VITEK

VTC-C750WDR

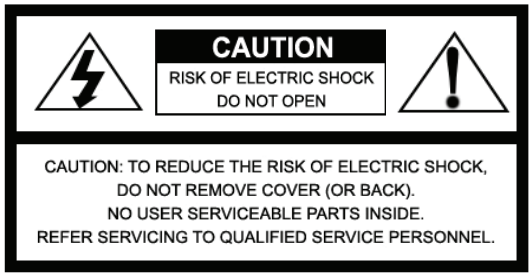
Wide Dynamic Range Color CCD Camera w/550TVL

- Wide Dynamic Range 1/3" Color DPS Pixim Image Sensor
- 550 TV Lines of Resolution
- OSD (On Screen Display) for Camera Function Setup
- True (ICR) Day/Night Function
- 0.0002 Lux Sensitivity (F1.2 @40IRE Sense-Up)
- Dual Voltage Operation 12VDC/24VAC
- Over 50dB S/N Ratio

WARNING To prevent fire or shock hazard, do not expose the unit to rain or moisture.

The symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the unit.

The symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Caution

To prevent electric shocks and risk of fire hazards, do NOT use other than specific power source.

Warning(NTSC version) -- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution -- Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Table of contents

1. Safety Instructions and Notes

- Please read these safety and operating instructions before putting the camera into operation.
- Keep the operating instructions in a safe place for later use.
- The Standard Box Camera is designed for indoor use only and it must not be installed where exposed to rain and moisture.
- Do not operate the cameras beyond their specified temperature, humidity or power ratings.
- Never open the case of the camera because there are precision parts inside. Otherwise a trouble or an accident may result
- Do not put anything metallic and other foreign substances through the vent. A trouble fire or electric shock may result.
- Be sure to turn off the power before installing or making connection.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks or damage and no moisture can get in.
- Do not install the camera in places exposed to vibrations and shocks.
- Be very careful not to drop or shock the camera while carrying it in.
- Do not orient the camera to the sun.
- Do not make any modification to the unit (neither to the software nor the hardware). Improper modification voids the warranty and can cause malfunctions or damages.
  The manufacturer accepts no liability for damages resulting from unauthorized or improper modifications to the unit
- Some of types of lenses may cause hunting, light amount drop or other problems. In such case, readjust the lenses.
- Because of the digital image device characteristics, images may look rugged at high temperatures. This does not mean the camera is in trouble.
- The warranty becomes void if repairs are undertaken by unauthorized persons.
- Contact the supplier if any functional problems arise.

Cleaning:

- Do not touch the surface of the imaging device.
- Keep clean the lens surfaces at both sides of front and rear..

2. General Descriptions

VTC-C750WDR (VTC-C750WDR/PAL for PAL)) is a superb wide dynamic range camera which achieves 120dB max(102dB typical) of dynamic range of the image by implementing PIXIM's DPS(digital pixel system) CMOS SENSOR.

With CMOS image sensor,
- Provides the best quality image without any blooming or vertical smear even under the spot light.

With Pixim's DPS technology,
- Offers unparalleled image quality across all lighting conditions especially at high-contrast environments like indoor and outdoor of daylight time
- Delivers natural color
- Offers the highest resolution of 540TVL(horizontal)
- Eliminates compromising image noise by blooming or vertical smear
- Reduces the color rolling and flicker(EFR version only of NTSC camera)
- Eliminates the color rolling of NTSC system by line-lock synchronization (AC24V version)
- Offers on-screen menu

With ICR mechanism,
- Enhances its sensitivity about 10x at night time
- Can accepts the infrared light

With 24VAC/12VDC dual power design,
- Offers the flexibility of installation
- Ensures the reliability

