

### XC-ST Series    XC-ST51/ST51CE XC-ST50/ST50CE XC-ST30/ST30CE

## Component/OEM



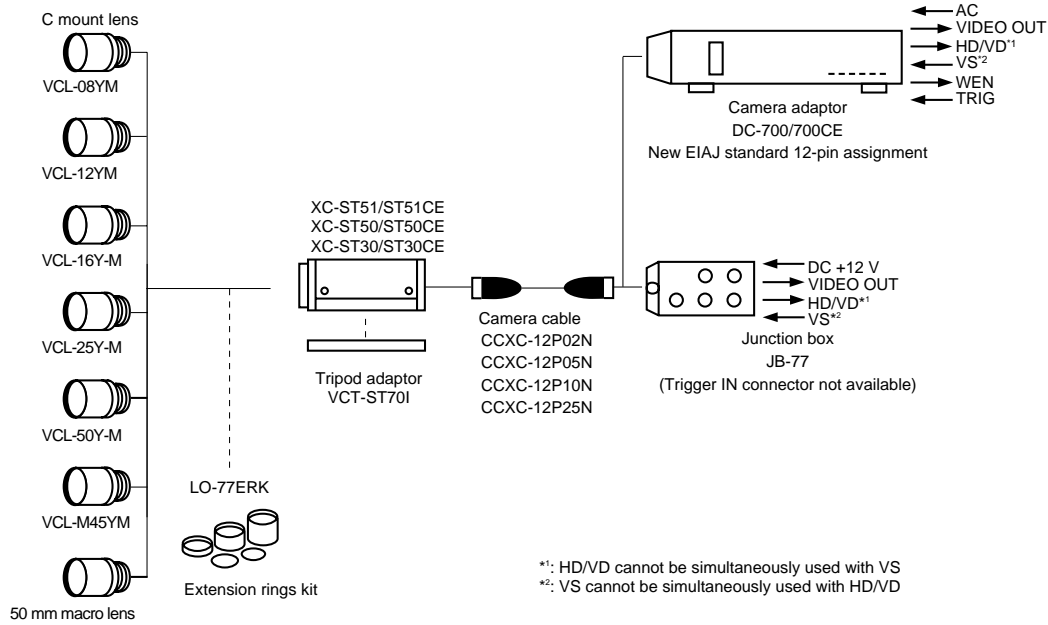
### OUTLINE

The XC-ST Series cameras incorporate the latest CCD and signal processing technologies into a compact black and white camera module. A new external trigger design allows the electronic shutter speed to be freely specified by the width of an external trigger pulse or by a switch setting on the rear panel of the camera. These cameras are also user-friendly, with all switch settings located on the rear panel. Moreover, the XC-ST51/ST51CE/ST50/ST50CE 1/2 type CCD and XC-ST30/ST30CE 1/3 type CCD models have the exact same dimensions, simplifying space requirements and making it easy to interchange them if necessary. These features, along with high picture quality and high shock and vibration tolerance make the XC-ST Series cameras ideal for demanding machine vision applications.

### FEATURES

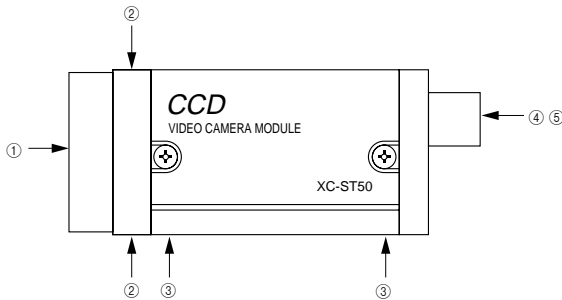
- XC-ST51/ST51CE/ST50/ST50CE: 1/2 type IT CCD
- XC-ST30/ST30CE: 1/3 type IT CCD
- Small and lightweight: 44 (W) x 29 (H) x 57.5 (D) mm, 110 g  
(1 3/4 x 1 3/16 x 2 3/8 inches, 3.8 oz)
- High sensitivity: XC-ST51/ST51CE: 0.2 lx (F1.4)  
XC-ST50/ST50CE/ST30/ST30CE: 0.3 lx (F1.4)
- High S/N ratio: XC-ST51/ST50: 60 dB  
XC-ST51CE/ST50CE: 58 dB
- Electronic shutter function  
1/100 to 1/10,000 s: EIA, 1/120 to 1/10,000 s: CCIR
- Flexible trigger shutter functions
  - Simple trigger with internally generated HD/VD and Write Enable (WEN)
  - Exposure control with switches or trigger pulse width
- Readout on command (with HD/VD input)
- 2:1 interlaced/non-interlaced(during external sync input)
- Frame/field exposure
- Restart/reset function
- Synchronization: internal/external (HD/VD, VS)
- High shock and vibration tolerance

## CONNECTIONS



## LOCATION OF PARTS & OPERATION

### ● Side



#### ① Lens mount (C mount)

A commercial C mount lens as well as Sony standard lenses can be used.

