DATE	2006.01.05
Ver.	1.1

Technical Manual

Model Name	SDZ-330 N/P

30X OPTICAL ZOOM BOX

SAMSUNG TECHWIN CO., LTD
Optics & Digital Imaging Div.

광디지털영상정보(개발U)/2381/김석대/55.121.207.180/2006-01-05 09:31:39
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<Modified History>

Revision	Date of Send	Modified Contents
Ver 1.0	Aug. 16. 2005	Official Version 1.0 Release
Ver 1.0	Jan. 05. 2006	Check Sum Data is changed. CMOS Level Voltage is changed. (3.7 v → 2.7 v)

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1. Product Model

SDZ-330 N/P (N:NTSC, P:PAL)

2. Features

■ Fine Picture in Ultra Low illumination

SV-III DSP and 1/3 high density CCD allows bright and high quality images to be captured in ultra low light condition.

■ Wide Dynamic Range(WDR)

SV-III DSP has strong compensation performance in WDR.
So it always shows obvious, clear and perfect light contrast picture in any environment.

■ SV-III DSP Chip

The SDZ-330 has powerful DSP that can remove image noise efficiency and it shows clean and obvious image under low illuminance.

■ 30x Optical Zoom

The SDZ-330 built-in x30 optical zoom lens is highly reliable. It features auto focus, auto iris and zoom function.

■ High Resolution

The horizontal resolution of 520TV Lines at Color mode and 570TV Lines at BW mode can be achieved by using a high density CCD having Double Speed 410,000 pixels SONY CCD, which provides clean, noiseless and reliable pictures.

■ Day & Night (ICR)

An infrared(IR) Cut-Filter can be disengaged from the image path for increased sensitivity in low light environments. The ICR will automatically engage depending on the ambient light, allowing the camera to be effective in day&night environmrnt.

■ Privacy zone masking(max. 32 zones/8 programmable zone per screen)

The privacy zone function makes it possible to mask specific areas of the scene from view.

■ Electrical Flip function

The SDZ-330 has function of H/V reverse mode.

■ Motion Detection

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3. Camera Specifications

Specifications		SDZ-330N	SDZ-330P
POWER	Input Voltage	DC12V (±10%)	
	Input Current	300 mA : Steady-state 450 mA : Max. (Zoom,Focus, Day&night motor operating)	
	Power Consumption	3.6 W : Steady-state	
CCD	Size	1/4 inch, Vertical double density interline CCD	
	Total Pixels	811(H) x 508(V)	795(H) x 596(V)
	Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
OPTICS	Optics	30X, f=3.3 to 99.0mm(F 1.6 to 3.2)	
	Min. Focus Distance	1000mm	
	D. ZOOM	X2, X4, X8	
	Angle Field of view	**H** : Appr. 58.0° (Wide) to 2.22° (Tele) **V** : Appr. 44.8° (Wide) to 1.68° (Tele)	
Sync.	Scanning System	2:1 Interlace	
	Synchronization	Internal/Line Lock	
	Frequency	Horizontal:15.734 KHz/Vertical :59.94 Hz	Horizontal: 15.625 KHz/Vertical : 50.00 Hz
ELECTRICAL	Camera Title	ON/OFF (Displayed 20 characters)	
	Camera ID	255 ID Selectable	
	Resolution	520 TV Lines(Min.) : Color 570 TV Lines(Min.) : B/W	
	Video Output	CVBS : 1.0Vp-p/75Ω	
	S/N (Y signal)	50 dB (AGC Off,Weight ON)	
	Min. Illumination	0.4 Lux/F1.6 (50 IRE) ; Color 0.08 Lux/F1.6 (50 IRE) ; B/W	
	WDR	52dB	
	Day & Night	AUTO/MANUAL(COLOR, B/W) (ICR type)	
	Gain Control	Low,Middle,High,OFF Selectable	
	White Balance	ATW/AWC/Manual (1800 °K ~ 10,500 °K)	
	Electronic shutter speed	AUTO/MANUAL (X128 ~ 1/60sec ~ 1/120,000sec) Sens-up and Sens-up Limit is selectable	AUTO/MANUAL (X128 ~1/50sec ~ 1/120,000sec) Sens-up and Sens-up Limit is selectable
	O.S.D	Built-In	
	Motion Detection	ON/OFF (output via Terminal)	
	SSNR	Low,Middle,High,Off	
	Focus	Auto/Manual/One Push	
	Zoom Movement Speed	5.2 Sec : Wide to Tele	5.4 Sec : Wide to Tele
	Lens Initialize	Built-In	
	Preset	8-Positions	
	Privacy Function	ON/OFF(32 Programmable Zone/ 8 Programmable Zone per Screen)	
	FLIP	LEFT/RIGHT, UP/DOWN	
	FREEZE	On/Off	
	IRIS Control	Auto/Manual	
Control Output		RS-485(9,600bps, 19,200bps, 384,000bps Seclectable) / External Control by Voltage(ZOOM,FOCUS)	
Operating Temperature/Humidity		-10℃ to +50℃ / 20% to 80% RH	
Storge Temperature/Humidity		-20℃ to +60℃ / 20% to 95% RH	
Dimension		67.4(W) × 67.6(H) × 120(D)mm(Without Tripod Base)	
Weight		450g	
Option		Remote Controller(RS-485 type)	

