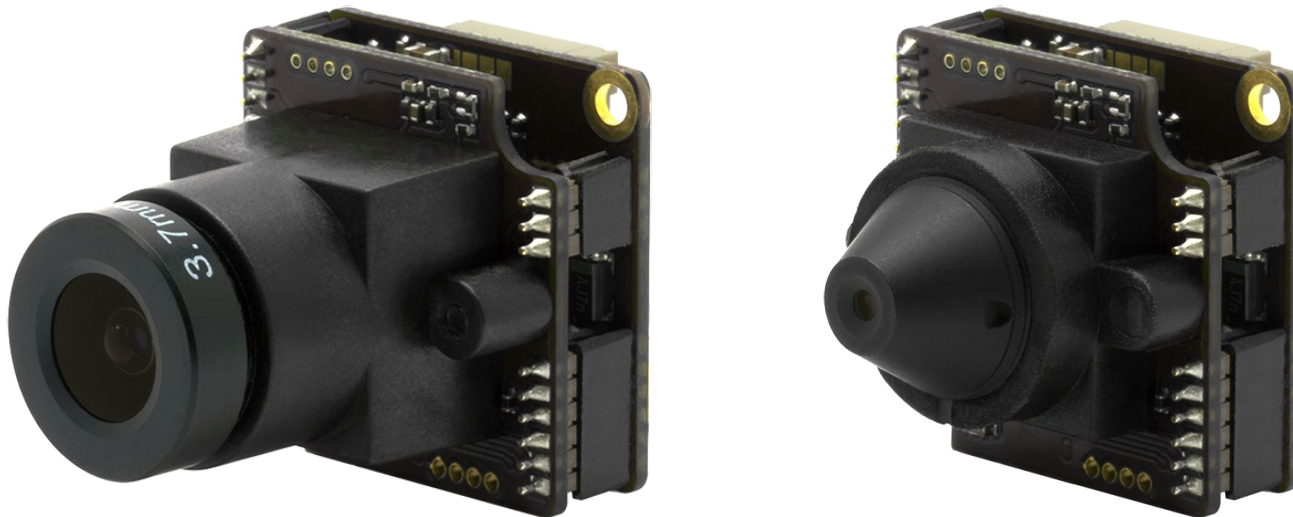




# WAT-1100MBD

1/3.2" High Sensitivity, Compact, Board type

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# Top Highlights

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- High Sensitivity
- Ultra-Compact & Light
- ICR Mechanical Less Day/Night Function
- High Resolution
- WDR
- DEFOG
- Low Noise
- Wide Input Voltage Range
- DC Iris Lens
- Advanced setting available by OSD

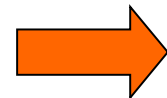


# High Sensitivity

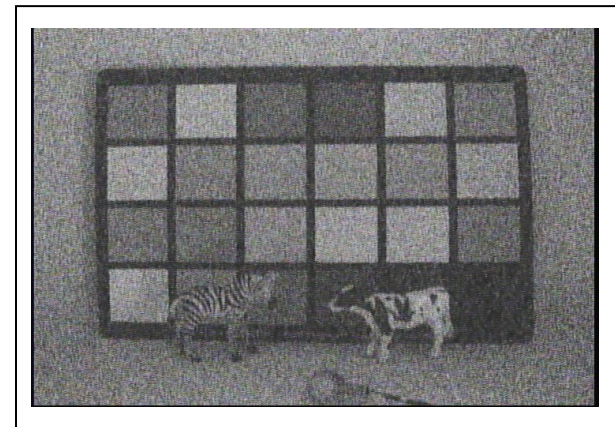
- Minimum Illumination 0.005lx F1.8 (Approx. Twice W-03CDB3)
- 1/3.2" BSI CMOS Sensor
  - ⇒ Higher sensitivity than the conventional model which was equipped with high sensitive CCD



W-03CDB3  
(1/3" CCD)



Approx.  
Twice



WAT-1100MBD  
(1/3.2" BSI CMOS)

※Photographing Environment: Illumination 0.05lx  
(Camera Settings: Shutter Speed 1/60s, Gain 54dB)  
Light Source: Halogen

