

i-PRO
SmartHD



**Super Dynamic HD Vandal Resistant
Dome Network Camera
WV-SW155, SW155M**

**Super Dynamic Vandal Resistant
Dome Network Camera
WV-SW152, SW152M**



**HD Dome Network Camera
WV-SF135**

**Dome Network Camera
WV-SF132**

Security & AV Systems Business Unit
Panasonic System Networks Co.,Ltd.

WV-SW155/152

i-PRO
SmartHD

WV-SW155, SW155M



HD/720P, 30fps

Day/Night (Electrical)

Super Dynamic

SDHC card

Face Detection

WV-SW152, SW152M



800x600, 30fps

Day/Night (Electrical)

Super Dynamic

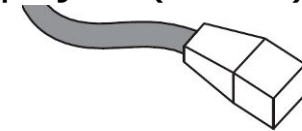
SDHC card

Face Detection

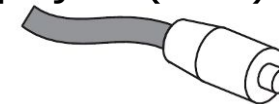


Different types of ethernet jack

WV-SW155, SW152
RJ45 type jack (female)



WV-SW155M, SW152M
M12 type jack (male)



■ Key Features

- ❑ Vandal/weather resistant (IP66), in spite of **compact and thin body**
- ❑ **Very lower distortion**, in spite of **wider angle of view** (104 degrees)
- ❑ **Good sensitivity** under low light condition (SW152:0.6lx/SW155:0.8lx@color)
- ❑ **Tamper resistant** (EN50155 and EN50121) for transportation application

Panasonic ideas for life

WV-SF135/132

i-PRO
SmartHD

WV-SF135



HD/720P, 30fps

Day/Night (Electrical)

Face Detection

WV-SF132



640x480, 30fps

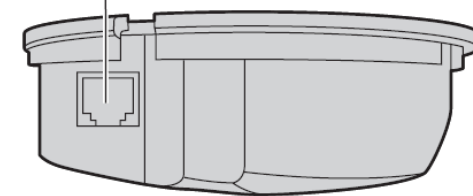
Day/Night (Electrical)

Face Detection



Ethernet jack

WV-SF135, SF132
RJ45 type jack
(female, inside a camera)



■ Key Features

- ❑ **Very compact and thin body, cost competitive**
- ❑ **Very lower distortion**, in spite of **wider angle of view**
(SF135 only: 104 degrees)
- ❑ **Good sensitivity** under low light condition (SF135: 0.8lx @color)

Panasonic ideas for life

Sophisticated Design (Ceiling Mount Image)

i-PRO
SmartHD



Panasonic ideas for life

SW155

SW155M

SW152

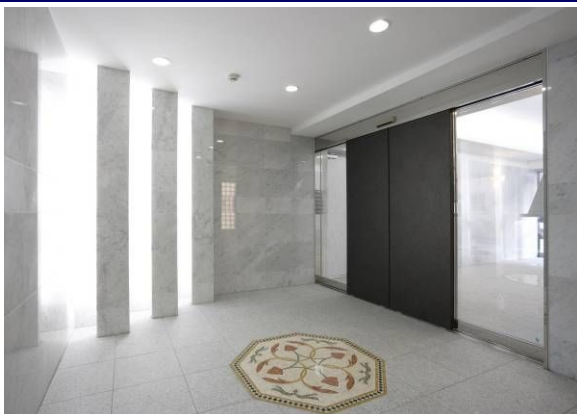
SW152M

SF135

SF132

Sophisticated Design (Wall Mount Image)