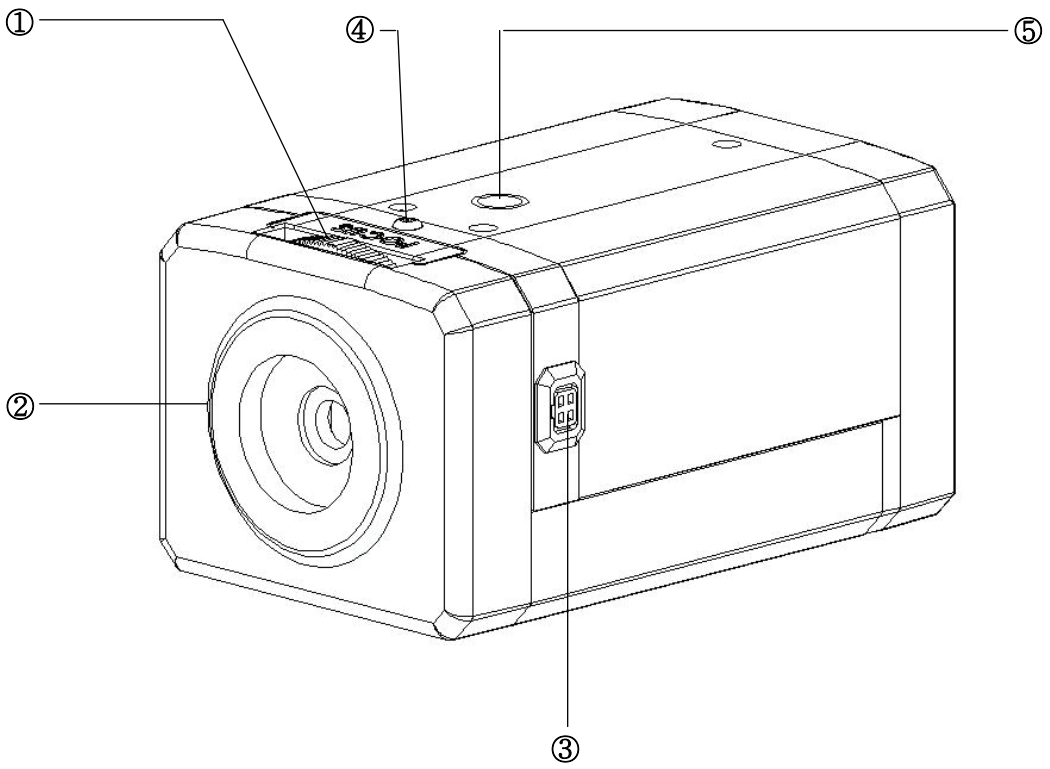
Main features are;
- 1/3" RGB Color DPS SENSOR (Pixim Orca D1500series)
- Resolution of 540 Horizontal Lines
- 10x sensitivity enhancement by removing the optical filter
- Switches to B/W and able to accept the infrared spectrum at night mode
- Enhanced sharpness compensation
- Very low noise and superior picture quality
- Sensitivity of 0.0002Lux (B&W)
- Automatically removable IR Cut Filter
- Automatic White Balance (ATW)
- Support DC auto iris lens
- Supply voltage: 12Vdc/24Vac Dual voltage

3. Supplied Items

1 x WDR TDN Color Camera
1 x Dust protection cap
1 x Installation and Operating Instructions

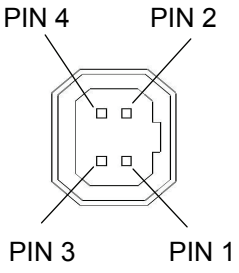
4. Part Names

4.1 Front view



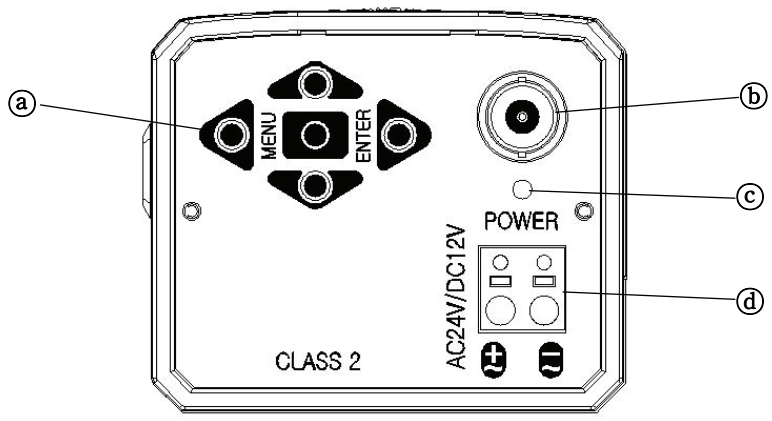
① Back Focus Adjustment
② Dust Protection Cap
③ Lens connector for auto iris lenses
④ Back focus Adjustment Lock Screw
⑤ Camera Mount Hole (Top and Bottom)

- **Lens Connector for Auto-iris lens (DC Drive)**



PIN No	DC Iris
1	Damp(-)
2	Damp(+)
3	Drive(+)
4	GND

4.2 Rear side view



ⓐ OSD menu switches (Up/ Down/ Left/ Right / Enter)
ⓑ Video Output Connector (BNC)
ⓒ Power indicator LED
ⓓ Power Input Terminal

5. Installation and commissioning Instructions

- Make sure the power is removed before the installation.
- Follow the order for applying power.
  First connect the low voltage (DC12V or AC24V), then plug the AC adapter to AC outlets to avoid an improper reset from power jitter and a damage from the surge voltage when no load.

5.1. Attaching the lens

- Remove the Dust Protection cap from the lens mount
- Screw the lens onto the camera without using force

5.2. Setting the back focus lock

The back focus is the distance between the lens support on the camera and the image sensor. Optimum focus is only possible when the correct distance is set. It may be necessary to set the back focus in individual cases due to production tolerances of the lens. The iris of the lens must be open as wide as possible. (smallest F value) to set the back focus. For lenses with automatic iris control, you will require a ND filter (gray filter) to prevent the iris from closing in bright light.

Setting for lenses with a fixed focal distance
If the focus cannot be set exactly by turning the focus ring (lens), please proceed as follows;

1. Point the camera at an object with sufficient contrast. The distance to the object should be longer than 1,000 x the focal distance.
2. Open the iris on the lens
3. Set the focus of lens so that the distance at the lens is close to infinity but not to exact infinity position.

