ø 5 8.9 |  Ø 5.7 4.8 |  11 11 MIC. 4.8 | Coming Soon | Coming Soon | Coming Soon |
| 93 |  Ø 5.2 10.2 |  Ø 5.7 5.9 |  11 11 MIC. 5.8 | Coming Soon |  Ø 7 23.5 |  Ø 8 22 Ø 2 Ø 4.9 |
| 158 |  Ø 6.5 11.4 |  Ø 6.5 7.7 |  11 11 MIC. 7.6 | Coming Soon | Coming Soon | Coming Soon |

Unit: ± 0.5 mm

## SERIES Y X H

| Lens | Side View | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | BL31105 Board Type (Short Board) | ZL31105 Slim Forming Type | SL31105 Forming Type | BL31105S Board Type (Single Board) | ZL31105S Slim Forming Type (Single Board) | SL31105S Forming Type (Single Board) | BL31103 Board Type (Single Board) | TL31106LI Tube Type (LED Light) |
| N/A |   | N/A | N/A |   | N/A | N/A |   | N/A |
| 77 |   |   |   |   |   |   |   |   |
| 88 |   |   |   |   |   |   |   | Coming Soon |
| 88M |   |   |   |   |   |   |   | Coming Soon |
| 93 |   |   |   |   |   |   |   |   |
| 158 |   |   |   |   |   |   |   | Coming Soon |

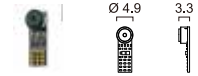
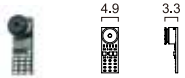
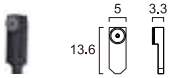
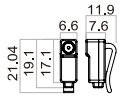
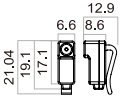
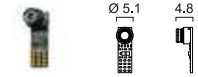
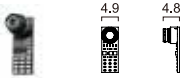
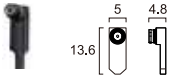
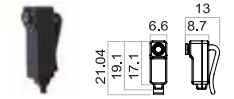
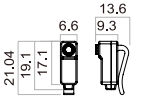
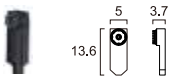
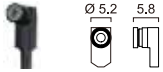
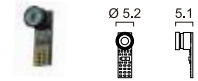
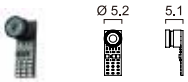
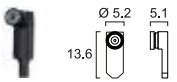
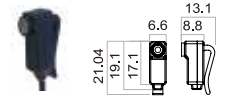
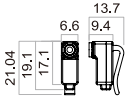
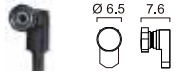
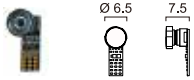
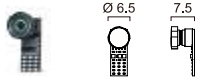
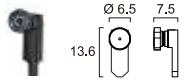
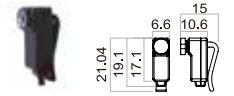
Unit: ± 0.5 mm

## SERIES X

| Lens | Side View | | | | | |
|---|---|---|---|---|---|---|
| | DBL31105 Board Type (Dual Camera) | DBL311S5 Board Type (Dual Camera / FPC) | | | | |
| N/A |   |   | | | | |
| 77 | Coming Soon | Coming Soon | | | | |
| 88 | Coming Soon | Coming Soon | | | | |
| 88M | Coming Soon | Coming Soon | | | | |
| 93 | Coming Soon | Coming Soon | | | | |
| 158 | Coming Soon | Coming Soon | | | | |

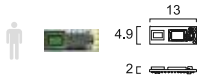
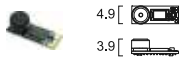
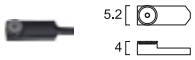
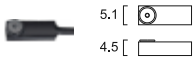
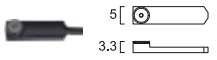
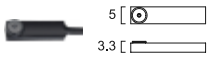
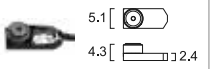
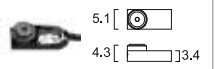
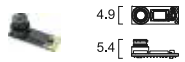
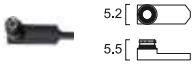
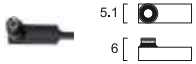
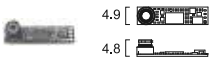
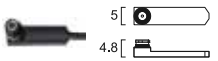
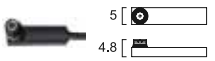
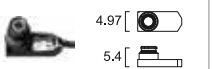
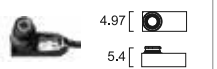
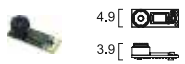
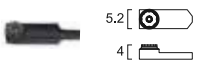
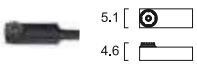
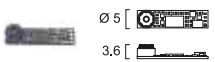
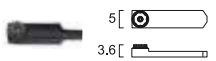
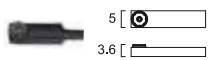
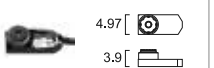
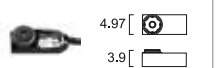
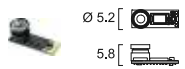
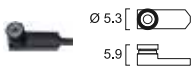
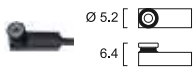
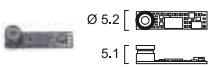
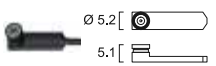
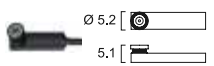
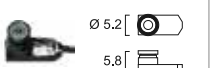
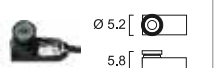
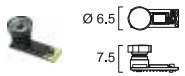
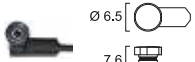
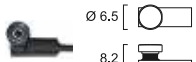
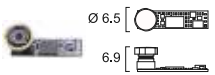
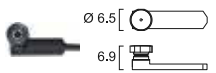
Unit: ± 0.5 mm

