

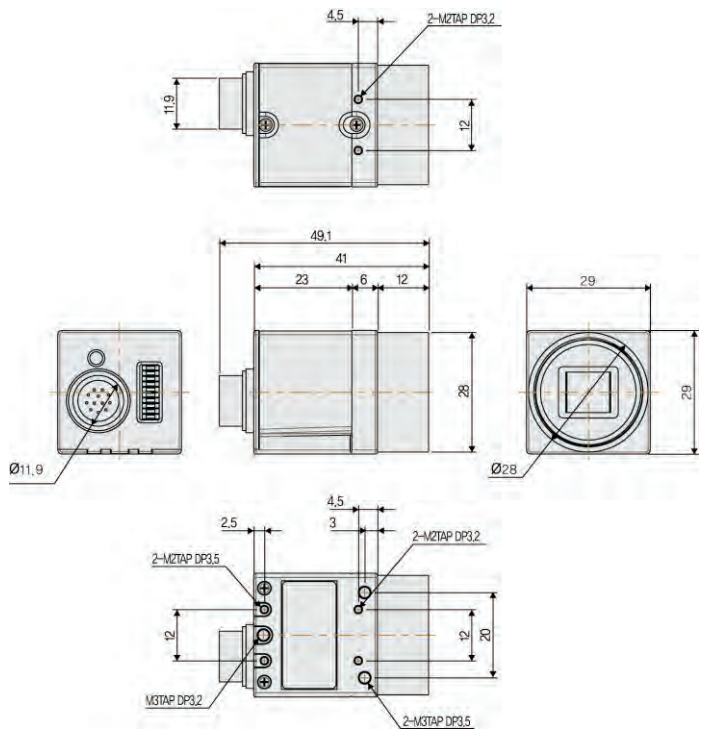
Analog Cameras



Key Features

Mini-size CCD Analog camera
 Trigger input range : +3V~5V
 EIA camera(MV-BE20A, MA-D037E)
 High Rates Scanning(HRS mode)

Dimension (Unit : mm)



Pin map

12pin Connector

Pin No.	Name	IN/OUT	Remark
1	GND	-	Power GND
2	Power	IN	+12VDC
3	GND	IN	Video GND
4	Video Signal	OUT	
5	GND	-	HD GND
6	HD	IN/OUT	
7	VD	IN/OUT	
8	GND	-	VD GND
9	HRS	IN	Progressive type only
10	WEN	OUT	
11	Trigger	IN	
12	GND	-	Trigger GND



Only [MV-BE20A]

Download (File name)

ex) SDK download:

CREVIS Site ▶ Search window ▶

- Camfile : analog_matrox.zip
- analog_cognex.zip
- analog_Coreco-Dalsa.zip
- analog_euresys.zip

Model (Mono)	MA-D130B	MA-D200B	MA-D210B
Sensor size	1/3"	1/1.8"	1/3"
Image sensor	CCD	CCD	CCD
Resolution	1280 x 960	1620 x 1220	1920 x 1080
Pixel size (μm)	3.75 x 3.75	4.4 x 4.4	2.8 x 2.8
Max frame rate	20fps	15fps	15fps
Interface	1 Vpp Analog Composite Signal		
Binning modes	Vertical		
Synchronization	Internal, External Trigger		
Sync level	Input : 3~5 Vpp, TTL input, Output : 5V Level		
Partial scan	Full : 960 Lines/20fps 1/2 : 435 Lines/40fps 1/4 : 167 Lines/80fps -	Full : 1220 Lines/15fps 1/2 : 550 Lines/30fps 1/4 : 211 Lines/60fps -	Full : 1080 Lines/15fps 1/2 : 493 Lines/30fps 1/4 : 198 Lines/60fps -
Horizontal scan frequency	Horizontal:19.841KHz, Vertical 20.042Hz	Horizontal:18.75KHz, Vertical 14.98Hz	Horizontal:16.514KHz, Vertical 15.01Hz
Trigger modes	Edge preset mode(fixed shutter), Pulse width		
Shutter	Global		
Shutter speed	Off, 1/100, 1/200, 1/500, 1/1000, 1/2000, 1/4000, 1/10000sec	Off, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000sec	
Minimum illumination	-	-	-
Horizontal resolution	960 TV lines (Min)	1220 TV lines (Min)	1080 TV lines (Min)
S/N ratio	34dB	34dB	-
Optical axis accuracy	Image Center ±0.1mm		
Gain	Manual (0dB ~ 12dB)		
Gamma	1.0 (fixed)		
Exposure trigger control	Positive and rising mode		
Lens mount	C mount		
Weight	<44g		
Dimension	29mm x 29mm x 29mm		
Temperature	-5℃ ~ 45℃ (Operating) / -20℃ ~ 60℃ (Storage)		
Power consumption	1.4W	1.6W	1.7W
Power requirements	12VDC ± 10%, PoE (Power over Ethernet 802.3af compliant)		
Conformity	CE, RoHS, WEEE		
Warranty	3 years		