4. Loosen ④ Back focus Adjustment Lock Screw one~two turns on the camera with industrial “+” driver
5. Rotate ① Back Focus Adjustment until the optimum focus is achieved.
6. Tighten ④ Back focus Adjustment Lock Screw again.
7. Trim the focus precisely at lens if necessary.

Setting for lenses with a variable focal distance (zoom)
If the focus changes as the focal distance changes, please proceed as follows.

1. Point the camera at an object with sufficient contrast at a distance of approximately 2 meters.
2. Open the iris on the lens
3. Set the maximum focal distance (Tele) at the lens
4. Set the optimum focus with the focus ring
5. Set the smallest focal distance (wide angle)
6. Loosen ④ Back focus Adjustment Lock Screw one~two turns on the camera with the industrial “+” driver
7. Adjust ① Back Focus Adjustment until the optimum focus is achieved. Steps 3,4,5 and 7 may be needed to repeat several times to obtain the best results
8. Tighten ④ Back focus Adjustment Lock Screw again

5.3. Installation

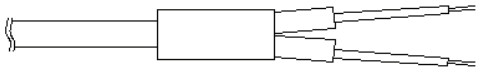
The camera has a 1/4” thread insert on its top and bottom side for mounting the camera to a tripod or the wall or ceiling with a corresponding mount.

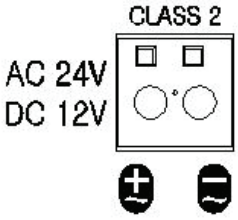
5.4 Commissioning

- Connect the power to the camera firstly
- Plug the power adaptor to the mains supply secondly
- ⓒ Power indicator LED will be lit
- The camera is ready for operation

5.5. Power Supply Connections

Camera can work with either 12VDC or 24VAC, dual voltage power. It does NOT require the polarity-matched connection for 12VDC supply. Primary and secondary grounds are completely isolated to avoid the possible ground-loop problems. Its excellently wide operating voltage range of 10.5V-30V for DC and 12-28.8V for AC gives an extra flexibility at the installation.





6. Start up

When the camera is powered properly, it starts up with initializing the internal parameters and the filter switch mechanism. The filter switch unit repeats IN and OUT two times at each power up and just after RESTORE FACTORY SETTINGS.

7. SETUP Menu

7.1 In the menu

Use , buttons to move menu, , buttons to change the settings and press button short to select or enter.

 button stands for MENU or ENTER button.

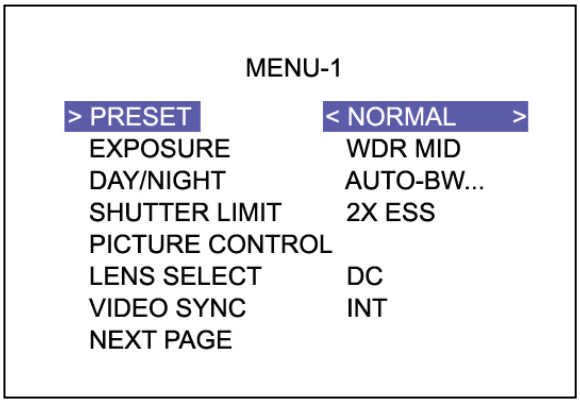
7.2 Entering menu

Press button longer than 2 sec on the back of camera.

7.3 PRESET menu

PRESET menu is provided to help the settings with the possible parameters obtained and assumed by the factory tests for the most common environments.

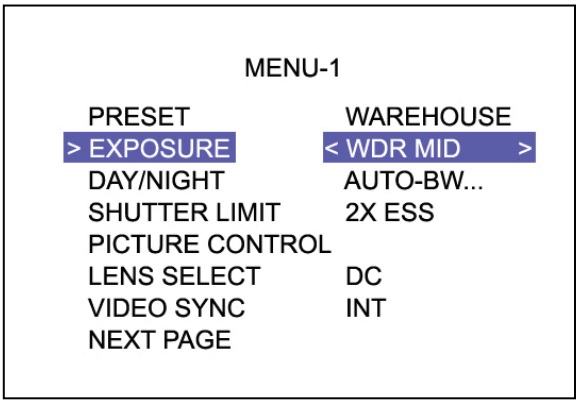
PRESETs may not be the best optimized settings for the actual installations.
In such cases, find the optimal settings in CUSTOM setting of EXPOSURE menu



PRESET	Descriptions
<NORMAL>	Produces an image that has average contrast and suitable for normal indoor or low-contrast outdoor scenes.
INDOOR	Provides better leveling of image for in the darker areas of the scene. Suitable for indoor scenes that have higher contrast lighting.
OUTDOOR	Optimized for outdoor sunlit applications and provides better leveling for the brighter areas. Suitable for outdoor scenes having high contrast between sunlit and shadows.
FL-LIGHT	Reduces the color rolling by fluorescent lights when line-lock is not available(NTSC). DC auto iris lens is required. Use Line-lock sync. with AC24V supply for the best result against the color rolling if possible.
LOBBY	Optimized for the common installation at lobby.
WAREHOUSE	Optimized for the common installation at warehouse

