VS TECHNOLOGY
MACHINE VISION OPTICS

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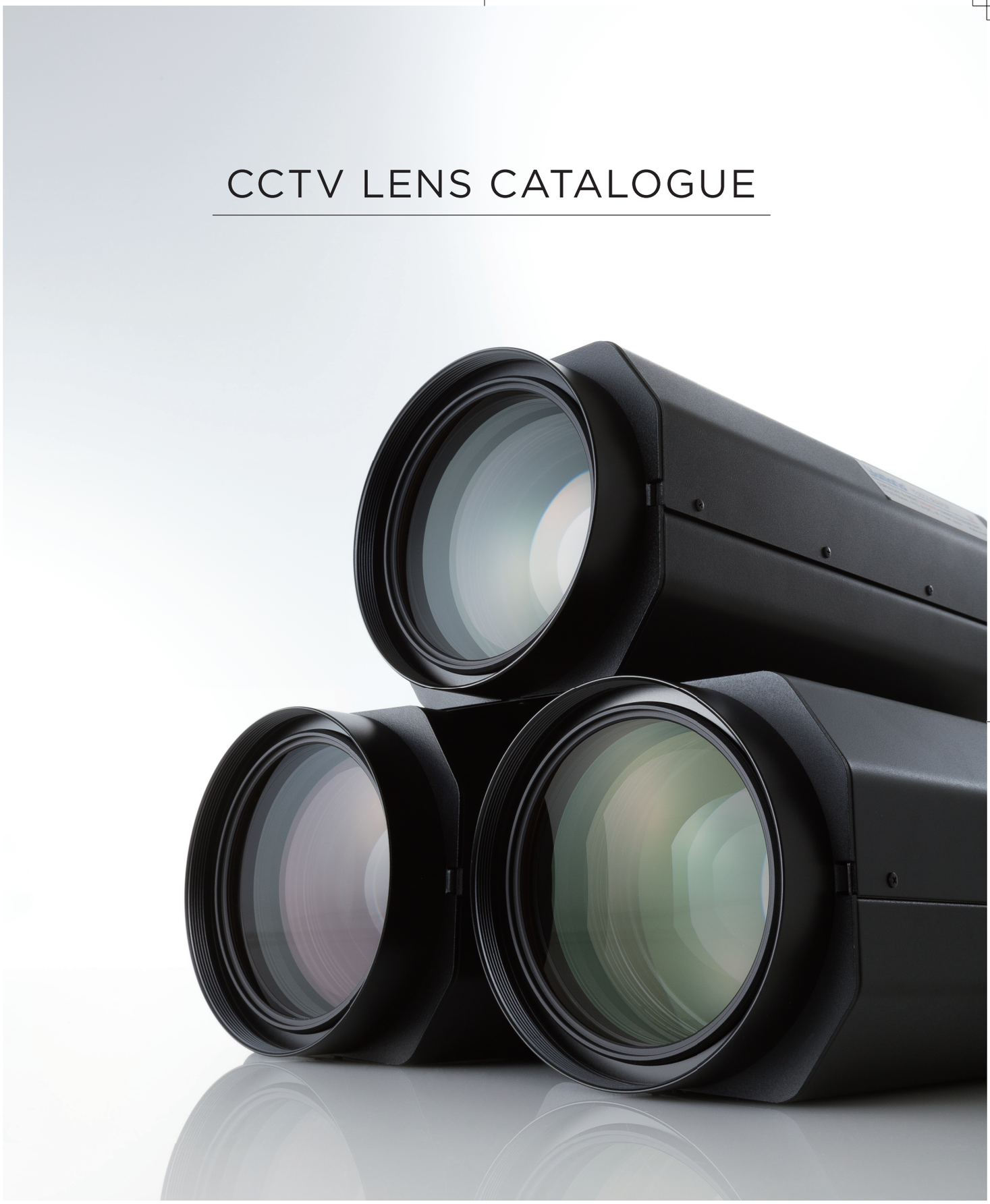
CCTV LENS CATALOGUE



VS TECHNOLOGY

MACHINE VISION OPTICS

2017-2018

あらゆる物体を捉える光学レンズに挑戦し続けます

Continuing our challenge to manufacture optical lenses that capture any object.

High Quality Zoom Lens Best Solution For Your Security.

わが社では一貫した品質を第一にしております。
カメラやカメラシステムにとってレンズは生命です。
どんな高価なカメラや画像処理装置もレンズによって、
その性能が大きく左右されてしまいます。

レンズはカメラにとって、人の目と同じように大変重要です。
また監視装置は、人々の命と財産を守る最前線にあります。
その品質を犠牲にすることは絶対にできません。
私たちはこの事を常に強く心にとめております。

VST group has consistently placed quality as our first priority.
The lens is the essence of the camera and the camera system.
Regardless of how expensive the camera or the image processing apparatus is,
the lens is the decisive factor in the overall performance.

The lens is as vital to the camera as is the eye is to us.
Also, the monitoring device is the frontline that protects lives and property.
Therefore, sacrificing quality is absolutely impossible.
Quality is the core at VST group.

私たちの技術や製品は、様々な分野で役立っています。

Our technology and products are successfully serving customers in a wide variety of industry sectors.

SAFETY

世界各国の国境・港湾・航空監視等の安全に30年以上貢献し続けています。

We have been contributing to safety for borders, harbors and airports surveillance for more than 30 years.

SECURITY

道路監視等において皆様の安心を見守るため365日休まず稼働しています。

Our products are working non-stop, 365 days of the year to ensure your safety through systems such as road surveillance.

MEDICAL

世界最先端の光学技術を医療に応用し、皆様の医療に対する不安を安心に変えていきます。

We apply the latest optical technology to medical care and transform your healthcare worries into confidence.

CONTENTS / 目次

ICON LIST / アイコンリスト

ズーム比 / Zoom ratio

広角端の焦点距離と望遠端の焦点距離の比
The ratio between minimum and maximum focal length.

センサーサイズ / Sensor size

対応センサーサイズ
The maximum sensor size supported by the lens.

最大口径比 / Maximum Aperture

広角端でのレンズの最大口径比
Maximum Aperture at Wide Angle

メガピクセル / Megapixel Resolution

Full HDカメラ対応。
For use with full HD camera

近赤外光対応 / True NIR

超低分散ガラスを使った光学補正設計により、可視光から近赤外光までの光学収差を極限まで抑えた、真の近赤外対応レンズ。
A true near infrared lens that keeps the optical aberration from the visible light to the near infrared to the bare minimum by optical correction design using super low density glass.

オートフォーカス / Auto Focus

世界で初めて開発された監視用ズームレンズ搭載オートフォーカス。次世代AFは、高速AF、かつ、夕方の低照度下でのAFが可能。(特許取得)
Yamano developed the first ever auto focus for surveillance zoom lenses. The next generation AF enables a high-speed AF and AF at low-light at dusk (patented)

自動温度焦点補正 / Thermal Compensation System

温度変化によるバックフォーカスシフトを自動で補正。超低分散ガラスを使うレンズでは必須機能。(特許取得)
Automatically corrects the back focus shifting caused by temperature changes. An essential function for lenses using low dispersion glass.

光軸調整機構 / Adjustable Optical Axis

ズーム広角から望遠まで画面中心がずれないように調整するための機構。
Adjustment mechanism prevents the image center from shifting while zooming from wide to tele

フランジバック調整機構付きマウント / Adjustable Flange Back

フランジバック調整機構の無いカメラとの組合せ時に、レンズ側でバックフォーカスを合わせるための機構。
For adjusting the back focus at the lens when mounting on a camera with no flange back adjustment mechanism.

Guide to Model Number / 型番の見方

Y 33 Z 15 R H AFD P 8 E V T / M S6

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- Y: Yamano
- 33: ズーム比 Zoom Ratio
- Z: ズーム Zoom
- 15: 最短焦点距離 Min. Focal Length
- /以下オプションを示す Letters after "/" are options

① R - NIR対応 / R-NIR
無し - 可視光対応 / None-Visible Light

② H - メガピクセル / H - Megapixel Lens
無し - ノンメガピクセル / None - Non-Megapixel

③ AFD - AF+DCアイリス / AFD- AF+DC Iris
AF - AF+ビデオアイリス / AF- AF+ Video Iris
MAF - AF+リモートアイリス / MAF- AF + Remote Iris
AD - DCアイリス / AD- DC Iris
A - ビデオアイリス / A- Video Iris
M - リモートアイリス / M- Remote Iris

④ P - 2pot (zoom & focus)
IP - 3pot (zoom & focus & iris)

⑤ 8 - 新基板使用 / 8 - New Circuit
5 - 新基板使用 / 5 - New Circuit

⑥ E - NDフィルター無し / E - No ND filter
T - Turretフィルター付き(Y64に対応) /
T - With Turret Filter (for Y64 only)

⑦ V - VCフィルター付き / V - Visible Cut (VC) Filter
TV - ターレットNDフィルターとVCフィルター付き /
TV - Turret ND filter and VC filter
無し - VCフィルター無し / None - No VC filter

⑧ T - TCS付き / T - with TCS
無し - TCS無し / None - No TCS

⑨ M - M/O付き /
M-with Manual Override (M/O)
無し - M/O無し /
None - No M/O
(Video AIに対応) /
(M/O only for Video AI)

⑩ S6 - RS - 485対応 /
S6 - RS-485
S7 - RS - 232C対応 /
S7 - RS-232C

Motorized Zoom Lens, Varifocal Lens Focal Length Chart /
電動ズーム/バリフォーカルレンズ焦点距離早見表

	レンズ名	ズーム比/ Zoom ratio	センサーサイズ/ Sensor size	メガピクセル/ Megapixel	近赤外補正/ Near-infrared corrected	焦点距離 / f 1 10 100 1,000
ズームレンズ / Zoom Lens	Y64Z16RH Series	64x	1/1.8" SENSOR	2MP	True NIR	f = 16.0～1030mm
	Y55Z16RH Series	55x	1/1.8" SENSOR	2MP	True NIR	f = 16.0～880mm
	Y36Z20RH Series	36x	2/3" SENSOR	2MP	True NIR	f = 20.0～720mm Comming soon!
	Y36Z15RH Series	36x	2/3" SENSOR	2MP	True NIR	f = 15.7～565mm Comming soon!
	Y33Z15RH Series	33x	1/1.9" SENSOR	2MP	True NIR	f = 15.2～500mm
	Y36Z12RH Series	36x	1/1.8" SENSOR	2MP	True NIR	f = 12.0～430mm Comming soon!
	Y35Z10RH Series	35x	1/1.8" SENSOR	2MP	True NIR	f = 10.0～350mm
	Y18Z86RH Series	18x	1/1.9" SENSOR	2MP	True NIR	f = 8.6～154mm
	Y10Z85RH Series	10x	1/2" SENSOR	2MP	True NIR	f = 8.5～85mm
	Y16Z78H Series	16x	1/1.8" SENSOR	2MP		f = 7.8～125mm
	Y33Z30R Series	33x	2/3" SENSOR		True NIR	f = 30.3～1000mm Made upon order
	Y33Z23R Series	33x	2/3" SENSOR		True NIR	f = 22.8～750mm
	Y33Z15R Series	33x	1/1.9" SENSOR		True NIR	f = 15.2～500mm
	Y18Z86R Series	18x	1/1.9" SENSOR		True NIR	f = 8.6～154mm
	Y10Z85R Series	10x	1/2" SENSOR		True NIR	f = 8.5～85mm
	Y20Z15 Series	20x	1/2" SENSOR			f = 15.0～300mm
	Y20Z10 Series	20x	1/2" SENSOR			f = 10.0～200mm
バリフォーカルレンズ/ V.F Lens	YV2812RHD	4.3x	1/3" SENSOR	3MP	True NIR	f = 2.8～12mm
サーマルレンズ/ Thermal Lens	YT50					

Megapixel Zoom Lens メガピクセルズームレンズ

Y64Z16RH（16 - 1030mm）Series

配線図 ▶ P38

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y64Z16RHAFDP8EVT	Y64Z16RHADP8EVT
Format Size		1/1.8"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x64	
Focal Length		16.0-1030mm	
Max. Aperture Ratio		1 : 2.8	
Iris Range		F2.8-F22	
ND Filter (Option)		ND10%, ND1% (Option)*	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		10.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	29.7˚ / 26.0˚ / 14.8˚	
	Tele	0.5˚ / 0.4˚ / 0.2˚	
Operation	Iris	Auto Iris(DC)	
	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	Turret ND Filter	Remote Control (Option)*	
	VC Filter	Remote Control	
	TCS	Auto Thermal Compensation System	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >9sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >9sec. (Entire Range)	
Auto Focus	Focusing Time	>2.0sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/Turret Filter/VC/TCS On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	Max. 5mA (Circuit)	
TCS	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Turret ND Filter (Option)*	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		27.53mm	
Flange Back Length		17.526mm	
Filter Screw Size		M116mm P=1.0	
Dimension(HxWxD)		132 x150 x 385mm	
Weight(Approx.)		6,600g	

Megapixel Zoom Lens メガピクセルズームレンズ

Y55Z16RH（16 - 880mm）Series

55x 1/1.8" SENSOR F2.8 2MP True NIR AF THERMAL COMPENSATION SYSTEM ADJUSTABLE OPTICAL AXIS ADJUSTABLE FLANGE BACK

配線図 ▶ P38

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y55Z16RHAFDP8EVT	Y55Z16RHADP8EVT
Format Size		1/1.8"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x55	
Focal Length		16.0-880mm	
Max. Aperture Ratio		1 : 2.8	
Iris Range		F2.8-F22	
ND Filter (Option)		ND10%, ND1% (Option)*	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		10.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	29.7° / 26.0° / 14.8°	
	Tele	0.6° / 0.5° / 0.3°	
Operation	Iris	Auto Iris(DC)	
	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	Turret ND Filter	Remote Control (Option)*	
	VC Filter	Remote Control	
	TCS	Auto Thermal Compensation System	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >9sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >9sec. (Entire Range)	
Auto Focus	Focusing Time	>2.0sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/Turret Filter/VC/TCS On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	Max. 5mA (Circuit)	
TCS	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Turret ND Filter (Option)*	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		27.53mm	
Flange Back Length		17.526mm	
Filter Screw Size		M116mm P=1.0	
Dimension(HxWxD)		132 x150 x 385mm	
Weight(Approx.)		6,600g	

Coming Soon !