i-PRO
SmartHD



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Compact and Thin Body

i-PRO
SmartHD

The most compact and thinnest models in Panasonic all line-up

WV-SW35x



Φ 191.5 x 146.2

WV-SF34x



Φ 132 x 102.5

WV-SF33x



Φ 129.5 x 93

WV-SW15x



Φ 109 x 47

BB-HCM70x

WV-SF13x



Φ 100 x 47

Φ 111 x 73

Panasonic ideas for life

SW155

SW155M

SW152

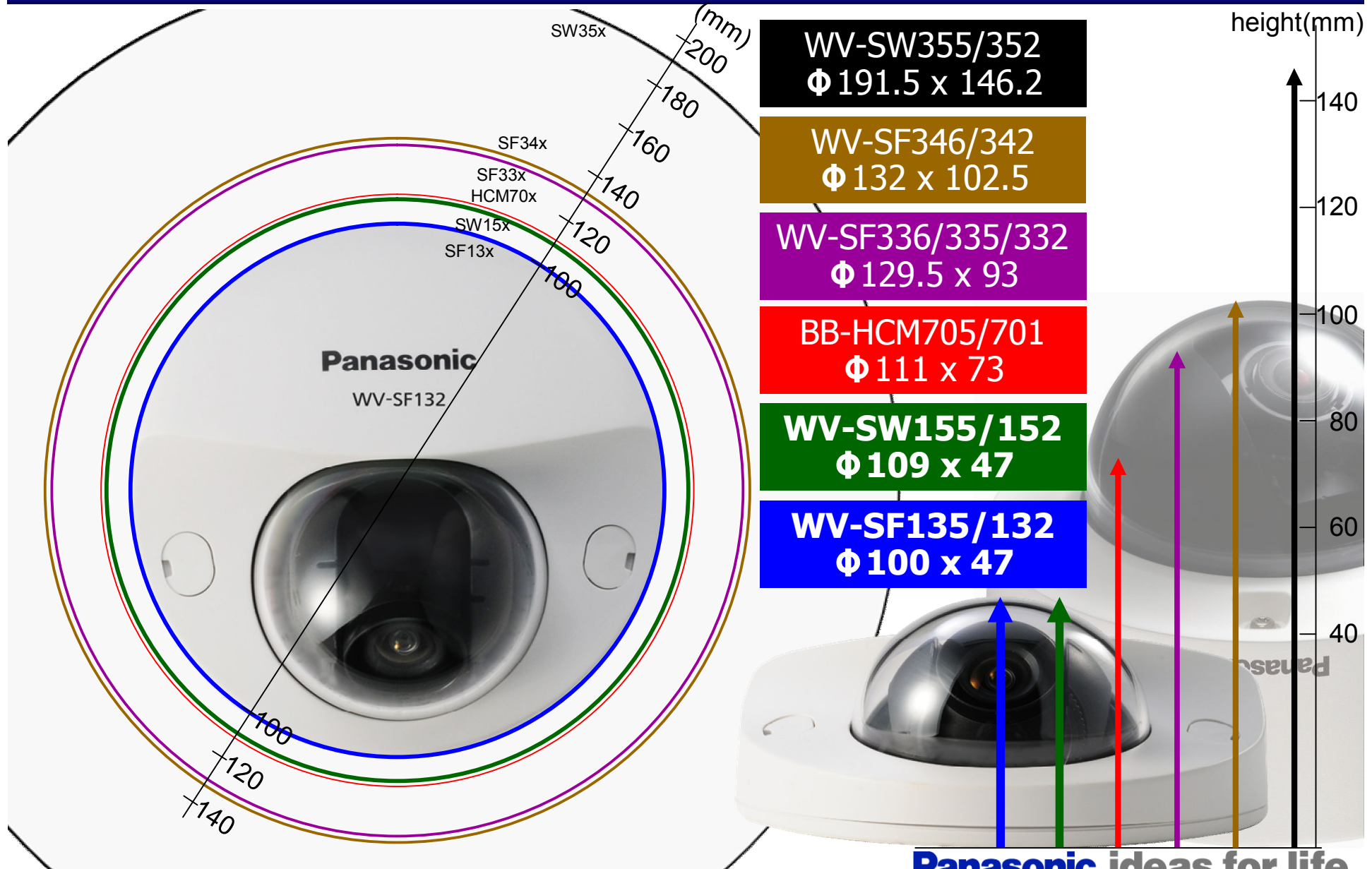
SW152M

SF135

SF132

Compact and Thin Body

i-PRO
SmartHD



SW155 SW155M SW152 SW152M SF135 SF132

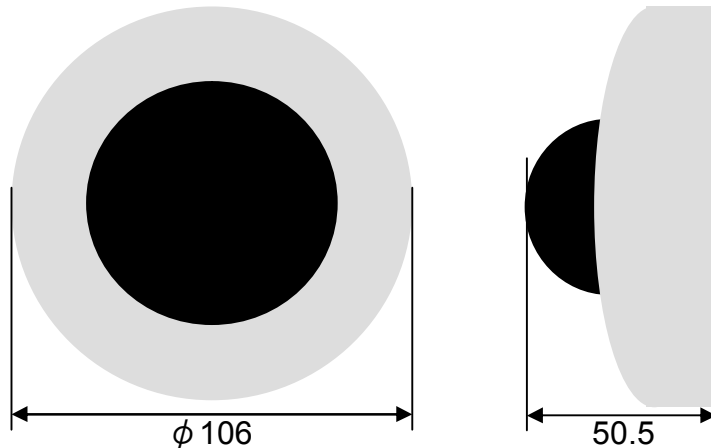
Panasonic ideas for life

Compact and Thin Body

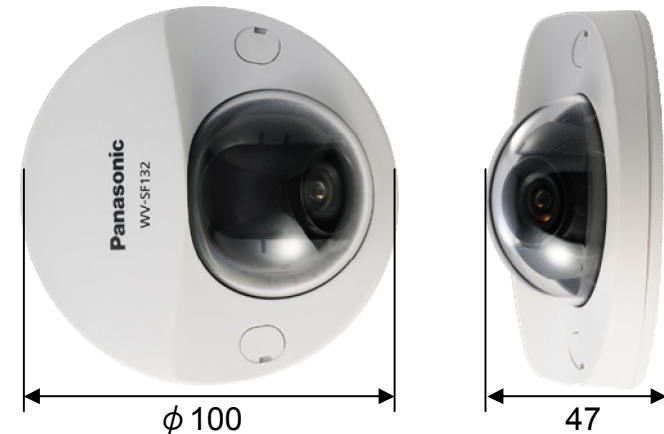
i-PRO
SmartHD

Panasonic cameras are enough compact and thin against competitor's.