7.4 EXPOSURE menu

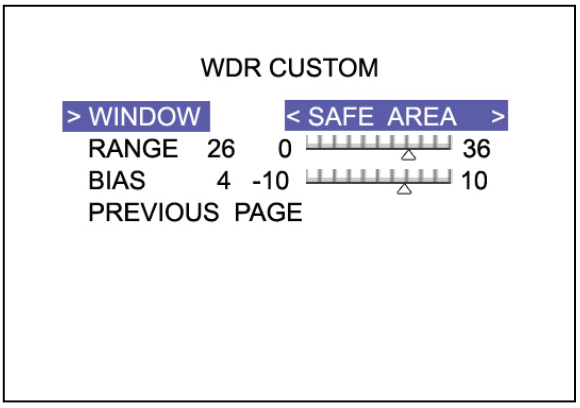
EXPOSURE menu is provided to help the settings with the possible parameters obtained and assumed by the factory tests for the most common environments.
EXPOSURE presets may not be the best optimized settings for the actual installations.
In such cases, find the optimal settings in CUSTOM setting of EXPOSURE menu



EXPOSURE	Descriptions
<WDR MID>	Medium level of the dynamic range control for each PRESETs.
WDR HIGH	Increases the dynamic range control. Some highlight area may washed out.
CUSTOM...	Provides more flexible compensation other than WDR MID, WDR LOW, WDR HIGH
BLC...	Compensates the brightness of main object against the bright back light. A zone out of CTR SPOT, UPPER1/3, MIDDLE1/3, LOWER1/3 can be set. Dynamic range control is inoperative if EXPOSURE is set to BLC.
WDR LOW	Decreases the dynamic range control.

7.5 CUSTOM menu

To enter CUSTOM menu, press button at <CUSTOM . . . > of EXPOSURE menu.

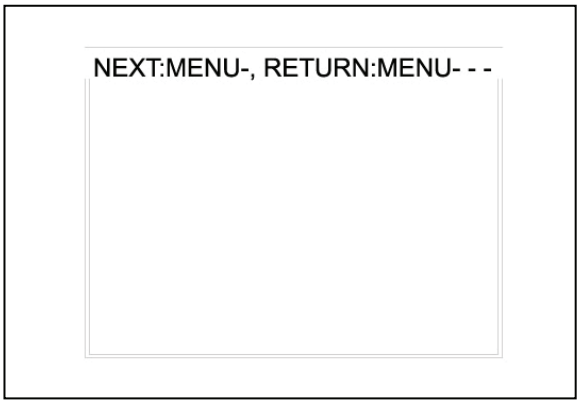


WDR CUSTOM	Descriptions
WINDOW	Metering of the dynamic control is weighted to the selected window from SAFE AREA, ZONE ADJUST, CENTER 1/3 AND LOWER 2/3.
RANGE	Adjusts the strength of the dynamic range control.
BIAS	Adjusts the base level of the dynamic range control.

7.6 ZONE ADJ menu

Adjusts the size and the location of the metering zone for the dynamic range control.
Dynamic range control is very sensitive to the size and the location of the zone.
The default window size is SAFE AREA.

To enter ZONE ADJ menu, press button at <ZONE ADJ . . .> of WDR CUSTOM menu.

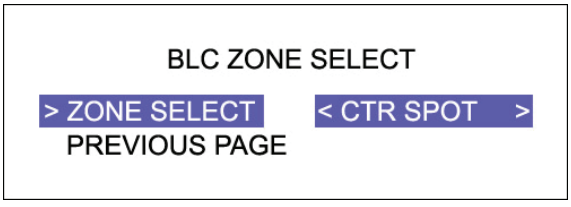


In ZONE ADJ menu, 'NEXT:MENU-' stands for 'press button short for next menu'
and 'RETURN:MENU---' means 'press button longer than 2 sec for return or exit'.
buttons are used for move, enlarge or reduce the zone.

White zone boundary moves the zone to locate it at the optimal position.
Green zone boundary enlarges the zone.
Red zone boundary reduces the zone.

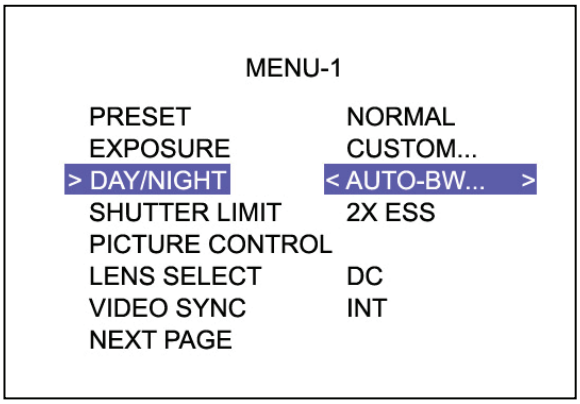
7.7 BLC ZONE SELECT menu

To enter BLC ZONE SELECT menu, press button at <BLC . . . > of EXPOSURE menu.