## SERIES Y X H

| Lens | Up View | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | B31105U Board Type | Z31105U Slim Forming Type | S31105U Forming Type | B31104SU Board Type | B31105SU Board Type (Single Board) | Z31105SU Slim Forming Type (Single Board) | N31106U Metal Case | N31106UL Metal Case |
| N/A |  | N/A | N/A |  |  | N/A | N/A | N/A |
| 77 |  |  |  |  |  |  | Coming Soon  | Coming Soon  |
| 88 |  |  |  |  |  |  |  | Coming Soon  |
| 88M |  |  |  |  |  |  | Coming Soon | Coming Soon |
| 93 |  |  |  |  |  |  |  | Coming Soon  |
| 158 |  |  |  |  |  |  |  | Coming Soon  |

Unit: ± 0.5 mm

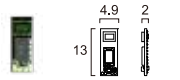
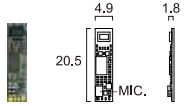
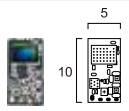
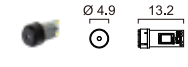
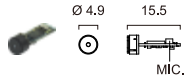
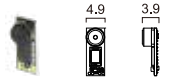
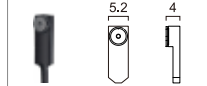
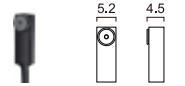
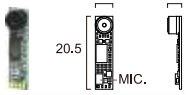
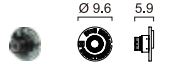
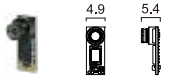
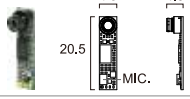
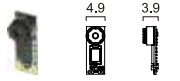
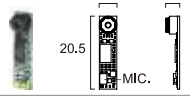
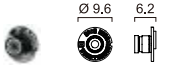
## SERIES T

| Lens | Side View | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | BL31105 Board Type (Short Board) | ZL31105 Slim Forming Type | SL31105 Forming Type | BL31105S Board Type (Single Board) | ZL31105S Slim Forming Type (Single Board) | SL31105S Forming Type (Single Board) | BL31106 Board Type (Short Board) | ZL31106 Board Type (Short Board) | SL31106 Board Type (Short Board) |
| N/A |   | N/A | N/A |   | N/A | N/A |   | N/A | N/A |
| 77 |   |   |   |   |   |   | N/A |   |   |
| 88 |   |   |   |   |   |   | N/A |   |   |
| 88M |   |   |   |   |   |   | N/A |   |   |
| 93 |   |   |   |   |   |   | N/A |   |   |
| 158 |   |   |   |   |   |   | N/A |   |   |

* **BL31106** Bare board will overheat, hence needs to apply glue.

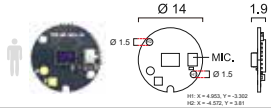
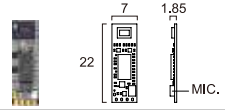
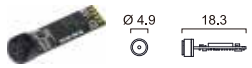
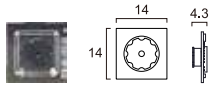
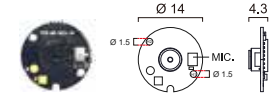
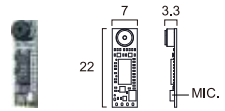
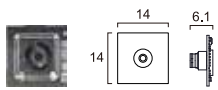
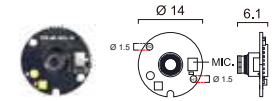
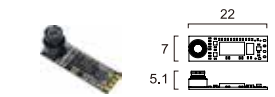
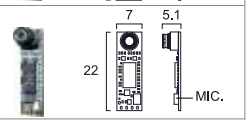
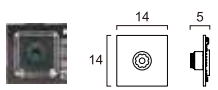
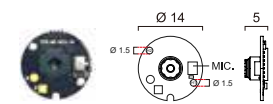
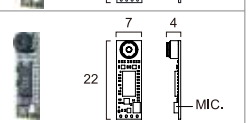
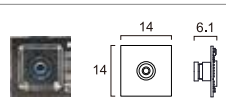
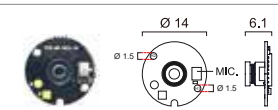
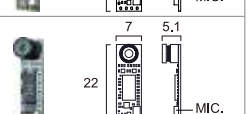
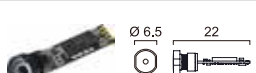
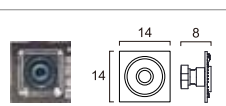
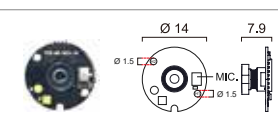
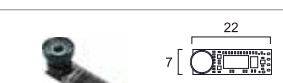
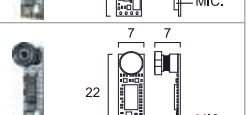
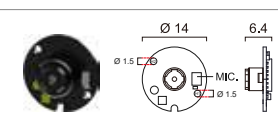
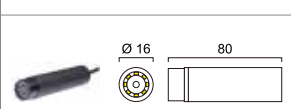
Unit: ± 0.5 mm