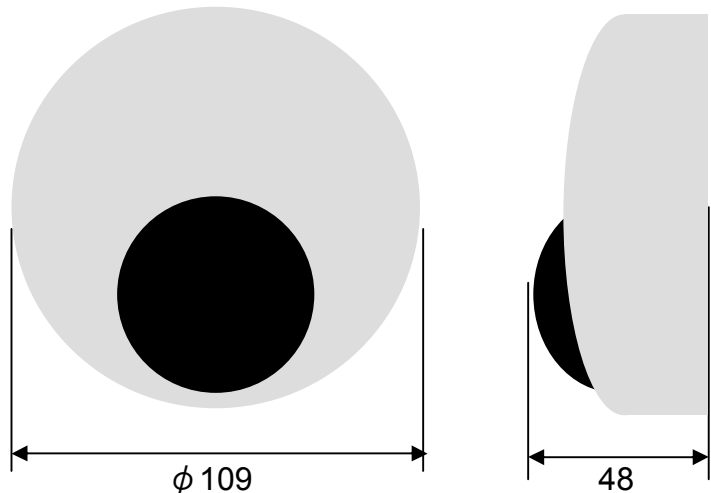
Company B



Panasonic WV-SF135/WV-SF132



Company A



Panasonic WV-SW155/WV-SW152



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

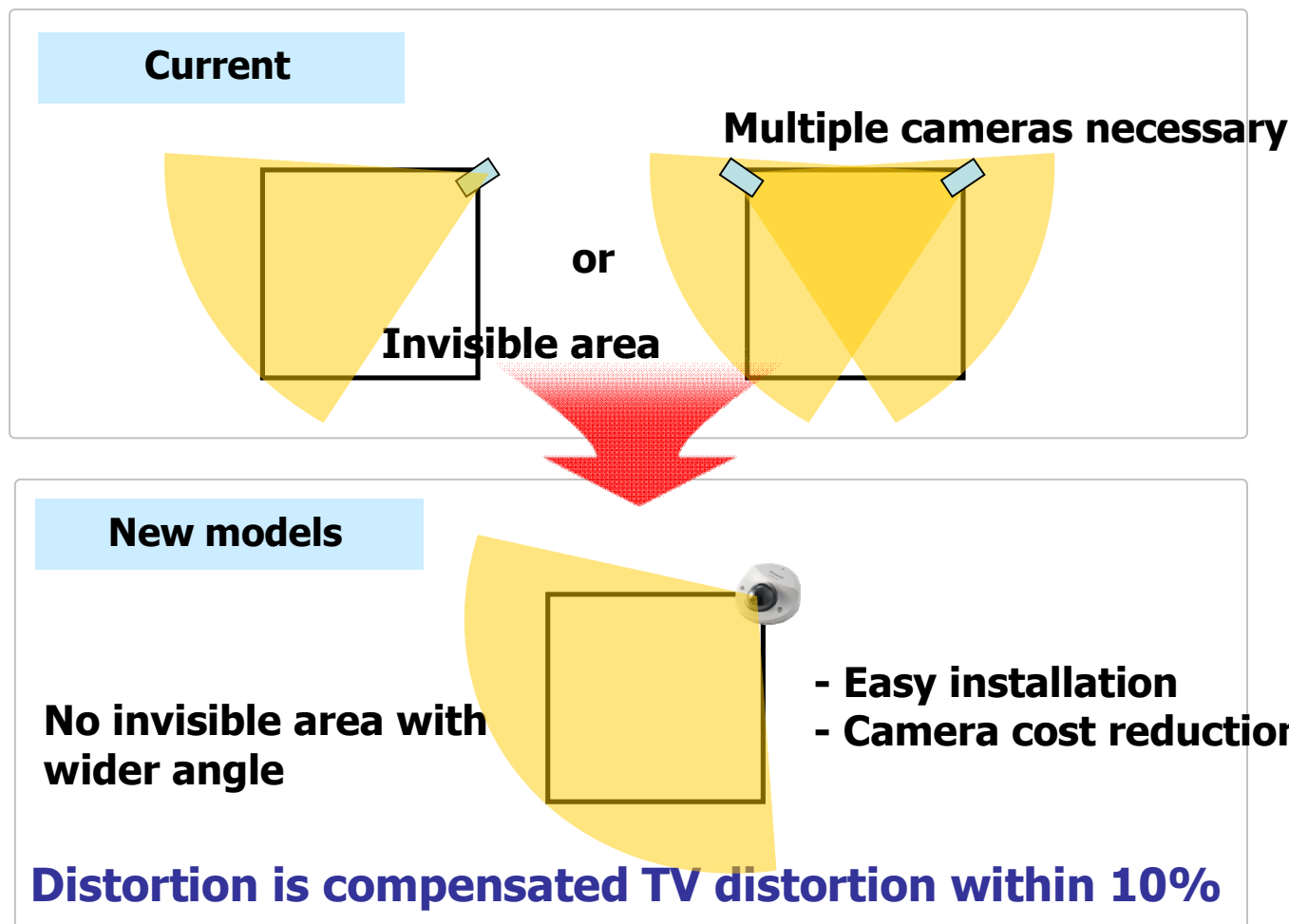
SF135

SF132

Wider Angle of View

i-PRD
SmartHD

Horizontal angle : 104 degree (*Except WV-SF132: 68 degree)
Simple no focal length adjustment can lead to installation cost reduction



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

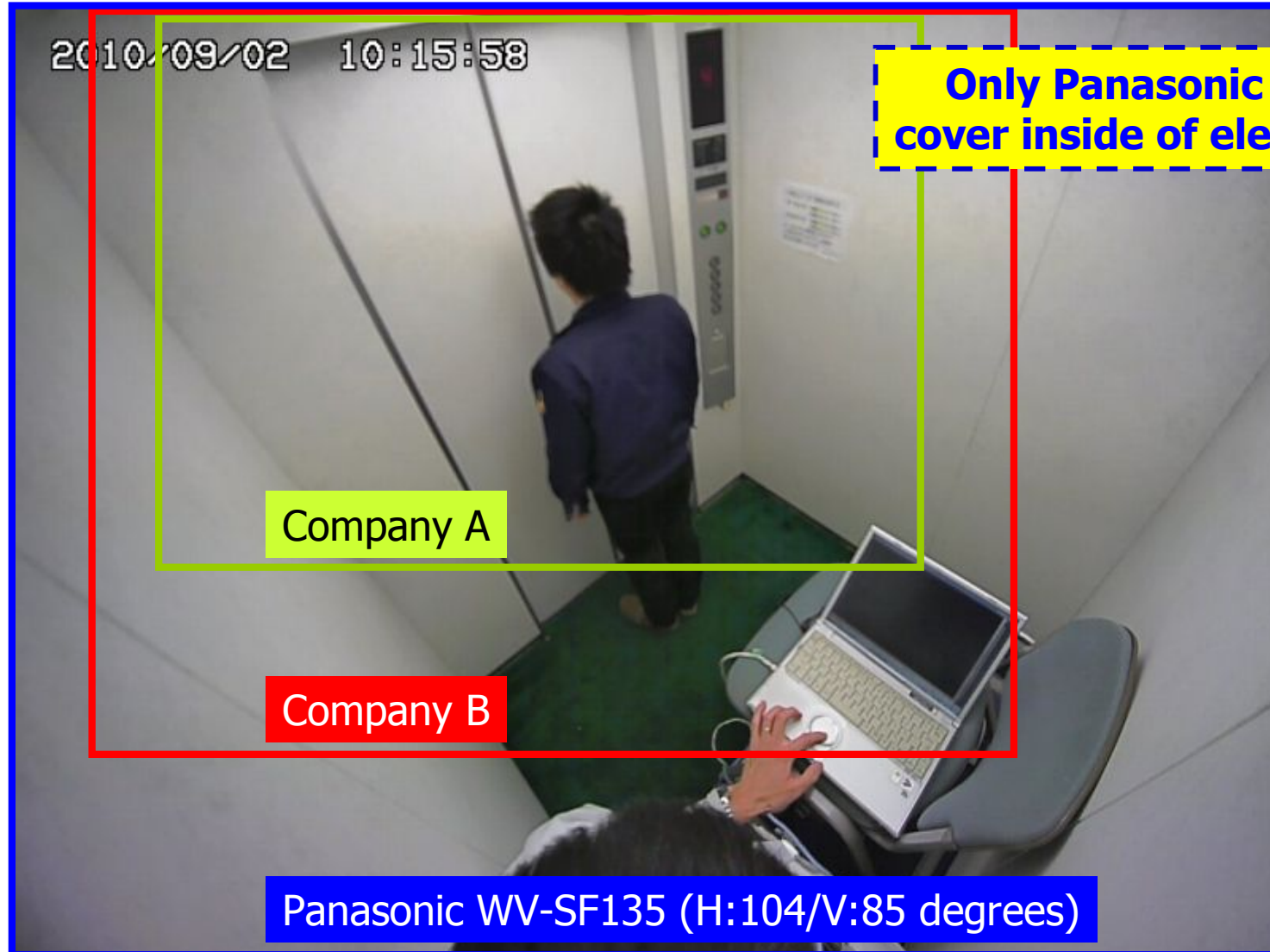
SF135

SF132

Wider Angle of View (Comparison)

i-PRO
SmartHD

Application case: In elevator



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Lower Distortion (Comparison)

Compare the same railroad line

Panasonic SF135



Panasonic has wider angle of view than Company B, however, distortion level is the same.

Panasonic has wider angle of view than Company A, moreover, distortion level is much better than Company A.