Megapixel Zoom Lens メガピクセルズームレンズ

NEW 新製品 Y36Z20RH (20 - 720mm) Series

36x | 2/3" SENSOR | F3.2 | 2MP | True NIR | AF | THERMAL COMPENSATION SYSTEM | ADJUSTABLE OPTICAL AXIS | ADJUSTABLE FLANGE BACK

配線図 ▶ P39

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y36Z20RHAFDP8EVT	Y36Z20RHADP8EVT
Format Size		2/3"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x36	
Focal Length		20.0-720mm	
Max. Aperture Ratio		1 : 3.2	
Iris Range		F3.2-F16	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		6.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	30.7° / 26.9° / 15.3°	
	Tele	0.92° / 0.79° / 0.46°	
	Iris	Auto Iris(DC)	
Operation	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	VC Filter	Remote Control	
	TCS	Auto Thermal Compensation System	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >6sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >12sec. (Entire Range)	
Auto Focus	Focusing Time	>1.7sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	Max. 5mA (Circuit)	
TCS	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		14.97 mm (in air)	
Flange Back Length		17.526mm	
Filter Screw Size		M110mm P=1.0	
Dimension(HxWxD)		125 x 125 x 372.5 mm	
Weight(Approx.)		5,000g	

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Megapixel Zoom Lens メガピクセルズームレンズ

NEW 新製品

Y36Z15RH（15.7 - 565mm）Series

配線図 ▶ P39

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y36Z15RHAFDP8EVT	Y36Z15RHADP8EVT
Format Size		2/3"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x36	
Focal Length		15.7-565mm	
Max. Aperture Ratio		1 : 2.4	
Iris Range		F2.4-F16	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		6.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	38.6° / 34.0° / 19.5°	
	Tele	1.17° / 1.02° / 0.58°	
	Iris	Auto Iris(DC)	
Operation	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	VC Filter	Remote Control	
	TCS	Auto Thermal Compensation System	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >6sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >12sec. (Entire Range)	
Auto Focus	Focusing Time	>1.7sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	Max. 5mA (Circuit)	
TCS	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		15.225 mm (in air)	
Flange Back Length		17.526mm	
Filter Screw Size		M110mm P=1.0	
Dimension(HxWxD)		125 x 125 x 342.2 mm	
Weight(Approx.)		4,900g	

Megapixel Zoom Lens メガピクセルズームレンズ

Y33Z15RH (15.2 - 500mm) Series

配線図 ▶ P34・P36

Type		NEW AUTO FOCUS MODEL			REMOTE CONTROL FOCUS MODEL		
Model No.		Y33Z15RHMAFP8EVT	Y33Z15RHAFP8EVT	Y33Z15RHAFDP8EVT	Y33Z15RHMP8EVT	Y33Z15RHAP8EVT	Y33Z15RHADP8EVT
Format Size		1/1.9"					
Mount		C / CS (with CS adapter)					
Zoom Ratio		x33					
Focal Length		15.2-500mm					
Max. Aperture Ratio		1 : 3.0					
Iris Range		F3.0-F32		F3.0-F13	F3.0-F32		F3.0-F13
Visible Light Cut Filter		760nm-950nm					
Applicable Wavelength		430nm-950nm					
Min. Object Distance		4.0m					
Angle of View		Diagonal / Horizontal / Vertical (16:9)					
	Wide	29.12° / 25.60° / 14.96°					
	Tele	0.93° / 0.81° / 0.46°					
Operation	Iris	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control					
	Focus	Auto Focus & Remote Control			Remote Control		
	VC Filter	Remote Control					
	TCS	Auto Thermal Compensation					
Iris (Remote Control or Video Auto)	Input Voltage	DC 8V-16V	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 40mA	Max. 50mA	N/A	Max. 40mA	Max. 50mA	N/A
	Travel Time(End-End)	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A	N/A
	Input Signal	N/A	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	N/A	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	N/A	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	N/A	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	N/A	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A
Iris(DC Auto)	Drive Coil	N/A	N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A	N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	N/A	Approx. 3sec.	N/A		Approx. 3sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 6sec. (Entire Range)					
Focus (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 12sec. (Entire Range)					
Auto Focus	Focusing Time	>1.7sec.			N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC/TCS On) or Max. 400mA(Serial Control *)					
VC	Input Voltage	DC 3V-16V					
	Current Consumption	Max. 5mA (Circuit)					
TCS	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
Potentiometer for Preset		Zoom & Focus (& Iris*)		Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm					
Optical Axis Adjustment System		Range : ±0.4mm					
Back Focal Length		28.63mm (in air)					
Flange Back Length		17.526mm					
Filter Screw Size		M95mm P=1.0					
Dimension(HxWxD)		98 x 106 x 249.6mm					
Weight(Approx.)		2,700g					

Coming Soon !

Megapixel Zoom Lens メガピクセルズームレンズ

NEW 新製品

Y36Z12RH（12 - 430mm）Series

36x | 1/1.8" SENSOR | F1.8 | 2MP | True NIR | AF | ADJUSTABLE OPTICAL AXIS | ADJUSTABLE FLANGE BACK

配線図 ▶ P39

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y36Z12RHAFDP8EV	Y36Z12RHADP8EV
Format Size		1/1.8"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x36	
Focal Length		12.0-430mm	
Max. Aperture Ratio		1 : 1.8	
Iris Range		F1.8-F18	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		6.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	40.2° / 35.4° / 20.3°	
	Tele	1.2° / 1.1° / 0.6°	
Operation	Iris	Auto Iris(DC)	
	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	VC Filter	Remote Control	
	TCS	N/A	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3 sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >6sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >12sec. (Entire Range)	
Auto Focus	Focusing Time	>1.7sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	Max. 5mA (Circuit)	
TCS	Input Voltage	N/A	
	Current Consumption	N/A	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		14.9mm	
Flange Back Length		17.526mm	
Filter Screw Size		M110mm P=1.0	
Dimension(HxWxD)		125 x 125 x 316.6mm	
Weight(Approx.)		4,800g	

Megapixel Zoom Lens メガピクセルズームレンズ

Y35Z10RH（10 - 350mm）Series

35x 1/1.8" SENSOR F1.6 2MP True NIR AF ADJUSTABLE OPTICAL AXIS ADJUSTABLE FLANGE BACK

配線図 ▶ P39

Type		NEW AUTO FOCUS MODEL	REMOTE CONTROL FOCUS MODEL
Model No.		Y35Z10RHAFDP8EV	Y35Z10RHADP8EV
Format Size		1/1.8"	
Mount		C / CS (with CS adapter)	
Zoom Ratio		x35	
Focal Length		10.0-350mm	
Max. Aperture Ratio		1 : 1.6	
Iris Range		F1.6-F16	
Visible Light Cut Filter		760nm-950nm	
Applicable Wavelength		400nm-950nm	
Min. Object Distance		6.0m	
Angle of View		Diagonal / Horizontal / Vertical (16:9)	
	Wide	47.60° / 42.06° / 24.40°	
	Tele	1.47° / 1.29° / 0.72°	
Operation	Iris	Auto Iris(DC)	
	Zoom	Remote Control	
	Focus	Auto Focus & Remote Control	Remote Control
	VC Filter	Remote Control	
	TCS	N/A	
Iris	Drive Coil	185Ω ±10% (20℃)	
		Close to Open : 4.0V	
		Open to Close : 0.5V	
	Damp Coil	1100Ω ±10% (20℃)	
	Response Speed	Approx. 3 sec.	
Zoom (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >6sec. (Entire Range)	
Focus (Remote Control)	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 5mA (Circuit)	
	Operation Speed	Approx. >12sec. (Entire Range)	
Auto Focus	Focusing Time	>1.7sec.	N/A
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V	
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC On) or Max. 400mA(Serial Control *)	
VC	Input Voltage	DC 3V-16V	
	Current Consumption	50mA	
TCS	Input Voltage	N/A	
	Current Consumption	N/A	
Potentiometer for Preset		Zoom & Focus	
Back Focus Adjustment System		Range : 17.526mm ±0.5mm	
Optical Axis Adjustment System		Range : ±0.5mm	
Back Focal Length		15.21 mm (in air)	
Flange Back Length		17.526mm	
Filter Screw Size		M110mm P=1.0	
Dimension(HxWxD)		125 x 125 x 317 mm	
Weight(Approx.)		4,700g	

Megapixel Zoom Lens メガピクセルズームレンズ

Y18Z86RH (8.6 - 154mm) Series

18x 1/1.9" SENSOR F2.5 2MP True NIR AF

配線図 ▶ P30・P32

Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y18Z86RHAFP5E	Y18Z86RHAFDP5E	Y18Z86RHMP5E	Y18Z86RHAP5E	Y18Z86RHADP5E
Format Size		1/1.9"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x18				
Focal Length		8.6-154mm				
Max. Aperture Ratio		1 : 2.5				
Iris Range		F2.5-F62	F2.5-F8.2	F2.5-F62		F2.5-F8.2
Applicable Wavelength		430nm-950nm				
Min. Object Distance		2.0m				
Angle of View		Diagonal / Horizontal / Vertical (16:9)				
	Wide	48.9° / 43.6° / 25.0°				
	Tele	3.0° / 2.6° / 1.5°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control		Remote Control		
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.>2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)	Drive Coil	N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >3.0sec. (Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >4.0sec. (Entire Range)				
Auto Focus	Focusing Time	>1.0sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System(Option*)		Range : 17.526mm ±0.5mm(Option) *				
Optical Axis Adjustment System(Option*)		Range : ±0.25mm(Option) *				
Back Focal Length		14.29mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 153.7mm				
Weight(Approx.)		880g				

Megapixel Zoom Lens メガピクセルズームレンズ

Y10Z85RH (8.5 - 85mm) Series

10x 1/2" SENSOR F1.5 2MP True NIR AF

配線図 ▶ P30・P32

Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y10Z85RHAFP5E	Y10Z85RHAFDP5E	Y10Z85RHMP5E	Y10Z85RHAP5E	Y10Z85RHADP5E
Format Size		1/2"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x10				
Focal Length		8.5-85mm				
Max. Aperture Ratio		1 : 1.5				
Iris Range		F1.5-F47	F1.5-F6.2	F1.5-F47		F1.5-F6.2
Applicable Wavelength		430nm-950nm				
Min. Object Distance		1.8m				
Angle of View		Diagonal / Horizontal / Vertical (16:9)				
	Wide	51.6° / 45.1° / 25.6°				
	Tele	5.4° / 4.7° / 2.7°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control		Remote Control		
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.>2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)		N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
	Drive Coil	N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >3.0sec. (Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >3.5sec. (Entire Range)				
Auto Focus	Focusing Time	>0.8sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		N/A				
Optical Axis Adjustment System		N/A				
Back Focal Length		14.49mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 135.8mm				
Weight(Approx.)		800g				

Megapixel Zoom Lens メガピクセルズームレンズ

Y16Z78H（7.8 - 125mm）Series

16x 1/1.8" SENSOR F1.6 2MP

配線図 ▶ P33

Type		REMOTE CONTROL FOCUS MODEL	
Model No.		Y16Z78HADE	Y16Z78HADPE
Format Size		1/1.8"	
Mount		C / CS（with CS adapter）	
Focal Length		7.8- 125 mm	
Max. Aperture Ratio		1:1.6	
Iris Range		F1.6 - 12	
Min. Object Distance		1.5 m	
Operation	Iris	Auto (DC Drive) (Galvanometer)	
	Focus	Remote (DC Motor)	
	Zoom	Remote (DC Motor)	
Angle of View		Wide / Tele (16:9)	
	Diagonal	56.6° / 4.2°	
	Horizontal	50.3° / 3.7°	
	Vertical	29.6° / 2.1°	
Iris	Drive Type	Galvanometer	
	Drive Coil	190Ω ±10%（20℃）	
		Close to Open : 4.0V（20℃）	
		Open to Close : 0.5V（20℃）	
	Damp Coil	1150Ω ±10%（20℃）	
	Response Speed	Approx. 3 sec.	
Zoom	Drive Type	DC Motor	
	Input Voltage	DC 8V - 12V	
	Current Consumption	Max. 80 mA（Motor）	
	Motorization Speed	Approx. >2.5sec	
Manual Focus	Drive Type	DC Motor	
	Input Voltage	DC 8V - 12V	
	Current Consumption	Max. 80 mA（Motor）	
	Motorization Speed	Approx. >4.0sec.	
Auto Focus	Input Voltage	N/A	
	Current Consumption	N/A	
Preset Function		Z & F	
Applicable Wavelength		430 nm - 680 nm	
Back Focal Length		13.97 mm（in air）	
Flange Back Length		17.526 mm	
Temperature Range		-10℃ - +50℃	
Filter Screw Size		M72.0 mm P=0.75	
Dimension(H × W × D)		87.5 x 86.0 x 157.5 mm	
Weight (Approx.)		1000 g	
Wiring Diagram		Ask	

Production in Order / 受注生産

NIR Corrected Zoom Lens 近赤外対応ズームレンズ

Y33Z30R (30.3 - 1000mm) Series

33x | 2/3" SENSOR | F6.0 | True NIR | AF | ADJUSTABLE OPTICAL AXIS | ADJUSTABLE FLANGE BACK

配線図 ▶ P34 · P36

Type		NEW AUTO FOCUS MODEL			REMOTE CONTROL FOCUS MODEL		
Model No.		Y33Z30RMAFP8EV	Y33Z30RAFP8EV	Y33Z30RAFDP8EV	Y33Z30RMP8EV	Y33Z30RAP8EV	Y33Z30RADP8EV
Format Size		2/3"					
Mount		C / CS (with CS adapter)					
Zoom Ratio		x33					
Focal Length		30.3-1000mm					
Max. Aperture Ratio		1 : 6					
Iris Range		F6-F64		F6-F26	F6-F64		F6-F26
Visible Light Cut Filter		760nm-950nm					
Applicable Wavelength		430nm-950nm					
Min. Object Distance		4.0m					
Angle of View		Diagonal / Horizontal / Vertical (4:3)					
	Wide	20.5° / 16.5° / 12.5°					
	Tele	0.65° / 0.52° / 0.39°					
Operation	Iris	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control					
	Focus	Auto Focus & Remote Control			Remote Control		
	VC Filter	Remote Control					
	TCS	Auto Thermal Compensation					
Iris (Remote Control or Video Auto)	Input Voltage	DC 8V-16V	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 40mA	Max. 50mA	N/A	Max. 40mA	Max. 50mA	N/A
	Travel Time(End-End)	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A	N/A
	Input Signal	N/A	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	N/A	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	N/A	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	N/A	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	N/A	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A
Iris(DC Auto)	Drive Coil	N/A		190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A		Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A		Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A		1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A		Approx. 3sec.	N/A		Approx. 3sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 6sec. (Entire Range)					
Focus (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 12sec. (Entire Range)					
Auto Focus	Focusing Time	>2.0sec.			N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC/TCS On) or Max. 400mA(Serial Control *)					
VC	Input Voltage	DC 3V-16V					
	Current Consumption	5mA (Circuit)					
TCS	Input Voltage	N/A					
	Current Consumption	N/A					
Potentiometer for Preset		Zoom & Focus (& Iris*)		Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm					
Optical Axis Adjustment System		Range : ±0.4mm					
Back Focal Length		32.88mm (in air)					
Flange Back Length		17.526mm					
Filter Screw Size		M95mm P=1.0					
Dimension(HxWxD)		98 x 106 x 267.9mm					
Weight(Approx.)		2700 g			2500 g	2600g	2600g