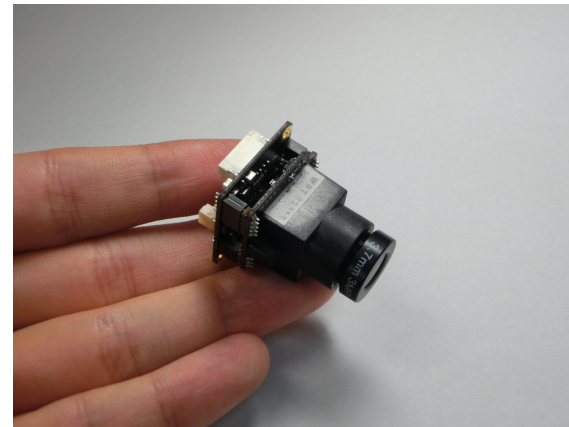
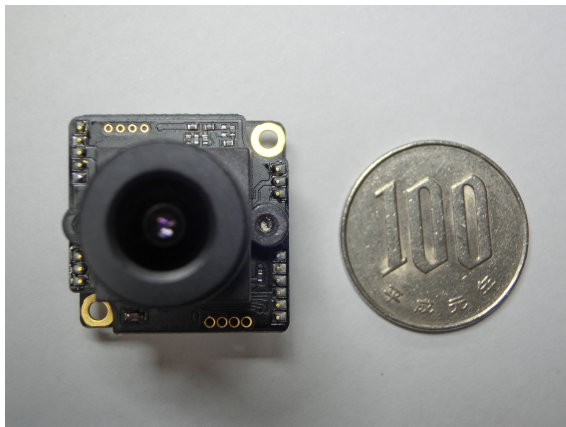
Switching automatically to monochrome mode by D/N function under low light environment



# Ultra-Compact & Light

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- Ultra-Compact Design
  - G3.7 : 23(W) × 23(H) × 33.5(D) (mm)
  - P3.3 : 23(W) × 23(H) × 24.5(D) (mm)
- Light
  - G3.7: Approx. 13g / P3.3: Approx. 8g
- Options (Sold Separately)
  - Miniature Lens, Remote Controller and more





# ICR Mechanical Less Day/Night Function

- New Method of Mechanical Less Day/Night Function without ICR (Infrared Cut filter Removal)

## Key Feature

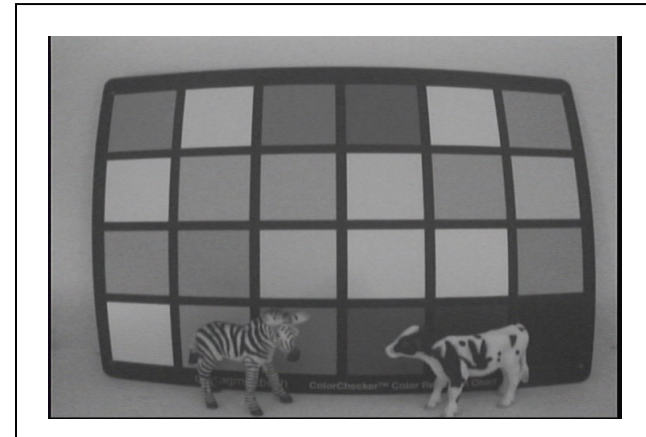
- Abolishing ICR Enables Downsizing & Unbreakable Mechanism

## High Reliability

- By Jointly Using an Infrared Ray Projector Further Improvement of Sensitivity (see figure below)



Color Camera



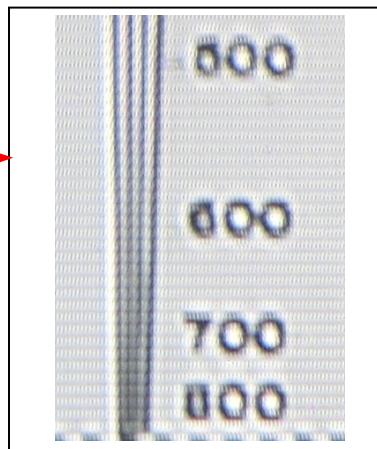
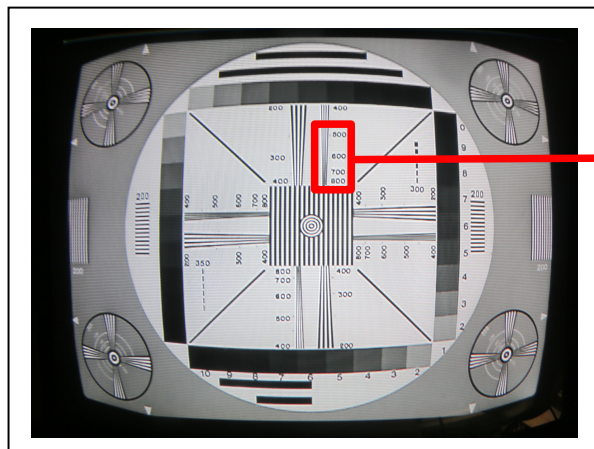
WAT-1100MBD

