

## XC-55 (One piece)

## XC-55BB (Remote head)

### Component/OEM



#### OUTLINE

The ultra-compact XC-55 and XC-55BB monochrome camera which has a progressive scan CCD to provide full frame images. The XC-55BB is a remote head camera module of the XC-55. The square remote head of the XC-55BB has a precisely installed CCD to ensure accurate alignment and the miniature size allow access to very contained spaces. The CCD uses square pixels most suitable for machine vision. The square pixels of the CCD ensure resolution in equal in both horizontal and vertical axis and negates the use of dimension correction for image processing. The XC-55 and XC-55BB models are more compact and lightweight than conventional cameras and can be used in a wide range of image processing applications.

#### MAJOR FEATURES

- 1/3" IT Progressive Scan CCD
- Square Pixel : 7.4μm x 7.4μm
- Progressive Scan Format
  - 1: 2:1 Interlaced
- 1N: Non-Interlaced
- Frame Shutter
- Normal (1/100 to 1/8,000 sec)
- E-DONPISHA II (1/4 to 1/100,000 sec)
- Sensitivity : 400lx (F5.6)
- Minimum illumination : 0.5lx (AGC, F1.4)
- S/N ratio : 56dB
- GAIN : AGC, FIX (0dB), MAN (0 to 18dB)
- Sync System : Internal / External (HD / VD)

#### FEATURES OF EACH MODEL

##### ● XC-55

- One piece
- C mount lens
- Dimensions : 29(W) x 29(H) x 67(D)mm
- Weight : 110g

##### ● XC-55BB

- Remote head (separation length 2m)
- NF mount lens (Can be converted into a C mount)
- Dimensions : CHU 22(W) x 22(H) x 30(D)mm  
CCU 29(W) x 29(H) x 67(D)mm
- Weight : CHU 40g  
CCU 100g

Actual size : XC-55

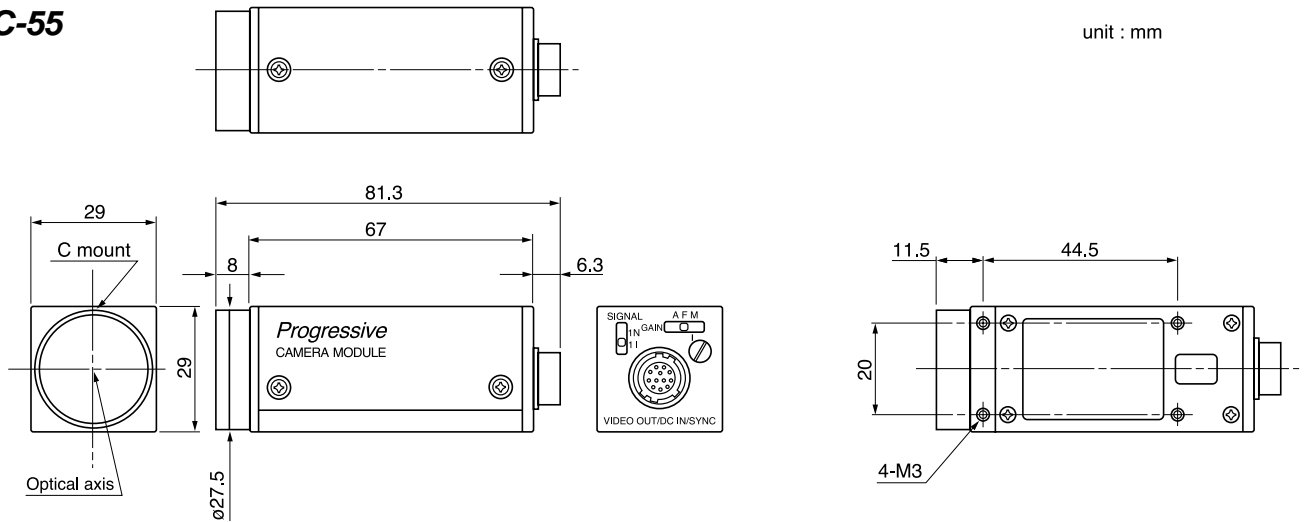


Actual size : XC-55BB (CHU)