* Design and specification are subject to change without notice.

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4. Precautions

1) Do not install the unit in an area that is dusty,greasy,wet or humid to avoid a decline in performance or operational failure.

2) Do not install the unit in an area that is subject to vibration. Also, protect the unit from any sudden impact or any kind of vibration as these may cause a decline in a performance or an operation failure.

3) Avoid placing the unit in an area exposed to direct sunlight that would cause the temperature inside the unit to rise resulting in an operation failure.

4) Be sure to use the specified screws of installing the camera unit. If not, serioue damage to the camera unit may occur.

5) Always turn off the power supply before unplugging the interface connector. Failure to do this may cause an operational failure.
And, do not apply excessive voltage.(Use only the specified voltage)
Otherwise, you may get an electric shock or a fire may occur.

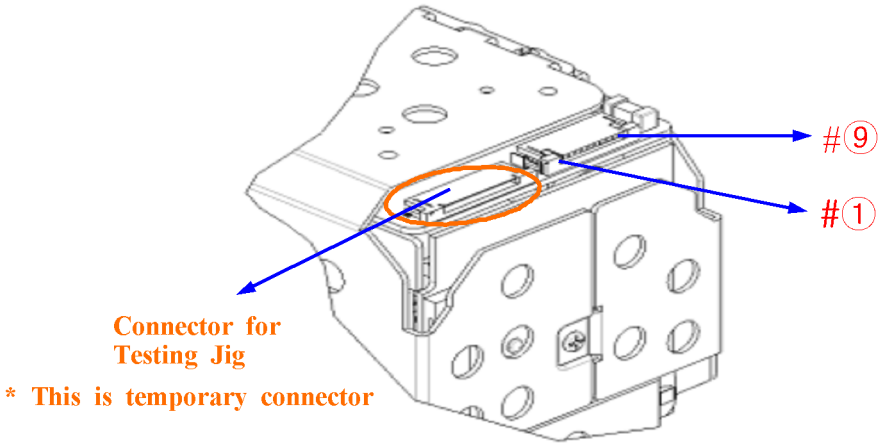
6) Always connect the power supply to the correct positive (+) and negative (-) terminals.Improper connections to the power supply will cause an operational failure.

7) Should you wish to use the camera unit for anything other than its intended use, please contact the manufacturer in advance.

8) It is recommended that auto-focus not be used on following subjects and scene.
- subjects with very dark surface (such as the black cloths or black curtain).
- subjects with very glossy or shiny surface (such as the exterior of automobiles).
- subjects with very little brightness contrast (such as the wall)
- subjects with very little or very strong back-lighting.
- scenes having a strong contrast between the right and left halves of the screen
- subjects with an object in front of them (such as animals in a cage)

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5. Pin Specification for Camera Control Interface

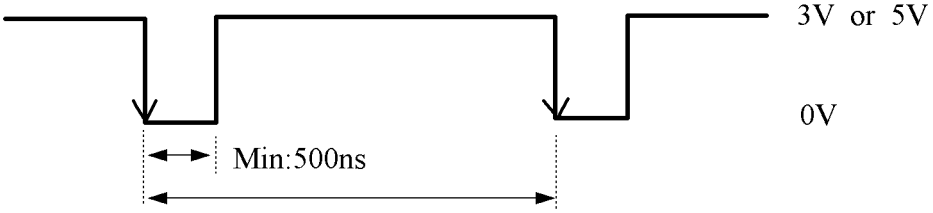


Connecting Condition

9 Pin FFC Connector : Compatible with 52207-0990,
1.0mm Pitch, Top Contact
Maker : Molex or Elco

PIN_NO.	NAME	I/O	LEVEL
1	**GND**	-	
2	**TRIGGER_IN**	Input	External Line-Lock Pulse (Negative, 3 or 5Vp-p)
3	**GND**	-	
4	**VIDEO_OUT**	Output	1.0v±0.2v
5	**GND**	-	
6	**DC-IN**	Input	DC 8~15V(Recommended : 9V or 12V)
7	**GND**	-	
8	**TxD(for RS-232C)**	Output	CMOS Level(Low : Max.0.8V, High : Min. 2.7V)
9	**RxD(for RS-232C)**	Input	CMOS Level(Low : Max.0.8V, High : Min. 2.7V)