## SERIES T

| Lens | Front View | | | | | Up View | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B31105 Board Type (Short Board) | B31105N Board Type | B31105A Board Type (Microphone) | B31107R Board Type | B31109R Board Type | B31105U Board Type | Z31105U Slim Forming Type | S31105U Forming Type | B31105UA Board Type (Microphone) | B31106U Board Type |
| N/A |   |   |   |   |   |   | N/A | N/A |   |   |
| 77 |   |   |   |   |   |   |   |   |   | Coming Soon |
| 88 |   |   |   |   |   |   |   |   |   | Coming Soon |
| 88M |   |   |   |   |   |   |   |   |   | Coming Soon |
| 93 |   |   |   |   |   |   |   |   |   | Coming Soon |
| 158 |   |   |   |   |   |   |   |   |   | Coming Soon |

Unit: ± 0.5 mm

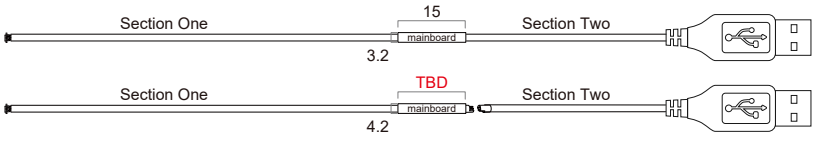
## SERIES M

| Lens | Front View | | | | | Side View | Up View |
|---|---|---|---|---|---|---|---|
| | B31105 Board Type | B31114 Board Type | V31109LH Tube Type | V31116L Tube Type | B31114RA Board Type (Microphone) | BL31107 Board Type | B31107UA Board Type (Microphone) |
| N/A |   |   | Coming Soon | Coming Soon |   |   |   |
| 77 |   |   | Coming Soon | Coming Soon |   |   |   |
| 88 |   |   | Coming Soon | Coming Soon |   |   |   |
| 88M |   |   | Coming Soon | Coming Soon |   |   |   |
| 93 |   |   | Coming Soon | Coming Soon |   |   |   |
| 158 |   |   | Coming Soon | Coming Soon |   |   |   |
| 11 | Coming Soon | Coming Soon |   | Coming Soon | Coming Soon | Coming Soon | Coming Soon |
| 49 | Coming Soon | Coming Soon | Coming Soon | Coming Soon |   | Coming Soon | Coming Soon |
| 3016 | Coming Soon | Coming Soon | Coming Soon |   | Coming Soon | Coming Soon | Coming Soon |

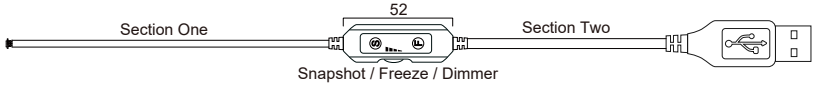
Unit: ± 0.5 mm

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

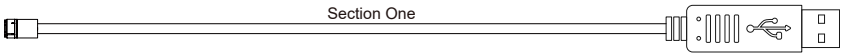
**K**



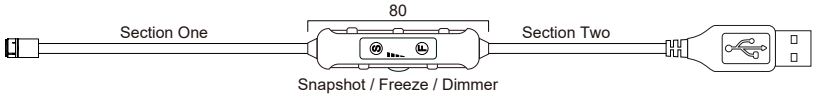

**FK**



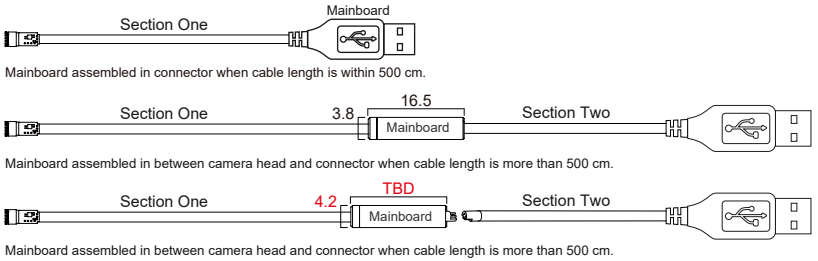

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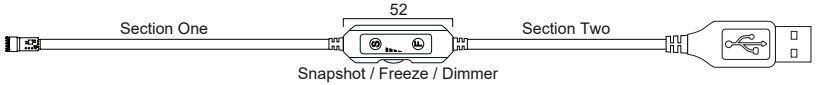