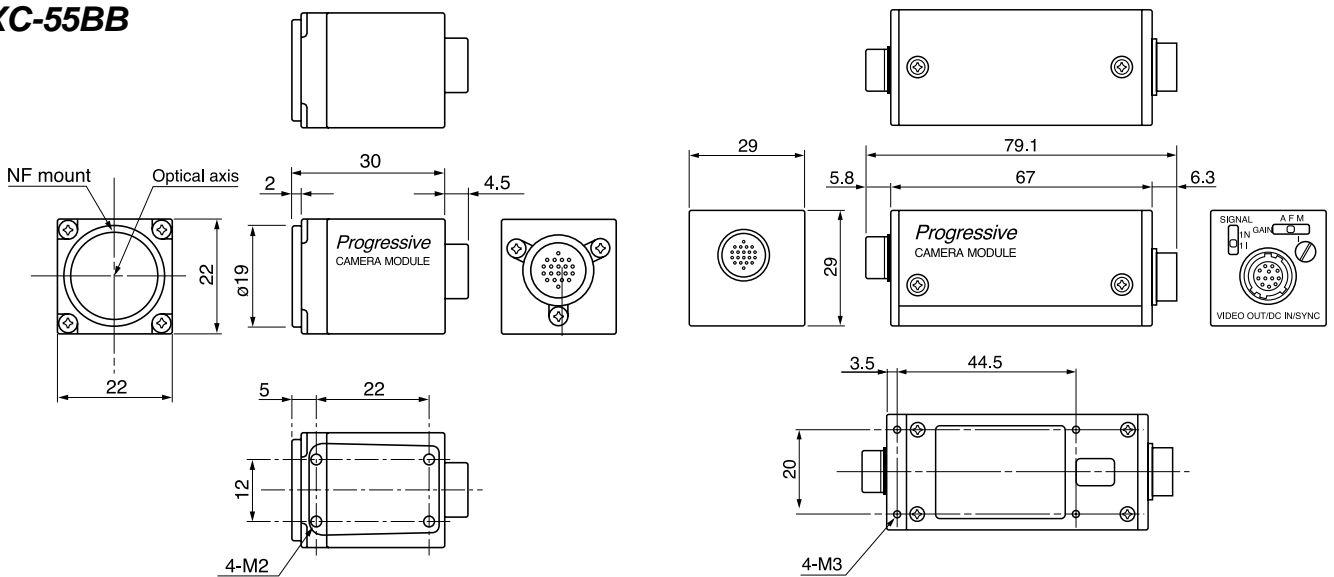


## DIMENSIONS



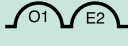
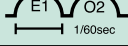
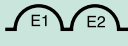

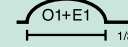
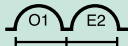
### **XC-55**