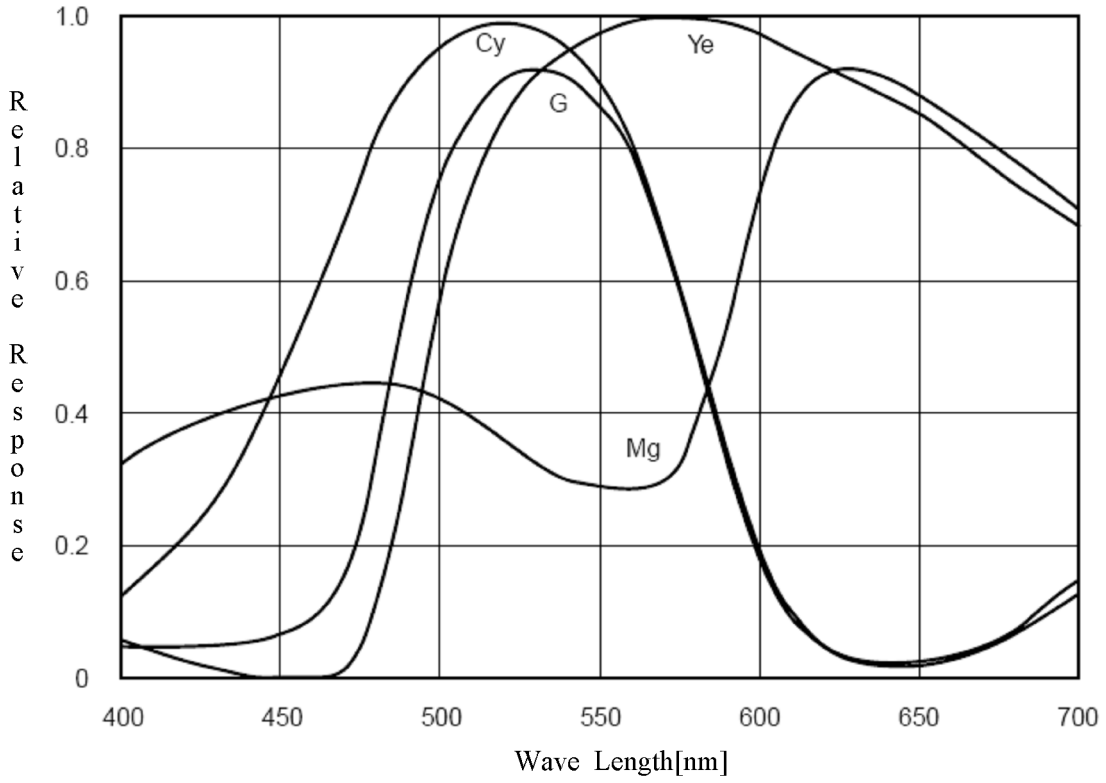
Trigger IN : Sync. to falling edge



60Hz ± 0.1Hz(NTSC)
50Hz ± 0.1Hz(PAL)

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6. Spectral Sensitivity Characteristics



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7. Command Instruction

Communication Protocol

communication speed : 9600bps
start bit : 1 bit
data bit : 8 bits
parity bit : none
stop bit : 1 bit

Communication Packet

[Command Format]

Command Packet											ACK Packet										
W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11

[notes] Command Packet : Sending command from controller to camera
Return Packet : Sending back data from camera to controller

[Command Packet] **Check Sum : Bitwise Not (sum(W2 ~ W9))

1st byte	W1	STX	Start of Text	A0h
2nd byte	W2	ID	CAM ID	00h~FFh
3rd byte	W3	HOST ADDRESS	HOST ADDRESS	00h~FFh
4th byte(Upper) 5th byte(Lower)	W4 W5	Command	Command	0000h~FFFFh
6th byte	W6	Parameter1	data	00h~FFh
7th byte	W7	Parameter2	data	00h~FFh
8th byte	W8	Parameter3	data	00h~FFh
9th byte	W9	Parameter4	data	00h~FFh
10th byte	W10	ETX	End of Text	AFh
11th byte	W11	Check Sum	Check Sum	**Check Sum