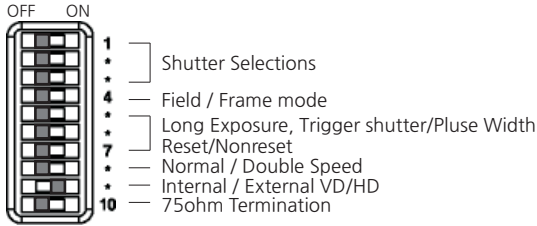
Model (Mono)	MA-D030B	MA-D037E
Sensor size	1/3"	1/3"
Image sensor	CCD	CCD
Resolution	660 x 494	768 x 494
Pixel size (μm)	7.4 x 7.4	6.4 x 7.5
Max frame rate	70fps	30fps
Interface	1 Vpp Analog Composite Signal	
Binning modes	Vertical	
Synchronization	Internal, External Trigger	
Sync level	Input : 3~5 Vpp, TTL input, Output : 5V Level	
Partial scan	Full : 520 Lines/70fps 1/2 : 219 Lines/140fps 1/4 : 83 Lines/280fps -	Double speed mode 60fps - - -
Horizontal scan frequency	Horizontal : 35.885KHz, Vertical 70.088Hz	Horizontal : 15.734KHz, Vertical 59.94Hz
Trigger modes	Edge preset mode(fixed shutter), Pulse width	
Shutter	Global	
Shutter speed	Off, 1/200, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000sec	Off, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000sec
Minimum illumination	-	-
Horizontal resolution	520 TV lines (Min)	570 TV lines (Min)
S/N ratio	35dB	56dB
Optical axis accuracy	Image Center ±0.1mm	
Gain	Manual (0dB ~ 12dB)	Manual (0dB ~ 12dB)
Gamma	1.0 (fixed)	
Exposure trigger control	Positive and rising mode	
Lens mount	C mount	
Weight	<44g	
Dimension	29mm x 29mm x 29mm	
Temperature	-5℃ ~ 45℃ (Operating) / -20℃ ~ 60℃ (Storage)	
Power consumption	1.4W	1.6W
Power requirements	12VDC ± 10%, PoE (Power over Ethernet 802.3af compliant)	
Conformity	CE, RoHS, WEEE	
Warranty	3 years	

Model (Mono)	MV-BE20A	MV-BX30A
Sensor size	1/2"	1/3"
Image sensor	CCD	CCD
Resolution	768 x 494	1024 x 772
Pixel size (μm)	8.4 x 9.8	4.65 x 4.65
Max frame rate	30fps	30fps
Interface	1 Vpp Analog Composite Signal	
Binning modes	Vertical	
Synchronization	Internal, External Trigger	
Sync level	Input : 3~5 Vpp, TTL input, Output : 5V Level	
Partial scan	- - - -	Full : 768 Lines/30fps 1/2 : 353 Lines/60fps 1/3 : 218 Lines/90fps 1/4 : 151 Lines/120fps
Horizontal scan frequency	Horizontal:31.486KHz(15.734Hz), Vertical:119.88Hz(59.94Hz)	Horizontal:23.6KHz, Vertical 30Hz
Trigger modes	Edge preset mode(fixed shutter)-Reset, non Reset, Pulse width mode-Reset	Edge preset mode(fixed shutter), Pulse width
Shutter	Global	
Shutter speed	Off, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000sec	
Minimum illumination	0.5 lx (F1.4, 50 IRE)	2.0 lx (F1.4, 50 IRE, 1/30sec)
Horizontal resolution	570 TV lines (Min)	768 TV lines (Min)
S/N ratio	56dB	
Optical axis accuracy	Image Center ±0.1mm	
Gain	Manual (0dB ~ 12dB)	
Gamma	1.0 (fixed)	
Exposure trigger control	Positive and rising mode	
Lens mount	C mount	
Weight	<44g	
Dimension	29mm x 29mm x 29mm	
Temperature	-5℃ ~ 45℃ (Operating) / -20℃ ~ 60℃ (Storage)	
Power consumption	2.0W	1.8W
Power requirements	12VDC ± 10%, PoE (Power over Ethernet 802.3af compliant)	
Conformity	CE, RoHS	
Warranty	3 years	