#### ② Camera fixing reference hole

High-precision screw hole machined on the lens mount surface.

#### ③ Screw hole for tripod adaptor installation (VCT-ST70I)

④ 12-pin multi-connector  
The 12-pin multi-connector is connected to a DC IN/SYNC (DC power/sync signal input)

⑤ BNC connector  
Video out

⑥ Gamma correction  
ON/OFF switchable

⑦ Internal/External synchronization switch  
In the EXT position, if there is no external sync input, the internal sync is activated inside the camera.  
In this case, HD/VD signal is not output through the 12-pin multi-connector.

#### ⑧ Trigger polarity switch

The trigger polarity is selectable (neg/pos polarity)

#### ⑨ 75 Ω termination switch

#### ⑩ Dip switch

Dip switch 1 - 4: Shutter speed  
Dip switch 5: FRAME/FIELD exposure  
Dip switch 6 - 8: Normal shutter mode, External trigger shutter mode, restart/reset mode

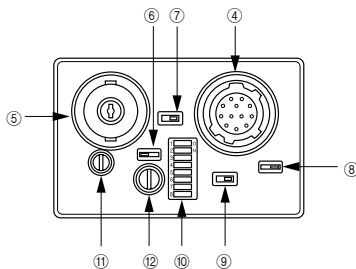
#### ⑪ Gain switch

A: Image output at a fixed level of image according to the brightness of the subject. (Variable range: 0 to 18 dB)  
F: Fixed gain 0 dB  
M: Gain (manual)  
Factory setting: the variable gain is adjusted to the fixed sensitivity for a standard subject. When using two or more XC-ST51/ST51CE, XC-ST50/50CE or XC-ST30/30CE cameras, identical images of the same subject can be attained.

#### ⑫ Gain control

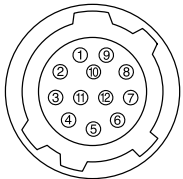
The gain can be adjusted between 0 to 18 dB when the gain switch is set to "M".

### ● Rear Panel



### ● 12-pin multi-connector

#### ④ 12-pin multi-connector



Pin No.	Internal sync		External sync	
	HD/VD sync	HD/VD sync	C. sync	
1	GND	GND	GND	
2	+12 V	+12 V	+12 V	
3	GND	GND	GND	
4	VIDEO output	VIDEO output	VIDEO output	
5	GND	GND	GND	
6	Internal HD input	External HD input	-	
7	Internal VD output	External VD input *1	C.SYNC or VS input	
8	GND	GND	GND	
9	-	-	-	
10	WEN output *2	WEN output *2	WEN output *2	
11	TRIG input	TRIG input	TRIG input	
12	GND	GND	GND	

\*1: RESET pulse is required when using restart, reset mode.  
\*2: WEN output is only effective in External trigger shutter mode.

### ● Rear panel factory settings

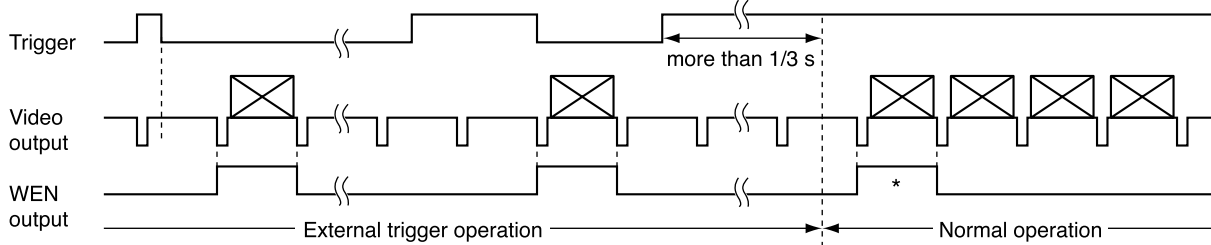
No.	Switch	Factory setting
⑥	Gamma correction ON/OFF	OFF
⑦	Internal/External sync	EXT
⑧	Trigger polarity	+
⑨	75 Ω termination	ON
⑩	Dip switch	
	1/2/3/4: Shutter speed	OFF
	5: Field/Frame	OFF
⑪	6/7/8: normal shutter/EXT trigger shutter/restart reset	OFF
	GAIN	FIX