NIR Corrected Zoom Lens 近赤外対応ズームレンズ

Y33Z23R (22.8 - 750mm) Series

33x | 2/3" SENSOR | F4.5 | True NIR | AF | THERMAL COMPENSATION SYSTEM | ADJUSTABLE OPTICAL AXIS | ADJUSTABLE FLANGE BACK

配線図 ▶ P34・P36

Type		NEW AUTO FOCUS MODEL			REMOTE CONTROL FOCUS MODEL		
Model No.		Y33Z23RMAFP8EV	Y33Z23RAFP8EV	Y33Z23RAFDP8EV	Y33Z23RMP8EV	Y33Z23RAP8EV	Y33Z23RADP8EV
Format Size		2/3"					
Mount		C / CS (with CS adapter)					
Zoom Ratio		x33					
Focal Length		22.8-750mm					
Max. Aperture Ratio		1 : 4.5					
Iris Range		F4.5-F48		F4.5-F19.2	F4.5-F48		F4.5-F19.2
Visible Light Cut Filter		760nm-950nm					
Applicable Wavelength		430nm-950nm					
Min. Object Distance		4.0m					
Angle of View		Diagonal / Horizontal / Vertical (4:3)					
	Wide	29.46° / 21.43° / 16.24°					
	Tele	0.84° / 0.67° / 0.51°					
Operation	Iris	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control					
	Focus	Auto Focus & Remote Control			Remote Control		
	VC Filter	Remote Control					
	TCS	Auto Thermal Compensation					
Iris (Remote Control or Video Auto)	Input Voltage	DC 8V-16V	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 40mA	Max. 50mA	N/A	Max. 40mA	Max. 50mA	N/A
	Travel Time(End-End)	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A	N/A
	Input Signal	N/A	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	N/A	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	N/A	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	N/A	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	N/A	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A
Iris(DC Auto)	Drive Coil	N/A		190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A		Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A		Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A		1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A		Approx. 3sec.	N/A		Approx. 3sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 6sec. (Entire Range)					
Focus (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 12sec. (Entire Range)					
Auto Focus	Focusing Time	>2.0sec.			N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC/TCS On) or Max. 400mA(Serial Control *)					
VC	Input Voltage	DC 3V-16V					
	Current Consumption	5mA (Circuit)					
TCS	Input Voltage	DC 8V-16V					
	Current Consumption	5mA (Circuit)					
Potentiometer for Preset		Zoom & Focus (& Iris*)		Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm					
Optical Axis Adjustment System		Range : ±0.4mm					
Back Focal Length		27.35mm (in air)					
Flange Back Length		17.526mm					
Filter Screw Size		M95mm P=1.0					
Dimension(HxWxD)		98 x 106 x 260.18mm					
Weight(Approx.)		2,800g					

NIR Corrected Zoom Lens 近赤外対応ズームレンズ

Y33Z15R（15.2 - 500mm）Series

33x | 1/1.9" SENSOR | F3.0 | True NIR | AF | THERMAL COMPENSATION SYSTEM | ADJUSTABLE OPTICAL AXIS | ADJUSTABLE FLANGE BACK

配線図 ▶ P34・P36

Type		NEW AUTO FOCUS MODEL			REMOTE CONTROL FOCUS MODEL		
Model No.		Y33Z15RMAFP8EVT	Y33Z15RAFP8EVT	Y33Z15RAFDP8EVT	Y33Z15RMP8EVT	Y33Z15RAP8EVT	Y33Z15RADP8EVT
Format Size		1/1.9"					
Mount		C / CS (with CS adapter)					
Zoom Ratio		x33					
Focal Length		15.2-500mm					
Max. Aperture Ratio		1 : 3.0					
Iris Range		F3.0-F32		F3.0-F13	F3.0-F32		F3.0-F13
Visible Light Cut Filter		760nm-950nm					
Applicable Wavelength		430nm-950nm					
Min. Object Distance		4.0m					
Angle of View		Diagonal / Horizontal / Vertical (16:9)					
	Wide	29.12° / 25.60° / 14.96°					
	Tele	0.93° / 0.81° / 0.46°					
Operation	Iris	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control					
	Focus	Auto Focus & Remote Control			Remote Control		
	VC Filter	Remote Control					
	TCS	Auto Thermal Compensation					
Iris (Remote Control or Video Auto)	Input Voltage	DC 8V-16V	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 40mA	Max. 50mA	N/A	Max. 40mA	Max. 50mA	N/A
	Travel Time(End-End)	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A	N/A
	Input Signal	N/A	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	N/A	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	N/A	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	N/A	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	N/A	Max. 3sec.	N/A	N/A	Max. 3sec.	N/A
Iris(DC Auto)	Drive Coil	N/A		190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A		Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A		Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A		1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A		Approx. 3sec.	N/A		Approx. 3sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 6sec. (Entire Range)					
Focus (Remote Control)	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 5mA (Circuit)					
	Operation Speed	Approx. 12sec. (Entire Range)					
Auto Focus	Focusing Time	>1.7sec.			N/A		
Power Supply for Zoom/Focus/ AF/VC/TCS/SC	Input Voltage	DC 8V-16V					
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF/VC/TCS On) or Max. 400mA(Serial Control *)					
VC	Input Voltage	DC 3V-16V					
	Current Consumption	5mA (Circuit)					
TCS	Input Voltage	DC 8V-16V					
	Current Consumption	5mA (Circuit)					
Potentiometer for Preset		Zoom & Focus (& Iris*)		Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm					
Optical Axis Adjustment System		Range : ±0.4mm					
Back Focal Length		28.63mm (in air)					
Flange Back Length		17.526mm					
Filter Screw Size		M95mm P=1.0					
Dimension(HxWxD)		98 x 106 x 249.6mm					
Weight(Approx.)		2,700g					

NIR Corrected Zoom Lens 近赤外対応ズームレンズ

Y18Z86R (8.6 - 154mm) Series

18x | 1/1.9" SENSOR | F2.5 | True NIR | AF

配線図 ▶ P30・P32

Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y18Z86RAFP5E	Y18Z86RAFDP5E	Y18Z86RMP5E	Y18Z86RAP5E	Y18Z86RADP5E
Format Size		1/1.9"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x18				
Focal Length		8.6-154mm				
Max. Aperture Ratio		1 : 2.5				
Iris Range		F2.5-F62	F2.5-F8.2	F2.5-F62		F2.5-F8.2
Applicable Wavelength		430nm-950nm				
Min. Object Distance		2.0m				
Angle of View		Diagonal / Horizontal / Vertical (4:3)				
	Wide	48.9° / 40.6° / 30.8°				
	Tele	3.0° / 2.4° / 1.8°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control			Remote Control	
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.>2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)	Drive Coil	N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >3.0sec.(Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. >4.0sec. (Entire Range)				
Auto Focus	Focusing Time	>1.0sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm(Option) *				
Optical Axis Adjustment System		Range : ±0.25mm(Option) *				
Back Focal Length		14.29mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 153.7mm				
Weight(Approx.)		880g				

NIR Corrected Zoom Lens 近赤外対応ズームレンズ

Y10Z85R (8.5 - 85mm) Series

10x 1/2" SENSOR F1.5 True NIR AF

配線図 ▶ P30・P32

Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y10Z85RAFP5E	Y10Z85RAFDP5E	Y10Z85RMP5E	Y10Z85RAP5E	Y10Z85RADP5E
Format Size		1/2"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x10				
Focal Length		8.5-85mm				
Max. Aperture Ratio		1 : 1.5				
Iris Range		F1.5-F47	F1.5-F6.2	F1.5-F47		F1.5-F6.2
Applicable Wavelength		430nm-950nm				
Min. Object Distance		1.8m				
Angle of View		Diagonal / Horizontal / Vertical (4:3)				
	Wide	51.6° / 41.5° / 31.3°				
	Tele	5.4° / 4.3° / 3.3°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control		Remote Control		
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.＞2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)		N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
	Drive Coil	N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞3.0sec.(Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞3.5sec. (Entire Range)				
Auto Focus	Focusing Time	＞0.8sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		N/A				
Optical Axis Adjustment System		N/A				
Back Focal Length		14.49mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 135.8mm				
Weight(Approx.)		800g				

Zoom Lens ズームレンズ

Y20Z15（15 - 300mm）Series

20x 1/2" SENSOR F3.6 AF

配線図 ▶ P30・P32

Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y20Z15AFP5E	Y20Z15AFDP5E	Y20Z15MP5E	Y20Z15AP5E	Y20Z15ADP5E
Format Size		1/2"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x20				
Focal Length		15.0-300mm				
Max. Aperture Ratio		1 : 3.6				
Iris Range		F3.6-F114	F3.6-F15	F3.6-F114		F3.6-F15
Applicable Wavelength		430nm-950nm				
Min. Object Distance		2.5m				
Angle of View		Diagonal / Horizontal / Vertical (4:3)				
	Wide	29.2° / 23.4° / 17.7°				
	Tele	1.5° / 1.2° / 0.9°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control		Remote Control		
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.＞2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)	Drive Coil	N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞3.0sec. (Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞4.0sec. (Entire Range)				
Auto Focus	Focusing Time	＞1.5sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm(Option) *				
Optical Axis Adjustment System		Range : ±0.25mm(Option) *				
Back Focal Length		15.94mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 153.7mm				
Weight(Approx.)		880g				

Zoom Lens ズームレンズ

Y20Z10（10 - 200mm）Series

20x 1/2" SENSOR F2.4 AF

配線図 ▶ P30・P32

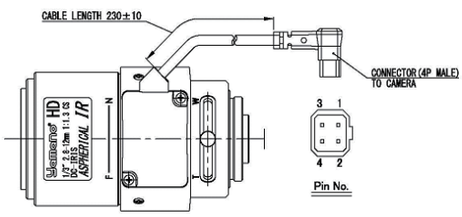
Type		NEW AUTO FOCUS MODEL		REMOTE CONTROL FOCUS MODEL		
Model No.		Y20Z10AFP5E	Y20Z10AFDP5E	Y20Z10MP5E	Y20Z10AP5E	Y20Z10ADP5E
Format Size		1/2"				
Mount		C / CS (with CS adapter)				
Zoom Ratio		x20				
Focal Length		10.0-200mm				
Max. Aperture Ratio		1 : 2.4				
Iris Range		F2.4-F78	F2.4-F10	F2.4-F78		F2.4-F10
Applicable Wavelength		430nm-950nm				
Min. Object Distance		1.8m				
Angle of View		Diagonal / Horizontal / Vertical (4:3)				
	Wide	42.4° / 34.8° / 26.4°				
	Tele	2.2° / 1.8° / 1.4°				
Operation	Iris	Auto Iris(Video) (& Remote*)	Auto Iris(DC)	Remote Control	Auto Iris(Video) (& Remote*)	Auto Iris(DC)
	Zoom	Remote Control				
	Focus	Auto Focus & Remote Control		Remote Control		
Iris (Remote Control or Video Auto)	Input Voltage	DC 9V-16V	N/A	DC 8V-16V	DC 9V-16V	N/A
	Current Consumption	Max. 50mA	N/A	Max. 20mA	Max. 50mA	N/A
	Travel Time(End-End)	N/A	N/A	Approx.＞2.0sec.	N/A	N/A
	Input Signal	Video Signal (VS or V)	N/A	N/A	Video Signal (VS or V)	N/A
	Accuracy	±15% at Image Signal	N/A	N/A	±15% at Image Signal	N/A
	Sensitivity Adjustment	0.5-1.0 Vp-p	N/A	N/A	0.5-1.0 Vp-p	N/A
	Metering Method	Average - Peak	N/A	N/A	Average - Peak	N/A
	Response Speed	Max. 3 sec.	N/A	N/A	Max. 3 sec.	N/A
Iris(DC Auto)	Drive Coil	N/A	190Ω ±10% (20℃)	N/A		190Ω ±10% (20℃)
		N/A	Close to Open : 4.0V	N/A		Close to Open : 4.0V
		N/A	Open to Close : 0.5V	N/A		Open to Close : 0.5V
	Damp Coil	N/A	1150Ω ±10% (20℃)	N/A		1150Ω ±10% (20℃)
	Response Speed	N/A	Approx. 3 sec.	N/A		Approx. 3 sec.
Zoom (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞3.0vsec. (Entire Range)				
Focus (Remote Control)	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 5mA (Circuit)		Max. 80mA (Motor)		
	Operation Speed	Approx. ＞4.0sec. (Entire Range)				
Auto Focus	Focusing Time	＞1.0sec.		N/A		
Power Supply for Zoom/Focus/ AF/VC/SC	Input Voltage	DC 8V-16V				
	Current Consumption	Max. 120mA (Stand By) / Max. 300mA (Zoom/Focus/AF On)				
Potentiometer for Preset		Zoom & Focus (& Iris*)	Zoom & Focus	Zoom & Focus (& Iris*)		Zoom & Focus
Back Focus Adjustment System		Range : 17.526mm ±0.5mm (Option)*				
Optical Axis Adjustment System		Range : ±0.25mm (Option)*				
Back Focal Length		11.12mm (in air)				
Flange Back Length		17.526mm				
Filter Screw Size		M62mm P=0.75				
Dimension(HxWxD)		78.3 x 84 x 153.7mm				
Weight(Approx.)		880g				

Varifocal Lens バリフォーカルレンズ

NEW 新製品 YV2812RHD (2.8 - 12.0mm)

Type			Auto iris (DC iris)
Model No.			YV2812RHD
Format Size			1/3"
Mount			CS
Focal Length			2.8 - 12.0 mm
Max. Aperture Ratio			1 : 1.3
Iris Range			F1.3 - F360 (ND filter, auto close)
Min. Object Distance			0.3 m
Operation	Iris		Auto iris (DC iris)
	Focus		Manual
	Zoom		Manual
Angle of View			Wide / Tele
	Horizontal		81.2° / 22.6°
	Vertical		65.5° / 17.1°
Iris	Operating Voltage		Close to Open : Less than 3V
			Open to Close : More than 0.5V
	Resistance Value	Drive Coil	190Ω ±10% (20℃)
		Damp Coil	500Ω ±10% (20℃)
Applicable Wavelength			400nm - 950nm
Back Focal Length			8.15 mm (in air)
Flange Back Length			12.5 mm
Temperature Range			-10℃ - +50℃
Filter Screw Size			—
Weight (Approx.)			Approx. 130 g

* Adjustable with volume
* 仕様・外観はお断りなく変更されることがあります。必ず取扱説明書をご参照するか、VST 販売拠点又は山野光学へ最新の仕様をお問合わせ下さい。
*Specifications are subject to change without notice. Please refer to the instruction manual or ask your local VST sales office or Yamano for the latest specification.