※Photographing Environment: Wavelength Approx. 850nm Infrared Light

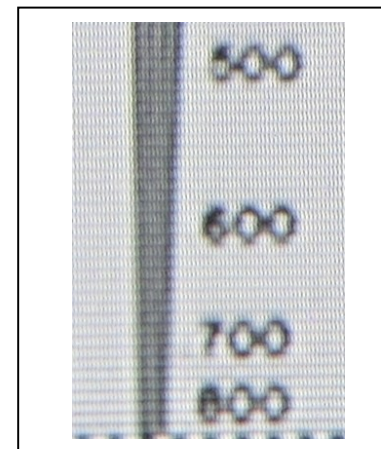


# High Resolution

Using Multi-Pixels Sensor Enables High Resolution  
⇒ More than 750TV



WAT-1100MBD

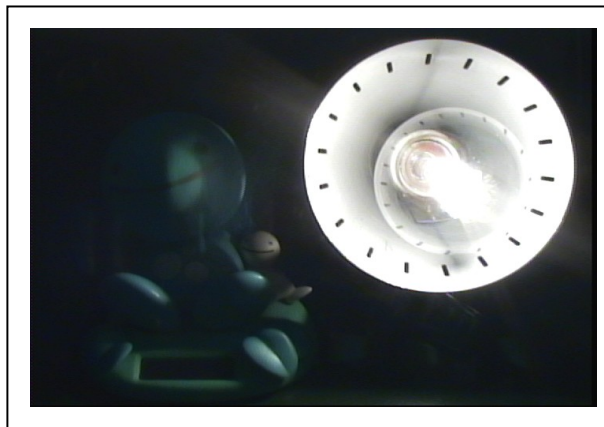


Conventional Model  
(380K pixels CCD)

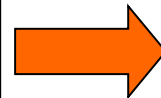


# Wide Dynamic Range (WDR)

- Selectable from WDR /ATR
- Corrects Clipped Whites & Crushed Shadows for the Subject in the High Contrast
- Smearless



The Conventional Model  
without WDR

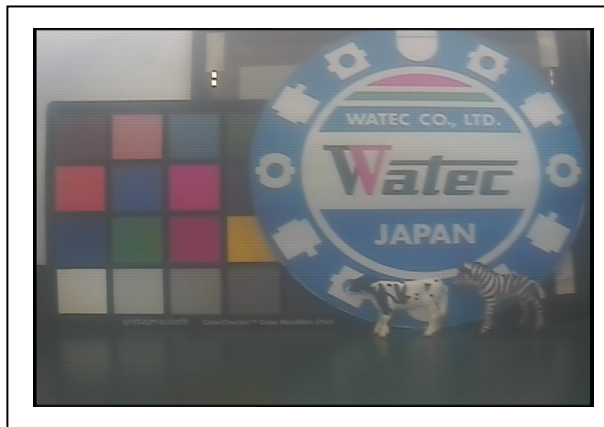


WAT-1100MBD

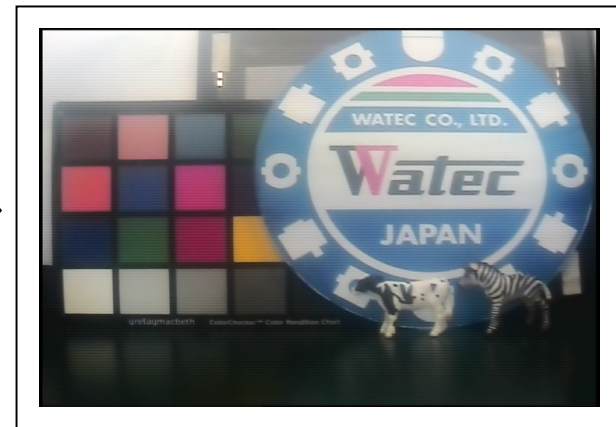
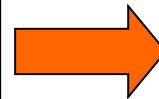