**FY**



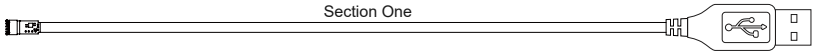

**X**



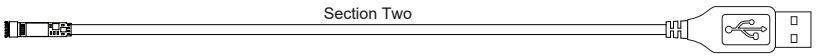

**FX**



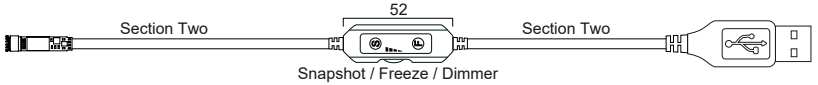

**H**



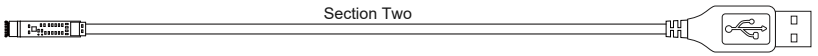

**T**



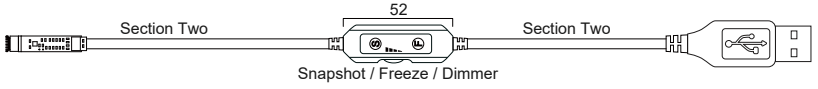

**FT**



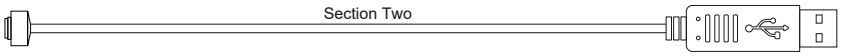

**M**



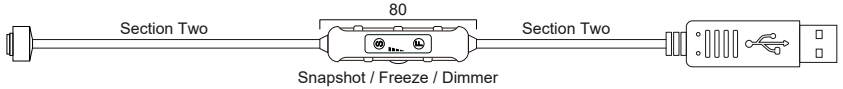

**FM**




**U**




**FU**




**Section One** (Max. 13 Pin)

| OD (mm) | Length (cm) | Series |
|---|---|---|
| 1.7 #36 x 13C | 10~100 | H |
| 1.9 #36 x 15C | 10~150 | Y |
| | 10~250 | K H |
| | 10~550 | X |
| 2.8 #32 x 15C | 10~300 | H |
| | 10~450 | Y |
| | 10~500 | K |
| | 10~600 | X |
| 2.8 #34 x 13C | 10~500 | H |
| | 10~500 | Y |
| | 10~800 | K |
| | 10~800 | X |
| 3.8 #30 x 17C | 10~450 | Y |
| | 10~500 | K |

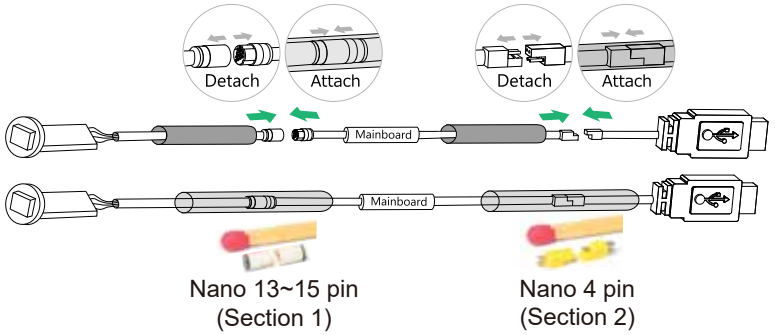
**Section Two** (Max. 7 Pin)

| OD (mm) | Length (cm) | Series |
|---|---|---|
| 0.7 #28 x 4C | 10~100 | K X H T M |
| 1.4 #28 x 4C | 10~1000 | |
| 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 U |

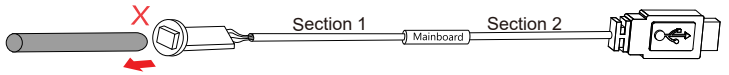
## Detachable Nano Connectors *(Customize Option)*

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.

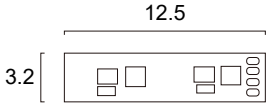



★Each segment can be modified by customer request.

