BU Series

BU Series CCD model 29mm × 29mm × 13mm 27g

BU Series CMOS model 29mm × 29mm × 16mm 32g

Outline

BU series have USB3.0 interface for image output and control.
Compact and light, suitable for set in equipment.
3 years warranty.
Wide product range from 0.3M to 12M.

Features

Easy operation

- Featuring newly developed TELI original IP core achieves super high speed correspondence.
- Body size in most compact class is suitable for setting in equipment.
- Power is supplied by USB cable.
- e-CON connector is equipped.
- TELI original software "TeliCamSDK" is available to free download as SDK.

Various function

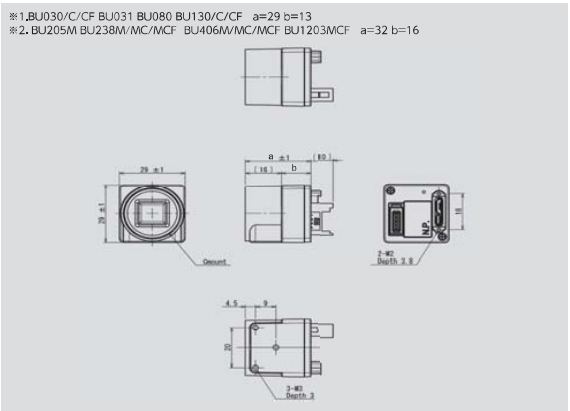
- "Event notifications" camera notified status information via event Packet.
- "BUS synchronization mode" synchronized exposure timing of multiple cameras completely.
- "Bulk trigger mode" outputs multiple images by one trigger input.(*1)
- "Sequential shutter mode" allows output several different setting image.(*2)
- "Image buffer" allows readout image data from host PC on demand.(*3)
- "Scalable mode and binning mode" higher speed image scan is available.(*4)
- "BERT function" measures correspondence quality of cables.(*5)

*functions and modes of *1 to *5 above are different depend on model.

Accessory information (options)

Dimensions

※1.BU030/C/CF BU031 BU080 BU130/C/CF a=29 b=13
※2. BU205M BU238M/MC/MCF BU406M/MC/MCF BU1203MCF a=32 b=16



Specifications

B/W ／ COLOR	B/W				COLOR	
Pixels	0.3M		0.8M	1.3M	0.3M	1.3M
Item ＼ Model Name	BU030	BU031	BU080	BU130	BU030C/CF	BU130C/CF
Interface	USB 3.0 (Only SuperSpeed is supported))					
Imager	1/3 type CCD (ICX424AL)	1/2 type CCD (ICX414AL)	1/3 type CCD (ICX204AL)	1/3 type CCD (ICX445AL)	1/3 type CCD (ICX424AQ)	1/3 type CCD (ICX445AQ)
Resolution	640 (H) × 480 (V)		1,024 (H) × 768 (V)	1,280 (H) × 960 (V)	640 (H) × 480 (V)	1,280 (H) × 960 (V)
Frame Rate	125 fps		40 fps	30 fps	125 fps	30 fps
Pixel Size	7.4 (H) × 7.4 (V) μm	9.9 (H) × 9.9 (V) μm	4.65 (H) × 4.65 (V) μm	3.75 (H) × 3.75 (V) μm	7.4 (H) × 7.4 (V) μm	3.75 (H) × 3.75 (V) μm
Electronic Shutter	MANUAL : 10 μs to 16 s, Random Trigger Shutter		MANUAL : 30 μs to 16 s, Random Trigger Shutter		MANUAL : 10 μs to 16 s, Random Trigger Shutter	MANUAL : 30 μs to 16 s, Random Trigger Shutter
Scan Method	Progressive					
Color Filter	—				RGB primary color mosaic-on-tip color filter	
Standard Sensitivity	1,700 lx, F5.6, 1/125 s		1,700 lx, F5.6, 1/40 s	1,300 lx, F8, 1/30 s	C : 3,500 lx, F5.6, 1/125 s CF : 4,200 lx, F5.6, 1/125 s	C : 1,250 lx, F5.6, 1/30 s CF : 1,500 lx, F5.6, 1/30 s
Minimum Sensitivity	7 lx, F1.4 (Gain +18 dB, Video level 50%)			3 lx, F1.4 (Gain +18 dB, Video level 50%)	C: 14 lx, CF :17 lx, F1.4 (Gain+18 dB, Video level 50%)	C: 5 lx, CF : 6 lx, F1.4 (Gain +18 dB, Video level 50%)
Gamma	γ=1.0 (OFF) to 0.45					
Gain	MANUAL : 0 to +18dB					
White Balance	—				Manual, Once	
Sync System	Internal synchronization					
Image Output Format	Mono 8 bit, Mono 10 bit All pixel readout / Scalable / Binning				RGB 24 bit, YUV422 16 bit, YUV411 12 bit, Bayer 8 / 10 bit, Mono 8 bit All pixel readout / Scalable / Binning	
Power Supply	DC+5 V ±5% (from USB connector)					
Power Consumption	2.6 W				2.7 W	
Lens Mount	C - Mount					
Dimensions	29 (W) × 29 (H) × 13 (D) mm (Not including protrusion)					
Mass	27 g					
Operation Assurance	'Temperature : 0℃ to 40℃ (Camera housing temperature : less than 50℃), Humidity : 10% to 90% (no condensation)					
Conformity	CE, FCC, RoHS, WEEE, USB3 Vision, GenICam, IIDC2					