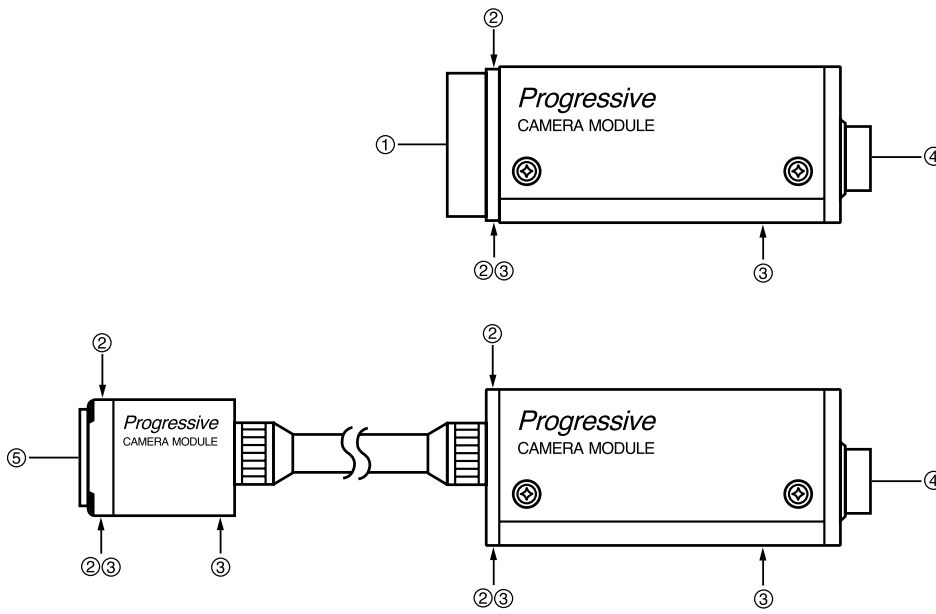
### **XC-55BB**



## COMPARISON WITH SONY XC-7500

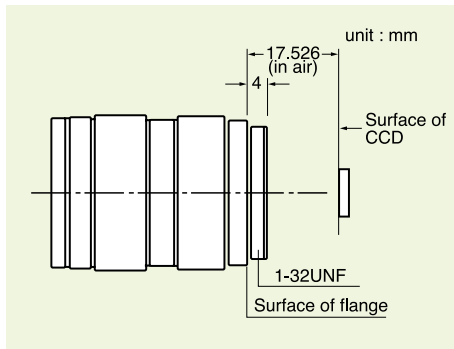
		XC-7500	XC-55/55BB	FEATURES
<div style="display: flex; flex-direction: column; align-items: center;">  <p><b>XC-7500</b></p>  <p><b>XC-55/55BB</b></p> <p>(Rear Panel)</p> </div>	<b>2I : 2-line Output</b> VIDEO OUT1  VIDEO OUT2 	○	—	Mode where the information in odd and even fields is obtained in 1/60 sec.
	<b>2N : 2-line Output</b> VIDEO OUT1  VIDEO OUT2 	○	—	Discrimination on the image processing side is not required because the field in which the same frame as 2I is always output is fixed.
	<b>1N : 1-line Output (Non-Interlaced)</b> VIDEO OUT 	○	○	A frame image is obtained by one output (1/30 sec.)
	<b>1I : 1-line Output (2 : 1 Interlaced)</b> CCD 2-line readout (field mixed) VIDEO OUT 	—	○	High-sensitivity mode where the 2-line read image of a CCD is obtained from one output (1/30 sec.) by interlacing.
<b>Trigger Control</b> <b>E-DONPISHA</b>	Low Speed Normal Speed High Speed	○	—	$\infty$ to 1/60 sec. 1/1,000 to 1/11,000 sec. 1/10,000 to 1/100,000 sec.
	<b>Trigger Control</b> (External)	○	○	$\infty$ to 1/10,000 sec.(XC-7500) 1/4 to 1/100,000 sec.(XC-55/55BB)

# LOCATION OF PARTS & OPERATION

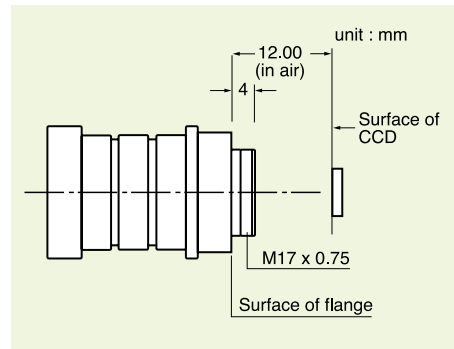


- ① Lens mount (C mount)  
A commercial C mount lens as well as the Sony standard lens can be used.
- ② Camera fixing reference hole  
High-precision screw hole machined on the lens mount surface. The reference hole can suppress the shift of an optical axis to the minimum.
- ③ Screw hole for tripod adaptor installation (VCT-333I/55I)
- ④ 12Pin Multiconnector  
The 12Pin multiconnector is connected to a DC IN/SYNC (DC power/sync signal input) CCXC-12Pxxx cable.