[Return Packet]

1st byte	W1	STX	Start of Text	A0h
2nd byte	W2	ID	CAM ID	00h~FFh
3rd byte	W3	HOST ADDRESS	HOST ADDRESS	00h~FFh
4th byte(Upper) 5th byte(Lower)	W4 W5	Command	Command	0000h~FFFFh
6th byte	W6	Parameter1	data	00h~FFh
7th byte	W7	Parameter2	data	00h~FFh
8th byte	W8	Parameter3	data	00h~FFh
9th byte	W9	Parameter4	data	00h~FFh
10th byte	W10	ETX	End of Text	AFh
11th byte	W11	Check Sum	Check Sum	**Check Sum

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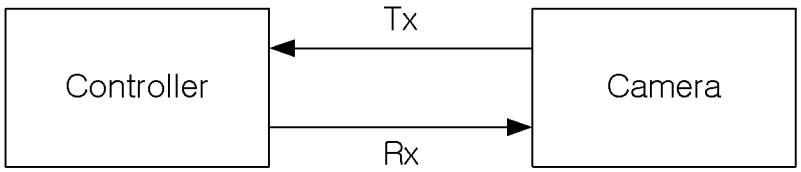
8. Command List

1) Communication Protocol

* Specification : RS-485
* Transmit Speed : 9600bps
* Start bit : 1 bit
* Data bit : 8 bits
* Parity bit : none
* Stop bit : 1 bit

2) Communication Sequence

In this Command Reference, 'Command Packet' is defined as the packet sent from Host-Controller and 'Return Packet' is defined as the packet sent from Module Camera. The Communication concludes when Host-controller receives a Return Packet from the Module Camera to a Command Packet as follows. This Command Reference prescribes the Command Packet, Return Packet and the Time To between receipt of a Command Packet and transmission of a Return Packet.



3) Communication Format

The Command packet format and return packet format are listed below. Both packets are fixed at 11 bytes.

<Command Packet Format>

Byte 1	STX	Start (A0h)
Byte 2	ID	CAM ID
Byte 3	Host Address	Host Address
Byte 4(Upper) || Byte 5(Lower)	Command	Command
Byte 6	Parameter3	Data3
Byte 7	Parameter4	Data4
Byte 8	Parameter5	Data5
Byte 9	Parameter6	Data6
Byte 10	ETX	End (AFh)
Byte 11	Check Sum	Check Sum

<Return Packet Format>

Byte 1	STX	Start (A0h)
Byte 2	ID	CAM ID
Byte 3	Host Address	Host Address
Byte 4(Upper) || Byte 5(Lower)	Command	Command
Byte 6	Parameter3	Data3
Byte 7	Parameter4	Data4
Byte 8	Parameter5	Data5
Byte 9	Parameter6	Data6
Byte 10	ETX	End (AFh)
Byte 11	Check Sum	Check Sum

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4) Detailed Command

(1) Command Description

Command Name	Name									
Function	Execution Description.									
Remark	Operation Condition									
	Byte1	Byte2	Byte3	Byte4|| Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
Command Packet	STX	CAM ID	HOST ADDR	Command	Data3	Data4	Data5	Data6	ETX	CHECK SUM
Return Packet	STX	CAM ID	HOST ADDR	Response	Data3	Data4	Data5	Data6	ETX	CHECK SUM
Parameter	Each parameter description									

(2) Command List of Transmitting

No.	Command Name	Reset									
1	Function	Reset all data to factory default value.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**000Fh**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**000Fh**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	Focus Far									
2	Function	Move focus lens to far direction.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0100h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0100h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	Focus Near									
3	Function	Move focus lens to near direction.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0200h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0200h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

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No.	Command Name	Zoom Wide									
4	Function	Move zoom lens to wide direction.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0040h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0040h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	Zoom Tele									
5	Function	Move wide lens to tele direction.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0020h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0020h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	AF Stop									
6	Function	Stop zoom & focus lens moving.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0000h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0000h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	One push AF									
7	Function	Unconditionally execute auto focus.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0045h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0045h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

