

XC-56BB

Non-TV Format



XC-56BB

Designed to comply with the pin-out of Sony's discontinued XC-55BB camera, Sony's new two piece, black and white progressive scan video camera - the XC-56BB - incorporates a 1/3-type progressive scan CCD that produces detailed, VGA resolution images at a high frame rate (30 fps).

Designed in a miniature body, the new XC-56BB camera inherits all the outstanding features of the XC-56 camera, but it is "form fitted" to the XC-55BB camera body.

IMAGE SENSING SOLUTIONS

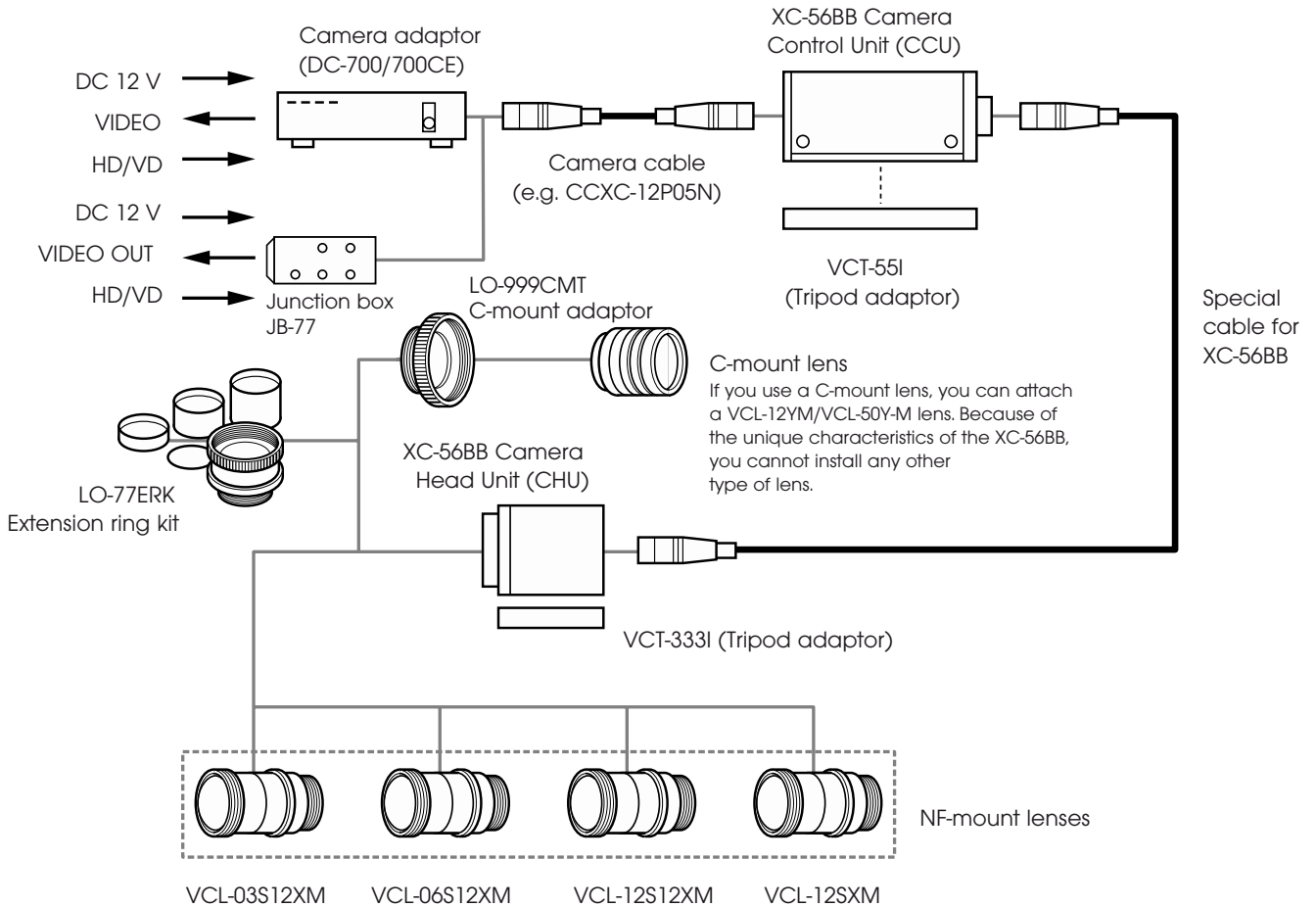
B/W Progressive Scan CCD
Remote Head Video Camera