## C mount standard



## NF mount standard



- ⑤ Lens mount (NF mount)  
Mount standard with flange back of 12 mm developed by Sony. The lens mount can also be converted into a C mount. (LO-999CMT)

⑥ SIGNAL SWITCH

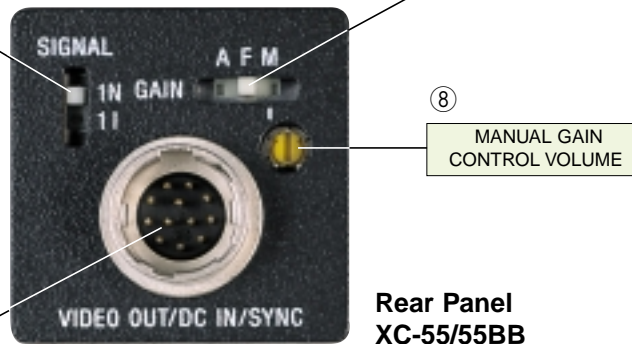
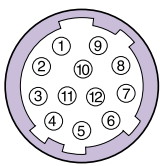
1N	1/30 Non-Interlaced
1I	1/60 Interlaced

⑦ GAIN SWITCH

A	AUTO GAIN
F	FIXED GAIN
M	MANUAL GAIN

- ⑥ Signal switch  
1N: Outputs all pixel data of a CCD continuously in 1/30 seconds.  
1I: Outputs all pixel data of a CCD in 1/60 seconds x 2. The output display appears on the monitor as interlacing of 2:1.

## ④ 12Pin Multiconnector



Rear Panel XC-55/55BB

- ⑦ Gain switch  
A: Outputs a fixed level of image according to the brightness of a subject. (Variable range: 0 to 18 dB)  
F: Fixed gain 0 dB  
The highest S/N ratio can be obtained.

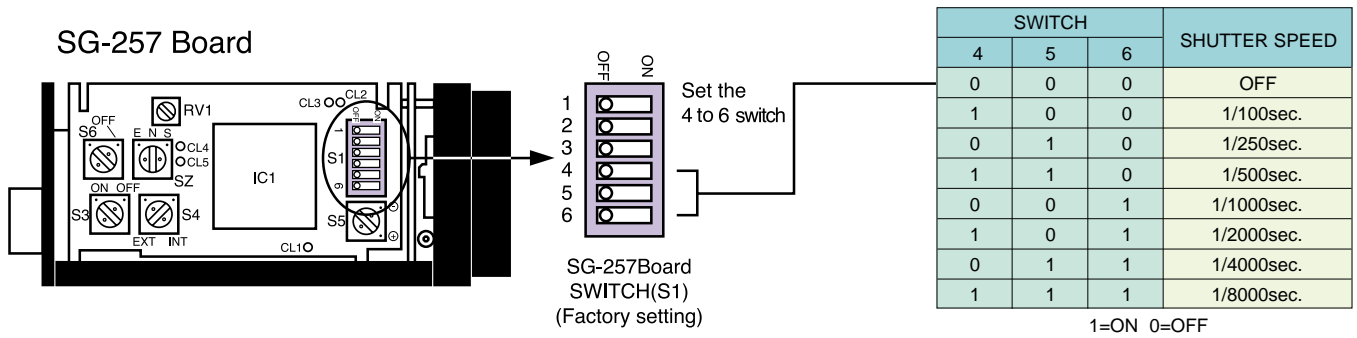
12P Multiconnector					
Pin No.	EXTERNAL HD/VD MODE	INTERNAL SYNC MODE	Pin No.	EXTERNAL HD/VD MODE	INTERNAL SYNC MODE
1	GND	GND	7	VD IN	VD OUT
2	+12V	+12V	8	TRIGGER IN(G)	TRIGGER IN(G)
3	VIDEO(G)	VIDEO(G)	9	TRIGGER IN	TRIGGER IN
4	VIDEO OUT	VIDEO OUT	10	GND	GND
5	HD(G)	HD(G)	11	+12V	+12V
6	HD IN	HD OUT	12	VD(G)	VD(G)