Company B



Company A



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Tough Body (Vandal Resistant)

i-PRO
SmartHD

Panasonic SW15x series achieve IEC60068-2-75 50J of vandal resistant

	Transcribes on specsheet	Standard
○ Company A	Vandal resistant	IEC62262 IK08 (5 J)
○ Company B	Vandal resistant	IEC62262 IK10
○ Company C	Vandal resistant	No description on spec
○ Panasonic	Vandal resistant	IEC62262 IK10 (20 J) / IEC60068-2-75 (50 J)

Standard	(less resistant) ← Vandal Performance → (more resistant)												
	IEC60068-2-75	0.14	0.2	(0.3)	0.35	(0.4)	0.5	0.7	1	2	5	10	20
IEC62262 /EN62262 /EN50102	IK01	IK02		IK03		IK05	IK05	IK06	IK07	IK08	IK09	IK10	
	0.14	0.2		0.35		0.5	0.7	1	2	5	10	20	

Panasonic ideas for life

SW155 SW155M SW152 SW152M SF135 SF132

Tough Body (Weather Resistant)

i-PRD
SmartHD

Panasonic SW15x series achieve IEC60529 IP66 rated of weather resistant



SW155

SW155M

SW152

SW152M

SF135

SF132

Panasonic ideas for life

Vibration Resistant

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Panasonic SW15x series are compliant with EN50155 and EN50121 standards.

This compliance fits transportation application,

- Train
 - Bus
- very well.



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

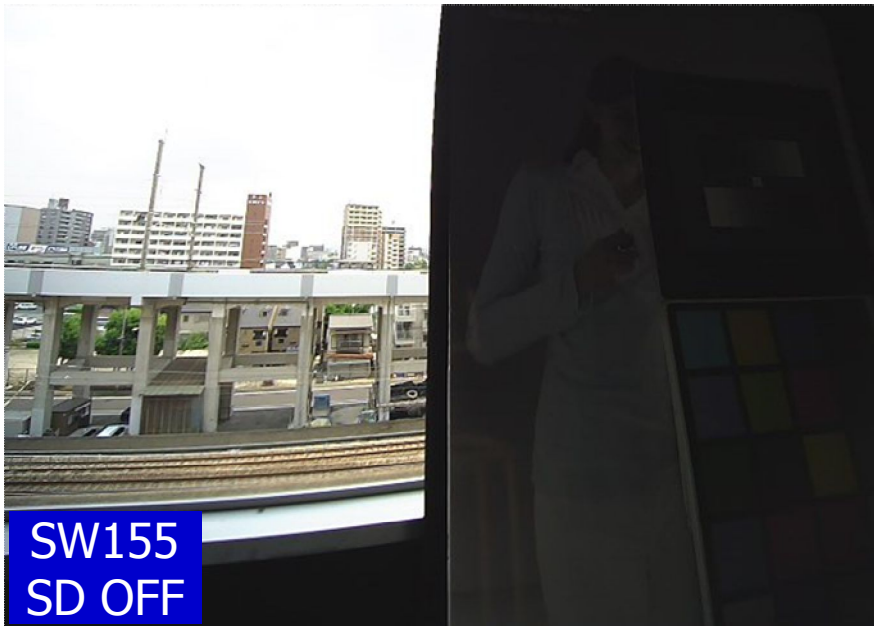
SF135

SF132

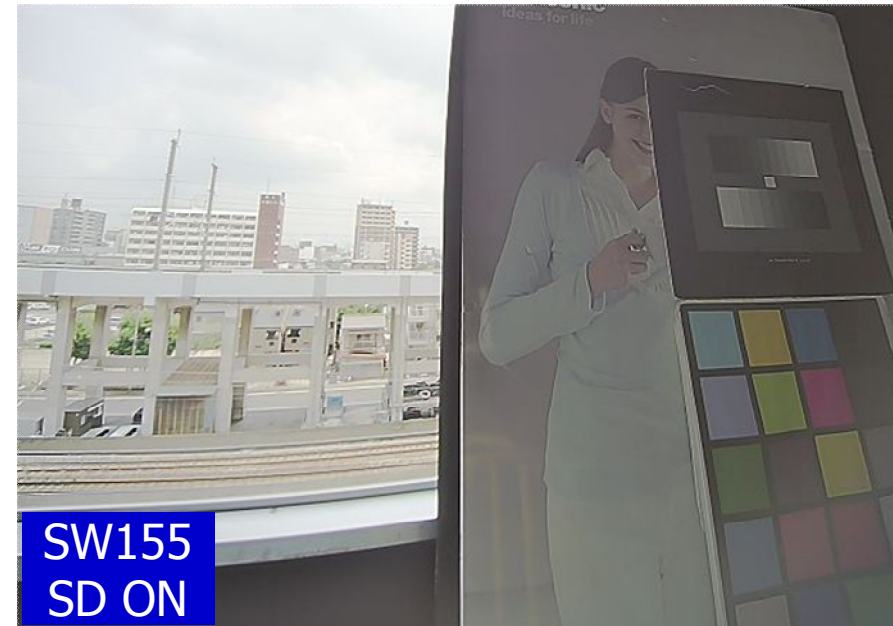
Super Dynamic

i-PRD
SmartHD

SW15x series have Super Dynamic (SD) function.
SD expands dynamic range of image, both of indoor (bright area) and outdoor (dark area) are visible well.



Only outdoor is visible well.



Both of indoor and outdoor are visible well.

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

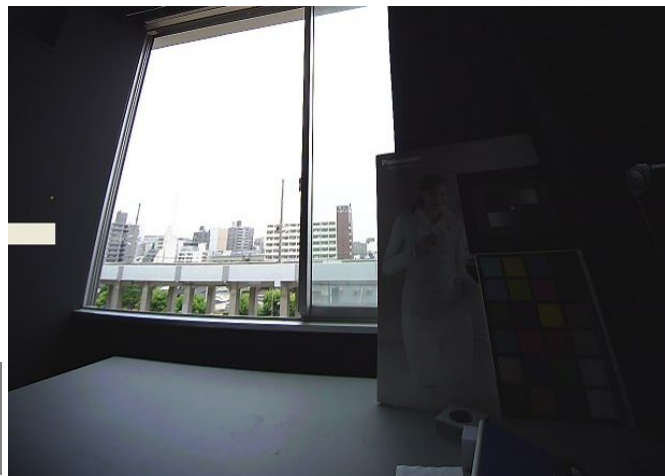
SF132

Super Dynamic

i-PRD
SmartHD

Super Dynamic ON

Clear picture both
in & out
of the compartment



SW155
SD OFF

Only outdoor is visible



SW155
SD ON

Both indoor and outdoor are visible

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Super Dynamic

i-PRD
SmartHD

Regarding outdoor image, darker area (e.g. ground) of image is improved better.



Ground area is still dark.



Ground area is brighter than the left image.

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Super Dynamic

i-PRD
SmartHD

Even though SD function is active, there is no bad influence to indoor image.



There is no difference between both of images.

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Onvif Conformity

i-PRO
SmartHD

SW15x series and SF13x series are conforming to ONVIF NVT corespec Ver.2.0 / Testspec V1.02.