# DEFOG

- Correct the Deteriorated Visibility due to Fog or Smoke
- Correction Strength is Selectable



OFF



ON





# Other Highlights

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- Low Noise  
S/N more than 55dB (AGC=OFF,  $\gamma=1.0$ )
- Wide Input Voltage Range  
Input Power DC+5V~12V
- DC Iris Lens
- Advanced setting available by OSD  
Following function settings are changeable on requests

LENS	SHUTTER/AGC	WHITE BAL	BACKLIGHT	ADJUST(※)
DEFOG	WDR/ATR	DAY/NIGHT	IR LED	DNR
PRIVACY	CAMERA ID	LANGUAGE		

(※) FLIP, BRIGHTNESS, CONTRAST, SHARPNESS, HUE/COLOR GAIN

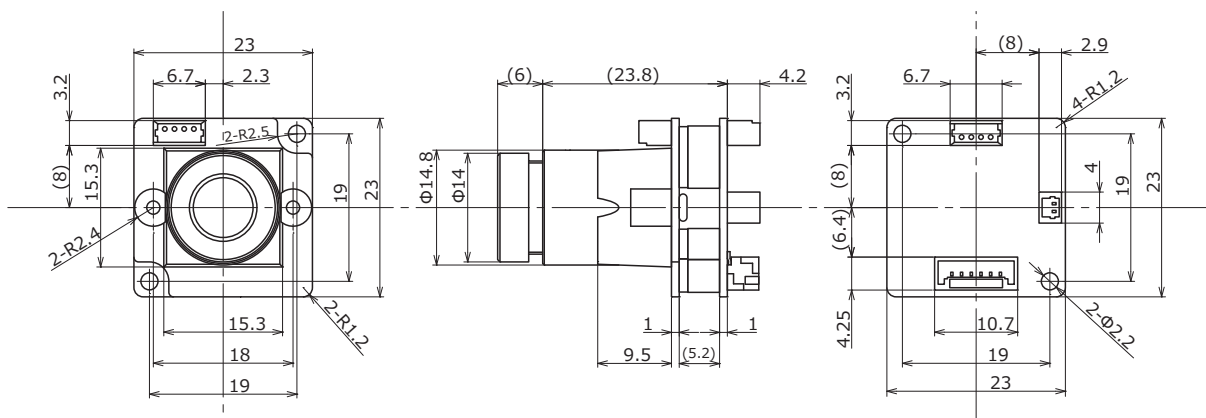
## SPECIFICATIONS

Sample Only

		NTSC	PAL
Video standard		NTSC	PAL
Pick-up element		1/3.2 inch BSI CMOS image sensor	
Number of effective pixels		1280(H)×960(V)	1280(H)×924(V)
Unit cell size		3.5μm(H)×3.5μm(V)	
Imaging system		RGB+W array mosaic filters on chip	
Synchronizing system		Internal	
Scanning system		Progressive	
Video output		Composite: 1.0 V(p-p) 75Ω (Unbalanced)	
Resolution (H)		More than 750TVL (Center)	
Minimum illumination		0.005 lx F1.8 (AGC=54dB)	
S/N		More than 55dB (AGC=OFF, γ=1.0)	
Function settings		OSD (On Screen Display) operated by remote controller	
AE mode	Fixed	1/60 sec.	1/50 sec.
	EI	1/60 - 1/100000 sec.	1/50 - 1/100000 sec.
White balance		ATW, PUSH, USER1, USER2, MANUAL, PUSH LOCK	
AGC		0 - 54dB	
MGC		MIN, 6, 12, 18, 24, 30, 36, 42, 48, MAX dB	
Day / Night		ICR mechaless Day/Night	
Gamma characteristics		γ≈0.45	
Noise reduction		2DNR ON (Level adjustable)	
Wide dynamic range		Multiple exposure WDR: ON (Level selectable) / OFF ATR: ON (Level selectable) / OFF	
Lens iris		DC	
Back light compensation		OFF / BLC / HLC	
Defog		OFF / AUTO (Correction level selectable)	
Privacy mask		16masks	
Mirror image		OFF / V-FLIP / H-FRIP / HV-FLIP	
Sharpness		0 - 255 (SHARPNESS)	
Power supply		DC+5V - 12V	
Power consumption		0.72W (60mA) ※12V	
Operating temperature		-10 - +50°C	
Storage temperature		-30 - +70°C	
Operating / Storage humidity		95% RH or less (Without condensation)	
Lens mount		M12 P=0.5	
Standard lens		M3718BC-12 (ƒ3.7 F1.8)	
Weight		Approx. 13.5g	
Accessories		4P Cable, I/O Cable	

※Design and specifications are subject to change without notice.