- M: Variable gain (manual)  
At the factory, the variable gain is adjusted to the fixed sensitivity for a standard subject.  
An image in the same level can be obtained when two or more XC-55/55BB are used for an identical subject.
- ⑧ The gain can be changed in the range of 0 to 18 dB when the gain switch is set to "M".

# SHUTTER FUNCTIONS & RESTART•RESET MODE

## ●Normal Shutter Modes

The normal shutter modes allow the capture of fast moving objects by continuously operating the electronic shutter.



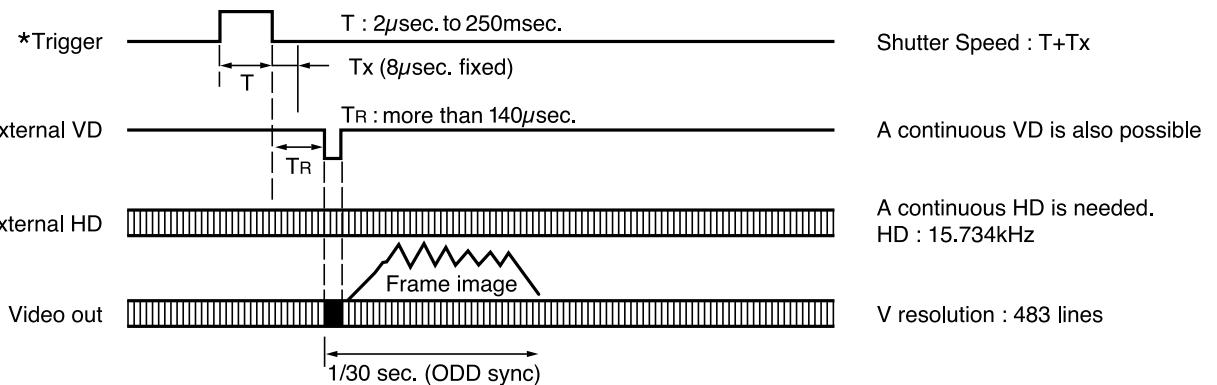
## ●Trigger Shutter Modes(E-DONPISHA II)

A fast moving object can be captured at a precise position by an external trigger input. The shutter speed can be set by adding constant storage time (8μ sec) to the trigger pulse width supplied by the control system. The shutter speed is automatically switched to the normal state by a trigger pulse or width more than 1/3 seconds.