Model (Mono)	MV-BV30A	MV-BV20A
Sensor size	1/3"	1/2"
Image sensor	CCD	CCD
Resolution	659 x 494	659 x 494
Pixel size (μm)	7.4 x 7.4	9.9 x 9.9
Max frame rate	60fps	60fps
Interface	1 Vpp Analog Composite Signal	
Binning modes	Vertical	
Synchronization	Internal, External Trigger	
Sync level	Input : 3~5 Vpp, TTL input, Output : 5V Level	
Partial scan	Full : 494 Lines/60fps 1/2 : 239 Lines/120fps 1/3 : 148 Lines/180fps 1/4 : 102 Lines/240fps	
Horizontal scan frequency	Horizontal : 31.468KHz, Vertical 60Hz	
Trigger modes	Edge preset mode(fixed shutter), Pulse width	
Shutter	Global	
Shutter speed	Off, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000sec	
Minimum illumination	1.0 lx (F1.4, 50 IRE, 1/60sec)	
Horizontal resolution	494 TV lines (Min)	
S/N ratio	56dB	
Optical axis accuracy	Image Center ±0.1mm	
Gain	Manual (0dB ~ 12dB)	
Gamma	1.0 (fixed)	
Exposure trigger control	Positive and rising mode	
Lens mount	C mount	
Weight	<44g	
Dimension	29mm x 29mm x 29mm	
Temperature	-5℃ ~ 45℃ (Operating) / -20℃ ~ 60℃ (Storage)	
Power consumption	2.0W	2.0W
Power requirements	12VDC ± 10%, PoE (Power over Ethernet 802.3af compliant)	
Conformity	CE, RoHS	
Warranty	3 years	

MV-BE20/30A/D037E

Mode Switch



Normal Shutter

OFF	1/125	1/250	1/500	1/1000	1/2000	1/4000	1/10000
1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>
2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>
3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>

* Normal Shutter is automatically set up 1/100 second when shutter off in trigger Shutter mode.

Mode setting

Standard	Trigger operation				Long exposure
	Trigger shutter (Reset)	Trigger shutter (Nonreset)	Pulse width (Reset)	Pulse width (Nonreset)	
5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>
6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>
7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>
Field/Frame		Double Speed	External HD/VD	Termination Resistor	
Field	Frame			75ohm	Open
4 <input type="checkbox"/>	4 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	10 <input type="checkbox"/>

MA-D130B/D200B/D210B/D030B

Mode Switch

PIN NO.	Name	Description
1	Shutter speed	OFF(1/15sec) ~ 1/10,000sec
2		
3		
4	Trigger Shutter mode	Normal/Fixed/PWC 1,2,3
5	HRS Scan Mode	Full/Binning/1/2, 1/4 Partial
6		
7		
8	Full Scan Enable	HRS Enable / Full Scan Enable
9	External Sync	HD/VD Input/Output
10	Trigger Polarity	Positive / Negative

Shutter speed

1 : MA-D130B 2 : MA-D200B
3 : MA-D210B 4 : MA-D030B

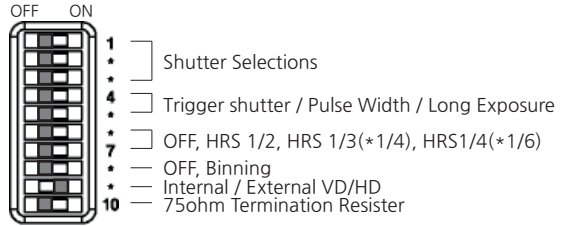
	OFF	1/100	1/200	1/500	1/1000	1/2000	1/4000	1/10000
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	9.99ms	5.0ms	1.99ms	984.10us	482.50us	231.70us	92.37us	36.63us

* Trigger mode가 Normal 또는 Fixed Mode일때 Shutter 설정값임.

MV-BS20/BX30/BV30A

Mode Switch

* Note : MV-BS20A Model is applied



Normal Shutter(unit:second)

OFF	1/125	1/250	1/500	1/1000	1/2000	1/4000	1/10000
1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>
2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>
3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>

* Normal Shutter is automatically set up 1/100 second when shutter off in trigger Shutter mode.

Mode Setting

* Note : MV-BS20A Model is applied

External Trigger operation			Long Exposure	Binning	
OFF	Trigger Shutter	Pulse width		OFF	ON
4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	8 <input type="checkbox"/>	8 <input type="checkbox"/>
5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>		
HRS				External HD/VD	Termination Resistor 75ohm
OFF	1/2	1/3(*1/4)	1/4(*1/6)		
6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>
7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>		

Trigger Shutter mode

Normal (Freerun)	External Trigger Operation		
	Fixed	PWC1	PWC2/3
4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>
5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>	5 <input type="checkbox"/>

- Fixed : Trigger Sync. Reset Mode
- PWC1 : Trigger Sync Reset Mode
- PWC2 : Trigger Sync. Non-Reset (VD Reset) Mode
- PWC3 : Long Exposure Mode
(Ext.Sync Mode가 'ON'이고 SW-Shutter speed가 'OFF' 일때만 설정됨)

HRS Scan Mode

Scan Mode			
FULL	Binning	1/2 Partial	1/4 Partial
6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>	6 <input type="checkbox"/>
7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>	7 <input type="checkbox"/>

Etc

Full Scan Enable		External Sync		Trig Polarity	
OFF	ON	OFF	ON	Positive	Negative
8 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	10 <input type="checkbox"/>