Onvif

<http://www.onvif.org/Default.aspx>

Onvif Panasonic Conformant Products

<http://www.onvif.org/Default.aspx?TabID=98&CompanyID=12851>

【Additional features in ONVIF 1.02】

- WSDL1.02 support (PTZ, Imaging, IF change)
- RTSP range field support
- H.264 Baseline support (used for cell phone monitoring)
- Change access authorization table (new regulations in ONVIF)
- Digest certification (include RTSP/HTTP,CGI)
- Host certification to ONVIF command(unity other i-PRO and CGI)
- AudioBackChannel(include overRTSP)
- Play audio only by RTSP(Profile exclude video)
- PTZ 360° spatial coordinate system•infinite PAN support
- Change acquisition options value for PTZ
- Ex/digital Zoom support



ONVIF

Driving network video through global standardization

<http://www.onvif.org/>
info@onvif.org

Annex A Declaration of Conformance – NVT

This Declaration of Conformance is issued by the indicated Member which is solely responsible for declared conformance. Conformance is valid ONLY for the NVT identified when used in a manner consistent with the intent of the referenced documents.

Responsible Member:

Member name: Panasonic System Networks Co., Ltd.

Member address: 4-1-62 Minoshima, Hakata-ku,
Fukuoka City,
812-8531, Japan

Identified NVT:

Product name: WV-SW155 Series
Product hardware version: N/A
Product firmware version: Ver 1.0x
Product software version: _____ (if applicable)

The NVT identified above conforms to the following specifications:

ONVIF Core Specification, version: Ver 2.0
ONVIF Test Specification, version: Ver 1.02.4
ONVIF Test Tool, version: Ver 1.02.4.3

Signature of Authorized Representative:

Signature: Shinji Nakamura
Name: Shinji Nakamura
Title and department: General Manager, SSBU Software Engineering Group
Date: Aug. 22, 2011

This Declaration of Conformance MUST be accompanied by the result report of [ONVIF Tool].

ONVIF Conformance Process Specification
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May, 2009
Page 1

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Panasonic Unique Features


i-PRO
SmartHD

VIQS (Variable Image Quality on Specified area)

VIQS i-PRO SmartHD

VIQS = Variable Image Quality on Specified area

is the technology that varies compression rate and image quality on specified area.



Usage

- (1) To reduce total bitrate or network bandwidth with keeping image quality on specified area
- (2) To improve image quality on specified area with keeping total bitrate or network bandwidth

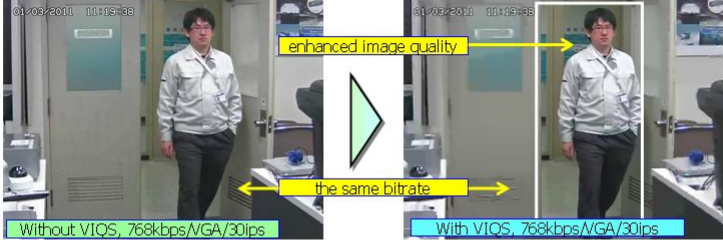
User Benefit

- To save Hard Disk Drive capacity
- To save network bandwidth

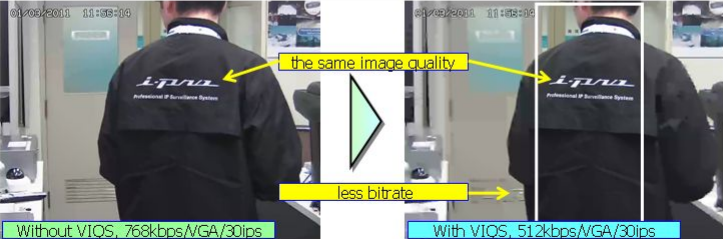
Panasonic ideas for life

Summary of VIQS i-PRO SmartHD

(1) To improve image quality on specified area with keeping total bitrate or bandwidth



(2) To reduce total bitrate or bandwidth with keeping image quality on specified area