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No.	Command Name	USER PRESET Save									
8	Function	Save current user preset configuration information.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0003h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0003h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Parameter	P1: 00h = USER PRESET 1 01h = USER PRESET 2 02h = USER PRESET 3 03h = USER PRESET 4 04h = USER PRESET 5 05h = USER PRESET 6 06h = USER PRESET 7 07h = USER PRESET 8									

No.	Command Name	USER PRESET EXEC.									
9	Function	Execute selected user preset.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0007h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0007h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Parameter	P1: 00h = USER PRESET 1 01h = USER PRESET 2 02h = USER PRESET 3 03h = USER PRESET 4 04h = USER PRESET 5 05h = USER PRESET 6 06h = USER PRESET 7 07h = USER PRESET 8									

No.	Command Name	OSD Menu On/Off									
10	Function	Display OSD menu on the screen. Clear OSD menu and save current menu setup.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**00B1h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**00B1h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Parameter	P1: 00h = ON 01h = OFF									

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No.	Command Name	OSD Menu Up									
11	Function	Move OSD arrow to up.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0008h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0008h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	OSD Menu Down									
12	Function	Move OSD arrow to down.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0010h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0010h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	OSD Menu Left									
13	Function	Move OSD arrow to left.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0004h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0004h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

No.	Command Name	OSD Menu Right									
14	Function	Move OSD arrow to right.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0002h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0002h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

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No.	Command Name	OSD Menu Set									
15	Function	OSD On/Off.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0100h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0100h**	**P1**	00h	00h	00h	AFh	CHECK SUM
	Parameter	P1: 00h = ON 01h = OFF									

No.	Command Name	OSD Menu ESC									
16	Function	Move to upper menu.									
	Remark										
		Byte1	Byte2	Byte3	Byte4 || Byte5	Byte6	Byte7	Byte8	Byte9	Byte10	Byte11
	Command Packet	A0h	CAM ID	HOST ADDR	**0200h**	00h	00h	00h	00h	AFh	CHECK SUM
	Return Packet	A0h	CAM ID	HOST ADDR	**0200h**	00h	00h	00h	00h	AFh	CHECK SUM
	Parameter										

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5) Function Initial Setting Table

Function Mode	Initial Setting	Sub Function
Cam Title	Off	Yes
White Balance	ATW	Yes
Backlight	Off	Yes
Motion Detection	Off	Yes
Focus	Auto	No
Zoom Tracking	On	No
Zoom Speed	Fast	No
Digital Zoom	Off	Yes
Display Zoom Magnification	On	No
Brightness Level	50	No
Iris	Auto	Yes
Shutter	Esc	Yes
AGC	Middle	No
SSNR(Noise Reduction)	Middle	No
Sens-Up(Slow Shutter)	Auto	Yes
Privacy	Off	Yes
Day/Night	Auto	Yes
Sync	Internal	Yes
Freeze	Off	No
H-Rev(horizontal reverse)	Off	No
V-Rev(vertical reverse)	Off	No
Tone Level	0	No
Sharpness Level	34	No
Color Level	50	No

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Mode	CTN	WBM	AWC	ATW	WDR	MDN	FMM	FOP	FAM	ZTN	DZN	INF	LNI	IRA	IRM	SHE	SHA	SHM	GOF	GON	NRN	SLA	PRN	DNA	DNC	DNB	SYL	FRN	HRN	VRN
CTN	-	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
WBM	○	-	X	X	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
AWC	○	X	-	X	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
ATW	○	X	X	-	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
WDR	○	○	○	○	-	○	○	○	○	○	○	X	X	○	○	○	○	X	○	○	○	○	○	○	○	○	○	X	○	○
MDN	○	○	○	○	○	-	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
FMM	○	○	○	○	○	○	-	X	X	X	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
FOP	○	○	○	○	○	○	X	-	X	X	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
FAM	○	○	○	○	○	○	X	X	-	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
ZTN	○	○	○	○	○	○	X	X	○	-	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
DZN	○	○	○	○	○	○	○	○	○	○	-	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
INF	○	○	○	○	○	○	○	○	○	○	○	-	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
LNI	○	○	○	○	○	○	○	○	○	○	○	X	-	○	○	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
IRA	○	○	○	○	○	○	○	○	○	○	○	X	X	-	X	X	○	○	○	○	○	○	○	○	○	○	○	X	○	○
IRM	○	○	○	○	○	○	○	○	○	○	○	X	X	X	-	○	○	○	○	○	○	○	○	○	○	○	○	X	○	○
SHE	○	○	○	○	○	○	○	○	○	○	○	X	X	X	○	-	X	X	○	○	○	○	○	○	○	○	○	X	○	○
SHA	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	X	-	X	○	○	○	X	○	○	○	○	○	X	○	○
SHM	○	○	○	○	X	○	○	○	○	○	○	X	X	○	○	X	X	-	○	○	○	X	○	○	○	○	○	X	○	○
GOF	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	-	X	X	X	○	X	○	○	○	X	○	○
GON	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	X	-	○	○	○	○	○	○	○	X	○	○
NRN	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	X	○	-	○	○	○	○	○	○	X	○	○
SLA	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	X	X	X	○	○	-	○	○	○	○	○	X	○	○
PRN	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	-	○	○	○	○	X	○	○
DNA	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	X	○	○	○	○	-	X	X	○	X	○	○
DNC	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	X	-	X	○	X	○	○
DNB	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	X	X	-	○	X	○	○
SYL	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	-	○	○	○
FRN	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-	○	○
HRN	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-	○
VRN	○	○	○	○	○	○	○	○	○	○	○	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-