## DIMENSIONS (mm)



### \*Shading Correction

The shading correction will correct the non-uniformity luminance to uniform brightness of the image which came from the characteristics of the optical system and the imaging system.

Uneven brightness will vary depending on the lens used with.

In WAT-1100MBD, we correct the shade for obtaining the uniform brightness for each lens equipped.

Therefore, when you replaced with another lens, may not be able to obtain optimized image.

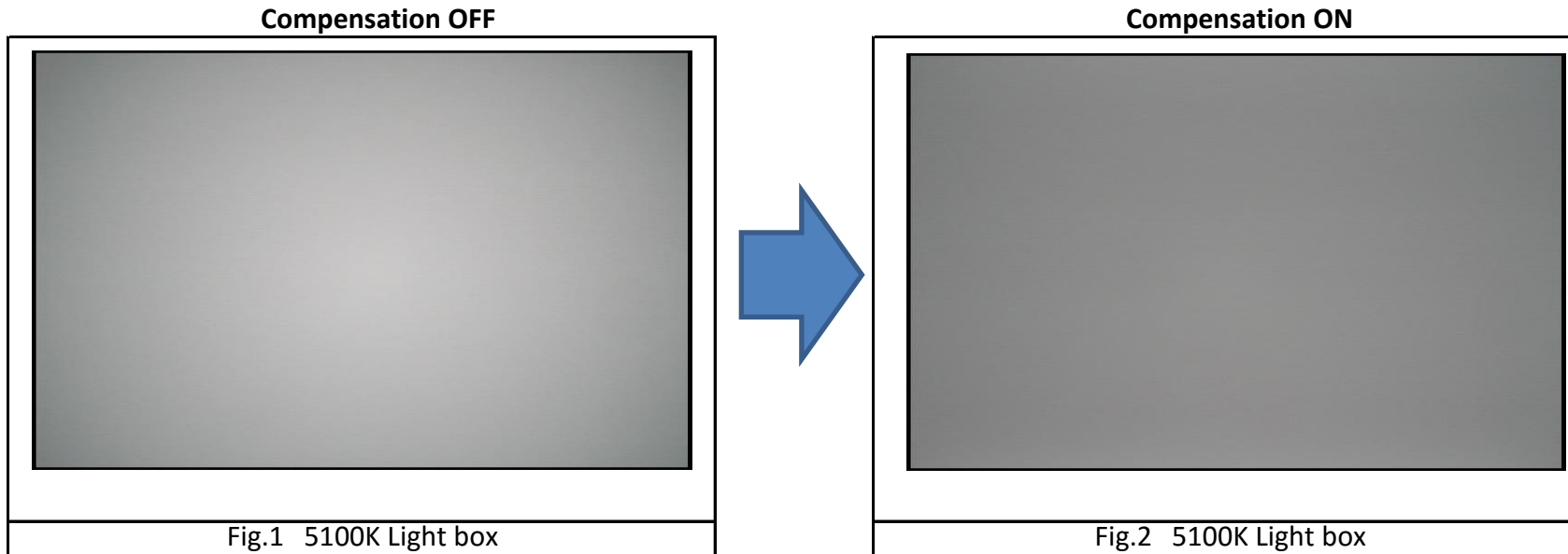
As a worst case, we will compare the camera P3.3 specification that replaced with G3.7 lens and adjusted WAT-1100MBD G3.7

\*WAT-1100MBD P3.3 does not have any shading correction since the shading appears particularly strong in pinhole lens and when we apply the correction on the lens the image quality gets worse.

Therefore, it will be the comparison of the shading correction ON and OFF the case of G3.7 lens model

The subjects are 1) 5100K light box, 2) gray scale chart, is 3) Logo. The captured images are described as follows;

1) Light box



In Fig.1, the center of the screen is bright and corners are dark, instead in Fig.2, you can confirm uniform brightness of the screen.