Lens for Thermal Camera（Uncooled, 8-12μm） サーマルレンズ

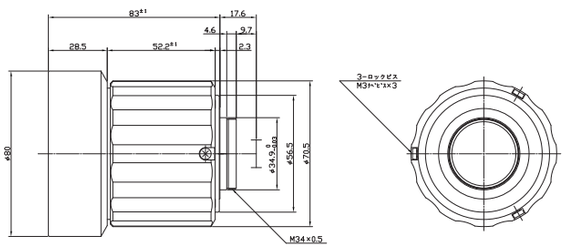
YT50（8-12μm, 50mm）Series

赤外線非冷却カメラ用レンズで、15μmピッチセンサーまで対応可能。
高解像度の赤外線映像監視に最適です。

Applicable for Uncooled Themal Camera with pixel size upto 15μm.
Good for high resolution themal video surveillance.

Type	Thermal（LWIR）
Model No.	YT50
Format Size	φ13.6 mm（10.88 x 8.16 mm）
Mount	M34 P0.5
Focal Length	50 mm
F No.	F1.0
Average Transmission	81%
Focal Range	2 m to infinity（over full temperature range）
Resolution	15μm
Horizontal Field View	11°（640 x 480 pixels, 17μm pitch） / 9.7°（640 x 480, 15μmpitch）
Applicable Wavelength	8μm - 12μm
Back Focal Length	29.6 mm（in air）
Flange Back Length	9 mm
Operating Temperature	-20℃ - +60℃
Dimension (Diameter / Length)	φ80 x 83 mm
Weight (Approx.)	Approx. 500g

*Specifications are subject to change without notice. Please refer to the instruction manual or ask your local VST sales office or Yamano for the latest specification.
* 仕様・外観はお断りなく変更されることがあります。必ず取扱説明書をご参照するか、VST販売拠点又は山野光学へ最新の仕様をお問合わせ下さい。



サーマルカメラによるサンプル画像 （Sample pictures taken by Thermal Camera）

サーマルカメラは人間の目では観ることのできない温度を可視化するカメラです。
監視用サーマルカメラは、センサー解像度の高まりとともに、映像も鮮明になってきています。
人や物体の温度を感知・解像することで、下写真のように暗闇や煙に隠れている被写体を観ることができます。

Sample pictures taken by Thermal Camera.

Thermal cameras allow the human eye to visualize temperature which otherwise cannot be seen.
Thermal surveillance camera images are becoming clearer with improved sensor resolution.
By detecting and processing temperatures of humans and objects,
thermal cameras see targets that are in total darkness or hidden by smoke, as in the photographs below.

SCD社製カメラ：BIRD60-17HS（高感度タイプ：NETD=35mK）による赤外線画像サンプル

写真提供：株式会社アイアールシステム社様
※撮影にはYT-50は使用していません。

This is a sample photograph taken with SCD's thermal camera: BIRD60-17HS(NETD=35mK).

Photo provided by IR SYSTEM Co., Ltd.
*YT50 was not used to take this picture.

Mega Pixel Fixed Focal Lens for Manual Iris　3.3μ対応CCTVレンズ

VS-VM Series

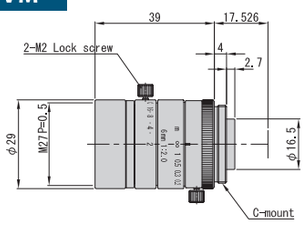
3.3μm対応 高コントラストCCTVレンズ
f6～50mmまでの全7種類ラインナップ

3.3μm High Contrast CCTV Lenses
7 models available f6～f50mm

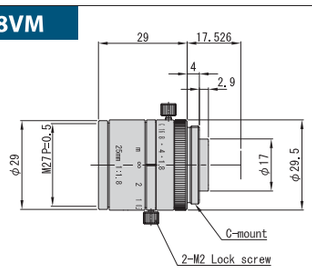
1/1.8" SENSOR　F1.8

Model	Resolution	Focal Length (mm)	Format	Mount	Iris Range	Iris	Focus	Angle (V x H)	M.O.D. (m)	Dimension (mm)	Weight (g)
VS-0620VM	2Mega	6	1/1.8"	C	F2-C	Manual	Manual	48.4° x 61.9°	0.1	φ29x39	62
VS-0818VM	2Mega	8	1/1.8"	C	F1.8-C	Manual	Manual	37.2° x 48.2°	0.1	φ29x38.5	64
VS-1218VM	2Mega	12	1/1.8"	C	F1.8-C	Manual	Manual	25° x 32.6°	0.1	φ29x37.5	60
VS-1618VM	2Mega	16	1/1.8"	C	F1.8-C	Manual	Manual	18.8° x 24.6°	0.1	φ29.5x39.5	58
VS-2518VM	2Mega	25	1/1.8"	C	F1.8-C	Manual	Manual	12.1° x 15.9°	0.25	φ29.5x29	60
VS-3518VM	2Mega	35	2/3"	C	F1.8-C	Manual	Manual	11.7° x 13.8°	0.25	φ29x33.5	48
VS-5026VM	2Mega	50	2/3"	C	F2.6-C	Manual	Manual	8.1° x 9.6°	0.4	φ29x39	54

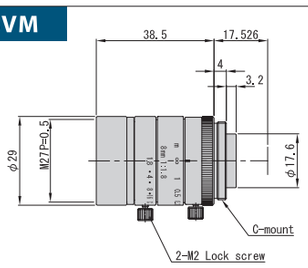
VS-0620VM



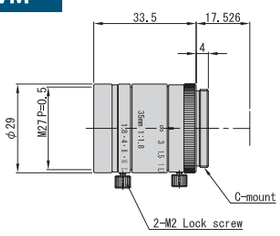
VS-2518VM



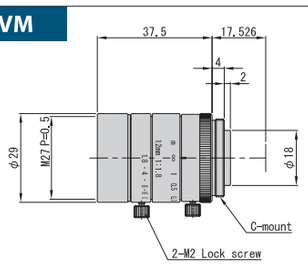
VS-0818VM



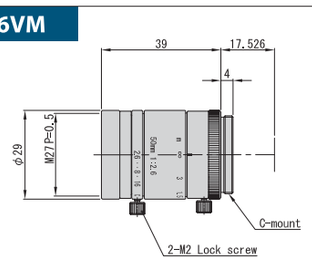
VS-3518VM



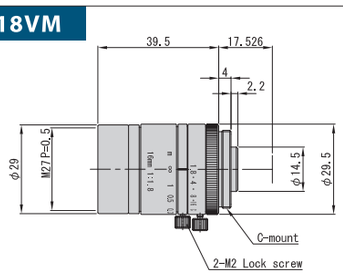
VS-1218VM



VS-5026VM



VS-1618VM



Mega Pixel Fixed Focal Lens for Manual Iris　メガピクセル対応CCTVレンズ

VS-H Series

メガピクセル対応CCTVレンズ
f6～100mmまでの全9種類をラインナップ

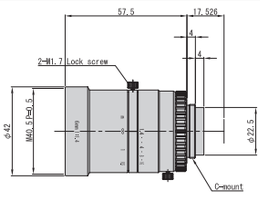
Megapixel CCTV Lenses
9 models available f6～f100mm

2/3" SENSOR　F1.4

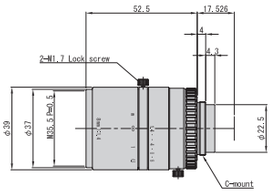
Model	Resolution	Focal Length	Format	Mount	Iris Range	Iris	Focus	Angle (V x H)	M.O.D. (m)	Dimension (mm)	Weight (g)
SV-0614H	5Mega	6	2/3"	C	F1.4-16	Manual	Manual	60.3° x 69.0°	0.1	φ42 x 57.5	142
SV-0814H	5Mega	8	2/3"	C	F1.4-16	Manual	Manual	47.9° x 55.4°	0.1	φ39 x 52.5	124
SV-2514H	5Mega	25	2/3"	C	F1.4-16	Manual	Manual	16.2° x 19.1°	0.15	φ30 x 36	60
SV-3514H	5Mega	35	2/3"	C	F1.4-16	Manual	Manual	11.6° x 13.7°	0.2	φ44 x 45.5	142
SV-5014H	5Mega	50	2/3"	C	F1.4-16	Manual	Manual	8.1° x 9.6°	0.3	φ44 x 57.5	165
SV-7525H	5Mega	75	1"	C	F2.5-16	Manual	Manual	8.6° x 8.6°	1.2	φ36 x 49.5	84
SV-10028H	5Mega	100	1"	C	F2.8-16	Manual	Manual	6.6° x 6.6°	2	φ39 x 66.5	104
SV-1214H	5Mega	12	2/3"	C	F1.4-16	Manual	Manual	32.4° x 37.9°	0.1	φ30 x 51	80
SV-1614H	5Mega	16	2/3"	C	F1.4-16	Manual	Manual	24.8° x 29.2°	0.1	φ30 x 47.5	76

※VS-H Seriesの全製品一覧は、P28固定焦点レンズリストをご参照ください。
※Please refer P28 for all VS-H series's specifications.

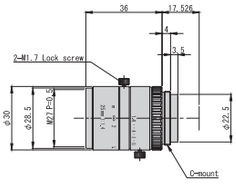
SV-0614H



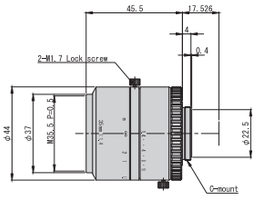
SV-0814H



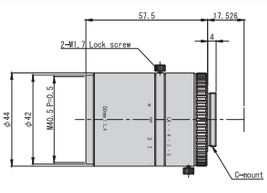
SV-2514H



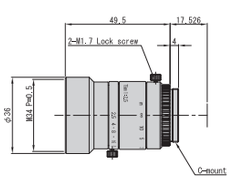
SV-3514H



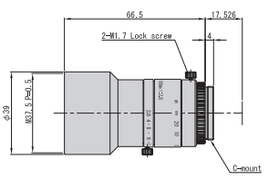
SV-5014H



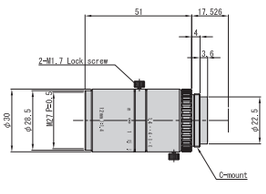
SV-7525H



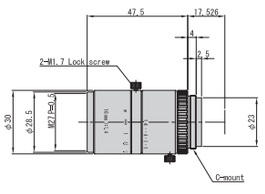
SV-10028H



SV-1214H



SV-1614H



Mega Pixel Fixed Focal Lens for Manual Iris　1"用メガピクセル対応CCTVレンズ

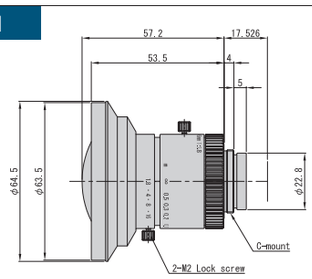
VS-H1 Series

1" 対応 メガピクセル対応CCTVレンズ
f6～100mmまでの全7種類をラインナップ

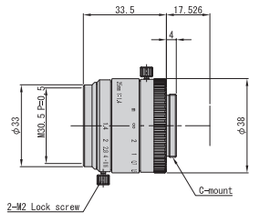
Support 1" Megapixel CCTV Lenses
7 models available f6～f100mm

Model	Resolution	Focal Length (mm)	Format	Mount	Iris Range	Iris	Focus	Angle (V x H)	M.O.D. (m)	Dimension (mm)	Weight (g)
VS-0618H1	4-9Mega	6	1"	C	F1.8-16	Manual	Manual	87.3° x 87.3°	0.1	φ64.5x57.2	205
VS-0814H1	4-9Mega	8	1"	C	F1.4-16	Manual	Manual	71.8° x 71.8°	0.1	φ57x59	175
VS-1214H1	4-9Mega	12	1"	C	F1.4-16	Manual	Manual	50.8° x 50.8°	0.3	φ38x48	130
VS-1614H1N	4-9Mega	16	1"	C	F1.4-16	Manual	Manual	38.6° x 38.6°	0.3	φ38x45	120
VS-2514H1	4-9Mega	25	1"	C	F1.4-16	Manual	Manual	25.1° x 25.1°	0.3	φ38x33.5	84
VS-3514H1	4-9Mega	35	1"	C	F1.4-16	Manual	Manual	18.3° x 18.3°	0.3	φ38x35	92
VS-5018H1	4-9Mega	50	1"	C	F1.8-16	Manual	Manual	12.8° x 12.8°	0.5	φ44x44.5	128