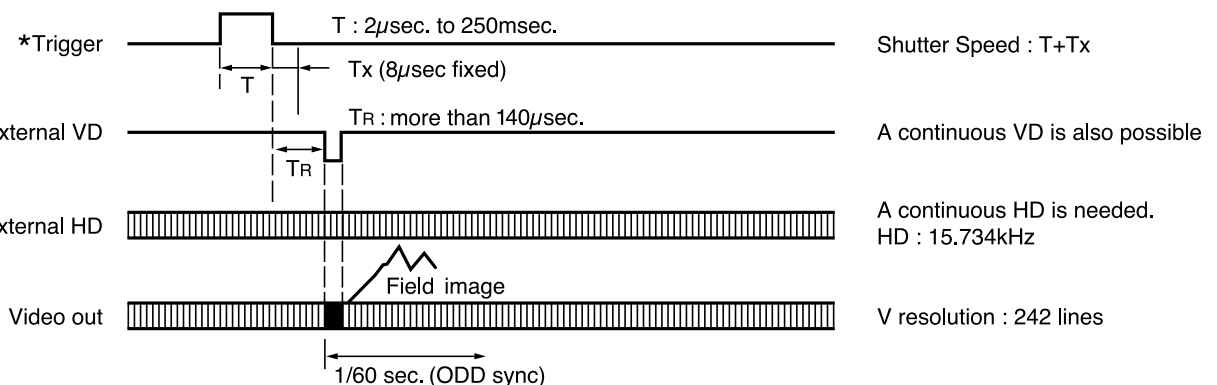
### IN mode & 1I mode

Applying a VD signal immediately (more than 140μ sec.) after the completion of strage provides the faster shutter speed operation.