Model name suffix F : with IR-cut filter, (none) : without glass or optical filter

Specifications

B/W ／ COLOR	B/W					
Pixels	1.3 M	2M	2.3M	3.1 M	4M	5M
Item \ Model Name	BU132M	BU205M	BU238M	BU302MG	BU406M	BU505MG
Interface	USB 3.0 (Only SuperSpeed is supported)					
Imager	1/1.8 type GS-CMOS (EV76C560)	2/3 type GS-CMOS (CMV2000)	1/1.2 type GS-CMOS (IMX174)	1/1.8 type GS-CMOS (IMX252)	1.0 type GS-CMOS (CMV4000)	2/3 type GS-CMOS (IMX250)
Resolution	1,280 (H) X 1,024 (V)	2,048 (H) × 1,088 (V)	1,936(H) × 1,216(V)	2,048 (H) X 1,536 (V)	2,048 (H) × 2,048 (V)	2,448 (H) X 2,048 (V)
Frame Rate	Mono 8 / 10 : 61 fps	170 fps	165 fps	Mono 8 : 120 fps Mono 10 / 12 : 63 fps	90 fps	Mono 8 : 75 fps Mono 10 / 12 : 39 fps
Pixel Size	5.3 (H) X 5.3 (V) μm	5.5 (H) × 5.5 (V) μm	5.86 (H) × 5.86 (V) μm	3.45 (H) X 3.45 (V) μm	5.5 (H) × 5.5 (V) μm	3.45 (H) X 3.45 (V) μm
Electronic Shutter	MANUAL : 30 μs to 1 s, Random Trigger Shutter	MANUAL : 30 μs to 16 s, Random Trigger Shutter				
Scan Method	Progressive					
Color Filter	—					
Standard Sensitivity	500 lx, F5.6, 1/62.5 s	3,800 lx, F8, 1/200 s	3,300 lx, F8, 1/200 s	3,250 lx, F5.6, 1/120 s	3,500 lx, F11, 1/90 s	2,100 lx, F5.6, 1/75 s
Minimum Sensitivity	2 lx, F1.4 (Gain +18dB, Video level 50%)	8 lx, F1.4 (Gain ×8, Video level 50%)	7 lx, F1.4 (Gain +18 dB, Video level 50%)	7 lx, F1.4 (Gain +24 dB, Video level 50%)	4 lx, F1.4 (Gain ×8, Video level 50%)	5 lx, F1.4 (Gain +24 dB, Video level 50%)
Gamma	γ=1.0 (OFF) to 0.45					
Gain	MANUAL : 0 to +18dB	MANUAL (Digital gain) : ×1 to ×8	MANUAL : -6 to +18dB	MANUAL : 0 to +24dB	MANUAL (Digital gain) : ×1 to ×8	MANUAL : 0 to +24dB
White Balance	—					
Sync System	Internal synchronization					
Image Output Format	Mono 8 / 10 bit All pixel readout / Scalable /Binning	Mono 8 bit All pixel readout / Scalable /Decimation / Reverse (H/V)	Mono 8 bit All pixel readout / Scalable /Reverse (H/V)	Mono 8 / 10 / 12 bit All pixel readout / Scalable / Decimation / Reverse (H/V)	Mono 8 bit All pixel readout / Scalable /Decimation / Reverse (H/V)	Mono 8 / 10 / 12 bit All pixel readout / Scalable / Decimation / Reverse (H/V)
Power Supply	DC+5 V ±5% (from USB connector)					
Power Consumption	1.7 W	2.7 W	2.9 W	3.2 W	2.7 W	3.2 W
Lens Mount	C - Mount					
Dimensions	29 (W) × 29 (H) × 16 (D) mm (Not including protrusion)					
Mass	32 g			33 g	32 g	33 g
Operation Assurance	Temperature : 0℃ to 40℃ (Camera housing temperature : less than 50℃), Humidity : 10% to 90% (no condensation)					
Conformity	CE, FCC, RoHS, WEEE, USB3 Vision, GenICam, IIDC2					