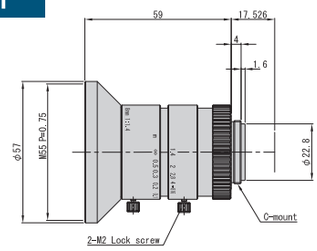
VS-0618H1



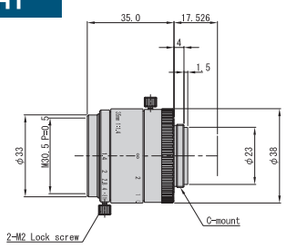
VS-2514H1



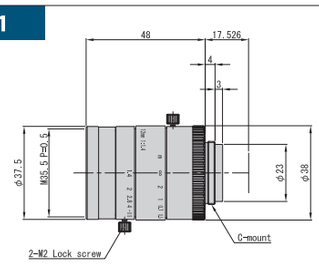
VS-0814H1



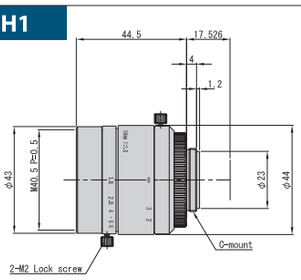
VS-3514H1



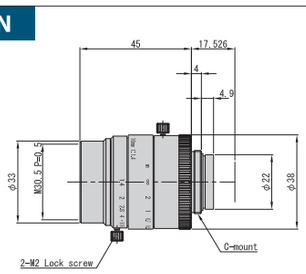
VS-1214H1



VS-5018H1



VS-1614H1N



固定焦点 / バリフォーカルレンズリスト　List of Fixed Focal / Varifocal Lenses

Mega Pixel Fixed Focal Lens

Model	Resolution	Focal Length (mm)	Format	Mount	Iris Range	Iris	Focus	Angle (V x H)	M.O.D. (m)	Dimension (mm)	Weight (g)	Remarks
VS-0620VM	2Mega	6.0	1/1.8"	C	F2-C	Manual	Manual	48.4° x 61.9°	0.10	φ29 x 39	62	
VS-0818VM	2Mega	8.0	1/1.8"	C	F1.8-C	Manual	Manual	37.2° x 48.2°	0.10	φ29 x 38.5	64	
VS-1218VM	2Mega	12.0	1/1.8"	C	F1.8-C	Manual	Manual	25° x 32.6°	0.10	φ29 x 37.5	60	
VS-1618VM	2Mega	16.0	1/1.8"	C	F1.8-C	Manual	Manual	18.8° x 24.6°	0.10	φ29.5 x 39.5	58	
VS-2518VM	2Mega	25.0	1/1.8"	C	F1.8-C	Manual	Manual	12.1° x 15.9°	0.25	φ29.5 x 29	60	
VS-3518VM	2Mega	35.0	2/3"	C	F1.8-C	Manual	Manual	11.7° x 13.8°	0.25	φ29 x 33.5	48	
VS-5026VM	2Mega	50.0	2/3"	C	F2.6-C	Manual	Manual	8.1° x 9.6°	0.40	φ29 x 39	54	
VS-1628H10M	10Mega	16.0	2/3"	C	F2.8-22	Manual	Manual	24.9° x 29.3°	0.35	φ36 x 48	106	2.4 μm @ entire sensor area, S rank
SV-0614H	5Mega	6.0	2/3"	C	F1.4-16	Manual	Manual	60.3° x 69.0°	0.10	φ42 x 57.5	142	
SV-0814H	5Mega	8.0	2/3"	C	F1.4-16	Manual	Manual	47.9° x 55.4°	0.10	φ39 x 52.5	124	
SV-1214HF	5Mega	12.0	2/3"	C	F1.4-16	Manual	Manual	33.4.° x 39.1°	0.10	φ37 x 48	112	
SV-1614HF	5Mega	16.0	2/3"	C	F1.4-16	Manual	Manual	24.5° x 28.9°	0.10	φ39.5 x 53.5	124	
SV-2514H	5Mega	25.0	2/3"	C	F1.4-16	Manual	Manual	16.2° x 19.1°	0.15	φ30 x 36	60	
SV-3514H	5Mega	35.0	2/3"	C	F1.4-16	Manual	Manual	11.6° x 13.7°	0.20	φ44 x 45.5	142	
SV-5014H	5Mega	50.0	2/3"	C	F1.4-16	Manual	Manual	8.1° x 9.6°	0.30	φ44 x 57.5	165	
SV-7525H	5Mega	75.0	1"	C	F2.5-16	Manual	Manual	8.6° x 8.6°	1.20	φ36 x 49.5	84	
SV-10028H	5Mega	100.0	1"	C	F2.8-16	Manual	Manual	6.6° x 6.6°	2.00	φ39 x 66.5	104	
SV-1214H	5Mega	12.0	2/3"	C	F1.4-16	Manual	Manual	32.4° x 37.9°	0.10	φ30 x 51	80	
SV-1614H	5Mega	16.0	2/3"	C	F1.4-16	Manual	Manual	24.8° x 29.2°	0.10	φ30 x 47.5	76	
SV-5026H	5Mega	50.0	2/3"	C	F2.6 - C	Manual	Manual	8.1° x 9.6°	0.50	φ29 x 39	54	
VS-0618H1	4-9Mega	6.0	1"	C	F1.8-16	Manual	Manual	87.3.° x 87.3°	0.10	φ64.5 x 57.2	205	
VS-0814H1	4-9Mega	8.0	1"	C	F1.4-16	Manual	Manual	71.8° x 71.8°	0.10	φ57 x 59	175	
VS-1214H1	4-9Mega	12.0	1"	C	F1.4-16	Manual	Manual	50.8° x 50.8°	0.30	φ38 x 48	130	
VS-1614H1N	4-9Mega	16.0	1"	C	F1.4-16	Manual	Manual	38.6° x 38.6°	0.30	φ38 x 45	120	
VS-2514H1	4-9Mega	25.0	1"	C	F1.4-16	Manual	Manual	25.1° x 25.1°	0.30	φ38 x 33.5	84	
VS-3514H1	4-9Mega	35.0	1"	C	F1.4-16	Manual	Manual	18.3° x 18.3°	0.30	φ38 x 35	92	
VS-5018H1	4-9Mega	50.0	1"	C	F1.8-16	Manual	Manual	12.8° x 12.8°	0.500--	φ44 x 44.5	128	

Vari Focal Lens - Manual Iris

Model	Zoom Ratio	Focal Length (mm)	Format	Mount	Iris Range	Iris	Focus	Angle (V x H x D) at Wide	M.O.D. (m)	Dimension (mm)	Weight (g)	Remarks
YV0555M	x11	5.0-55.0	1/3"	CS	F1.4 - C	Manual	Manual	40°x 53°	0.30	φ45.5 x 64	83	
YV0555RM	x11	5.0-55.0	1/3"	CS	F1.4 - 360	Manual	Manual	40°x 53°	0.30-0.80	φ45.5 x 64	83	IR

Vari Focal Lens - Auto Iris (Direct Drive)

Model	Zoom Ratio	Focal Length (mm)	Format	Mount	Iris Range	Iris	Focus	Angle (V x H x D) at Wide	M.O.D. (m)	Dimension (mm)	Weight (g)	Remarks
YV0880RD-1MPX	x10	8.0-80.0	1/2"	C	F1.6 - 360	AI (Direct)	Manual	34.3°x46.6°	0.1	φ54.0 x 91.0	198	1MP, IR
YV1012D	x12	10.0-120.0	1/2"	C	F1.6 - 360	AI (Direct)	Manual	26°x34°x42°	1.5	φ55.0x64.3x123.2	350	
YV1012RD-1MPX	x12	10.0-120.0	1/2"	C	F1.6 - 360	AI (Direct)	Manual	26°x34°x42°	1.5	φ55.0x64.3x123.2	375	1.3MP, IR
YV2812RHD	x2.3	2.8-12.0	1/3"	CS	F1.3-360	AI (Direct)	Manual	65.5°x81.2°	0.3	φ43.5 x 50.75 x 67.2	130	3MP,IR
YV2812RD-3MPX	x4.2	2.8-12.0	1/3"	CS	F1.4-360	AI (Direct)	Manual	72.5°x97.9°	0.3	φ41.3 x 46.1 x 59.4	70	3MP,IR
YV0308RD-2	x2.6	3.0-8.0	1/3"	CS	F1.2 - 360	AI (Direct)	Manual	68°x92°	0.3	φ38x42.8x46	63	IR
YV0555D	x11	5.0-55.0	1/3"	CS	F1.4 - 360	AI (Direct)	Manual	40°x53°	0.3	φ42 x 48 x 64	93	
YV0555RD	x11	5.0-55.0	1/3"	CS	F1.4 - 360	AI (Direct)	Manual	40°x53°	0.3	φ42 x 50 x 64	93	IR
YV0850RD-5MP	x6.2	8.0-50.0	1/2.7"	CS	F1.4-360	AI (Direct)	Manual	28.6°x38.7°	0.3	φ44 x 46.4 x 73.5	101	5MP, IR

ズームレンズ接続方法 How to connect Zoom Lens

1. レンズ接続方法
How to make wiring connection

カメラに取付前にマウントタイプをご確認ください。
Before setting the lens to the camera,
Check the CCD size & mount type of the camera

1/2", Cマウント
1/2", C mount

1/2", Cマウント
1/2", C mount

1/2", Cマウント
1/2", C mount

CS マウントアダプター不要
CS mount adapter is unnecessary.

CSマウントアダプター(t=5mmリングアダプター)をレンズとカメラの間に取付けます。
*Y10Z06シリーズは除く。
CS mount adapter(t=5mm ring adapter) is needed to be put between lens and camera.
*Except Y10Z06 Series (1/3" format)

ズームレンズをカメラに取り付けた後、配線をしてください。
AFズームレンズは、「②ＡＦズームレンズの配線方法」をご確認ください。
After setting zoom lens to camera, Make wiring connection correctly.
Regarding AF Lens, Go to " ②Wiring connection for AF Zoom Lens "

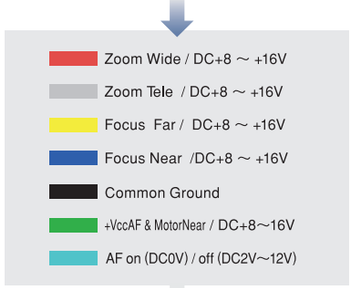
③カメラのバックフォーカスを調整します。
調整方法は「④バックフォーカス調整」をご確認ください。
③To adjust back focus of the camera, Go to "④Back Focus Adjustment".

⑤ 全てのセッティングが終わりました。ズームレンズの操作準備が完了しました。
⑤ All the settings are done. Now ready to start Auto Focus with your camera.

2. AFズームレンズの配線方法
Wiring Connection forAF Zoom Lens

ご使用になられるコントローラーからの供給電圧のタイプをご確認ください。
Check type of power supply to zoom & focus from the controller

+/+ タイプ
+/+ type



BNCケーブルをカメラ側のビデオ出力端子に接続してください。
Connect the BNC cable to the video output socket of the camera.

オートアイリスケーブルをカメラ側の4ピンコネクターに出力してください。
Connect the Auto Iris cable to the ALC 4 pin socket of the camera.

電源を入れる前に、全ての配線が正しく接続されていることを再度ご確認ください。
Make sure that the zoom, focus and iris connections are correct before turning on the power.

「③ バックフォーカス調整」へ。
Back to ③ To adjust Back Focus

3. バックフォーカス調整
Back Focus Adjustment

調整前に、必ず絞りを全開にして下さい。絞りが少しでも閉じていると、被写界深度が深くなるため、本来の正しい位置に調整することができなくなります。

絞りの開き方

1. Video Auto Irisの場合
レンズ前面をキャップ等で覆い、絞りが全開になったら、オートアイリスケーブルをカメラのプラグから外して下さい。その際、映像が明るすぎる場合には、カメラのエレクトリックシャッターを速めて適正露出に調整してください。

2.DC Auto Irisの場合
カメラ設定で強制的に全開にするようにしてください。または専用の特殊治具をお使いください。

*Before setting, make sure to set iris fully open. Otherwise, back focus can't adjust correctly due to depth of focus.

1. For Video Auto Iris
Cover the front lens by hand to get the iris fully open, and then disconnect the 4-pin auto iris cable from the ALC 4 pin socket of the camera. If the image is too bright, increase the electric shutter speed of the camera to obtain the correct exposure.

2. For DC Auto Iris
Force the iris to open fully via the camera setting. Or use a jig customized for this purpose.

(1) ズームを望遠端にしてください。
Bring zoom to Tele end

(2) フォーカスでピントを合わせてください。
Adjust Focus to get focused

(3) ズームを広角端にして下さい。
Bring zoom to Wide end

(4) カメラ側のバックフォーカス調整機構で
バックフォーカスを合わせてください。
Adjust back focus ring on camera to get focused

(5) ズームを再度望遠端にし、ピントが合っているか確認してください。
Bring Zoom to Tele end, Check if it is still focused.

Yes

No

(1) からやり直してください。
Back to (1) and start again.

何度かズームを望遠端～広角端を往復動作させてみて、
ピントが合い続けているか確認してください。
Check a few times whether the focus is kept in focus while zooming in & zooming out.

OK（ピントが合っている場合）

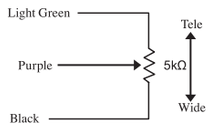
バックフォーカス調整完了。(5)に戻る。

配線図 Wiring Diagram

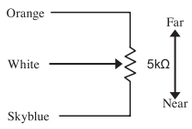
Wiring Diagram 1-1　Subject : Y18Z86RH / Y10Z85RH / Y18Z86R / Y10Z85R / Y20Z15 / Y20Z10 (Auto Focus Model)
For information about controller for AF zoom lens, please look at the page "Controller information for AF"

-AFP5E or AFP5E/M			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+ Vcc (DC8-16V)
Common Ground	Black		Ground
Cable No.2 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Cable No.3 for M/O			
Iris Manual Override (option)	Red		+ Vcc
	Green		CON1
	White		CON2
	Black		Ground
Video Auto Iris Cable with 4 pin plug			
Auto Iris	1. Red		+ Vcc
	2. NC		NC
	3. White		Video Signal
	4. Black		Ground
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground

Zoom Preset



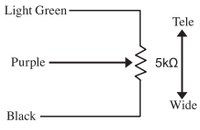
Focus Preset



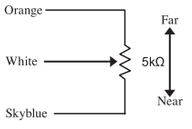
*1 - Power supply is essential to control zoom, focus, and AF.
*1 - ズーム/フォーカス/AFに対して電源が必須。

-AFIP5E or AFIP5E/M			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+ Vcc (DC8-16V)
Common Ground	Black		Ground
Cable No.2 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Iris Pot.	Red		V+
	Yellow		Iris Wiper
	Blue		V-
Cable No.3 for M/O			
Iris Manual Override (option)	Red		+ Vcc
	Green		CON1
	White		CON2
	Black		Ground
Video Auto Iris Cable with 4 pin plug			
Auto Iris	1. Red		+ Vcc
	2. NC		NC
	3. White		Video Signal
	4. Black		Ground
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground

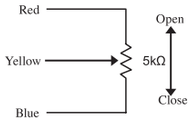
Zoom Preset



Focus Preset



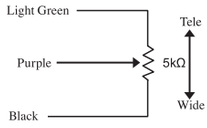
Iris Preset



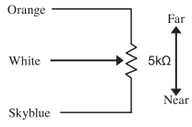
*1 - Power supply is essential to control zoom, focus, and AF.
*1 - ズーム/フォーカス/AFに対して電源が必須。

-AFDP		Number of Cable : 4 Cables
Cable No.1 for Motors & AF		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Auto Focus	Sky Blue	Off (DC2-12V) / On (0V)
Power Supply*1	Green	+ Vcc (DC8-16V)
Common Ground	Black	Ground
Cable No.2 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
DC Auto Iris Cable with 4 pin plug		
Auto Iris	1. Black	Damp+
	2. Red	Damp-
	3. White	Drive+
	4. Green	Drive-
Analogue Video Composite Signal Cable with BNC connector		
VCS	1. White	VCS
	2. Black	Ground

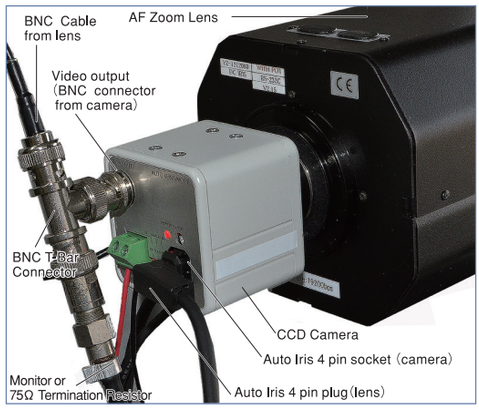
Zoom Preset



Focus Preset



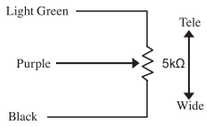
*1 - Power supply is essential to control zoom, focus, and AF.
*1 - ズーム/フォーカス/AFに対して電源が必須。