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9.Function Dependancy Table

[Function Mode]

- CTN : Camera Title On
- WBM : White Balance Manual Mode
- AWC : One Push Auto White Balance Mode
- ATW : Auto Tracking White Balance Mode
- WDR : Wide Dynamic Range Mode
- MDN : Motion Detection On
- FMM : Focus Manual Mode
- FOP : Focus One-Push AF Mode
- FAM : Focus Auto Mode
- ZTN : Zoom Tracking On
- DZN : Digital Zoom On
- INF : Infinite Position Mode
- LNI : Lens Initialization Mode
- IRA : Iris Auto Mode
- IRM : Iris Manual Mode
- SHE : Shutter ESC Mode
- SHA : Shutter Anti-Flicker Mode
- SHM : Shutter Manual Mode
- GOF : AGC Off
- GON : AGC On
- NRN : SSNR(Noise Reduction) On
- SLA : Sens-Up(Slow Shutter) Auto
- PRN : Privacy On
- DNA : Day/Night Auto Mode
- DNC : Day/Night Color Mode
- DNB : Day/Night B/W Mode
- SYL : Sync Line-Lock Mode
- FRN : Freeze On
- HRN : H-Reverse On
- VRN : V-Reverse On

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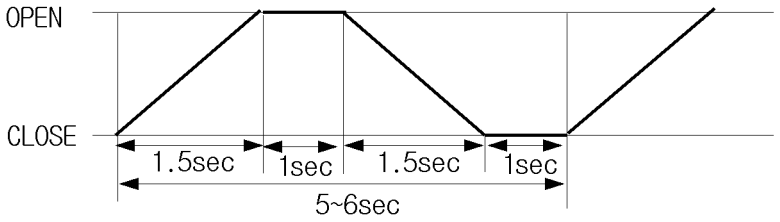
10. DC Power Supply

- Voltage Source : DC 8V~15V
- Power Consumption : 3.15W(steady-state)
  4.5 W(Max. :)

11. Reliability and Environment Condition

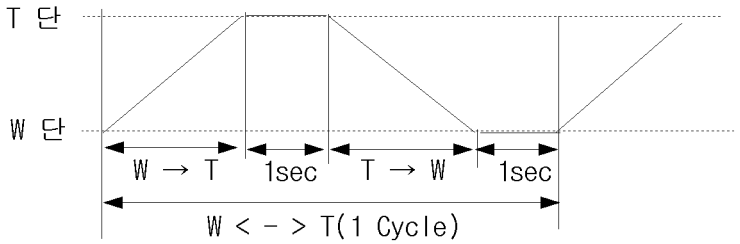
- IRIS : 500,000 times(Room Temperature)

The change of Iris's speed or the failure of the iris's operation should not happen when the Iris's operation is tested for the 500,000 times from CLOSE to OPEN. A time's cycle is 5sec~6sec.



- ZOOM : 500,000 times

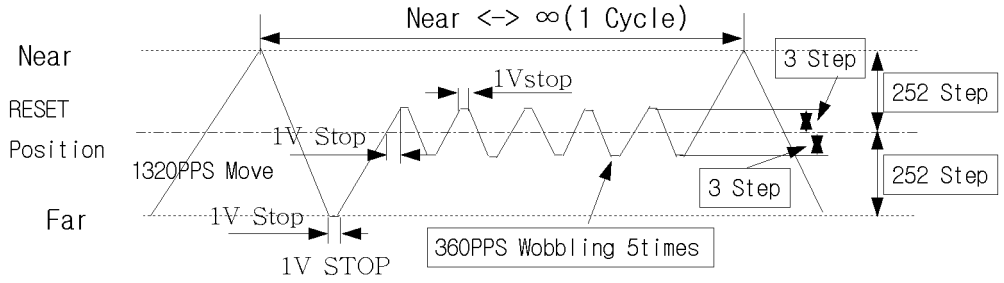
The failure of Zooming operation should not happen when Zooming is tested for the 500,000 times from TELE to WIDE.
The step between TELE and WIDE is 1,743.
The test should be done by the following speed condition.