Model name suffix G : with Dust-proof glass, (none) : without glass or optical filter

B/W ／ COLOR	COLOR				
Pixels	2.3M	3.1M	4M	5M	12M
Item \ Model Name	BU238MC/MCF	BU302MCG/MCF	BU406MC/MCF	BU505MCG/MCF	BU1203MC/MCF
Interface	USB 3.0 (Only SuperSpeed is supported)				
Imager	1/1.2 type GS-CMOS (IMX174)	1/1.8 type GS-CMOS (IMX252)	1.0 type GS-CMOS (CMV4000)	2/3 type GS-CMOS (IMX250)	1/1.7 type RS-CMOS (IMX226CQJ)
Resolution	1,936 (H) × 1,216 (V)	2,048 (H) X 1,536 (V)	2,048 (H) × 2,048 (V)	2,448 (H) X 2,048 (V)	4,000 (H) × 3,000 (V)
Frame Rate	165 fps	Bayer 8, Mono 8 : 120 fps YUV, Bayer 10 / 12 : 63 fps RGB, BGR : 42 fps	90 fps	Bayer 8, Mono 8 : 75 fps YUV, Bayer 10 / 12 : 39 fps RGB, BGR : 26 fps	30 fps
Pixel Size	5.86 (H) × 5.86 (V) μm	3.45 (H) X 3.45 (V) μm	5.5 (H) × 5.5 (V) μm	3.45 (H) X 3.45 (V) μm	1.85 (H) × 1.85 (V) μm
Electronic Shutter	MANUAL : 30 μs to 16 s, Random Trigger Shutter				MANUAL : 43.28 μs to 16 s (Rolling reset), Random Trigger Shutter (Global reset)
Scan Method	Progressive				
Color Filter	RGB primary color mosaic-on-tip color filter				
Standard Sensitivity	C : 3,700 lx, F8, 1/200 s CF : 4,100 lx, F8, 1/200 s	CG : 2,400 lx, F4, 1/120 s CF : 2,650 lx, F4, 1/120 s	4,800 lx, F8, 1/90 s	CG : 3,000 lx, F5.6, 1/75 s CF : 3,300 lx, F5.6, 1/75 s	C : 4,200 lx, F8, 1/30 s CF : 4,600 lx, F8, 1/30 s
Minimum Sensitivity	C : 8 lx, CF :9 lx, F1.4(Gain +18 dB, Video level 50%)	CG : 10 lx, CF : 11 lx F1.4(Gain +24 dB, Video level 50%)	10 lx, F1.4 (Gain ×8, Video level 50%)	CG : 6 lx, CF : 7 lx F1.4(Gain +24 dB, Video level 50%)	C : 13 lx, CF : 14 lx, F1.4 (Gain ×8, Video level 50%)
Gamma	γ=1.0 (OFF) to 0.45				
Gain	MANUAL : -6 to +18dB	MANUAL : 0 to +24dB	MANUAL (Digital gain) : ×1 to ×8	MANUAL : 0 to +24dB	MANUAL (Digital gain) : 0 to +18dB
White Balance	Manual, Once				
Sync System	Internal synchronization				