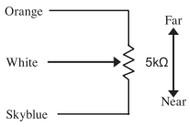
Wiring Diagram 1-2
Subject : Y18Z86RH / Y10Z85RH / Y18Z86R / Y10Z85R / Y20Z15 / Y20Z10（Non Auto Focus Model）

-MP5E		Number of Cable : 2 Cable
Cable No.1 for Motors		
Iris	Green	V + Open (DC8-16V)
	Brown	V + Close (DC8-16V)
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Cable No.2 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-

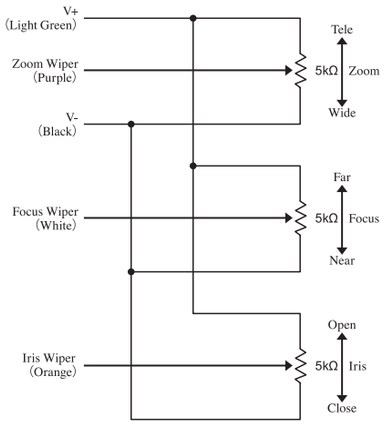
Zoom Preset



Focus Preset

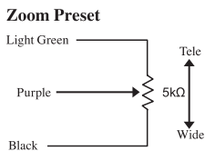


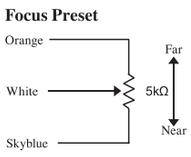
-MIP5E		Number of Cable : 2 Cables
Cable No.1 for Motors		
Iris	Green	V + Open (DC8-16V)
	Brown	V + Close (DC8-16V)
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Cable No.2 for Potentiometers		
Potentiometers	L.Green	V+
	Purple	Zoom Wiper
	White	Focus Wiper
	Orange	Iris Wiper
	Black	V-



-AP5E or AP5E/M — Number of Cable : 4 Cables

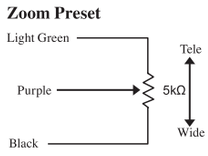
Cable No.1 for Motors			
Zoom Motor	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus Motor	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Cable No.3 for M/O			
Iris Manual Override (option)	Red		+Vcc
	Green		CON1
	White		CON2
	Black		Ground
Video Auto Iris Cable with 4 pin plug			
Auto Iris	1. Red		+ Vcc
	2. NC		NC
	3. White		Video Signal
	4. Black		Ground

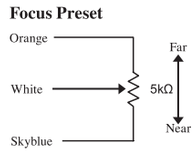




-ADP5E — Number of Cable : 3 Cables

Cable No.1 for Motors			
Zoom Motor	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus Motor	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1. Black		Damp+
	2. Red		Damp-
	3. White		Drive+
	4. Green		Drive-

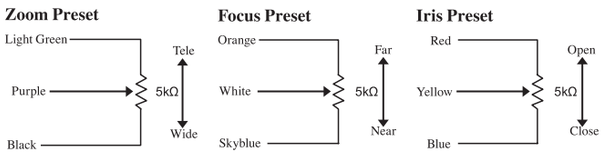




Wiring Diagram 1-3
Subject: Y16Z78H

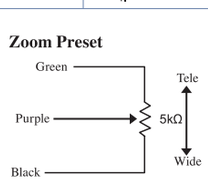
-AIP5E or AIP5E/M — Number of Cable : 4 Cables

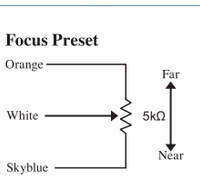
Cable No.1 for Motors			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Iris Pot.	Red		V+
	Yellow		Iris Wiper
	Blue		V-
Cable No.3 for M/O			
Iris Manual Override (option)	Red		+ Vcc
	Green		CON1
	White		CON2
	Black		Ground
Video Auto Iris Cable with 4 pin plug			
Auto Iris	1. Red		+ Vcc
	2. NC		NC
	3. White		Video Signal
	4. Black		Ground



-ADPE — Number of Cable : 2 Cables

Cable No.1 for Motors & Potentiometers			
Zoom Motor	Red		V + Wide (DC8-12V)
	Gray		V + Tele (DC8-12V)
Focus Motor	Yellow		V + Near (DC8-12V)
	Blue		V + Far (DC8-12V)
Zoom Pot.	Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1.		Damp-
	2.		Damp+
	3.		Drive+
	4.		Drive-

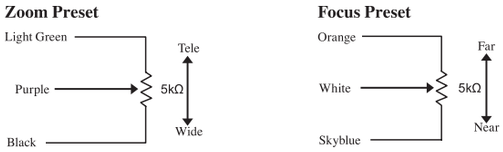




配線図 Wiring Diagram

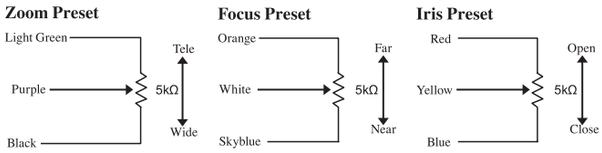
Wiring Diagram 2-1　Subject : Y33Z15RH / Y33Z30R / Y33Z23R / Y33Z15R (Auto Focus Model)
For information about controller for AF zoom lens, please look at the page "Controller information for AF"

-MAFP8EVT			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Iris	L. Green		V + Open (DC8-16V)
	Brown		V vClose (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+Vcc (DC8-16V)
Common Ground	Black		Ground
Cable No.2 for VC Filter			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground



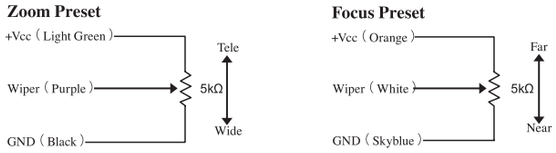
*1 - Power supply is essential to control zoom, focus, iris, AF, VC and TCS.
*1 - ズーム/フォーカス/アイリス/AF/VC/TCSに対し電源が必須。

-MAFIP8EVT			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Iris	L. Green		V + Open (DC8-16V)
	Brown		V + Close (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+Vcc (DC8-16V)
Common Ground	Black		Ground
Cable No.2 for VC Filter			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Iris Pot.	Red		V+
	Yellow		Iris Wiper
	Blue		V-
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground



*1 - Power supply is essential to control zoom, focus, iris, AF, VC and TCS.
*1 - ズーム/フォーカス/アイリス/AF/VC/TCSに対し電源が必須。

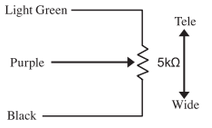
-AFP8EVT or AFP8EVT/M			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+Vcc (DC8-16V)
Common Ground	Black		+Vcc (DC8-16V)
Cable No.2 for VC Filter & M/O			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Iris Manual Override (option)	Red		+Vcc
	Green		CON1
	White		CON2
	Black		Ground
Cable No.3 for Potentiometers			
Zoom Pot.	L.Green		V+
	Purple		Zoom Wiper
	Black		V-
Zoom Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Video Auto Iris Cable with 4 pin plug			
Auto Iris	1. Red		+Vcc
	2. NC		NC
	3. White		Video Signal
	4. Black		Ground
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground



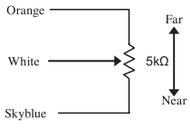
*1 - Power supply is essential to control zoom, focus, AF, VC and TCS.
*1 - ズーム/フォーカス/AF/VC/TCSに対し電源が必須。

-AFIP8EVT or AFIP8EVT/M		Number of Cable : 5 Cables
Cable No.1 for Motors & AF		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Auto Focus	Sky Blue	Off (DC2-12V) / On (0V)
Power Supply*1	Green	+Vcc (DC8-16V)
Common Ground	Black	Ground
Cable No.2 for VC Filter & M/O		
Visible Light Cut Filter (standard)	Yellow	V + F. out (DC3-16V)
	Brown	V + F. in (DC3-16V)
Iris Manual Override (option)	Red	+Vcc
	Green	CON1
	White	CON2
	Black	Ground
Cable No.3 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
Iris Pot.	Red	V+
	Yellow	Iris Wiper
	Blue	V-
Video Auto Iris Cable with 4 pin plug		
Auto Iris	1. Red	+Vcc
	2. NC	NC
	3. White	Video Signal
	4. Black	Ground
Analogue Video Composite Signal Cable with BNC connector		
VCS	1. White	VCS
	2. Black	Ground

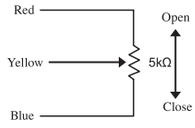
Zoom Preset



Focus Preset



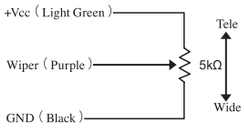
Iris Preset



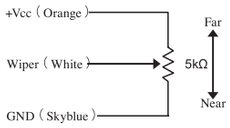
*1 - Power supply is essential to control zoom, focus, AF, VC and TCS.
*1 - ズーム/フォーカス/AF/VC/TCSに対し電源が必須。

-AFDP8EVT		Number of Cable : 5 Cables
Cable No.1 for Motors & AF		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Auto Focus	Sky Blue	Off (DC2-12V) / On (0V)
Power Supply*1	Green	+Vcc (DC8-16V)
Common Ground	Black	Ground
Cable No.2 for VC Filter		
Visible Light Cut Filter (standard)	Yellow	V + F. out (DC3-16V)
	Brown	V + F. in (DC3-16V)
Cable No.3 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
DC Auto Iris Cable with 4 pin plug		
Auto Iris	1. Black	Damp+
	2. Red	Damp-
	3. White	Drive+
	4. Green	Drive-
Analogue Video Composite Signal Cable with BNC connector		
VCS	1. White	VCS
	2. Black	Ground

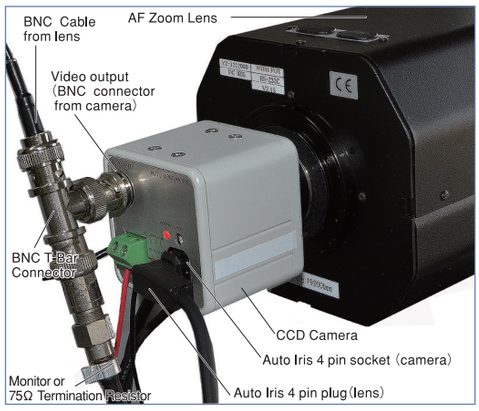
Zoom Preset



Focus Preset

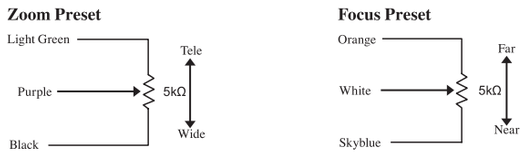


*1 - Power supply is essential to control zoom, focus, AF, VC and TCS.
*1 - ズーム/フォーカス/AF/VC/TCSに対し電源が必須。



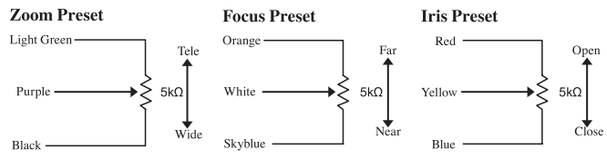
Wiring Diagram 2-2
Subject : Y33Z15RH / Y33Z30R / Y33Z23R / Y33Z15R (Non Auto Focus Model)

-MP8EVT			Number of Cable : 3 Cables
Cable No.1 for Motors			
Iris	Green		V + Open (DC8-16V)
	Brown		V + Close (DC8-16V)
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter & Power Supply			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange		+ Vcc DC (8-16V)
	Blue		GND
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-



*1 - Power supply is essential to control zoom, focus, Iris, VC and TCS.
*1 - Zoom/Focus/Iris/VC/TCSに対し電源が必須。

-MIP8EVT			Number of Cable : 3 Cables
Cable No.1 for Motors			
Iris	Green		V + Open (DC8-16V)
	Brown		V + Close (DC8-16V)
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter & Power Supply			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange		+ Vcc (D8-16V)
	Blue		GND
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
Iris Pot.	Red		V+
	Yellow		Iris Wiper
	Blue		V-

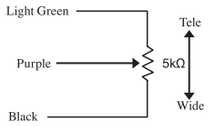


*1 - Power supply is essential to control zoom, focus, Iris, VC and TCS.
*1 - Zoom/Focus/Iris/VC/TCSに対し電源が必須。

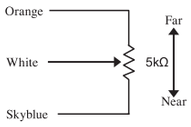
-AP8EVT — Number of Cable : 4 Cables

Cable No.1 for Motors		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter & Power Supply		
Visible Light Cut Filter (standard)	Yellow	V + F. out (DC3-16V)
	Brown	V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange	+ Vcc (D8-16V)
	Blue	GND
Iris Manual Override (option)	Red	+Vcc
	Green	CON1
	White	CON2
	Black	Ground
Cable No.3 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
Video Auto Iris Cable with 4 pin plug		
Auto Iris	1. Red	+Vcc
	2. NC	NC
	3. White	Video Signal
	4. Black	Ground

Zoom Preset



Focus Preset

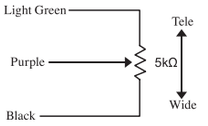


*1 - Power supply is essential to control zoom, focus, VC and TCS.
*1 - Zoom/Focus/VC/TCSに対し電源が必須。

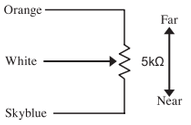
-AIP8EVT — Number of Cable : 4 Cables

Cable No.1 for Motors		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter, M/O & Power Supply		
Visible Light Cut Filter (standard)	Yellow	V + F. out (DC3-16V)
	Brown	V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange	+Vcc (D8-16V)
	Blue	GND
Iris Manual Override (option)	Red	+Vcc
	Green	CON1
	White	CON2
	Black	Ground
Cable No.3 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
Iris Pot.	Red	V+
	Yellow	Iris Wiper
	Blue	V-
Video Auto Iris Cable with 4 pin plug		
Auto Iris	1. Red	+Vcc
	2. NC	NC
	3. White	Video Signal
	4. Black	Ground

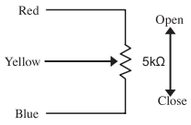
Zoom Preset



Focus Preset



Iris Preset

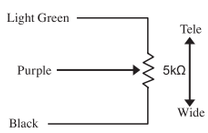


*1 - Power supply is essential to control zoom, focus, VC and TCS.
*1 - Zoom/Focus/VC/TCSに対し電源が必須。

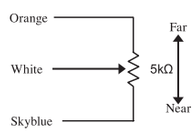
-ADP8EVT — Number of Cable : 4 Cables

Cable No.1 for Motors		
Zoom	Red	V + Wide (DC8-16V)
	Gray	V + Tele (DC8-16V)
Focus	Yellow	V + Near (DC8-16V)
	Blue	V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter & Power Supply		
Visible Light Cut Filter (standard)	Yellow	V + F. out (DC3-16V)
	Brown	V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange	+ Vcc (D8-16V)
	Blue	GND
Cable No.3 for Potentiometers		
Zoom Pot.	L. Green	V+
	Purple	Zoom Wiper
	Black	V-
Focus Pot.	Orange	V+
	White	Focus Wiper
	Sky Blue	V-
DC Auto Iris Cable with 4 pin plug		
Auto Iris	1. Black	Damp+
	2. Red	Damp-
	3. White	Drive+
	4. Green	Drive-