Unit: ± 0.5 mm

## Mainboard

K X H T M

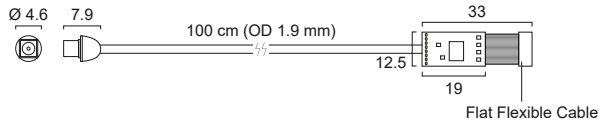



▲ MEX-EX-M1688-V3

## DVP Interface



▲ XP-B31105-77




## Video Demo



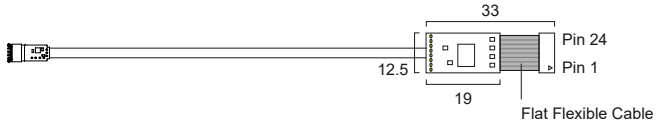

Actually font size : 8pt (2.13 mm x 2.093)



▲ MD-V311M16L-3016

## Digital Video Port (DVP) (Available for X Series Only)

XP




### DVP Pin Definition

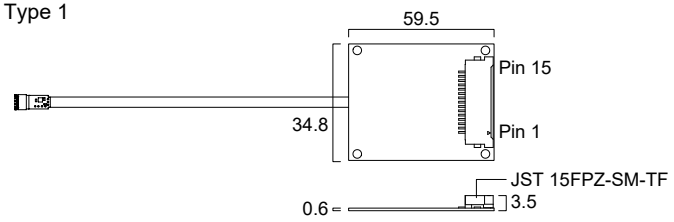
| PIN | NAME | DESCRIPTION | PIN | NAME | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | AVDD | Analog power (2.8V) | 13 | PCLK | Pixel clock output |
| 2 | AGND | Analog ground | 14 | D0 | Data output 0 |
| 3 | DOVDD | I/O power (1.8V) | 15 | D1 | Data output 1 |
| 4 | DVDD | Digital circuit power (1.2V) | 16 | D2 | Data output 2 |
| 5 | DGND | Digital ground | 17 | D3 | Data output 3 |
| 6 | PWDN | Power Down (active high) | 18 | D4 | Data output 4 |
| 7 | SDA | I2C interrface data pin | 19 | D5 | Data output 5 |
| 8 | SCL | I2C interrface input clock | 20 | D6 | Data output 6 |
| 9 | RESET | Reset (active low) | 21 | D7 | Data output 7 |
| 10 | VSYNC | VSYNC output | 22 | D8 | Data output 8 |
| 11 | HERFF | HYNC output | 23 | DGND | Digital ground |
| 12 | MCLK | System input clock | 24 | DGND | Digital ground |

Coming Soon

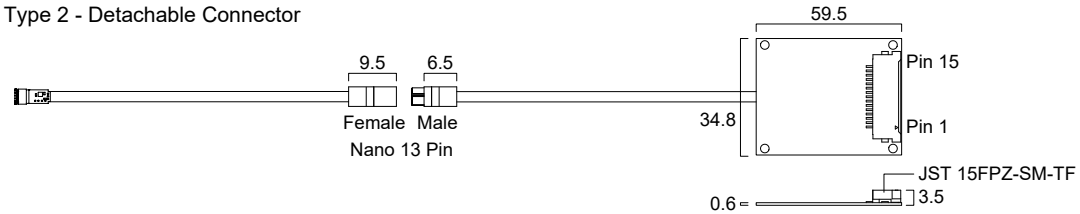
Unit: ± 0.5 mm

## Raspberry Pi (RPi) / MIPI CSI-2 (Available for X Series Only)

Type 1

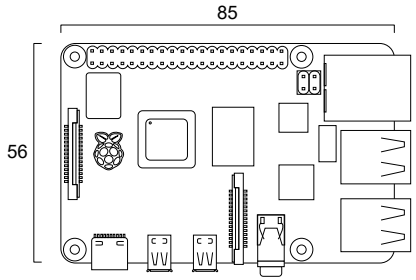


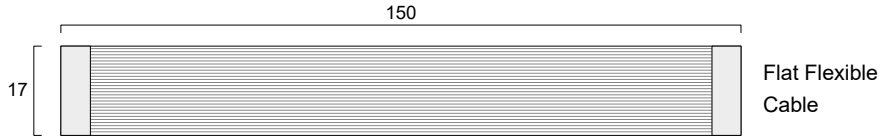

Type 2 - Detachable Connector




Type 3 - Wires Out




| PIN | NAME | DESCRIPTION | PIN | NAME | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | GND | Ground | 9 | MCP | MIPI clock positive output |
| 2 | MDN0 | MIPI data negative output | 10 | GND | Ground |
| 3 | MDP0 | MIPI data positive output | 11 | RST | Reset and power down (active low) |
| 4 | GND | Ground | 12 | MCLK | System clock input |
| 5 | MDN1 | MIPI data negative output | 13 | SCL | Serial interface clock |
| 6 | MDP1 | MIPI data positive output | 14 | SDA | Serial interface data |
| 7 | GND | Ground | 15 | +3.3V | Power supply +3.3V |
| 8 | MCN | MIPI clock negative output | | | |

# FYD-B31105LH-77A-H

Unit: ± 0.5 mm

## SERIES

**USB 3.0**
- (F)Y Low Temp.
- (F)U Advance

**USB 2.0**
- (F)K Short Head
- (F)X Low Temp.
- (F)T Advance
- (F)M Basic

**H.264**
- (F)H Low Temp.

*F Snapshot and Freeze Frame

## CONNECTOR

**UVC (USB)**
- D Type A
- T Type C
- E TE Industrial Mini I/O Type II (2040008-2) (USB 2.0 Only)
- R Raspberry Pi (X)

*R No Controller

## CAMERA BODY

**Other View**
- (V)B Board Type
- (V)DB Board Type
- (V)S Forming Type
- (V)Z Slim Forming Type
- (V)N Metal Case
- T Tube Type
- V Tube Type
- E Tube Type

