

### WV-BL730 Series Black-and-White FIT CCD Cameras

WV-BL730 (120VAC)  
WV-BL734 (12VDC/24VAC)

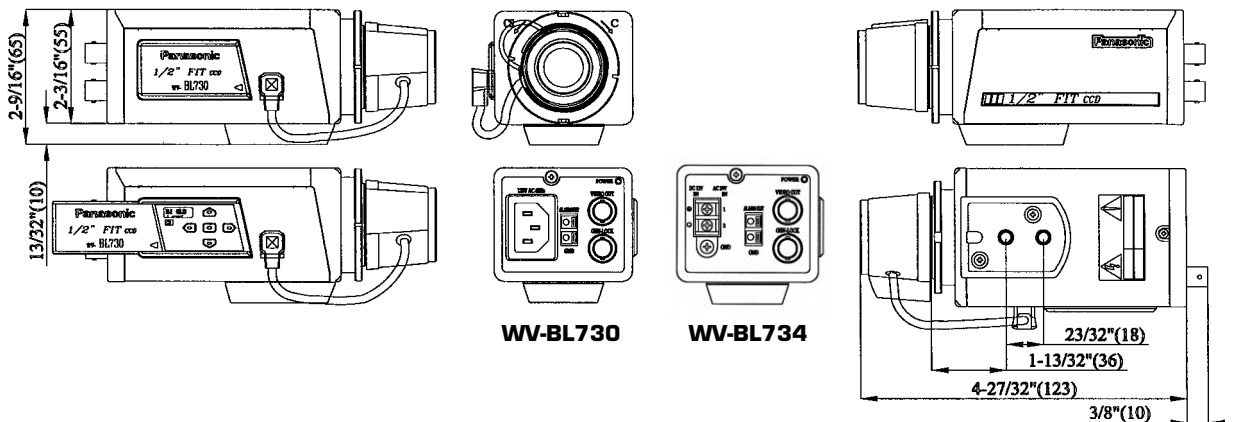
#### PRODUCT FEATURES

- Digital signal processing and digital functions
- 1/2" frame interline transfer CCD for reduction of smear
- High sensitivity 0.04 lux (.004 fc) at f/1.4
- 570-line horizontal resolution and a S/N ratio of 50dB
- Built-in digital motion detector with alarm output connector
- Electronic sensitivity-up for surveillance under severe conditions
- User-friendly on-screen set-up
- VD2 lock for roll-free camera switching over a single coaxial cable when used with Panasonic Matrix System 500, 850 and Multiplexer System 400 or data multiplex unit WJ-MP404

The Panasonic WV-BL730 1/2" FIT B/W camera overcomes the problem of vertical smear with the inclusion of the frame interline transfer CCD. Its remarkably low smear feature ensures that vertical smear does not deteriorate required image details. This offers a great advantage for nighttime or vehicle monitoring with its electronic sensitivity enhancement. The WV-BL730 also employs the 3rd generation DSP which creates excellent picture sharpness. The WV-BL730 offers cutting edge technology and performance for the most advanced CCTV applications.



Lens optional



**WV-BL730 Series  
Black-and-White FIT CCD Cameras**

**GENERAL SPECIFICATIONS**

<b>Pickup Device</b>	771(H) x 492(V) pixels, frame interline transfer CCD
<b>Scanning Area</b>	6.4(H) x 4.8(V)mm (equivalent to 1/2" pickup tube)
<b>Synchronization</b>	Internal sync/Line Lock/VD2, VS sync; 360 V-phase adjustment of line lock; H-phase adjustment; 75 ohms termination for the G/L
<b>Scanning System Scanning</b>	2:1 interlace 525 lines/60 fields/30 frames; Horizontal: 15.75kHz; Vertical: 60Hz 570 TV lines
<b>Horizontal Resolution Video Output</b>	1.0Vp-p EIA composite/75 ohms BNC connector
<b>S/N Ratio</b>	50dB (AGC OFF, weight ON)
<b>Electronic Light Control</b>	Equivalent to continuous variable shutter speed between 1/60-1/10,000 sec.
<b>Minimum Illumination</b>	0.01 lux at f/0.75 (equivalent to 0.04 lux at f/1.4)
<b>Gain Control</b>	Selectable AGC on or off
<b>Automatic Light Compensation</b>	ALC: 1:52,000/ELC: 1:10,000 selectable ALC or ELC
<b>ALC Lens Drive</b>	Video servo/DC servo selectable