Features

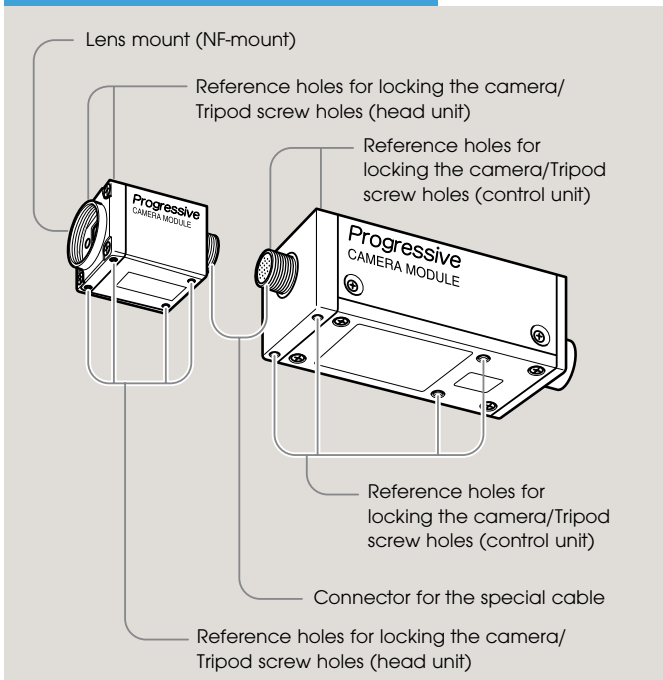
- 1/3 inch Progressive Scan CCD with square pixels
- Non-TV format
- Square lattice/Full pixel read-out
- Effective Picture Elements - 659 (H) x 494 (V)
- NF Lens Mount
- High Rate Scan /Binning Function - 30 frames per sec./60 frames per sec. Binning
- Sync System - Internal/External (auto)
- External Sync System - HD/VD (2 to 5 Vp-p)
- Gain - Manual/Fixed switchable
- Gamma - OFF ($\gamma=1$)
- High Shock and Vibration Resistance
- Miniature Size
- External Trigger Shutter: 1/4 to 1/100,000 sec
- Cable length: 2 m
- Lead-free soldering
- Same Pin Assignment as XC-55BB camera

XC-56BB

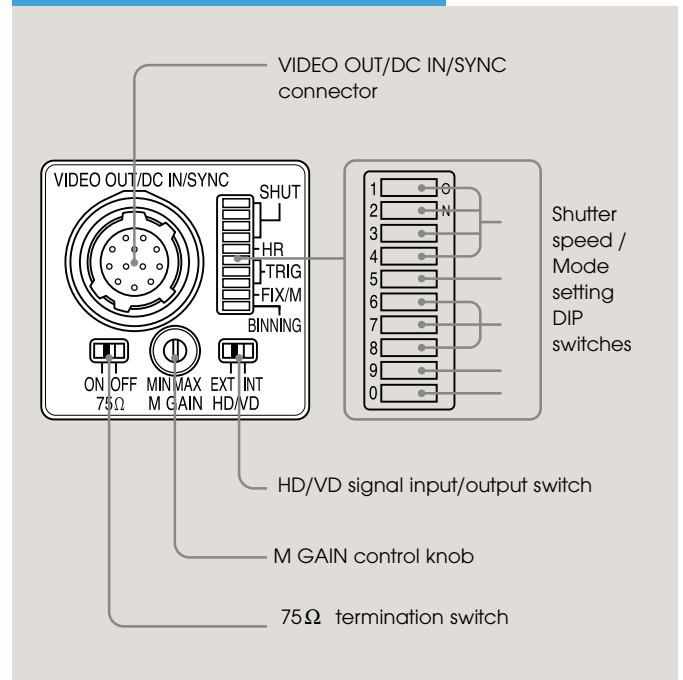
Connection diagram



Location and function of parts and controls



Rear panel



Electronic shutter

There are two shutter types: normal shutter and external trigger shutter. Select them with the DIP switches on the rear panel.

| | |
|----------------------------|----------------------------|
| Normal Shutter | Other Modes* |
| 8 <input type="checkbox"/> | 8 <input type="checkbox"/> |

Normal shutter

This mode provides continuous video output with the electronic shutter selected by switches to capture a high-speed moving object clearly.

* "Other modes" refers to restart/reset mode and external trigger shutter mode.

| | | | | |
|--|--|--|--|--|
| 1/100 | 1/125 | 1/250 | 1/500 | 1/1000 |
| 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> |
| 1/2000 | 1/4000 | 1/8000 | 1/15000 | |
| 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | |

External trigger shutter

inputting an external trigger pulse enables the camera to capture fastmoving objects clearly. Set DIP switches 6, 7, and 8 on the rear panel to Mode 1 or Mode 2. When you set the trigger pulse width to 1/3 of a second or more, the output signal changes to the normal VIDEO signal.

| | |
|--|--|
| Mode 1 | Mode 2 |
| 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> | 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> |

| | |
|----------------------------|----------------------------|
| OFF | ON |
| 5 <input type="checkbox"/> | 5 <input type="checkbox"/> |