## TRIGGER SHUTTER MODES

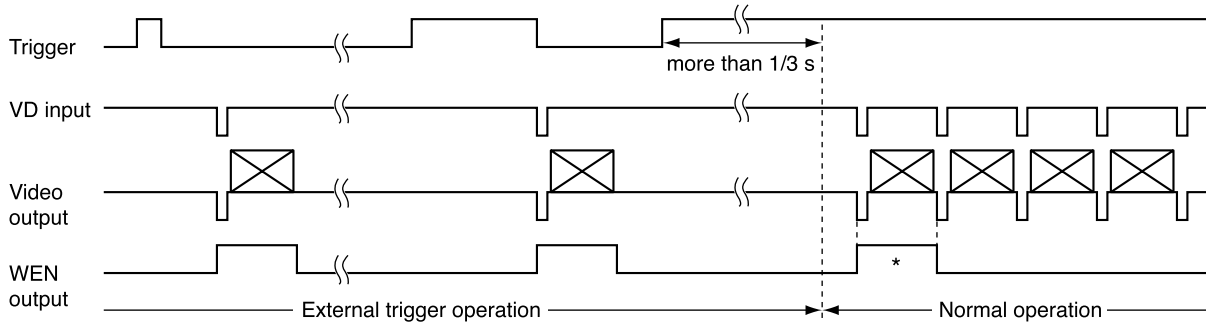
A new external trigger design allows the electronic shutter speed to be freely specified by the width of an external trigger pulse or by a switch setting on the rear panel of the camera.

### Shutter speed setting based on the trigger width

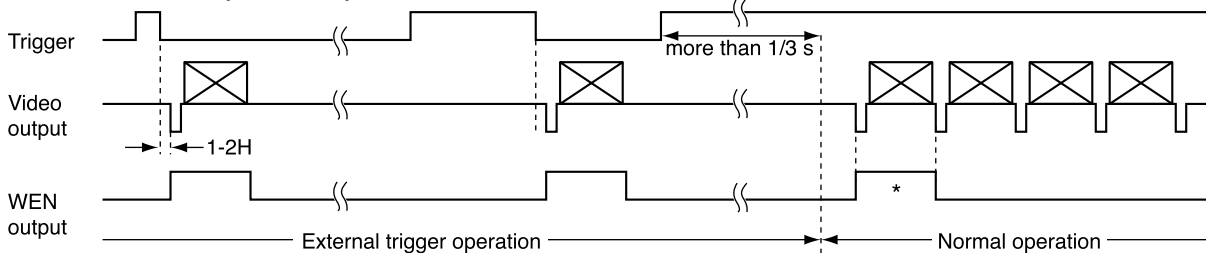
◇ Non reset mode Ext sync (continuous HD/continuous VD input), or internal sync



◇ Non reset mode Ext sync (continuous HD and single VD input)



◇ Reset mode Only for Ext sync



\* When switching from Ext. trigger to regular operation the WEN pulse is output

### Shutter speed settings by dip switch control

Shutter speeds are set by dip switches 6, 7, 8 on the camera's rear panel. The width of the trigger pulse is irrelevant.

## ACCESSORIES



**Compact camera adaptor  
(CE standard)**

#### DC-700/700CE

- Compact, lightweight (700 g, 1 lb 8 oz)
- Two video outputs
- External sync IN/OUT
- Trigger input/WEN output
- New EIAJ standard 12-pin assignment
- Dimensions:  
110 (W) x 53 (H) x 160 (D) mm  
(4 3/8 x 2 1/8 x 6 3/8 inches)



**12-pin camera cable  
(CE standard)**

- CCXC-12P02N (2 m)
- CCXC-12P05N (5 m)
- CCXC-12P10N (10 m)
- CCXC-12P25N (25 m)



**Tripod adaptor  
VCT-ST70I**

- Isolated type
- Approx. 14 g (0.5 oz)
- Dimensions:  
40 (W) x 6 (H) x 59 (D) mm  
(1 5/8 x 1/4 x 2 3/8 inches)