**Side View**
- (V)BL Board Type
- (V)DBL Board Type
- (V)SL Forming Type
- (V)ZL Slim Forming Type
- TL Tube Type
- VL Tube Type

*V Dimmer Controller
*D Dual Lenses
*E Triple Lenses

## DISPLAY

### Front View

| Color | B/W | Dimensions | |
|---|---|---|---|
| 31105 | 311M5 | Ø 4.9 x 6.4 | (Y / X / H) |
| | | Ø 4.9 x 10.8 | (T) |
| | | Ø 4.9 x 16.4 | (M) |
| 31105N | 311M5N | Ø 4.9 x 10.8 | |
| 31106R | 311M6R | Ø 5.7 x 2 | |
| 31107R | 311M7R | Ø 7.4 x 2.2 | |
| 31111 | 311M11 | 11 x 11 | |
| 31114 | 311M14 | 14 x 14 | |
| 31114R | 311M14R | Ø 14 x 1.9 | |
| 31109R | 311M9R | Ø 9.5 x 1.8 | |
| 31109 | 311M9 | Ø 9 x 40.5 | (Tube Type) |
| 31116 | 311M16 | Ø 16 x 80 | (Tube Type) |

*D Down View
*U Up View
*R Round Shape
*N Flip 90 degrees for forward view
*S Single Board
*S FPC

### Up View

| Color | B/W | Dimensions | |
|---|---|---|---|
| 31104U | 311M4U | 4 x 13.4 | |
| 31105U | 311M5U | 4.9 x 8.4 | (Y / X / H) |
| | | 4.9 x 13 | (T) |
| 31105SU | 311M5SU | 4.9 x 13.5 | |
| 31107U | 311M7U | 7 x 22 | |
| 31106U | 311M6U | Ø 6.7 x 26.2 | |
| 31106SU | 311M6SU | Ø 6.7 x 19 | |
| 31109RU | 311M9RU | Ø 9.5 x 1.8 | |
| 31114RU | 311M14RU | Ø 14 x 1.9 | |

### Down View

| Color | B/W | Dimensions | |
|---|---|---|---|
| 31104D | 311M4D | 4 x 13.4 | |
| 31105D | 311M5D | 4.9 x 8.4 | (Y / X / H) |
| | | 4.9 x 13 | (T) |
| 31105SD | 311M5SD | 4.9 x 13.5 | |
| 31107D | 311M7D | 7 x 22 | |
| 31106D | 311M6D | Ø 6.7 x 26.2 | |
| 31106SD | 311M6SD | Ø 6.7 x 19 | |
| 31109RD | 311M9RD | Ø 9.5 x 1.8 | |
| 31114RD | 311M14RD | Ø 14 x 1.9 | |

### Side View

| Color | B/W | Dimensions | |
|---|---|---|---|
| 31103 | 311M3 | 3.1 x 15.5 | |
| 31105 | 311M5 | 4.9 x 8.4 | |
| 31105S | 311M5S | 4.9 x 13.5 | |
| 31106 | 311M6 | 4.97 x 10 | (T) |
| 31107 | 311M7 | 7 x 22 | |

### Side View (Dual Lens)

| Color | B/W | Dimensions | |
|---|---|---|---|
| 31105 | 311M5 | 5.0 x 25 | (X) |
| 311S5 | 311MS5 | 5.0 x 25 | (X) |

## MICROPHONE

- N/A None
- A External
- A Built-In

## LED

- N/A None

**White**
- L Normal
- LH High-Intensity
- LI High-Intensity (One Pcs)

**Infrared**
- L9 IR 940 nm
- L8 IR 850 nm

## LENS

| Code | Specification | View Angle |
|---|---|---|
| 3016 | 30 mm / F 1.6 | 5˚ |
| 11 | 16 mm / F 7.0 | 11˚ |
| 22 | 8.0 mm / F 2.5 | 22˚ |
| 29 | 6.0 mm / F 4.5 | 29˚ |
| 34 | 5.0 mm / F 3.5 | 34˚ |
| 39 | 4.4 mm / F 4.8 | 39˚ |
| 49 | 3.4 mm / F 2.8 | 49˚ |
| | 3.4 mm / F 6.0 | |