<b>Lens Mount Function</b>	C-/CS-mount
<b>Communication Camera Title</b>	Single wire 16-character display (alphabet, numeric, symbols)
<b>Electronic Shutter AGC</b>	1/60 (off), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10,000 SEC. On/off
<b>Electronic Sensitivity Up</b>	Auto: X2, X4, X6, X10, X16, X32 Fix: X2, X4, X6, X10, X16, X32
<b>Motion Detector</b>	On/off 6 x 8 masking area available for masking (sensing area is 12 x 16 zone)
<b>Back Light Compensation</b>	6 x 8 masking area available for BLC
<b>Operating Temperature</b>	14°F - 122°F (-10°C ~ +50°C)
<b>Operating Humidity</b>	Less than 90%
<b>Power Source</b>	WV-BL730: 120VAC, 60Hz WV-BL734: 12VDC/24VAC, 60Hz
<b>Power Consumption</b>	WV-BL730: 5.3W WV-BL734: 5.4W/570mA
<b>Dimensions</b>	2 3/16"H x 2 5/8"W x 4 13/16"D (65 x 67 x 123mm)
<b>Weight</b>	WV-BL730: 0.9 lbs. (0.41kg) (without power cord) WV-BL734: 0.88 lbs. (0.40kg)

**STANDARD ACCESSORIES**

- 1 pc. Body cap
  - 1 pc. ALC lens connector (YFE4191J100)
  - 1 pc. AC power cord (only WV-BL730)
- Weights and dimensions shown are approximate. Specifications subject to change without notice.

**ARCHITECTS' AND ENGINEERS' BID SPECIFICATIONS**

**WV-BL730**

The digital signal processing (DSP) black-and-white FIT CCD camera shall be Panasonic model WV-BL730 or equivalent. The WV-BL730 camera shall incorporate a 1/2" frame interline transfer CCD for reducing smear, 382,000 [771(H) x 492(V)] effective pixels, achieve lower smear and high sensitivity of 0.04 lux at f/1.4. The camera shall display outstanding 570 lines of horizontal resolution and S/N ratio of 50dB. The WV-BL730 camera shall feature a built-in digital motion detector within the compact body. The camera shall also feature intelligent digital back light compensation, and electronic sensitivity-up for real surveillance purposes under severe conditions. Both the digital motion detector and the back light compensation features shall utilize a 48 segment mask with an 8-position sensitivity level adjust. For better picture quality, the camera shall feature selectable DC/video for ALC lens, digital 2H enhancer, smear level of -120 and digital white detective ATW. The camera shall be C-/CS-mount selectable. The WV-BL730 shall offer user-friendly on-screen set-up and adjustment of camera ID, ELC plus many other features. A special menu shall allow fine adjustment of chrominance, pedestal and aperture level. The WV-BL730 shall provide a variety of synchronization modes. They shall provide color genlock to help ensure optimum performance with image processors and screen splitters. They shall also feature VD2 lock over a single coaxial cable when used with the Matrix Systems and/or data multiplexing unit. Line lock shall provide roll-free picture switching. The video, camera control and synchronization signal shall be transmitted up to 3000' over coaxial cable (Belden 9259 or equivalent), when used with the Panasonic model WJ-FS616/WV-PB6164 multiplexer with control kit, Matrix System 500, Matrix System 850 and single camera controller, model WV-CU151. The power source for the WV-BL730 shall be 120VAC, 60Hz. All units must be UL listed.

**WV-BL734**

The digital signal processing (DSP) black-and-white FIT CCD camera shall be a Panasonic model WV-BL734 or equivalent. The WV-BL734 camera shall incorporate a 1/2" frame interline transfer CCD for reducing smear, 382,000 [771(H) x 492(V)] effective pixels, achieve lower smear and high sensitivity of 0.04 lux at f/1.4. The camera shall display outstanding 570 lines of horizontal resolution and a S/N ratio of 50dB. The WV-BL734 camera shall feature a built-in digital motion detector within the compact body. The camera shall also feature intelligent digital back light compensation and electronic sensitivity-up for real surveillance purposes under severe conditions. Both the digital motion detector and back light compensation features shall utilize a 48 segment mask with an 8-position sensitivity level adjust. For better picture quality, the camera shall feature selectable DC/video for ALC lens, digital 2H enhancer, smear level of -120 and digital white detective ATW. The camera shall be C-/CS-mount selectable. The WV-BL734 shall offer user-friendly on-screen set-up and adjustment of camera ID, ELC plus many other features. A special menu shall allow fine adjustment of chrominance, pedestal and aperture level. The WV-BL734 shall provide a variety of synchronization modes. They shall provide color genlock to help ensure optimum performance with image processors and screen splitters. They shall also feature VD2 lock over a single coaxial cable when used with the Matrix Systems and/or data multiplexing unit. Line lock shall provide roll-free picture switching. The video, camera control and synchronization signal shall be transmitted up to 3000' over coaxial cable (Belden 9259 or equivalent), when used with the Panasonic model WJ-FS616/WV-PB6164 multiplexer with control kit, Matrix System 500, Matrix System 850 and single camera controller, model WV-CU151. The camera shall be powered by either 12VDC or 24VAC, 60Hz. All units must be UL listed.