Panasonic ideas for life

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Panasonic Unique Features

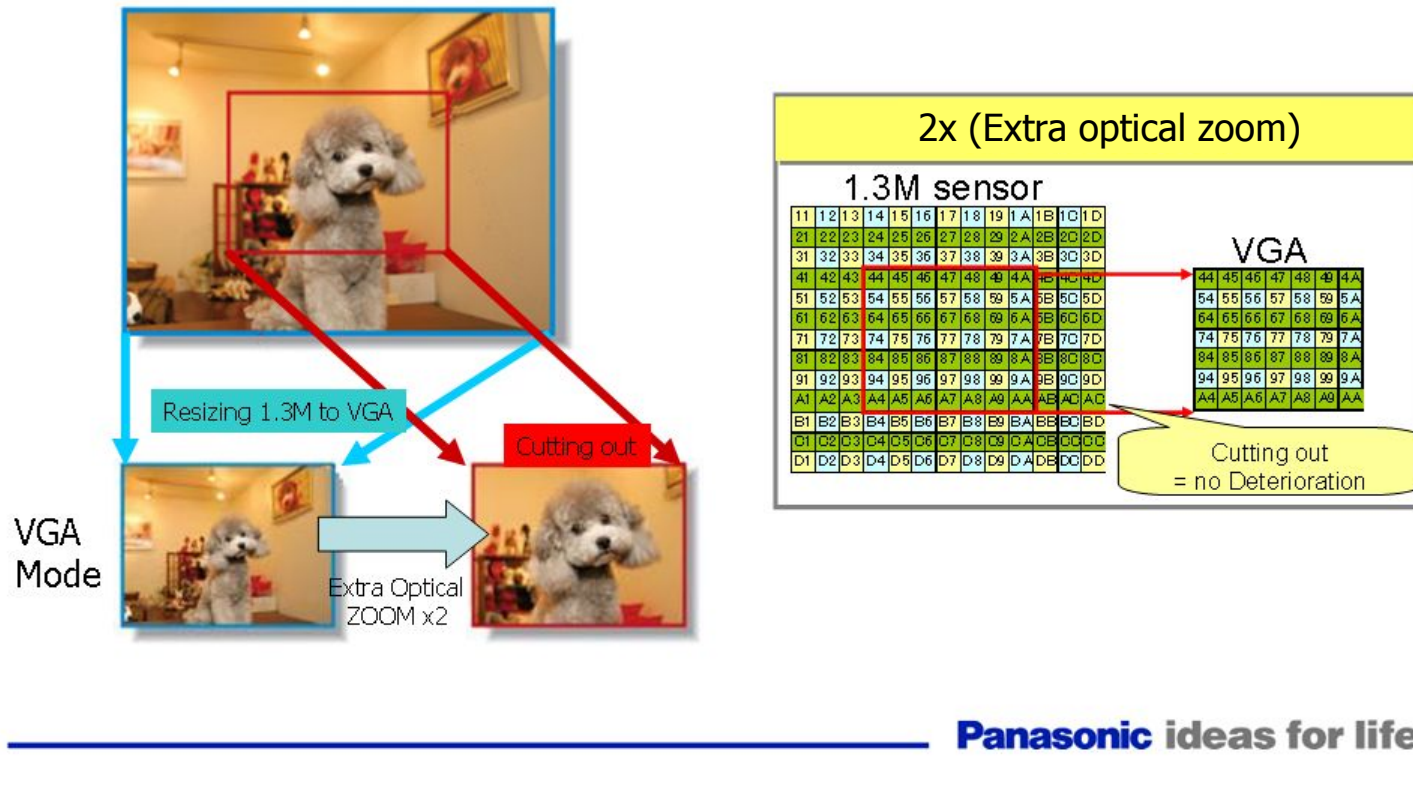
i-PRD
SmartHD

Extra Optical Zoom

Extra Optical Zoom

i-PRD
SmartHD

Using VGA output, Extra zoom function can provide a picture image of 2 times



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

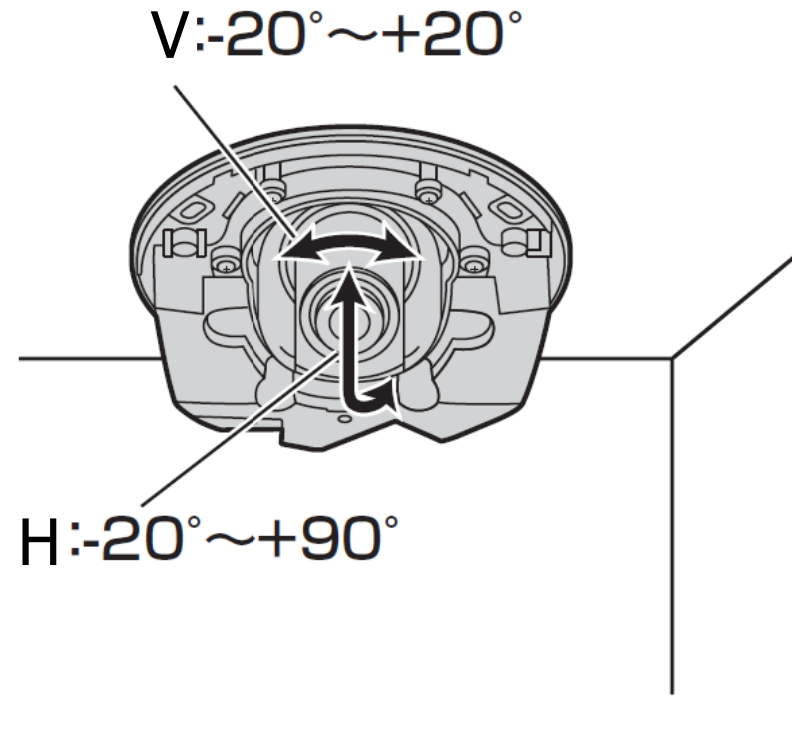
SF132

Easy Installation

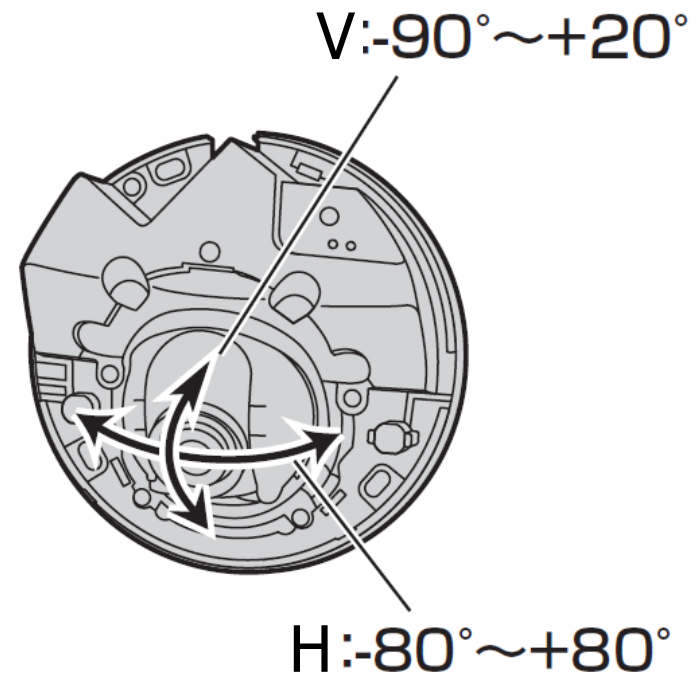
i-PRD
SmartHD

Camera angle can be widely adjustable.

■ Ceiling Mount



■ Wall mount



Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

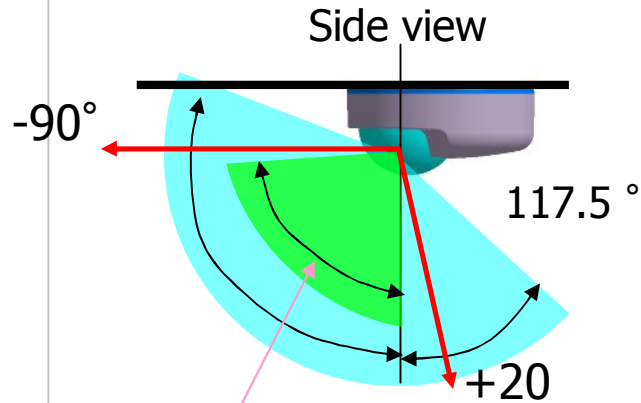
SF132

Easy Installation (cover area)