Restart/reset mode

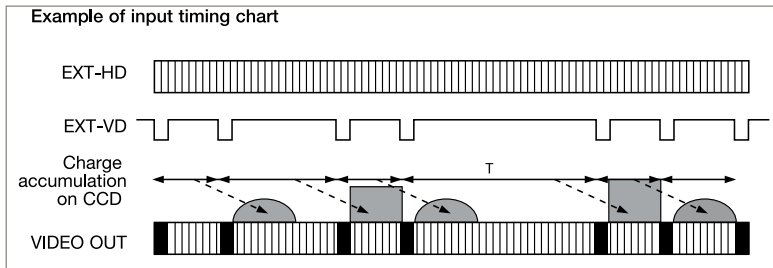
this mode allows you to capture the information on single screens at any time by externally inputting restart/reset signals (HD/VD). To enter this mode, set the trigger shutter switches (6 to 8) on the rear panel of the camera.

| |
|--|
| R/R |
| 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> |

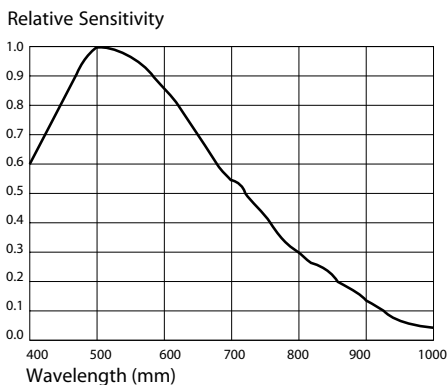
| | |
|----------------------------|----------------------------|
| OFF | ON |
| 5 <input type="checkbox"/> | 5 <input type="checkbox"/> |

Long exposure

the Restart/Reset function extends the CCD accumulation time, resulting in highly sensitive image capture. This function is effective when you cannot gain satisfactory sensitivity under normal operating conditions, or when you want to observe the trail of a moving object. Extend the VD interval (T) between external VD pulses.



Spectral sensitivity characteristics



(Lens characteristics included, and light source characteristics excluded.)

XC-56BB Specifications

| | |
|---|---|
| Image Device | 1/3 type Progressive Scan CCD |
| Effective Pixel Elements (HxV) | 659 X 494 |
| Effective Lines (HxV) | 647 X 493 |
| Output Image Size | VGA class (647 x 494) |
| Cell Size (HxV) | 7.4 x 7.4 μm |
| Lens Mount | NF mount |
| Flange Focal Length | 12.0 mm |
| Sync System | Internal/External (automatically switched according to input signal) |
| External Synchronisation | HD/VD (HD/VD level: 2 to 5 Vp-p) |
| Input / Output | HD/VD (2 to 5 Vp-p 75 Ω) |
| Allowable Frequency Deviation of External Synchronisation | ± 1% (in horizontal synchronous frequency) |
| H Jitter | Less than 20 ns |
| Scan Lines | 525-lines/236-lines (Normal mode/Binning mode) |
| Video Output Mode | Normal: 1-line sequential output 29.97 fps / Binning: F2-line sequential output 59.94 fps |
| Video Output | 1.0 Vp-p, sync. Negative, 75 Ω, unbalanced |
| Horizontal Frequency | 15,734 KHz |
| Output Signal Frequency | 29.97 Hz (Normal mode)/59.94 Hz (Binning Mode) |
| Horizontal Resolution | 500 TV lines |
| Sensitivity | 400 lx (F8, γ= OFF, FIX GAIN (0dB) |
| Minimum Illumination | 0.5 lx (F1.4 γ= OFF, GAIN + 18dB) |
| S/N Ratio | 58 dB |
| Gain | Fixed/Manually Adjustable |
| Gamma | 1 (fixed) |