Image Output Format	Bayer 8 bit All pixel readout / Scalable / Reverse (H/V)	RGB 24 bit, BGR 24 bit, YUV422 16 bit, YUV411 12 bit, Bayer 8 / 10 / 12 bit, Mono 8 bit All pixel readout / Scalable / Binning / Decimation / Reverse (H/V)	Bayer 8 bit All pixel readout / Scalable / Decimation / Reverse (H/V)	RGB 24 bit, BGR 24 bit, YUV422 16 bit, YUV411 12 bit, Bayer 8 / 10 / 12 bit, Mono 8 bit All pixel readout / Scalable / Binning / Decimation / Reverse (H/V)	Bayer 8 bit, Mono 8 bit All pixel readout / Scalable /Reverse (H/V)
Power Supply	DC+5 V ±5% (from USB connector)				
Power Consumption	2.9 W	4.0 W	2.7 W	4.0 W	2.7 W
Lens Mount	C - Mount				
Dimensions	29 (W) × 29 (H) × 16 (D) mm (Not including protrusion)				
Mass	32 g	33 g	32 g	33 g	32 g
Operation Assurance	Temperature : 0℃ to 40℃ (Camera housing temperature : less than 50℃), Humidity : 10% to 90% (no condensation)				
Conformity	CE, FCC, RoHS, WEEE, USB3 Vision, GenICam, IIDC2				

Model name suffix G : with Dust-proof glass, F : with IR-cut filter, (none) : without glass or optical filter
※GS-CMOS : Global shutter CMOS / RS-CMOS : Rolling shutter CMOS

DU Series

DU Series CMOS model
40mm × 40mm × 35mm 85g

Outline

DU series have USB3.0 interface for image output and control. Compact and light, suitable for set in equipment. 3 years warranty.
Wide product range from 6M or 12M.

Features

Easy operation

- Featuring newly developed TELI original IP core achieves super high speed correspondence.
- Body size in most compact class is suitable for setting in equipment.
- Power is supplied by USB cable.
- e-CON connector is equipped.
- TELI original software "TeliCamSDK" is available to free download as SDK.

Various function

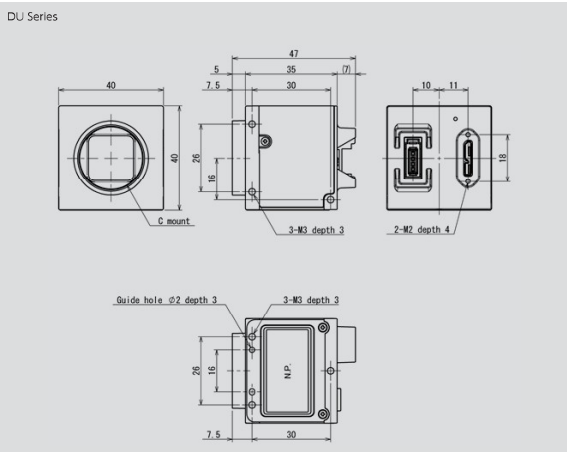
- "Event notifications" camera notified status information via event Packet.
- "BUS synchronization mode" synchronized exposure timing of multiple cameras completely.
- "Bulk trigger mode" outputs multiple images by one trigger input.(*1)
- "Sequential shutter mode" allows output several different setting image.(*2)
- "Image buffer" allows readout image data from host PC on demand.(*3)
- "Scalable mode and binning mode" higher speed image scan is available.(*4)
- "BERT function" measures correspondence quality of cables.(*5)