**Junction box  
JB-77**

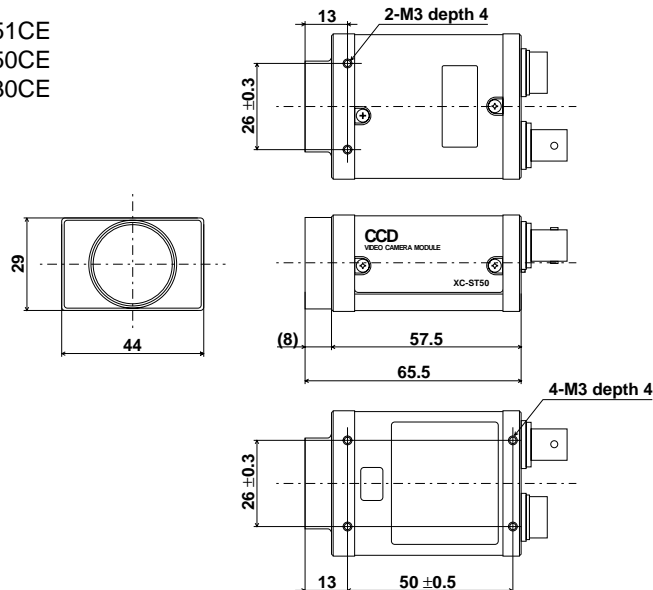
# SPECIFICATIONS

	XC-ST51	XC-ST50	XC-ST30	XC-ST51CE	XC-ST50CE	XC-ST30CE
Image device	1/2 type IT CCD		1/3 type IT CCD	1/2 type IT CCD		1/3 type IT CCD
Effective picture elements	768 (H) x 494 (V)			752 (H) x 582 (V)		
Signal system	EIA standard			CCIR standard		
Horizontal frequency	15.734 kHz $\pm$ 1 %			15.625 kHz $\pm$ 1 %		
Vertical frequency	59.94 Hz			50 Hz		
Lens mount	C mount					
Flange back	17.526 mm					
Sync system	Internal/External (auto)					
External sync system*	HD/VD (2 to 5 Vp-p), VS					
External sync frequency	Horizontal sync frequency $\pm$ 1 %					
Jitter	Less than $\pm$ 50 ns					
Scanning system	525 lines, 60 fields/s, 2:1 Interlaced			625 lines, 50 fields/s, 2:1 Interlaced		
Video output	1.0 Vp-p, negative, 75 $\Omega$ unbalanced					
Horizontal resolution	570 TV lines			560 TV lines		
Sensitivity (Gamma compensation ON, 0 dB)	400 lx, F11	400 lx, F8		400 lx, F11	400 lx, F8	
Minimum illumination (F1.4, AGC ON, without IR cut filter)	0.2 lx	0.3 lx		0.2 lx	0.3 lx	
S/N ratio	60 dB		56 dB	58 dB		54 dB
Gain	AGC (0 to 18 dB)/Manual (0 to 18 dB)/Fixed (0 dB) selectable					
Gamma	ON/OFF					
Normal shutter	1/100 to 1/10,000 s			1/120 to 1/10,000 s		
External trigger shutter	1/4 to 1/10,000 s			1/4 to 1/8,000 s		
Power requirements	DC 12 V $\pm$ 10 %					
Power consumption	2.0 W	1.9 W		2.0 W	1.9 W	
Dimensions	44 (W) x 29 (H) x 57.5 (D) mm (1 3/4 x 1 3/16 x 2 3/8 inches)					
Mass	110 g, 3.8 oz					
Operation temp./humidity	-5 $^{\circ}$ C to +45 $^{\circ}$ C/20 to 80 %					
Storage temp./humidity	-30 $^{\circ}$ C to +60 $^{\circ}$ C/20 to 95 %					
Vibration	10 G (20 to 200 Hz)					
Shock resistance	70 G					
MTBF	70,600 hrs.					
Regulations	UL6500, FCC Class B, IC Class B, CE (EN61326/97 + A1/98), AS4251.1 + AS4252.2					
Supplied accessories	Lens mount cap (1), Operating instructions (1)					

\* Automatic switching by external sync signals when the sync switch is set for EXT.

# DIMENSIONS

XC-ST51/ST51CE  
XC-ST50/ST50CE  
XC-ST30/ST30CE



(unit: mm)

- Sony Electronics Inc. (USA) HQ
- Sony of Canada Ltd. (CANADA)
- Sony Broadcast & Professional Europe HQ

Germany  
France  
UK  
Nordic  
Italy

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115 Gordon Baker Rd, Toronto, Ontario M2H 3R6  
Schipholweg 275 1171 PK Badhoevedorp The Netherlands

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16-26 rue Morel 92110 Clichy  
The Heights, Brooklands, Weybridge, Surrey KT13 0XW  
Per Albin Hanssons vag 20 S-214 32 Malmo Sweden  
Via Galileo Galilei 40 I-20092 Cinisello Balsamo, Milano

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(TEL:+31-20-44-99-351) (FAX:+31-20-44-99-333)  
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MK07494V3IW03FEB

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