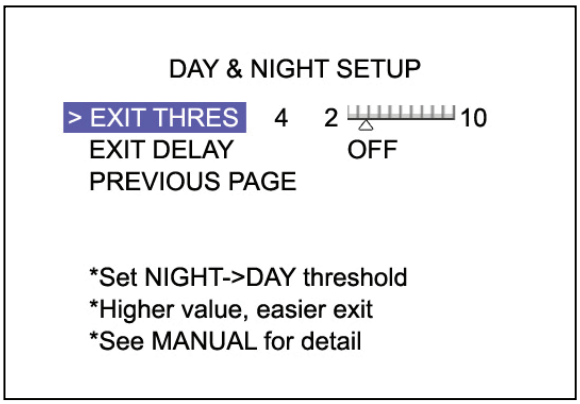
Metering of the backlit compensation control is weighted to the selected window from CTR SPOT(1/9 of entire screen), UPPER 1/3, MIDDLE 1/3 and LOWER 1/3.

7.8 DAY / NIGHT menu



DAY/NIGHT	Descriptions
<AUTO BW>	IR Cut filter is switched OUT/IN at night/day time automatically. At night mode, camera outputs the B/W video without the color burst signal.
OFF	IR Cut filter is stuck and is NOT switch OUT.

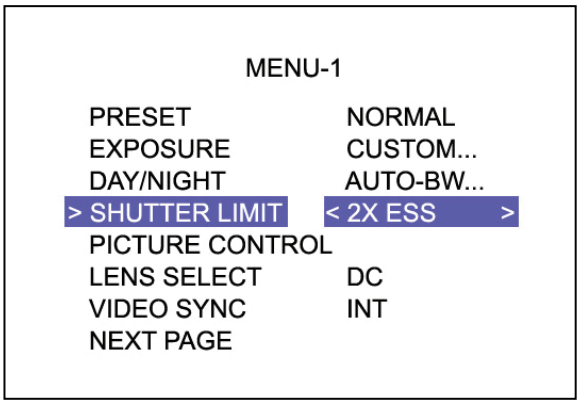
7.9 DAY/NIGHT SETUP menu



IMPORTANT!!!

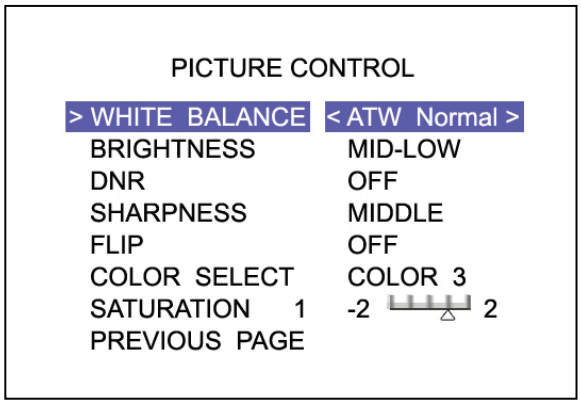
DAY/NIGHT SETUP	Descriptions
EXIT THRES	*IMPORTANT!!!* DAY->NIGHT and NIGHT->DAY operations must be examined and verified at the final step of the installation because they may be affected by the settings such as the size or location of the metering window. Block the lens for a few seconds for NIGHT mode and release it to be returned to DAY mode. If camera stay at NIGHT mode more than 10sec, increase EXIT THRES and repeat the fore mentioned steps. If the scene is too dim, it may not be returned to DAY.
EXIT DELAY	If set to ON, camera insert 8~10sec delay for NIGHT to DAY transition. This is to avoid the unnecessary transitions between NIGHT and DAY by the short duration of light such as car lights.

7.10 SHUTTER LIMIT menu



SHUTTER LIMIT	Descriptions
<2X ESS >	The longest shutter is limited to 2X of 1/60(NTSC)/1/50(PAL) sec when the scene illumination becomes dim. Video refresh rate at 2X ESS is 15(NTSC)/12.5(PAL)frames/sec.
4X ESS ~ 32X ESS	The longest shutter is limited to 4X~32X of 1/60(NTSC)/1/50(PAL) sec when the scene illumination becomes dim. The higher integration increases the sensitivity but decreases the video refresh rate.

7.11 WHITE BALANCE menu (in PITURE CONTROL menu)

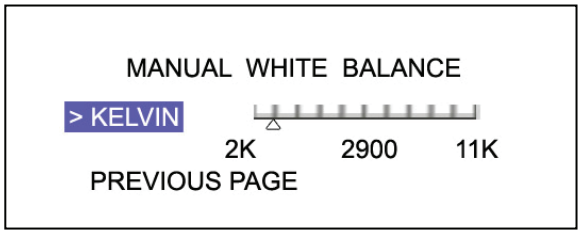


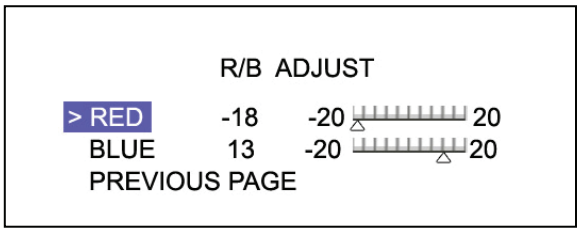
To enter PICTURE CONTROL sub-menu, press button at PICTURE CONTROL of MENU-1.