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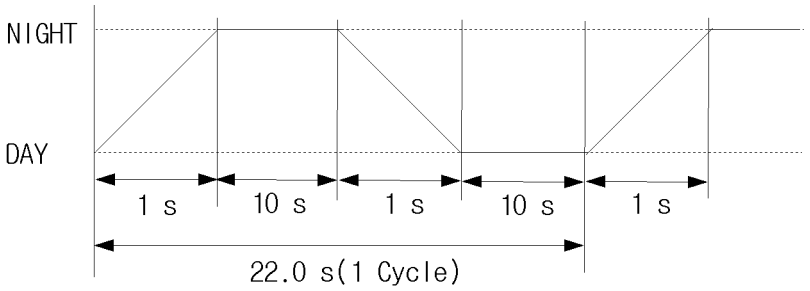
- **Focus : 500,000 times**

The failure of Focusing operation should not happen when Focusing is tested by the following cycle for the 500,000 times.



- **Day & Night : 50,000 times**

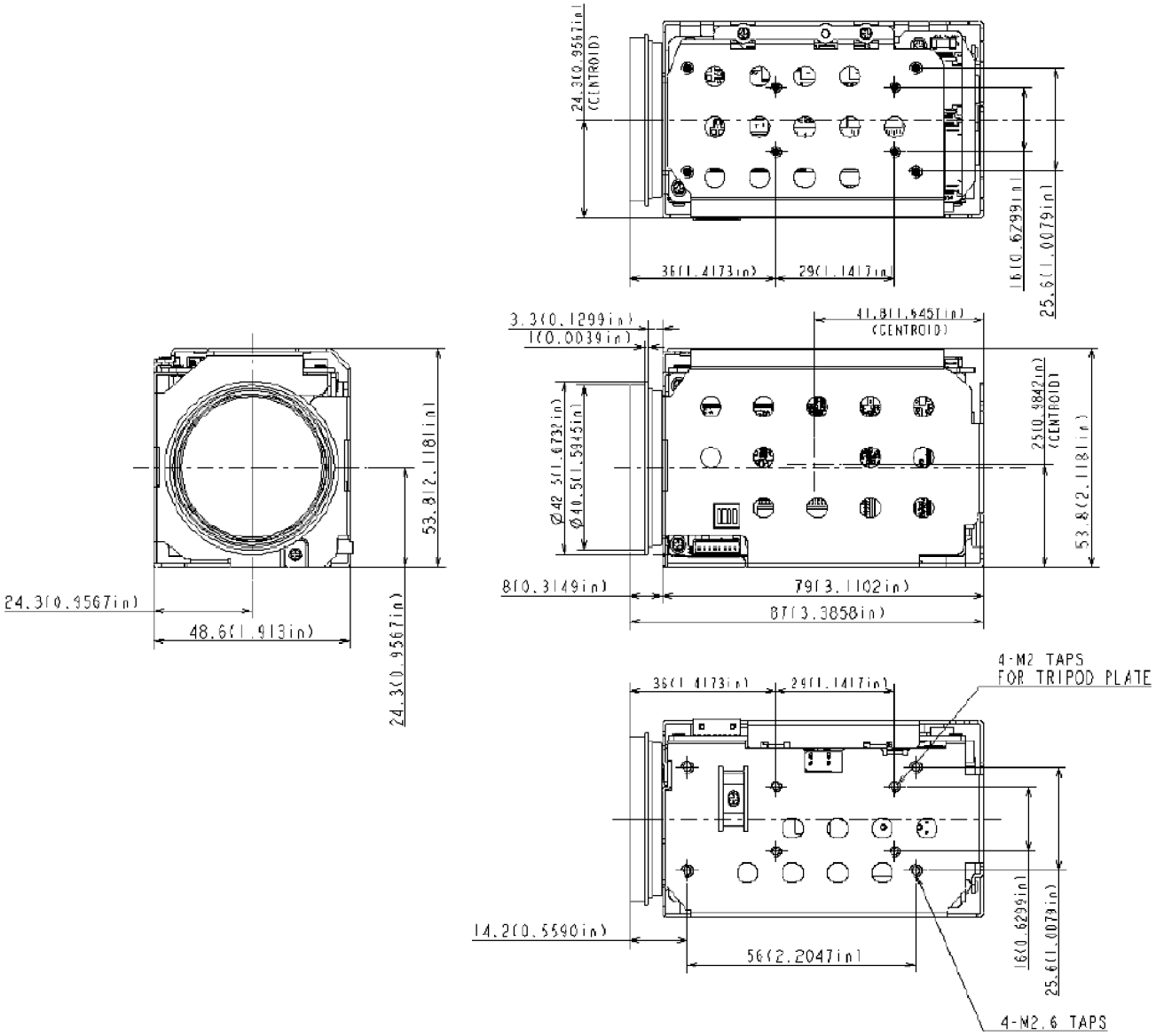
The failure of DAY/NIGHT operation should not happen when the function of the DAY/NIGHT is tested by the following cycle for the 50,000 times.
Motor Voltage = 5V, Frequency = 480pps