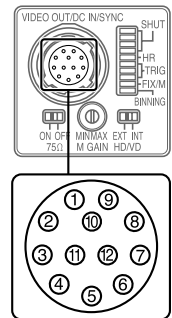
| | |
|-----------------------------------|---|
| White Clip | 820 mV ± 70mV |
| Shutter Mode | Normal Shutter, Restart/Reset, External Trigger shutter mode (Mode1/Mode2) |
| Normal Shutter Speed | 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/15000 s |
| External Trigger Shutter | DIP switch setting 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000 s, 1/25000, 1/50000, 1/100000 s Trigger pulse width settings: 1/4 to 1/100000 s |
| External Trigger | Polarity: +, 2μs to 250 ms ; Input impedance: 10kΩ or more (H:+2 to 5.0V, L: 0 +0.6V) |
| Pin Assignment | Correspondence to EIAJ compliant 12PIN connector pin assignment Unavailable (No.8 pin: Trigger input (G), No.9 pin: Trigger input, No. 10 pin: GRD, No. 11 pin: +10V) Pins No.10 and 11 are not connected inside the camera |
| Power Requirements | +12 V DC (range: +10.5 to 15V) |
| Power Consumption | 2.2 W |
| Dimensions (WxHxD) | CHU: 22 x 22 x 30 mm CCU: 29 x 29 x 67 mm |
| Mass | CHU: Approximately 40g CCU: Approximately 100g |
| Operating Temperature | -5 to 45°C |
| Storage Temperature | -30 to 60°C |
| Performance Guarantee Temperature | 0 to 40°C |
| Operating Humidity | 20 to 80% (no condensation) |
| Storage Humidity | 20 to 95% (no condensation) |
| Vibration Resistance | 10G (20Hz to 200Hz) |
| Shock Resistance | 70 G |
| MTBF | 73,800 Fit (approx. 8.4 years) |
| Regulation | UL 6500, FCC Class A Digital Device, CE (EN61326/97 + A1/98) |
| Supplied Accessories | Lens mount cap (1), Operating Instructions (1), Dedicated cable (1), Ferrite core (1) |

Optional Accessories

| | |
|------------------------|--------------------|
| Compact camera adaptor | DC-700/700CE |
| 12-pin Camera Cable | CCXC-12P02N (2 m) |
| | CCXC-12P10N (10 m) |
| | CCXC-12P05N (5 m) |
| C-mount adaptor | LO-999CMT |
| C-mount lens | VCL-12YM |
| | VCL-50YM |
| NF-mount lens | VCL-03S12XM |
| | VCL-12S12XM |
| | VCL-06S12XM |
| Tripod adaptor | VCT-333I (for CHU) |
| | VCT-55I (for CCU) |

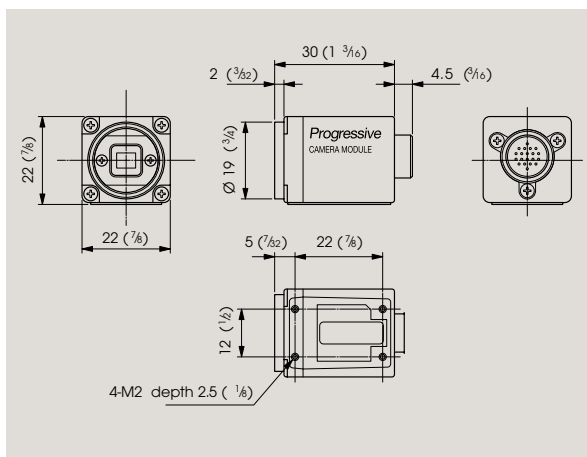
Pin assignment

| Pin No. | Camera sync output | External mode (HD/VD) | Restart/Reset | External trigger shutter |
|---------|--------------------|-----------------------|-------------------|------------------------------|
| 1 | | Ground | | |
| 2 | | +12 V DC | | |
| 3 | | Video output (Ground) | | |
| 4 | | Video output (Signal) | | |
| 5 | HD output (Ground) | | HD input (Ground) | |
| 6 | HD output (Signal) | | HD input (Signal) | |
| 7 | VD output (Signal) | VD input (Signal)† | Reset (Signal) | VD input (Signal) |
| 8 | — | — | — | — |
| 9 | — | — | — | Trigger pulse input (Signal) |
| 10 | — | — | — | — |
| 11 | — | — | — | — |
| 12 | VD output (Ground) | VD input (Ground) | Reset (Ground) | VD input (Ground) |

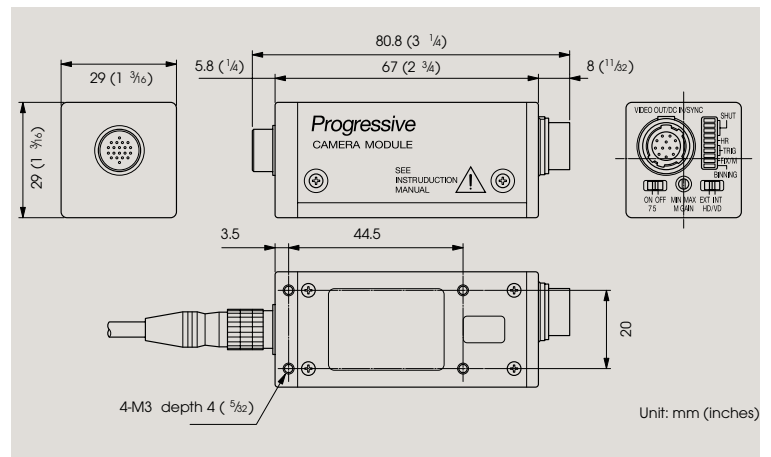


Dimensions

CHU



CCU



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