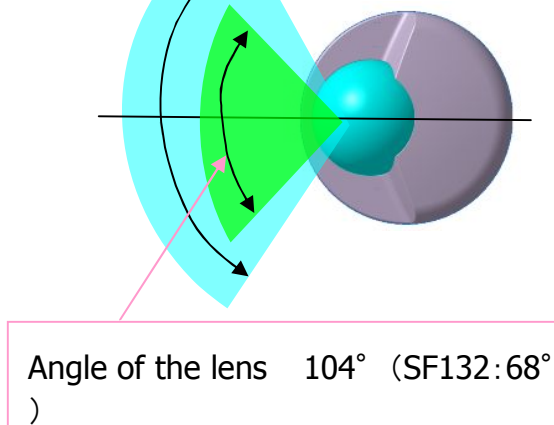
i-PRRO
SmartHD

SF135/SW155/SW152

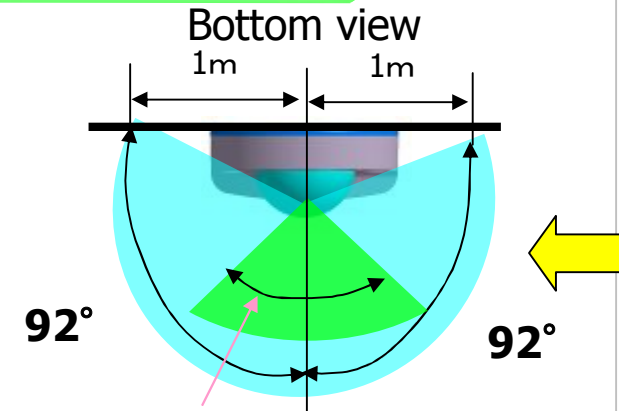
Mounted on a ceiling



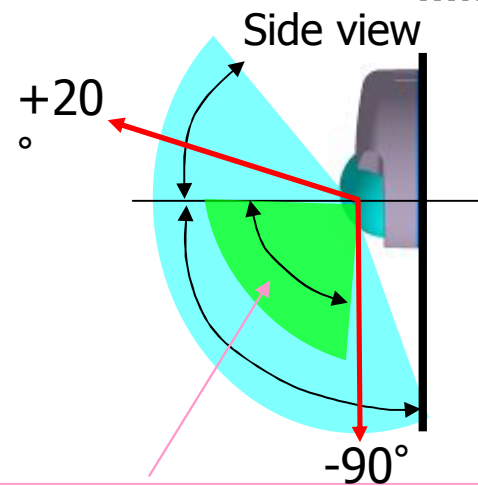
Bottom view



Mounted on a wall



Move
PAN direction



Panasonic ideas for life

Easy Installation (Wiring/Mount Bracket)

i-PRD
SmartHD

WV-SW155/152



Installation is possible without making cable hole in the wall and using the Mount Bracket.

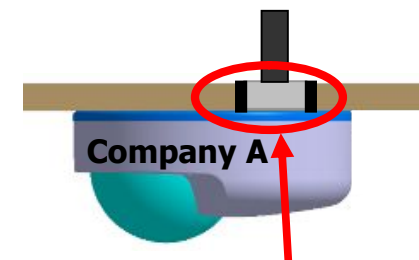


※ Compact installation is possible without cable hole.

Company A



Since there is a convex part, the necessity of using a mount seat or making a cable hole in a wall



※ Without Mount Bracket, so cable hole is required.

cable hole is unnecessary ⇒ Easy installation is possible.
Mount Bracket doesn't need to use ⇒ Compact installation is possible.

Panasonic ideas for life

Specifications

i-PRO
SmartHD

Item		WV-SF132	WV-SF135	WV-SW152 WV-SW152M	WV-SW155 WV-SW155M	
Camera	Sensor	1/5" 0.3Mpixel MOS	1/3" 1.3Mpixel MOS			
	Lens Angle of view	F2.8 (fixed, M12 mount) H: 68 deg / V: 53 deg	F2.2 (fixed, M12 mount) H: 104 deg / V: 85 deg			
	Minimum luminance @Color	2.0 lx	0.8 lx	0.6lx	0.8 lx	
	Day/Night	Day/Night (Electrical)				
Function	Video Codec	H.264, MJPEG				
	Maximum Resolution	640 x 480	1280 x 960	800 x 600	1280 x 960	
	Audio	x				
	SD memory card	x	○ (SD/SDHC)			
	I/O terminal	x				
	PoE	○				
	DC input	x				
	Super Dynamic	x (Wide dynamic range)		○		
	ABS	○				
	VIQS	○				
	Face detection	○				
	Face SD	x		○		
	LED	ACT, LINK		ACT, LINK, SD card		
	Extra Optical Zoom	Center	x	○ (2x, at VGA resolution)		
		Pan/Tilt	x			
	P/T movable angle	Ceiling mount H:±20° V:-20° to +90° / Wall mount H:±80° V:-90° to +20°				
	Vandal resistant	x		IEC 62262 IK10 IEC 60068-2-75 test Eh, 50J		
	Water/dust resistant	x		IP66		
	Operating Temperature	0 to +40 deg C		-30 to +50 deg C		

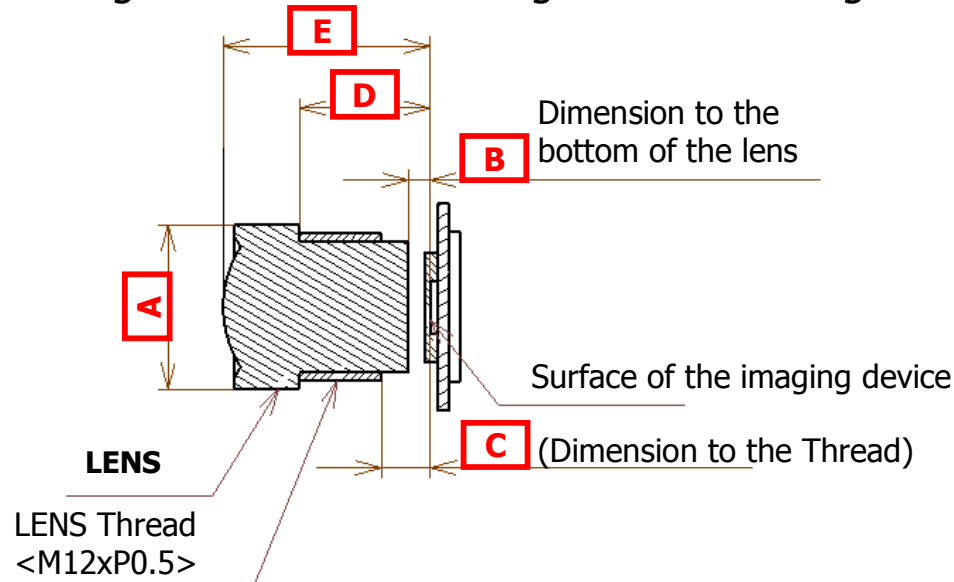
Panasonic ideas for life

Appendix

Changeable Lens

SW15x series and SF 13x series has M12 mount lens.

The original lens can be changed into following compatible lens by user's own responsibility.