WHITE BALANCE	Descriptions
<ATW NORMAL>	White balance is compensated automatically in range of 2800K-7500K
ATW Desat	White balance is compensated automatically in range of 2000K-11000K. In the range of 2000-2800K and 7500-11000K, white balance is gradient-compensated.
ATW Xtnd	White balance is compensated automatically in range of 2000K-11000K
MANUAL	White balance can be adjusted by either KELVIN or R/B.

7.12 MANUAL WHITE BALANCE menu (in PITURE CONTROL menu)

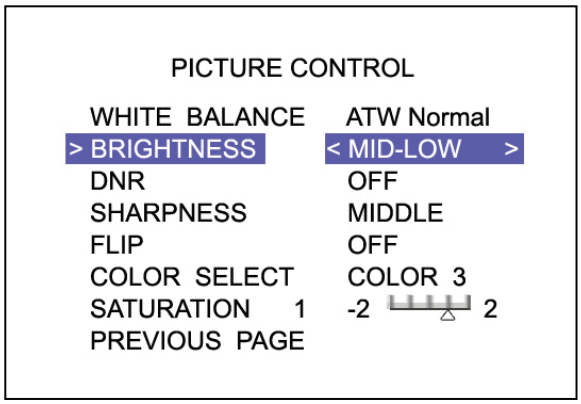
To enter MANUAL WHITE BALANCE menu, press button at <MANUAL...> of WHITE BALANCE menu.





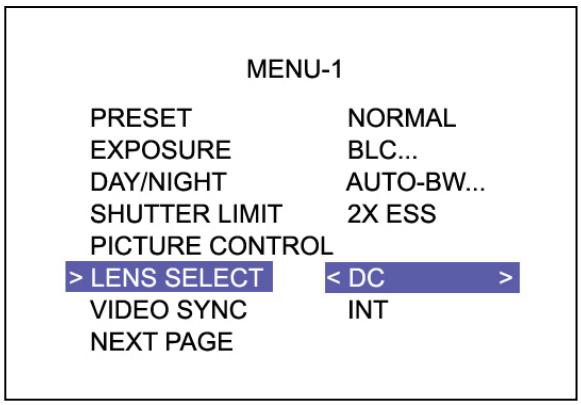
Shoot a white paper or a gray card and adjust either KELVIN or R/B so that the color on the monitor becomes most white.

7.13 BRIGHTNESS, DNR, SHARPNESS, FLIP, COLOR SELECT and SATURATION menus (in PITURE CONTROL menu)



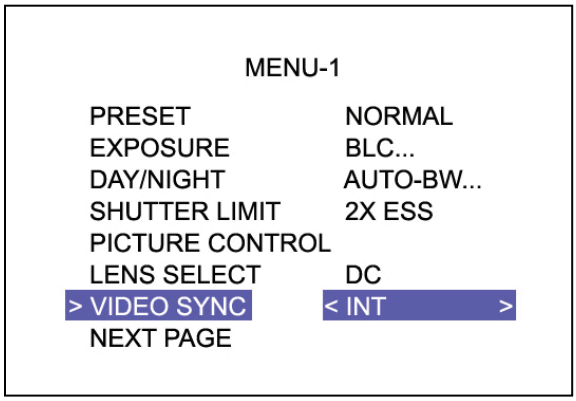
PICTURE CONTROL	Descriptions
BRIGHTNESS	BRIGHTNESS level is a kind of video output gain and is different from the iris level control. It can be set to MID-LOW, MIDDLE, MID-HIGH, HIGH and LOW. If it is set too high, the dynamic range is decreased.
DNR	ON reduces the dynamic noise but effects SHARPNESS a little soft.
SHARPNESS	MIDDLE, HIGH, MAX, LOW
FLIP	OFF provides the normal video. H-FLIP(V-FLIP) provides the horizontally(vertically) flipped video. H/V-FLIP provides the horizontally and vertically flipped video.
COLOR SELECT	Four sets of COLOR variance are provided.
SATURATION	Color saturation can be adjusted between -2 and +2.

7.14 LENS SELECT menu



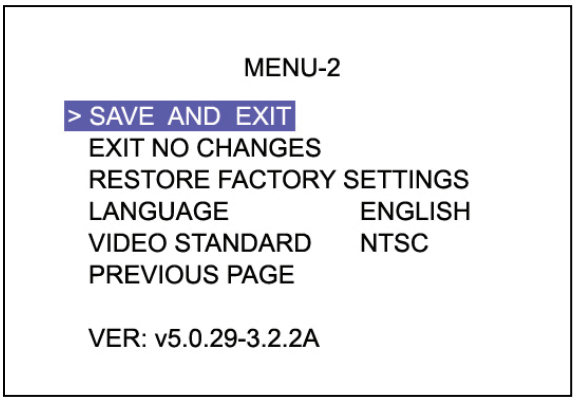
DC auto iris lens or MAUAL lens can be used for this camera but DC auto iris lens must be used in FL-LIGHT and EFR presets and strongly recommended in other presets when the scene is very bright.