Zoom Preset



Focus Preset

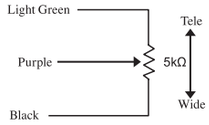


*1 - Power supply is essential to control zoom, focus, VC and TCS.
*1 - Zoom/Focus/VC/TCSに対し電源が必須。

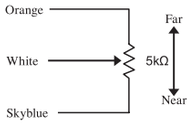
Wiring Diagram 3
Subject : Y64Z16RH / Y55Z16RH

-AFDP8EVT			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+ Vcc (DC8-16V)
Common Ground	Black		Ground
Turret Filter (Option)	L.Green		FWD
	White		REV
	Brown		GND
Cable No.2 for VC Filter			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1. Black		Damp+
	2. Red		Damp-
	3. White		Drive+
	4. Green		Drive-
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground

Zoom Preset



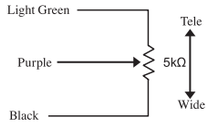
Focus Preset



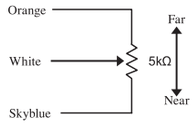
*1 - Power supply is essential to control zoom, focus, AF, Turret, VC and TCS.
*1 - Zoom/Focus/AF/Turret/VC/TCSに対し電源が必須。

-ADP8EVT			Number of Cable : 4 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Turret Filter (Option)	L.Green		FWD
	White		REV
	Brown		GND
Cable No.2 for Visible Light Cut Filter & Power Supply			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Power Supply for Motors* & TCS (standard)	Orange		+ Vcc (D8-16V)
	Blue		GND
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1. Black		Damp+
	2. Red		Damp-
	3. White		Drive+
	4. Green		Drive-

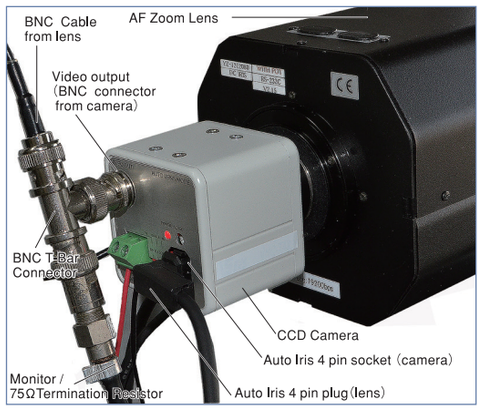
Zoom Preset



Focus Preset



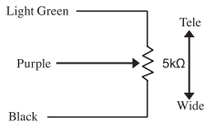
*1 - Power supply is essential to control zoom, focus, AF, Turret, VC and TCS.
*1 - Zoom/Focus/Turret/VC/TCSに対し電源が必須。



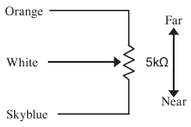
Wiring Diagram 4
Subject : Y36Z20RH, Y36Z15RH, Y36Z12RH, Y35Z10RH

-AFDP8EV			Number of Cable : 5 Cables
Cable No.1 for Motors & AF			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Auto Focus	Sky Blue		Off (DC2-12V) / On (0V)
Power Supply*1	Green		+ Vcc (DC8-16V)
Common Ground	Black		Ground
Cable No.2 for VC Filter			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1. Black		Damp+
	2. Red		Damp-
	3. White		Drive+
	4. Green		Drive-
Analogue Video Composite Signal Cable with BNC connector			
VCS	1. White		VCS
	2. Black		Ground

Zoom Preset



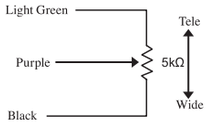
Focus Preset



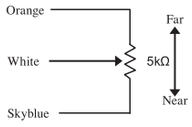
*1 - Power supply is essential to control zoom, focus, AF, VC and TCS.
*1 - Zoom/Focus/AF/VC/TCSに対し電源が必須。

-ADP8EV			Number of Cable : 4 Cables
Cable No.1 for Motors			
Zoom	Red		V + Wide (DC8-16V)
	Gray		V + Tele (DC8-16V)
Focus	Yellow		V + Near (DC8-16V)
	Blue		V + Far (DC8-16V)
Cable No.2 for Visible Light Cut Filter & Power Supply			
Visible Light Cut Filter (standard)	Yellow		V + F. out (DC3-16V)
	Brown		V + F. in (DC3-16V)
Power Supply for Motors*	Orange		+ Vcc (D8-16V)
	Blue		GND
Cable No.3 for Potentiometers			
Zoom Pot.	L. Green		V+
	Purple		Zoom Wiper
	Black		V-
Focus Pot.	Orange		V+
	White		Focus Wiper
	Sky Blue		V-
DC Auto Iris Cable with 4 pin plug			
Auto Iris	1. Black		Damp+
	2. Red		Damp-
	3. White		Drive+
	4. Green		Drive-

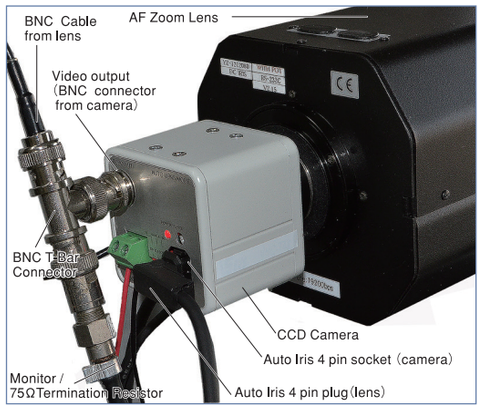
Zoom Preset



Focus Preset



*1 - Power supply is essential to control zoom, focus, VC and TCS.
*1 - Zoom/Focus/VC/TCSに対し電源が必須。



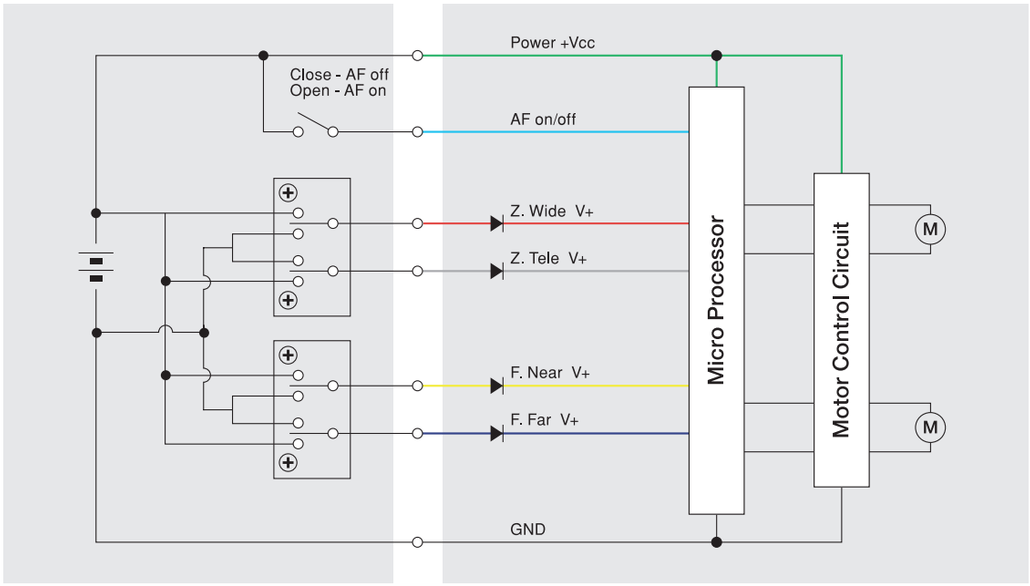
1. コントローラー回路

Yamano新AFズームレンズは、下記の制御回路が必要になります。
また、既存のYamanoAFズームレンズユーザーが使用されているAFズームレンズ専用コントローラー以外にも、
市販されているズームレンズコントローラでもYamano新AFズームレンズを操作することが可能になりました。

1. Controller Circuit
Yamano New AF Zoom Lens requires the following control circuit.
To operate Yamano New AF Zoom Lens, conventional zoom lens controller can be used as well as Special AF Zoom Lens Controller which our current users have been using..
Either the controller ① or ② below,

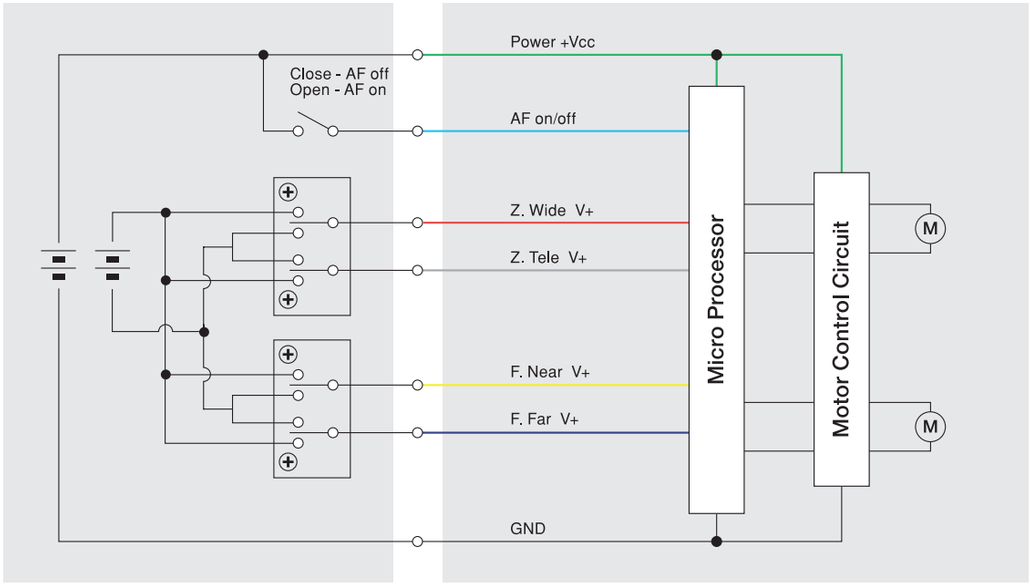
①共通グランドタイプ (山野旧AFズームレンズ用コントローラー)
①Common Ground Type (Controller for Yamano old type AF zoom lens)

Common Ground Type
Yamano AF Zoom Lens Controller being used by our current customers



②独立グランドタイプ（一般的なコントローラーを使用する場合）
②Independent Ground Type (When using Conventional Zoom Lens Controller)

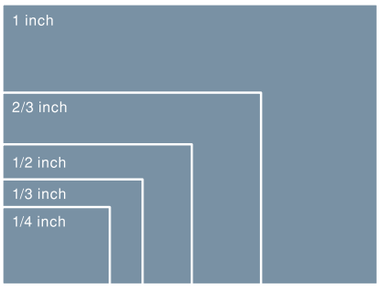
Independent Ground Type
Conventional Zoom Lens Controller



1. イメージサイズ

レンズのフォーマットがカメラのセンサーよりも大きいければ、ケラレることなく使用できます。

Image Size - Image element of CCTV camera
As long as Lens Format Size is larger than Image Element of camera, they are compatible.



イメージ素子 Image Element	イメージサイズ (mm) Image Size (mm)			レンズフォーマットサイズ Lens Format Size				
	水平 Horizontal	垂直 Vertical	対角 Diagonal	1"	2/3 "	1/1.8 "	1/2"	1/3"
1"	12.8	9.6	16.0	○	×	×	×	×
2/3"	8.8	6.6	11.0	○	○	×	×	×
1/1.8"	7.2	5.4	9.0	○	○	○	×	×
1/2"	6.4	4.8	8.0	○	○	○	○	×
1/3"	4.8	3.6	6.0	○	○	○	○	○
1/4"	3.6	2.7	4.5	○	○	○	○	○
35mm	36.0	24.0	43.3	–	–	–	–	–

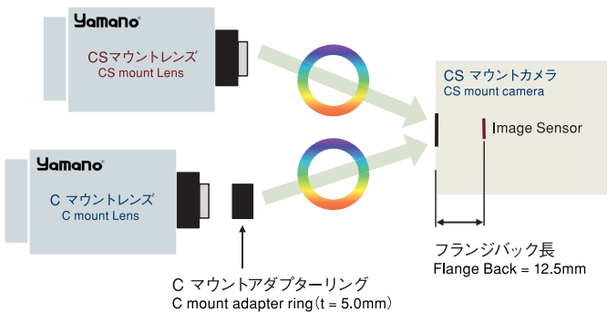
○ - Compatible
× – Not Compatible

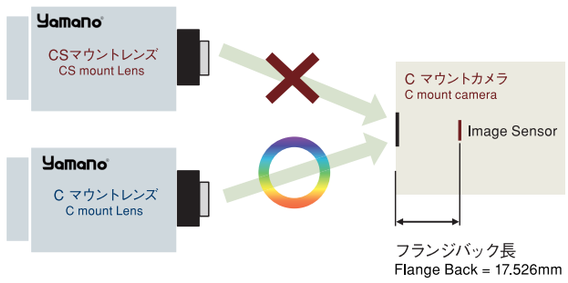
2. マウント

CCTV カメラは、CマウントとCSマウントの2種類があります。CマウントとCSマウントの違いは、フランジバック長の違いです。

Type of Mount—Mount type of CCTV camera
CCTV camera has two types of mount, such as C mount and CS mount. The difference between C & CS is only the flange back distance.

規格 STANDARD	CS マウント CS mount	C マウント C mount
フランジバック長 Flange Back Distance	12.5mm (in air)	17.526mm (in air)
マウントネジ径 Diameter of screw thread	φ25.4 (1-32 UNF)	



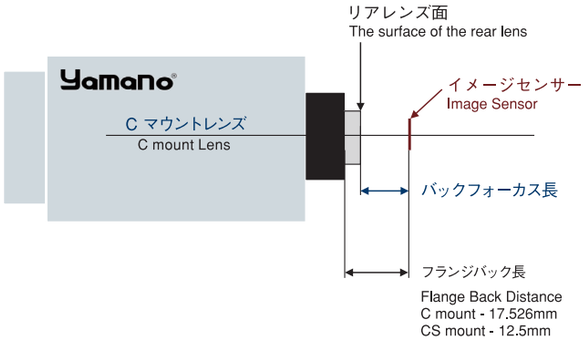


3. フランジバック長

フランジバック長とは、レンズマウントの機械的な平面からセンサー受光面までの長さのことです。バックフォーカス長とは、光学系の一番後ろに位置するレンズの表面からセンサーの受光面までの長さのことです。

Flange Back & Back Focal Distance
- Distance from the flange back & the surface of the rear lens to the image sensor

Flange back is the distance between the mechanical mount surface and the image plain.
Back focal distance is the distance between the rear end of the lens part and the image plain.