# Technical Supplement [ FIT CCD ]

## SMEAR :

When you shoot object with intense spot light, you may recognize white vertical line appear on above/below it.

Such a phenomenon is known as SMEAR from which you can not evade as long as adapting solid state for pick up device instead of vacuum tube.

How is SMEAR caused in Charge Coupled Device (CCD) which is most popular solid state pick up device ?

The light leaking from PHOTO DIODE (PD) or crossing over it yields electrical carriers below PD (inside of Silicon chip).

The carriers which are aroused in Silicon chip below PD diffuse into Vertical CCD shift register (V-CCD).

Thus the carriers diffused into V-CCD cause SMEAR that white tailing band/line above/below bright part as shown in Fig. 1).

The brighter the light is, the easier SMEAR appears.

As a matter of course, it deteriorates the quality of picture image.

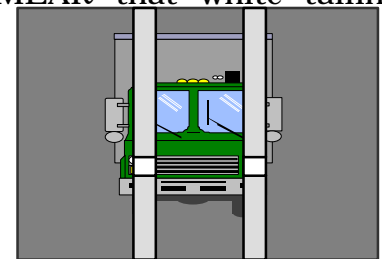


Fig. 1)

## IT CCD, FIT CCD :

How does anti SMEAR come ?

Frame Interline Transfer (FIT) CCD is noted as the most suitable one.

FIT CCD is distinctive as equipping with part for switching gate (GATE) and part for storing charges (STORING PART) as shown in Fig. 2) in addition to part for picking up light / yielding charges (YIELDING PART).

To the contrary, Interline Transfer (IT) which is most popular CCD in CCTV market consists of only YIELDING PART.

PD picks up light and converts it to electrons.

Those electrons are accumulated in PD during a certain term (= 1field, 1/50 sec. by normal shutter mode).

The charges in each PD is transferred into V-CCD standing aside in row by every term.

At this moment, V-CCD has already contained SMEAR which was aroused in Silicon chip below PD and flew into V-CCD during the term.

In case of IT CCD, therefore the charges produced by PD results to mix with SMEAR remaining in V-CCD.

Moreover while shifting the charges a step by step along with V-CCD to Horizontal CCD shift register (H-CCD), they mix with SMEAR produced in V-CCD subsequently.

To the contrary, FIT CCD does not mix pure charges with SMEAR in principle.

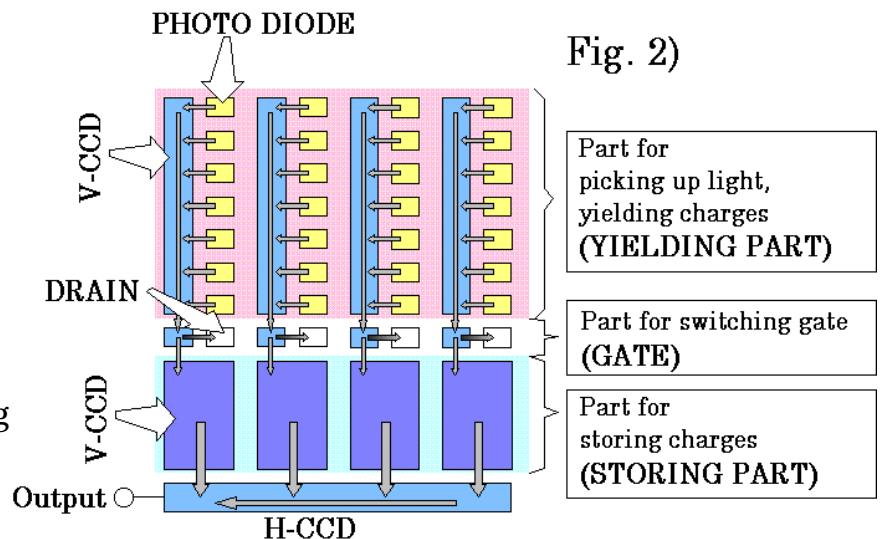


Fig. 2)

There is GATE between YIELDING PART and STORING PART as shown in Fig. 2). This GATE opens just before transferring charges in PD to V-CCD so as to sweep and clean SMEAR remaining in V-CCD down to DRAIN.

Thus after making SMEAR escape into DRAIN, the charges in PD are transferred to each V-CCD aside.

The charges shifted to V-CCD are tapped down to STORING PART through GATE during vertical blanking.