2) Gray scale chart

Compensation OFF

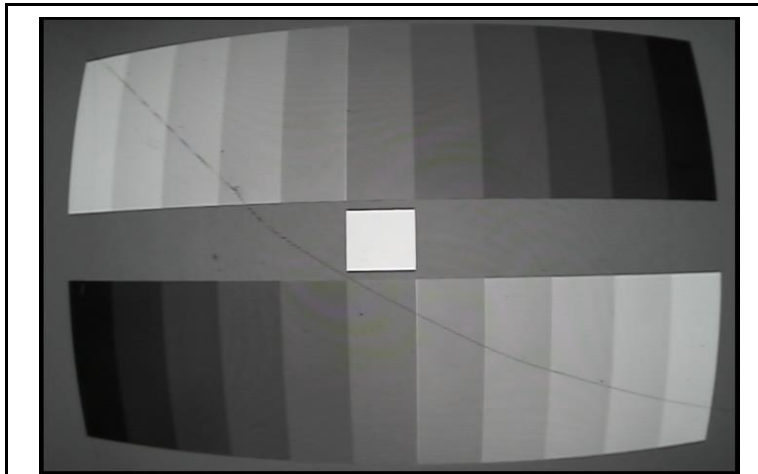


Fig.3 Gray scale chart captured image

Compensation ON

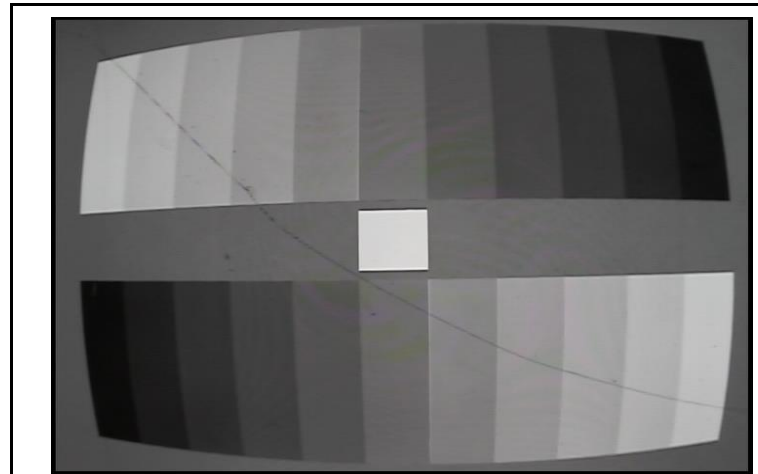


Fig.4 Gray scale chart captured image

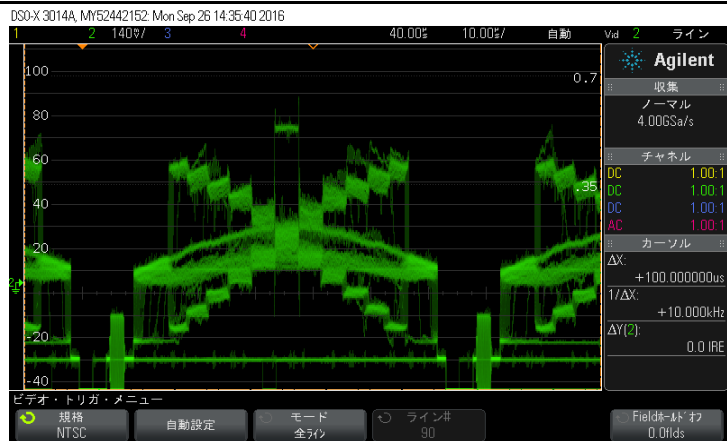


Fig.5 Gray scale chartvideo waveform

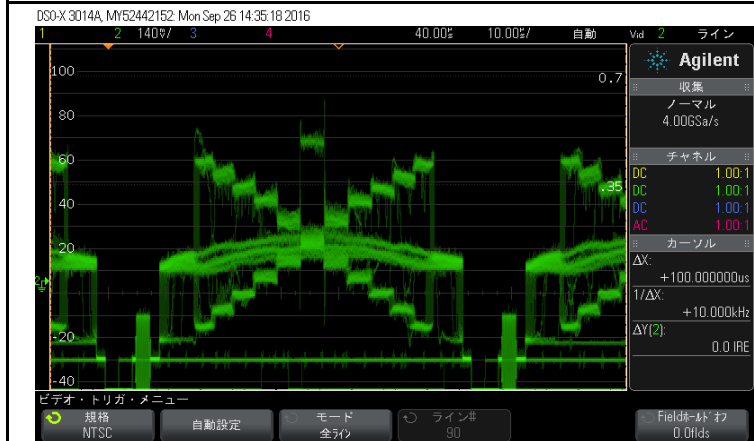


Fig.6 Gray scale chartvideo waveform

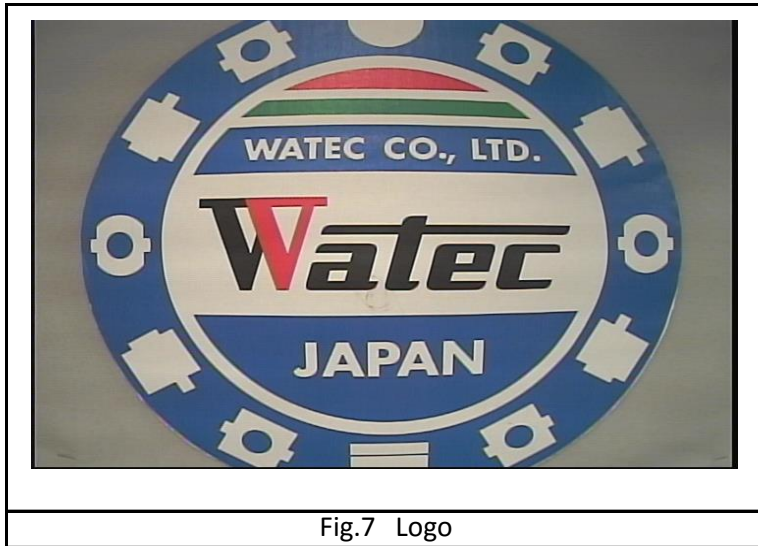
For the FIG. 3, the center of the white become strong compared to Figure 4.

When we look into the Fig.5, staircase waveform of the chart, the level has lowered toward the both ends.

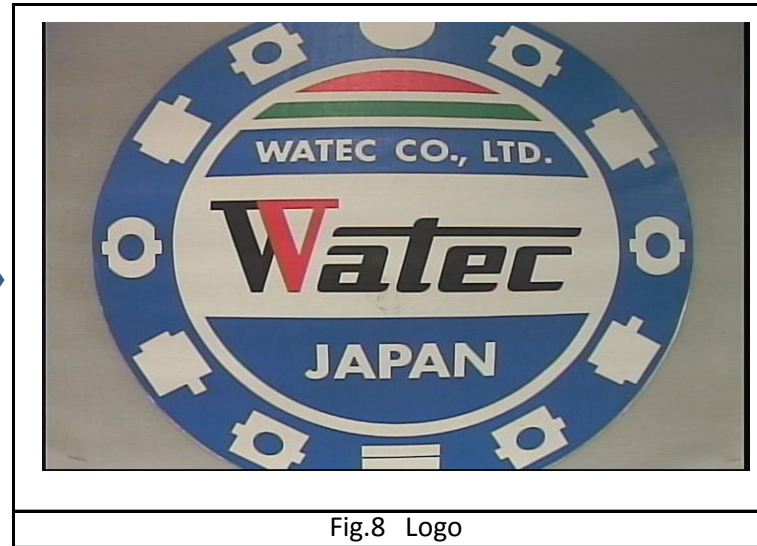
On the other hand, in Fig.6, staircase waveform is strait line in both ends.

### 3) Logo

Compensation OFF



Compensation ON



Since shading is difficult to see depending on the subject occasionally, when you actually take the image as shown in Figure 7.8, you might not feel the big difference in images. However, it is confirmed that the image quality will be improved by the shading correction from the results described above. From the above results, we highly recommended to correct the shading on each lens of WAT-1100MBD.

Shading correction is available from following 2 options.

1) Factory setting \*standard

We will correct the shading depending on the lens used with in production line.

\*Watec recommended option1)

2) Provision of rewriting software with jig(communication cable

When you use the camera while replacing the lens, you can correct the shading on the equipped lens.

We will provide you the software and communication cable, please follow the manual.

\*Option 2) is Watec Inc and Watec Taiwan exclusive.

For more information please contact:



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Toronto, Ontario M9W 6M6

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[sales@bockoptronics.ca](mailto:sales@bockoptronics.ca)  
[www.bockoptronics.ca](http://www.bockoptronics.ca)