*functions and modes of *1 to *5 above are different depend on model.

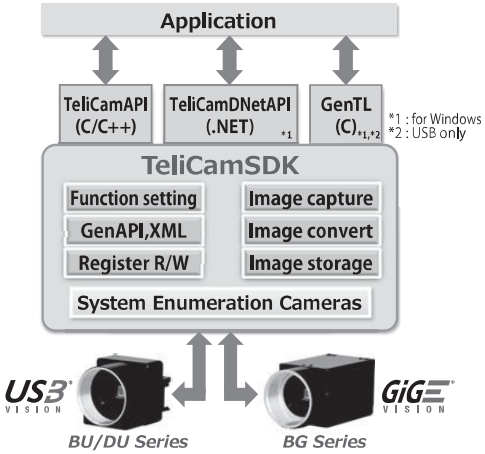
Accessory information (options)

Dimensions

DU Series



TeliCamSDK



- Easy to capture image
- More than 70% reduction of mounting code
- GEN<i>CAM available
- Varieties of functions for easy programming
- Abundant sample code
- Easy to understand manuals
- Unified SDK for USB3.0 & GigE

Package composition of TeliCamSDK

Driver | Sample code | Setting tools
Library | Viewer | Instruction manual

* TeliCamSDK contains the components necessary for application development.

bit	Windows					Linux	
	XP SP3	Vista	7	8.1	10	Ubuntu 14.04 LTS	Debian 8.1.0
32	✔ (Corresponds to old ver.)	✔ (Corresponds to old ver.)	✔	✔	✔	(i386) (Please contact us)	(i386) (Please contact us)
64	–	✔ (Corresponds to old ver.)	✔	✔	✔	✔ (AMD64)	✔ (AMD64)

* Linux version for ARM is under development.