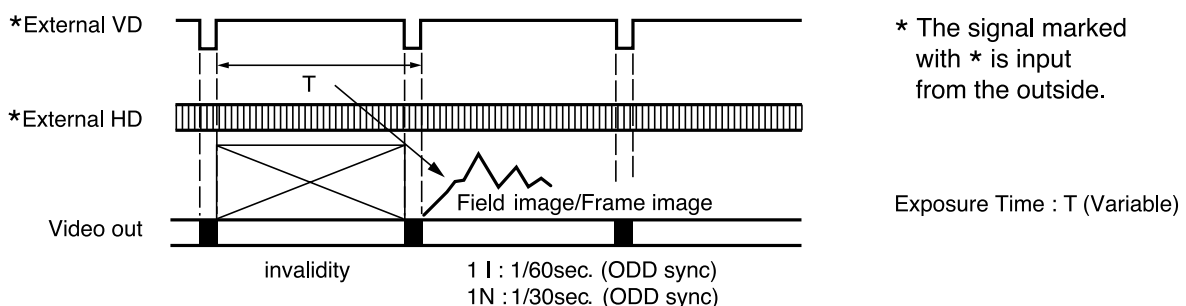
#### 1N mode



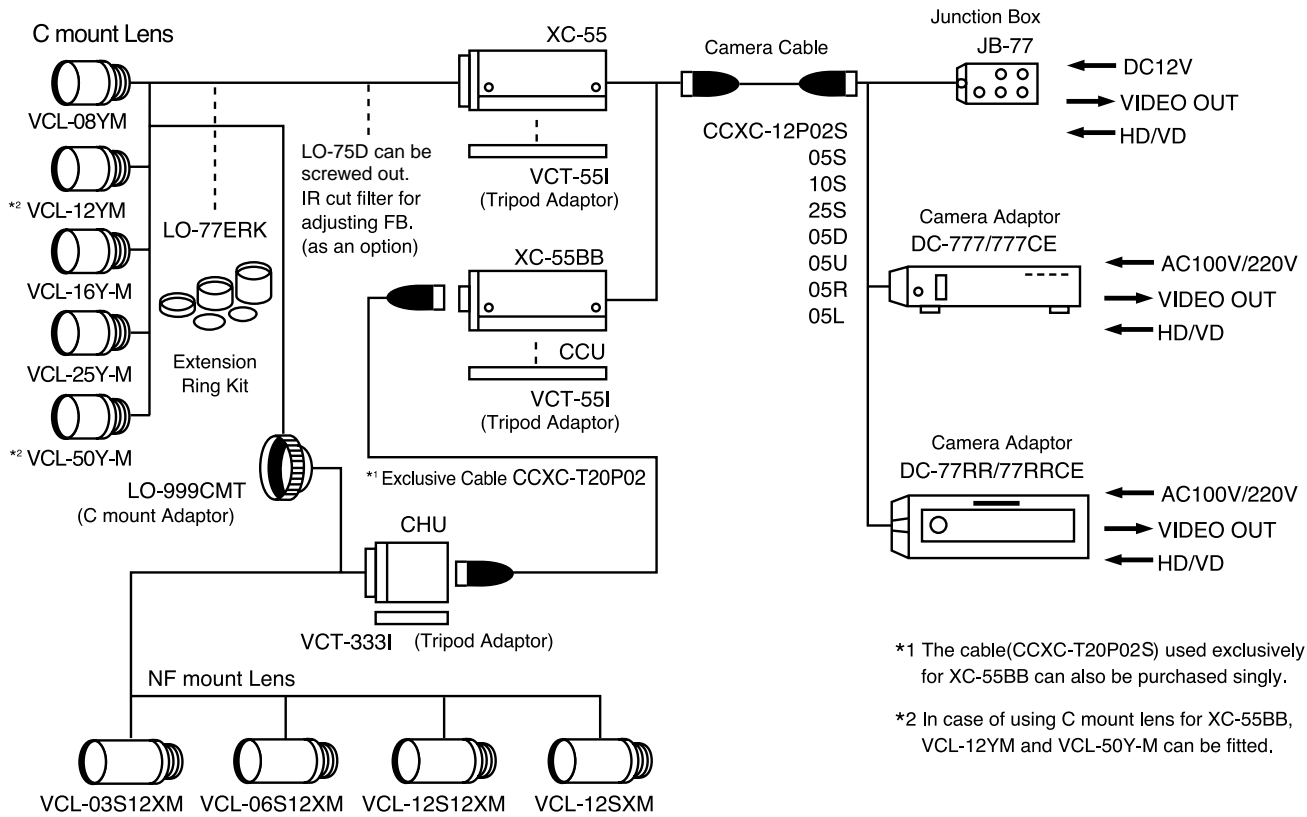
#### 1I mode



## ●Restart•Reset Mode(for long exposure)



## CONNECTIONS



Note : Use the CHU and CCU of XC-55BB by combining them in the same serial No.

## VIDEO OUTPUT MODES

The signal output below can be obtained by selecting the signal switch on the rear panel.

1I Setting (1/60 sec. 2:1 Interlaced)

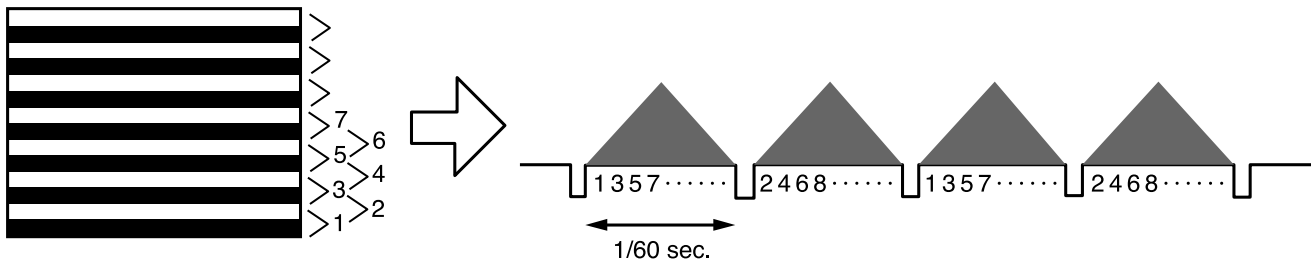
TV Standard Video Output/External Genlock

CCD Signal Output

2-line read out

VIDEO OUT

It can be connected a TV monitor

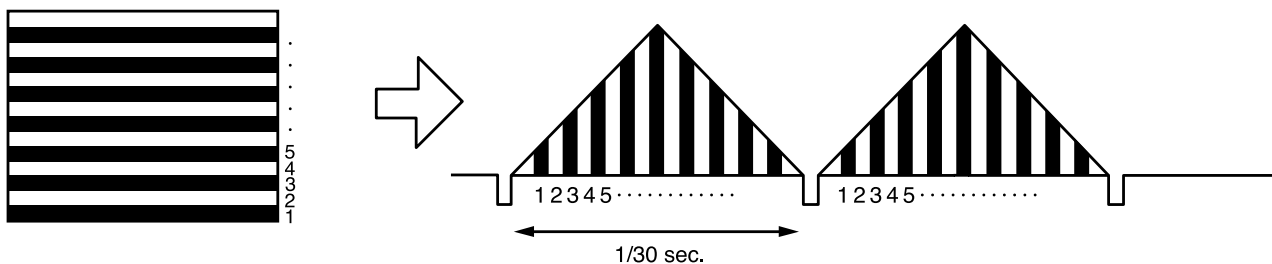


1N Setting (1/30 sec. Non-Interlaced)