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12. Mechanical Dimension

·Dimension (W x H x D)	48.6(W) x 53.8(H) x 87(D)mm
·Weight	240 g
·Machine Serial Number	Serial number is printed on ID label.

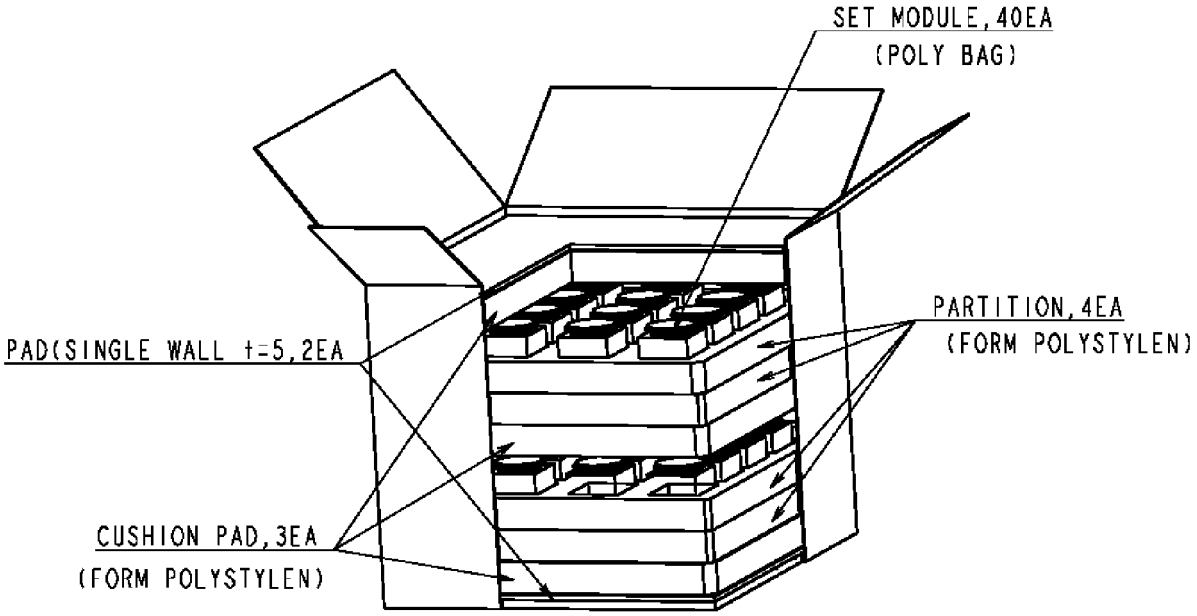


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13. Package Specifications

Internal Packaging

1.PAD :SINGLE WALL(t=5)(SIZE330x380x5t)
2.CUSHION PAD :FORM POLYSTYLEN(SIZE330x380x30)
3.PARTITION :FORM POLYSTYLEN(SIZE330x380x30)
4.POLY BAG :P.E. SHEET
5.LENS CAP :P.E(t=0.5)(SIZEΦ47x4.7)
6.Number of Camera Module : 40EA.



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14. Changes and Modifications of this Product Specification

- Changes or modifications of this production specifications must be submitted, in writing, for mutual consent between both parties.

- Changes and modifications to the specifications must be authorized, in writing, before such changes and modifications can be engineered.

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