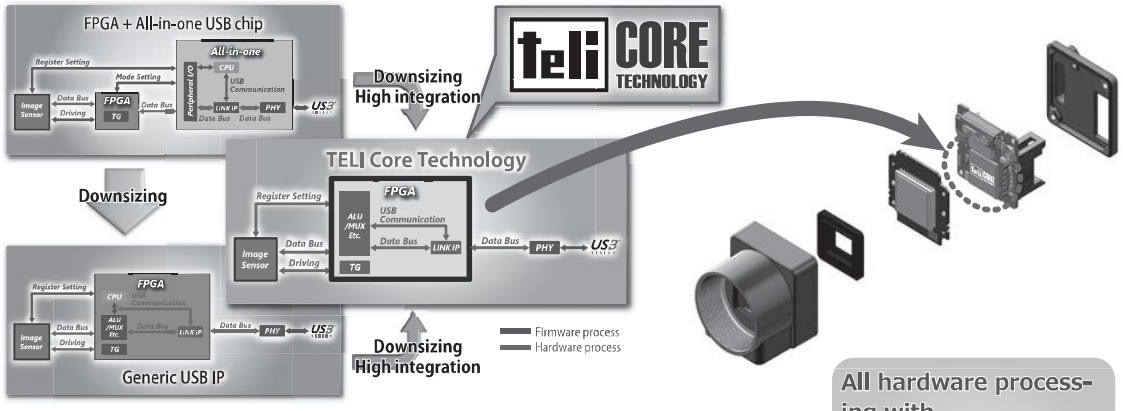
Specifications

B/W ／ COLOR	B/W	COLOR	B/W	COLOR
Pixels	6.5 M		12.3M	
Item \ Model Name	DU657M	DU657MC	DU1207MG	DU1207MCG/MCF
Interface	USB 3.0 (Only SuperSpeed is supported)			
Imager	1.1 type GS-CMOS (TELI Original)		1.1 type GS-CMOS (IMX253)	
Resolution	2,560 (H) X 2,560 (V)		4,096 (H) X 3,000 (V)	
Frame Rate	Mono 8 : 55 fps	Bayer 8 : 55 fps	Mono 8 : 32 fps Mono 10 / 12 : 16 fps	Bayer 8, Mono 8 : 31 fps YUV, Bayer 10 / 12 : 16 fps RGB, BGR : 10 fps
Pixel Size	5.0 (H) X 5.0 (V) μm		3.45 (H) × 3.45 (V) μm	
Electronic Shutter	MANUAL : 10 μs to 200 ms, Random Trigger Shutter		MANUAL : 30 μs to 16 s, Random Trigger Shutter	
Scan Method	Progressive			
Color Filter	–	RGB primary color mosaic-on-tip color filter	–	RGB primary color mosaic-on-tip color filter
Standard Sensitivity	900 lx, F5.6, 1/62.5 s	2,200 lx, F5.6, 1/62.5 s	860 lx, F5.6, 1/32 s	CG : 1,150 lx, F5.6, 1/31 s CF : 1,425 lx, F5.6, 1/31 s
Minimum Sensitivity	16 lx, F1.4(Gain x8, Video level 50%)	40 lx, F1.4(Gain x8, Video level 50%)	2 lx, F1.4(Gain +24 dB, Video level 50%)	CG : 3 lx, CF : 3 lx F1.4(Gain +24 dB, Video level 50%)
Gamma	γ=1.0 (OFF) to 0.45			
Gain	MANUAL (Digital gain) : ×1 to ×8		MANUAL : 0 to +24dB, AGC	
White Balance	–	Manual, Once	–	Manual, Once
Sync System	Internal synchronization			
Image Output Format	Mono 8 bit All pixel readout / Scalable / Binning / Reverse (H/V)	Bayer 8 bit All pixel readout / Scalable / Binning / Reverse (H/V)	Mono 8 bit All pixel readout / Scalable / Binning / Decimation / Reverse (H/V)	RGB 24 bit, BGR 24 bit, YUV422 16 bit, YUV411 12 bit, Bayer 8 / 10 / 12 bit, Mono 8 bit All pixel readout / Scalable / Binning / Decimation / Reverse (H/V)
Power Supply	DC+5 V ±5% (from USB connector)			
Power Consumption	3.6 W		4.0 W	4.5 W
Lens Mount	C - Mount			
Dimensions	40 (W) × 40 (H) × 35 (D) mm (Not including protrusion)			
Mass	85 g		90 g	
Operation Assurance	Temperature : -5℃ to 45℃ , Humidity : 10% to 90% (no condensation)			
Conformity	CE, FCC, RoHS, WEEE, USB3 Vision, GenICam, IIDC2			

Model name suffix G : with Dust-proof glass, F : with IR-cut filter, (none) : without glass or optical filter

Featuring TELI original IP "TELI Core Technology"

- Achieved high integration with TELI's original technology.
- Shorten the response time!



Access response (Average) PC (Board) side host controller : Intel / Renesas

Command	Our Unique USB IP	Generic USB IP	All in one USB chip
	100 times faster		
	10 times faster		
Read register	2.2 / 5μs	40.8 / 44.6μs	223 / 546μs
Software trigger (write register)	2.2 / 5.4μs	46.9 / 71.0μs	314 / 324μs

All hardware processing with
no CPU and no software !

Downsizing and super high speed response by high integration !