Progressive Scan Video Output / External Genlock

CCD Signal Output

VIDEO OUT

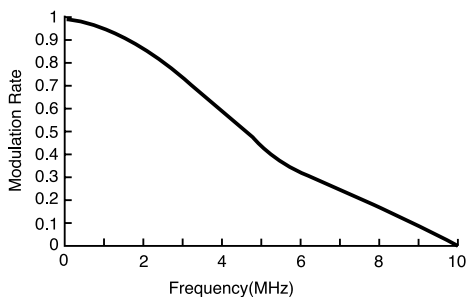


## SPECIFICATIONS

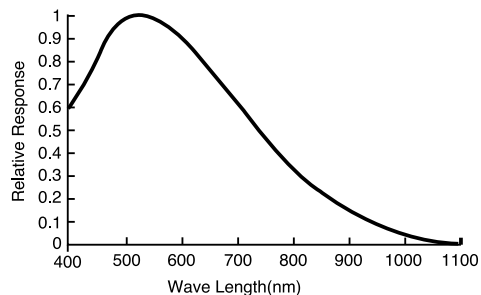
	XC-55	XC-55BB
Pick up device	1/3-inch Interline transfer Progressive Scan CCD	
Effective picture elements	659(H) x 494(V)	
Cell size	7.4µm x 7.4µm	
CCD horizontal drive frequency	12.2727MHz	
Signal systems	EIA/Progressive Scan	
Number of video output pixels	646(H) x 485(V)	
Lens mount	C mount	NF mount
Flange back	17.526mm	12.0mm
Horizontal frequency	15.734kHz	
Vertical frequency	59.94Hz/30Hz	
Sync System	Internal/External(auto)	
External sync system	HD/VD(2 to 5Vp-p)	
External sync allowance	Horizontal sync frequency±1%	
Jitter	less than ±50n sec.	
Output modes	1I: 2:1 Interlaced(1/60 sec.x2) 1N: Non-Interlaced(1/30 sec.)	
Horizontal resolution	500 TV lines	
Sensitivity	400lx, F5.6 (0dB)	
Minimum illumination	0.5lx (AGC, F1.4)	
S/N ratio	56dB	
Gain	AGC(0 to 18dB)/ FIX(0dB)/Manual(0 to 18dB)factory setting : fixed same level	
Gamma	ON(γ=0.45)/OFF(γ=1)(Internal switch selection•factory setting:OFF)	
Normal shutter	1/100, 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/8,000 sec.	
Trigger shutter (E-DONPISHA II)	1/4 to 1/100,000sec. HD/VD(2 to 5Vp-p)	
Power requirements	DC+12V(+10.5 to +15V)	
Power consumptions	1.8W	2.2W
Weight	110g	CHU:40g / CCU:100g
Operating temp./mois.	-5 to +45°C/20 to 80%	
Storage temp./mois.	-25 to +60°C/20 to 95%	
Vibration resistance	10G(XYZ directions)	
Shock resistance	70G	
MTBF	98,600Hrs	94,900Hrs
Regulations	UL1492, FCC Class A Digital Device, CE(EN50081-1+EN50082-1), AS4251.1	
Supplied accessories	Lens mount cap(1), Operating Instructions(1), Clamp filter(1)	

## CHARACTERISTICS

### ● Total MTF Response(typical value)



### ● Spectral Response(typical value)



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