A standard lens can be changed to other available lens, if

- the lens is M12 mountable
- its dimensions are within the following values

Items		WV-SF132 only		Other models	
		Min (mm)	Max (mm)	Min (mm)	Max (mm)
A	Lens Diameters	ϕ 14 or ϕ 15 Only			
B	Surface of the Image Device -- Lens Bottom (Back Focus)	1.7	6.5	2.0	8.0
C	Surface of the Image Device -- Dimension to the Thread	1.7	6.5	2.0	8.0
D	Surface of the Image Device -- Lens Ring	10.3	16.3	12.0	16.3
E	Surface of the Image Device -- Lens Top	17.9	ϕ 14:21.9 ϕ 15:21.5	12.0	ϕ 14:21.9 ϕ 15:21.5

Panasonic ideas for life

SW155

SW155M

SW152

SW152M

SF135

SF132

Original Lens Specifications / Tested Lenses



Specifications for the original (standard) lens

Items		Specification	
		WV-SF132 only	Other models
F Number		2.9	2.2
Focal Length f (mm)		1.95 mm	
IR Cut Filter (cut off wave length)		650nm ± 10nm	
Resolution (lp/mm)	At Center	120	160
	At Object Height X mm	100 (1.2mm)	100 (2.1mm)
Minimum Effective Image Circle Size (mm)		3.6-4.3 (Equal to 1/5" Sensor Size)	6.3-6.6 (Equal to 1/3" Sensor Size)

Lenses which Panasonic had already tested

Focal Length (mm)	Model Number	F No.	Manufac- -turer	Compatibility		SF132		Other Models	
				SF132	Other models	Horizontal Angle (deg)	TV-Distortion (%)	Horizontal Angle (deg)	TV-Distortion (%)
1.68	BW16BF-1000	2.5	Boowon	YES	NO (*1)	96.7	-12.49	-	-
3.0	DSL213A-670	2.0	Sunex	YES	NO (*1)	53.4	-4.95	-	-
3.7	BW37HF-1000	2.8	Boowon	NO (*2)	YES	-	-	76.2	-8.65
8.0	5502-411	1.8	AXIS	YES	YES	24.0	-0.63	35.8	-3.02
10.1	BW992BR-1000	2.8	Boowon	YES	YES	17.2	-0.63	27.1	-0.04
12.0	BW120HF-1000	2.0	Boowon	YES	YES	12.9	0.00	22.7	-0.10

*1: These Lenses are for 1/4" Sensor

*2: Does not meet specification Dimension item "C"

Comparison (Outdoor image)

i-PRD
SmartHD

Panasonic SF135



Company B



Company A



[Check points]

- Wider angle of view
- Lower distortion
- Color reproducibility (sky, cloud)

Panasonic ideas for life

Comparison (Angle of View)

i-PRO
SmartHD

Panasonic SF135
H:104/V:85 deg



[Check points]

- Only Panasonic SF135 can cover inside of elevator entirely.



Company A
H:80/V:48 deg (16:10)



Company B/model Z
H:80.7/V:61 deg



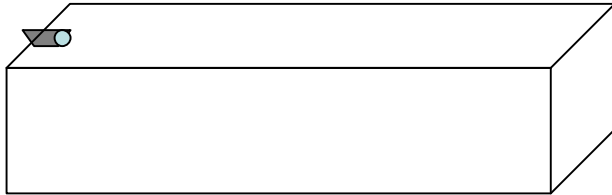
Company B/model Y
H:88/V:66 deg

Panasonic ideas for life

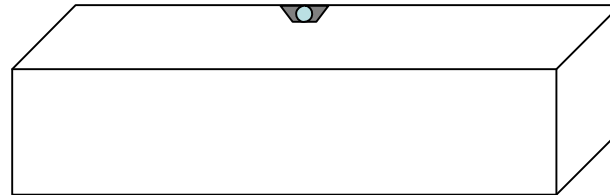
Comparison (Angle of View)

i-PRO
SmartHD

Ceiling mount (front side of a bus)



Wall mount (center side of a bus)



Company A has a fatal blind spot in both of installations.

Panasonic ideas for life

Bitrate/Framerate Chart (H.264)

i-PRD
SmartHD

Transmission Priority is "Frame rate" (Frame Rate priority mode)
Image Quality is "Normal"

4:3 Frame rate priority mode (1User , Audio=OFF, Refresh-Interval=1sec)

Frame rate(fps)		1fps	3fps	5fps	7.5fps	10fps	15fps	20fps	30fps
bitrate (kbps)	SXVGA	768	1024	1024	1024	1536	1536	1536	2048
	SVGA (800x600)	512	768	768	1024	1024	1024	1536	2048
	VGA	256	384	384	512	512	512	768	768
	QVGA	128	256	256	256	384	384	512	512

16:9 Frame rate priority mode (1User , Audio=OFF, Refresh-Interval=1sec)

Frame rate(fps)		1fps	3fps	5fps	7.5fps	10fps	15fps	20fps	30fps
bitrate (kbps)	1280x720	768	1024	1024	1024	1536	1536	1536	2048
	640x360	256	512	512	768	768	768	1024	1024
	320x180	128	256	256	256	384	384	512	512

*The bit rate values may change up to object conditions and required image quality.

Panasonic ideas for life

Bitrate/Framerate Chart (MJPEG)

i-PRD
SmartHD

<JPEG Frame Rate (H.264/MPEG-4 OFF) >

4:3

Picture quality mode		0 (Super fine)	1 (Fine)	2	3	4	5 (Normal)	6	7	8	9 (Low)
1280 x 960	Frame rate	5	6	7	8	10	13	17	21	26	30
	File size (kbyte)	288	256	224	192	160	128	96	80	64	48
	Bit rate (kbps)	13,248	14,131	14,426	14,131	14,720	15,309	15,014	15,456	15,309	13,248
VGA	Frame rate	13	17	21	26	30	30	30	30	30	30
	File size (kbyte)	128	96	80	64	56	48	40	32	28	24
	Bit rate (kbps)	15,309	15,014	15,456	15,309	15,456	13,248	11,040	8,832	7,728	6,624
QVGA	Frame rate	30	30	30	30	30	30	30	30	30	30
	File size (kbyte)	44	40	36	32	28	24	20	16	14	12
	Bit rate (kbps)	12,144	11,040	9,936	8,832	7,728	6,624	5,520	4,416	3,864	3,312

16:9

Picture quality mode		0 (Super fine)	1 (Fine)	2	3	4	5 (Normal)	6	7	8	9 (Low)
1280 x 720	Frame rate	7	8	10	12	14	18	24	28	30	30
	File size (kbyte)	216	192	166	144	120	96	72	60	48	36
	Bit rate (kbps)	13,910	14,131	15,272	15,898	15,456	15,898	15,898	15,456	13,248	9,936
640 x 360	Frame rate	18	24	28	30	30	30	30	30	30	30
	File size (kbyte)	96	72	60	48	42	36	30	24	20	18
	Bit rate (kbps)	15,898	15,898	15,456	13,248	11,592	9,936	8,280	6,624	5,520	4,968
320 x 180	Frame rate	30	30	30	30	30	30	30	30	30	30
	File size (kbyte)	33	30	27	24	21	18	15	12	10	8
	Bit rate (kbps)	9,108	8,280	7,452	6,624	5,796	4,968	4,140	3,312	2,760	2,208

Panasonic ideas for life