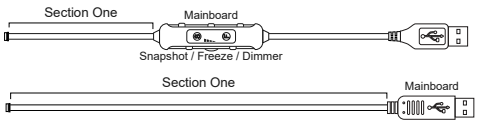
| Code | Specification | View Angle |
|---|---|---|
| 55 | 2.88 mm / F 2.0 | 55˚ |
| | 2.88 mm / F 4.8 | |
| 65 | 2.46 mm / F 2.0 | 65˚ |
| | 2.46 mm / F 5.0 | |
| 67 | 2.34 mm / F 2.2 | 67˚ |
| 77 | 1.83 mm / F 2.0 | 77˚ |
| | 1.83 mm / F 5.0 | |
| | 1.83 mm / F 8.0 | |

| Code | Specification | View Angle |
|---|---|---|
| 79 | 1.80 mm / F 2.0 | 79˚ |
| | 1.80 mm / F 5.0 | |
| | 1.80 mm / F 8.0 | |
| 83 | 2.00 mm / F 5.5 | 83˚ |
| 88M | 1.86 mm / F 4.0 | 88˚ |
| | 1.86 mm / F 5.0 | |
| | 1.86 mm / F 6.0 | |

| Code | Specification | View Angle |
|---|---|---|
| 88 | 1.55 mm / F 5.7 | 88˚ |
| | 1.55 mm / F 8.0 | |
| | 1.55 mm / F 10.0 | |
| 93 | 1.5 mm / F 4.0 | 93˚ |
| | 1.5 mm / F 5.7 | |
| 120 | 1.06 mm / F 4.5 | 120˚ |
| 158 | 1.523 mm / F 4.8 | 158˚ |
| | 1.523 mm / F 6.0 | |
| | 1.523 mm / F 8.0 | |

## CABLE

**Camera Head to Mainboard (Section One)**
- N/A Cable OD 2.5 mm (T Series Only)
- A Cable OD 2.8 + 0.1 mm (Max. 200 cm)




## SYSTEM PARAMETERS

**USB 3.0**
- N/A Auto @ 60 fps
- R RAW Data @ 60 fps
- H HD @ 90 fps
- V VGA @120 fps
- F FHD @ 60 fps
- Q QVGA @ 240 fps

**USB 2.0**
- N/A Auto @ 30 fps
- R RAW Data @ 30 fps

** **X Series** 31111 / **T Series** 31105 / 31105U / **M Series** 31107U / 31114RU
* 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.
* **BL31106** Bare board will overheat, hence needs to apply glue.
* TE Industrial Mini I/O Type II connector does not support USB 3.0 output.

**Connector Information**



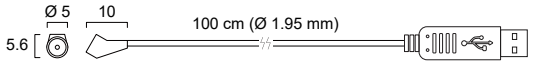
USB Type A | USB Type C | TE Industrial Mini I/O Type II (2040008-2) (USB 2.0 Only)

Unit: ± 0.5 mm

## Customize

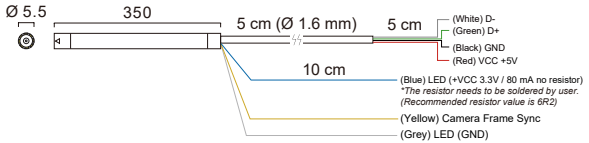


▲ YD-S31105-77-(xx)



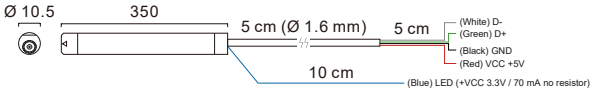



▲ KD-T31105LH-77-(xx)



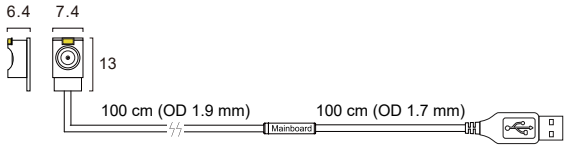



▲ KD-T31110LH-93-(xx)



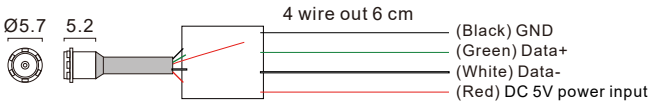



▲ XD-B31105SULI-93-(xx)



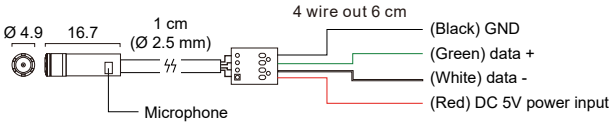



▲ XT-B31106RL-77-(xx)



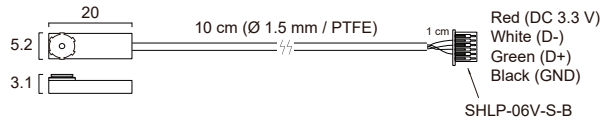



▲ TD-B31105AL-77-(xx)



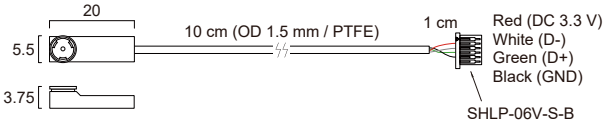



▲ TD-SL311M5S-77-(xx)