7.15 VIDEO SYNC menu



VIDEO SYNC	Descriptions
<INT >	Synchronization is INTERNAL regardless of the power source.
INT2	Synchronization is INTERNAL but sync frequency is modified to simulate line-lock. It is not actually synchronized to the line frequency.
AUTO…	Synchronization mode is decided automatically by the power source. Line-lock for AC24V and Internal for DC12V

7.16 SAVE / RESTORE / EXIT menu



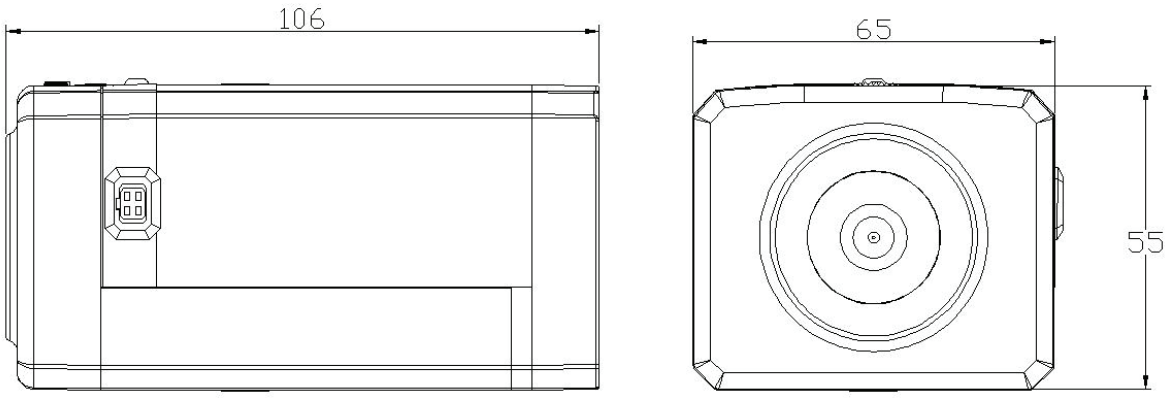
MENU-2	Descriptions
SAVE AND EXIT	Exits menu after saving the parameters.
EXIT NO CHANGES	Exits menu with discarding any changes.
RESTORE FACTORY SETTINGS	Restores and saves all parameters of factory settings. Camera resets and restarts automatically.
LANGUAGE	English is available only. Language does NOT change by RESTORE FACTORY SETTINGS.
VIDEO STANDARD	NTSC and PAL can be switched. VIDEO STANDARD does NOT change by RESTORE FACTORY SETTINGS

8. Specifications

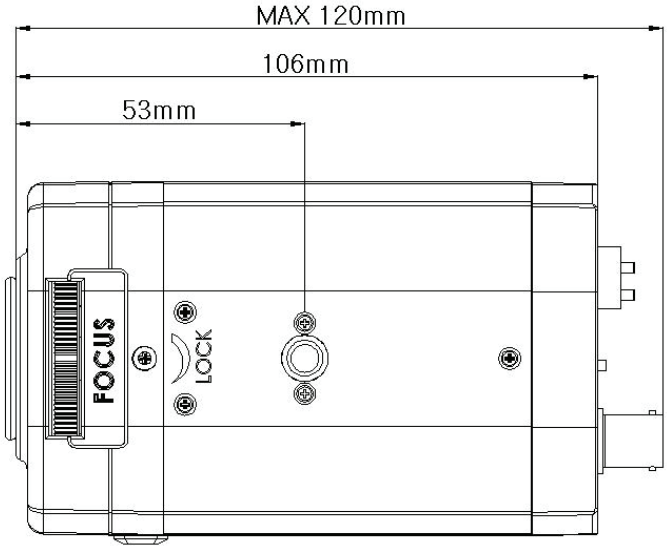
Model name	VTC-C750WDR	VTC-C750WDR/PAL
Image Device	1/3" RGB Color DPS SENSOR (Pixim Orca D1500series)	
Effective Pixels	720(H) x 540(V)	
TV system	NTDC, 525lines / 2:1interlace	PAL, 625lines / 2:1interlace
Scan frequency.	59.94Hz(V), 15.734Khz(H)	50Hz(V), 15.625Khz(H)
Synchronization	Internal/Line lock (Default: Internal)	
H. Resolution	550 TV Lines	
Sensitivity	0.0002Lux(F1.2,@40IRE, DN(DSS mode + ICR mode))	
S/N Ratio	50dB with AGC OFF at 50IRE	
White Balance	2000~11000ºK Automatic tracking	
WDR mode	4 presets (Low / Middle / High / Custom)	
Auto Iris Control	DC drive iris control. Level control is fixed internally.	
Slow shutter	2X, 4X, 8X, 16X, 32X ESS	
BLC Zone	4 areas (CTR SPOT, UPPER 1/3, MIDDLE 1/3, LOWER 1/3)	
Presets	NORMAL, INDOOR, OUTDOOR, FL-LIGHT, LOBBY, WAREHOUSE	
Flicker reduction	Yes (NTSC Version only)	
OSD	Yes (Setup menu only)	
Video Output	VBS 1Vpp +/-10%, 75ohm	
Lens mount	CS mount	
Power	24VAC(12V-28.8Vac) or 12VDC(10.5-30Vdc), 5Watts max	
Operation Temperature	-10ºC~+50ºC, 85% RH. Max. non-condensing	
Dimensions (W x H x L)	2.56" x 2.17" x 4.17" (65mm x 55mm x 106mm)	
Weight	9.52 Oz. (270g)	