As mentioned above, GATE functions both opening to transfer the charges in YIELDING PART to STORING PART while closing DRAIN and opening to sweep SMEAR remaining in V-CCD to DRAIN while closing a route for STORING PART.

STORING PART consists of the same steps of V-CCD as YIELDING PART and is perfectly cut off light, no room to produce any SMEAR in that area.

The charges in V-CCD of STORING PART are transferred to H-CCD by line per horizontal blanking and then provided to OUTPUT of CCD.

While the charges are shifting in V-CCD of STORING PART and pumping up OUTPUT from STORING PART, no chance to mix with further SMEAR because STORING PART are well protected from light.

In this way, FIT CCD can achieve a low smear or no smear by employing for STORING PART and GATE.

**WV-CL830, WV-CL834, WV-BL730, WV-BL734 :**

Fig. 3) shows a front appearance of IT CCD and FIT CCD.

FIT CCD has STORING PART with shield from light in addition to YIELDING PART as mentioned before, therefore STORING PART is a little shifted from the center of chip that it enables easier to identify both type CCDs.

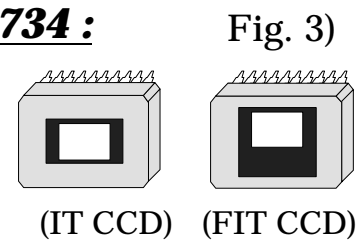


Fig. 3)

(IT CCD)

(FIT CCD)

As you may imagine by figure, FIT CCD is more expensive than IT CCD, it used to restrict its application for broadcast area.

This time, Panasonic has introduced cost compatible FIT CCD into CCTV field as well in order to meet to the market demand.

Panasonic own CCD development and mass production technology enabled to materialize it.

SMEAR is the phenomenon to appear white vertical line as mentioned above.

WV-CL830 (color AC120V), WV-CL834 (color AC24V/DC12V), WV-BL730 (mono AC120V), WV-BL734 (mono AC24V/DC12V) adopted FIT device on top of 1/2 inch sized CCD so that it reduced SMEAR level down to 1/100 in comparison with conventional IT technology.



(1/2 inch FIT CCD Camera)

Thus Panasonic is proud to offer ANTI SMEAR camera into CCTV market.

Even though observing at night, FIT CCD camera well produces the object despite glaring head light of car.

Moreover 1/2 inch size offers you more sensitive picture level at night.

Panasonic 1/2 inch FIT CCD cameras (WV-CL830/834, WV-BL730/734) perform indisputably better for night surveillance.

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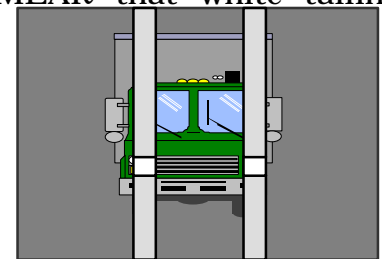


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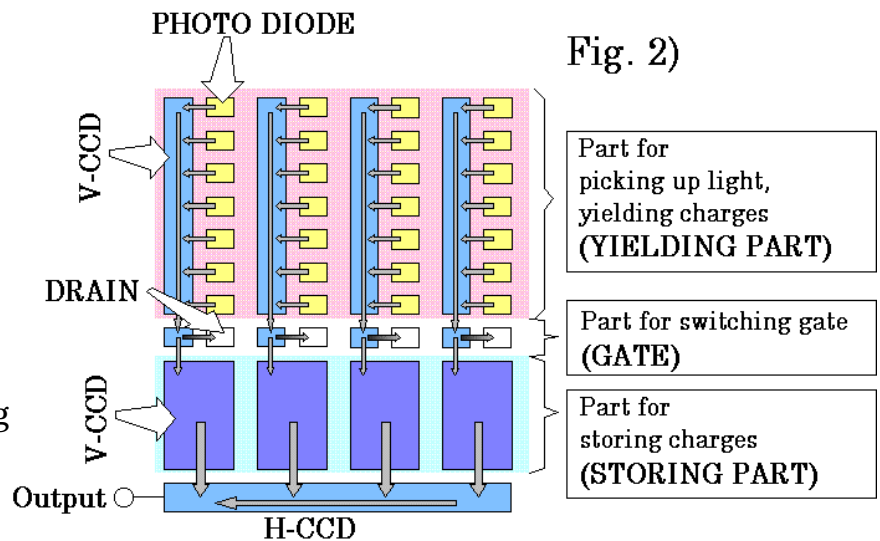


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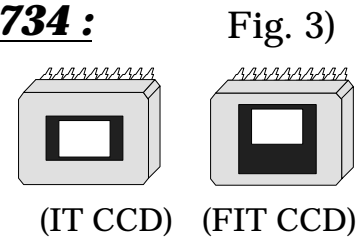


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