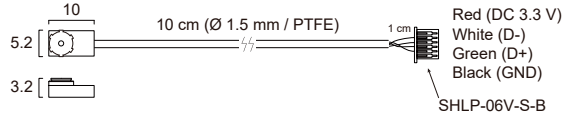



▲ TD-SL311M5S-77-02(xx)



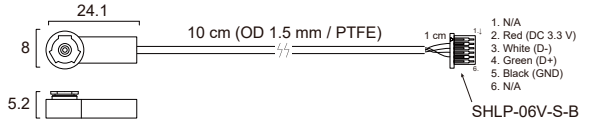



▲ TD-SL31106-77-(xx)
(Enhance heat dissipation)



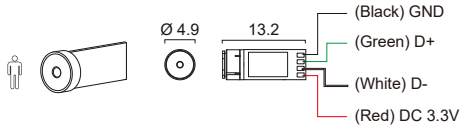



▲ TD-SL311M5S-108-(xx)



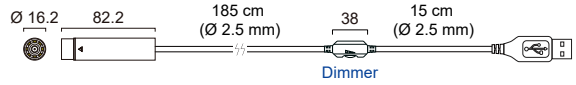



▲ TD-B31105N-77-(xx)






▲ MD-V31116L-3016-(xx)

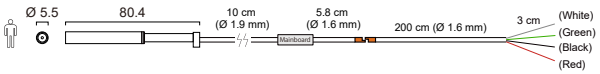


Unit: ± 0.5 mm

## Customize

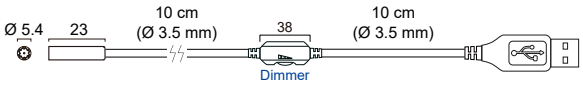


▲ HM-T31105-77-(xx)



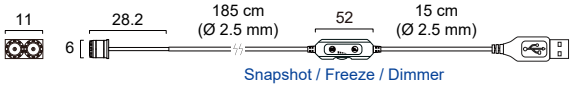



▲ MD-V31105L-77-(xx)



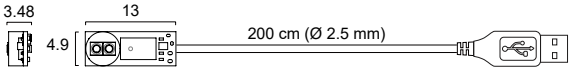



▲ FTD-VDB311M5L8H-49-(xx)



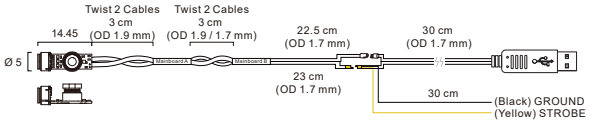



▲ TD-DL31105-11930



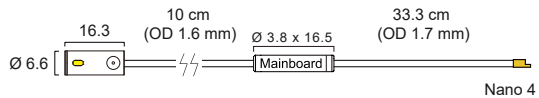


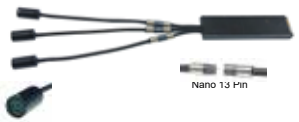

▲ XD-DB31105-77-(xx)



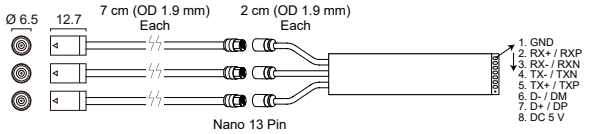



▲ XD-DB31105-77-(xx)



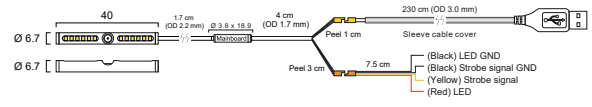




▲ XD-E311xx-xx-(xx)



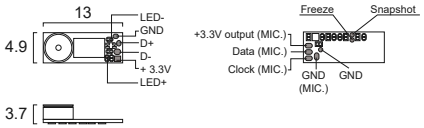



▲ XD-TL31106LI-79-(xx)



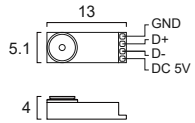



▲ TD-BL311M5-77-(xx)



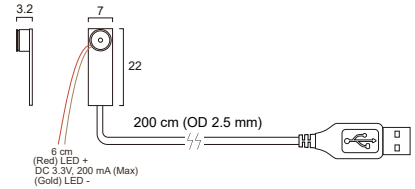



▲ TD-SL31105-77-(xx)



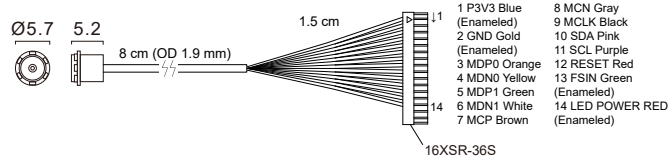



▲ MD-B311M7U-43-(xx)





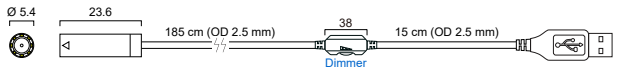

▲ XR-B31105RL-77-(xx)



Unit: ± 0.5 mm

## Customize






▲ MD-V22605LH-36-(xx)