● Design and specifications are subject to change for product improvements without prior notice.

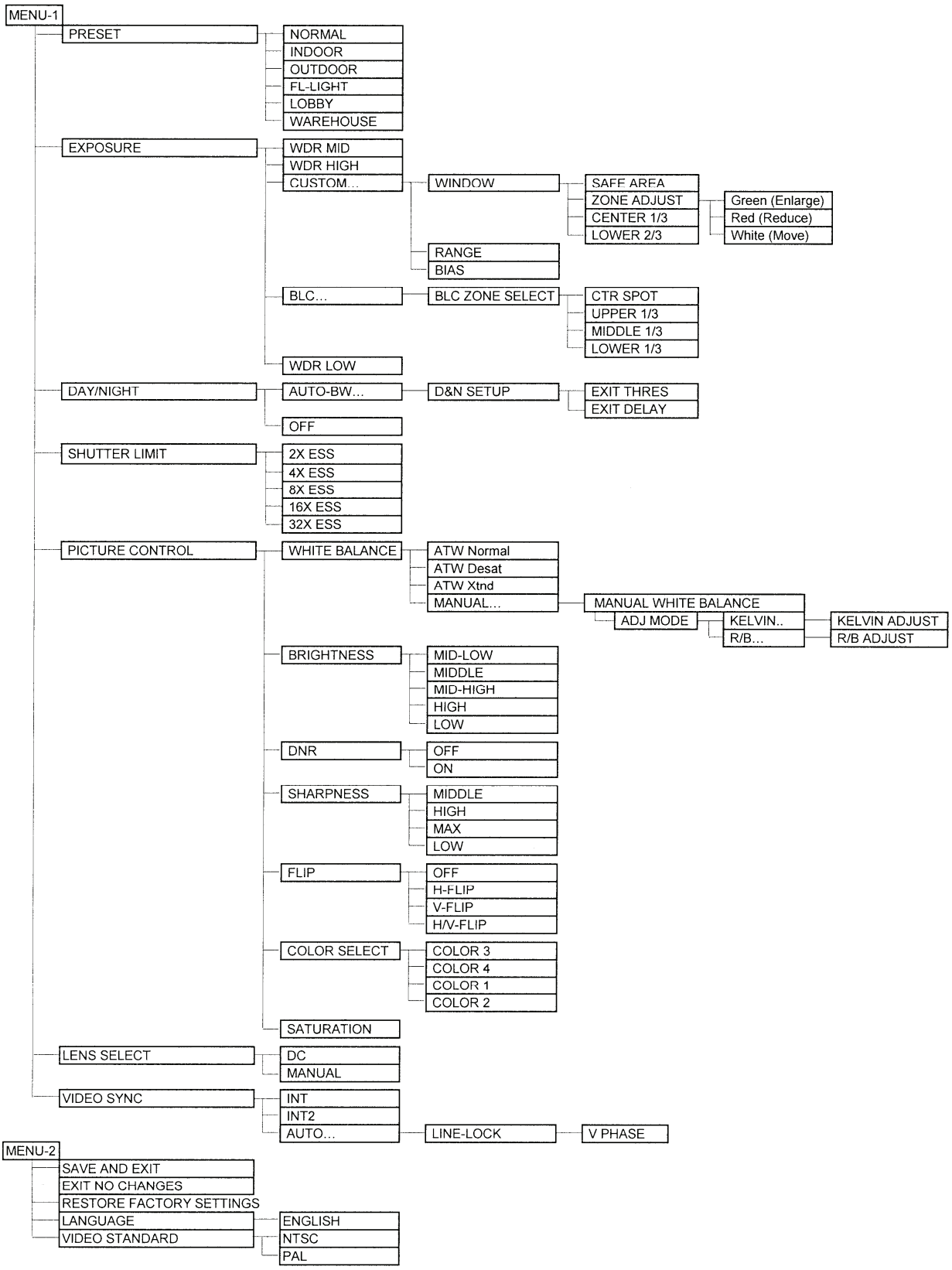
9. Dimensional Drawings



(Unit: mm)



10. Setup Menu Tree



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