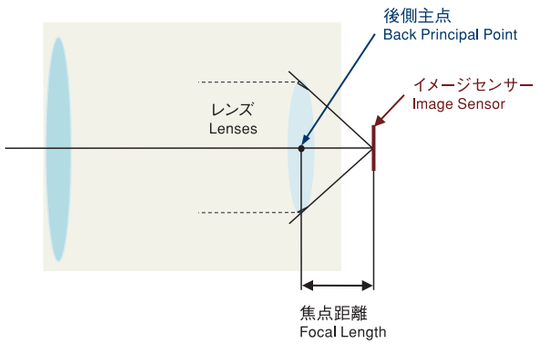


4. 焦点距離

焦点距離とは、レンズの後側主点から焦点が合う位置（イメージセンサー受光面）までの距離のことです。
焦点距離が長くなると画角が狭くなり（望遠）、短くなると画角が広くなります（広角）。

Focal Length -From Back Principal Point To Focal Point

Focal Length is the distance from back principal point to focal point (usually image plain).
The longer the focal length becomes, the narrower the angle of view.

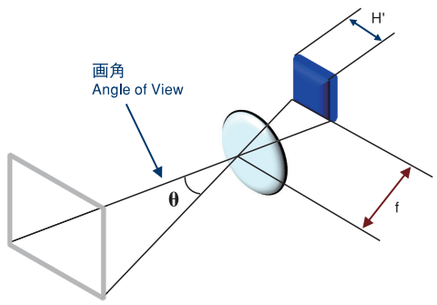


5. 画角 — 撮影範囲

画角は、イメージセンサーが受光できる範囲（撮影範囲）のことです。画角は角度を用いて表されます。一般的に、画角はレンズを無限遠にピントを合わせた時の撮影範囲（角度）を表します。画角は、焦点距離をイメージサイズから求めることができます。画角とイメージサイズが分かれば、おおよそどの焦点距離のレンズが必要かも求めることが可能です。以下の式は、ディストーション（歪率）を0%と仮定した場合の計算式です。

Focal Length -From Back Principal Point To Focal Point

Angle of view is the shooting range that can be captured by image sensor, and it is expressed in degree. Normally angle of view means the shooting range when focused at infinity.Angle of view can be calculated using focal length and image size.The formula below is available when assuming that distortion is 0%.



θ = 画角 Angle of View
H' = イメージサイズ*1 Image Size
f = 焦点距離 Focal Length

$$\theta = 2\tan^{-1}\frac{H'}{2f}$$

*1 - H' は、水平・垂直・対角のいずれかの値が入ります。
H' can be each size of image size such as Horizontal, Vertical and Diagonal

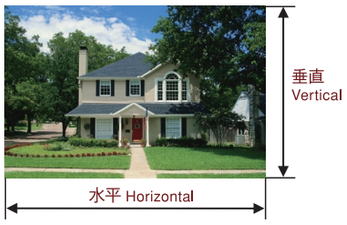
6. 撮影範囲と焦点距離

被写体までの距離が有限の場合、イメージセンサーサイズ、焦点距離、被写体までの距離が分かれば、撮影範囲を求めることができます。
又、どの焦点距離のレンズを選べばよいか検討する場合、撮影範囲、被写体までの距離、イメージセンサーサイズより求めることができます。
以下の計算式は、ディストーション（歪率）を0%と仮定した場合の計算式です。

Field of view & Focal Length - Relation ship between Object Size & Focal Length

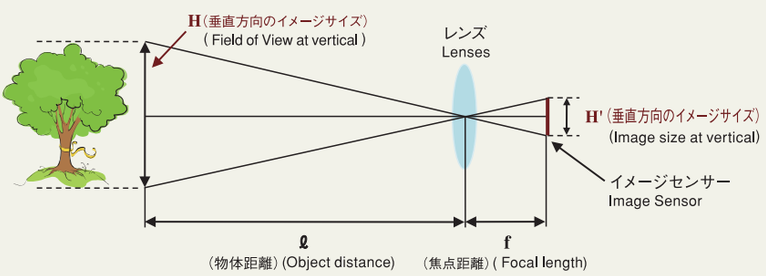
When object distance is limited, object size can be calculated using image size, focal length of lens and object distance.
In another word, when you are thinking which focal length of lens to choose, calulate it using each value of object size, object distance and image size. The formula below is available when assuming that distortion is 0%.

被写体範囲 Object Size



イメージセンサーサイズ Image Sensor Size

イメージ素子 Image Element	イメージサイズ (mm) Image Size (mm)		
	水平 Horizontal	垂直 Vertical	対角 Diagonal
1 inch	12.8	9.6	16.0
2/3 inch	8.8	6.6	11.0
1/2 inch	6.4	4.8	8.0
1/3 inch	4.8	3.6	6.0



H = 視野範囲 Field of view
ℓ = 被写体距離 Object Distance
H' = イメージサイズ Image Size
f = 焦点距離 Focal Length

視野範囲 Field of View $H = H'\frac{\ell}{f}$

焦点距離 Focal Length $f = \ell\frac{H'}{H}$

7. FナンバーとTナンバー — レンズの明るさ

FナンバーとTナンバーはレンズの明るさを示します。それぞれナンバーの値が小さくなるほどより明るいレンズとなります。
一般的に、カタログ等ではFナンバーが用いられます。Fナンバーは、次の計算式により求めることができます。

F Number & T Number - Brightness of Lens

Either F number (F No.) and T number (T No.) indicates how bright lens is. Smaller value of F No. or T No. means lens is brighter.
In general, F number is used more often than T number.
F No. is calculated by the formula on the right:

Fナンバー F number

f = 焦点距離 Focal Length
d = 有効瞳径 Effective diameter of lens

$$\text{Fナンバー (F number)} = \frac{f}{d}$$

※透過率を100%として計算した場合
※Spectral transmittance is assumed as 100%.

Tナンバーは、Fナンバーをさらにレンズの透過率を考慮に入れた値の為、Fナンバーよりもより正確なレンズの明るさを表します。
Tナンバーは次の計算式により求めることができます。

T number is more accurate value of brightness of lens than F number, since it is calculated using transmittance of lens.
TNo. is calculated by the formula on the right:

Tナンバー T number

F = F ナンバー F number
t = レンズ透過率 (%) Transmittance (%) of Lens

$$\text{Tナンバー (T number)} = \frac{F}{\sqrt{t\,(\%)}}$$

8. 光軸・バックフォーカス調整機構

Yamano製ズームレンズは、光軸調整機構とバックフォーカス調整機構が標準搭載、又はオプション搭載することが可能です。

For the Yamano zoom lens, the optical axis and back focus adjustment mechanisms can be installed as standard or option.

光軸調整機構：ズーム広角端時の画面中心の被写体が、望遠側にズームすると画面から消えてしまうことがあります。これはカメラのセンサーの傾きによる部分が大きいためです。光軸調整機構はこのズレを補正し、ズーム広角端から望遠端まで画面中心の被写体を中心に維持させることが可能です。

Optical axis adjustment mechanism: Sometimes, the target at the center of the image at zoom wide may disappear when zooming out to the tele. This is mostly due to the inclination of the camera's sensor. The optical adjustment mechanism corrects this shift and allows the target to remain at the center of the image from throughout the zoom from wide to tele.

バックフォーカス（BF）調整機構：ズームレンズとカメラともに実際にはフランジバックにバラつきがあります。それを補正するため、カメラにはBF調整機構が付いていますが、小型のカメラにはBF調整機構が付いていない場合があります。その場合、レンズのBF調整機構が有効です。

Back focus (BF) adjustment mechanism: In actual use, both the zoom lens and the camera has deviations in the flange back. Cameras has BF adjustment mechanisms for that purpose but some smaller cameras may not. In such cases, the BF adjustment mechanism is very effective.

9. 新オートフォーカス

オートフォーカスは、アナログコンポジットビデオ信号をサンプリングすることで動作します。このビデオ信号は輝度信号と水平・垂直同期信号からなり、NTSC、PAL、PROGRESSIVEに対応しております。
AFマイクロプロセッサーは水平方向の輝度信号を電圧変換し、ピントが合った時のピーク電圧を検知して、フォーカスを合わせます。

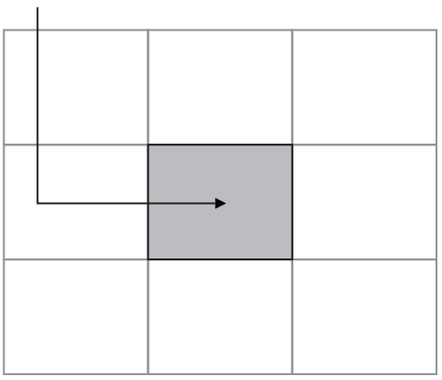
One Push Auto Focus

Yamano Auto Focus (AF) operates by sampling Analog Composite Video Signal from camera.This video signal must be composed of video signal and vertical & horizontal synchronized signal in NTSC, PAL, or PROGRESSIVE .
AF micro processor converts the change rate of horizontal contrast into voltage and detects the highest point of the voltage by moving front lens to get focus.

オートフォーカスAFは一度ボタンを押すと自動的にフォーカスを合わせます。
フォーカスを合わせることが非常に難しい超望遠レンズを用いた監視においては非常に有効な機能です。緊急時においても、映像がボケることなく、また短時間でフォーカスをあわせることができるため、非常に便利です。

One Push AF can be used to get focused automatically by pressing button only one time. This is quite effective for surveillance system using zoom lens with long focal length which is too sensitive to get right focus.
AF can provide great support in focus adjustment without time loss or blurring in emergency situations.

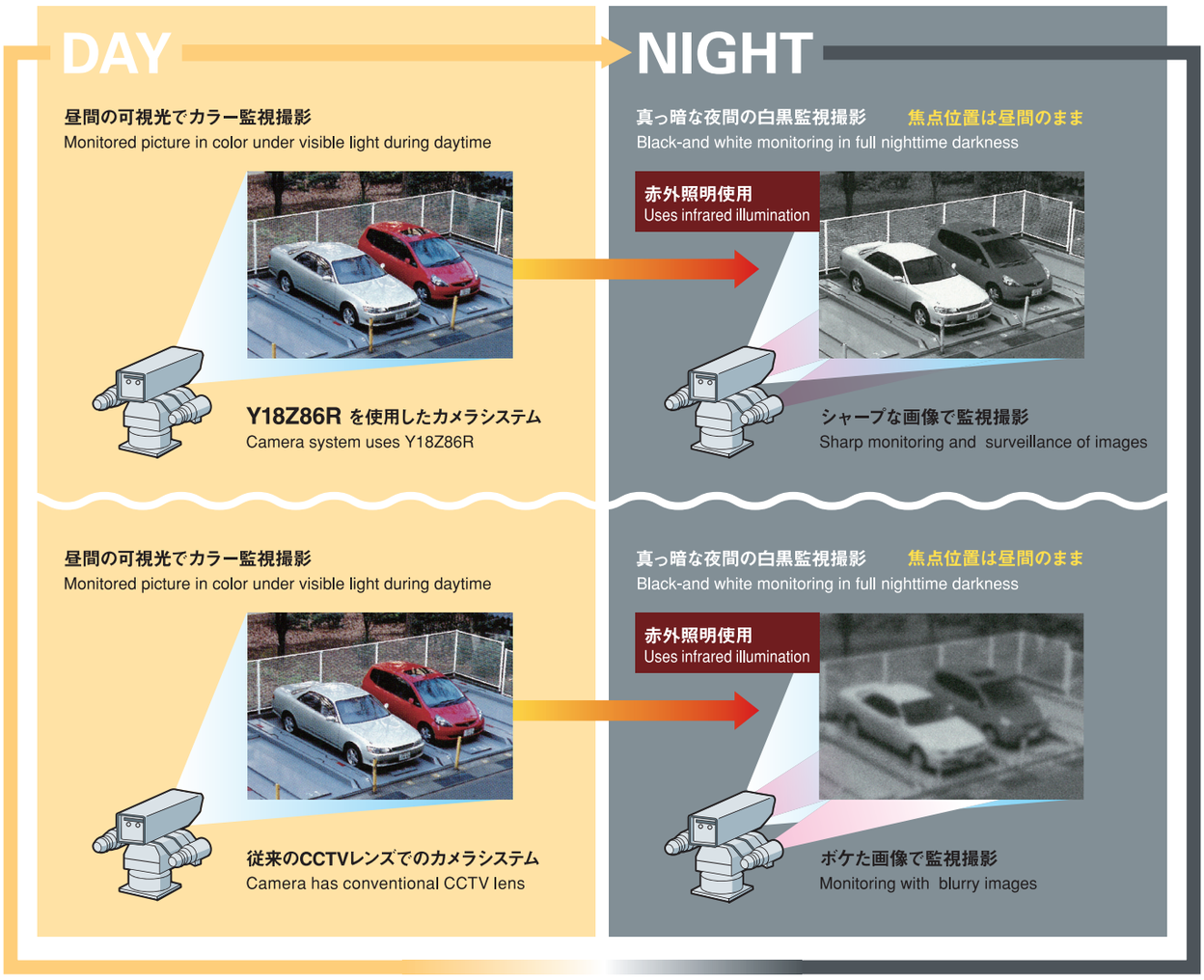
モニターを9分割した時の中心部をサンプリング
Sampling the center



Yamanoオートフォーカスは、低照度時の合焦精度を高めることで、夕方の低照度時や夜間の近赤外線光監視時にもAFが可能です。
（被写体のコントラストがある高さを満たしている場合のみ）

The Yamano Auto Focus is available at low light conditions at dusk and NIR surveillance at night by enhancing focusing accuracy at these conditions (only in cases where the target's contrast with the background meets a certain standard)

10. 近赤外対応ズームレンズ
True Near Infrared (NIR) Corrected Zoom Lens



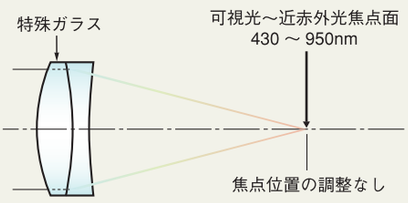
近赤外でのレンズの分解能力

一般のズームレンズは可視光内で使用する場合は焦点位置は一定ですが、近赤外での使用では焦点面が大幅にズレるため、再調整が必要となります。しかし、焦点を合わせても分解能が非常に悪いため、鮮明な画像が得られません。「Y18Z86R」は、可視光から近赤外まで焦点位置のズレがないうえ、近赤外での分解能が非常によく、認識力が低下しないため鮮明な画像が得られるのです。

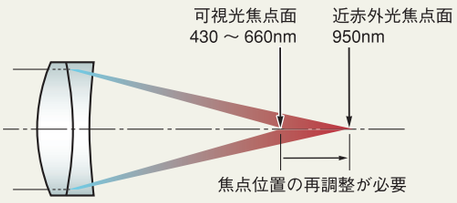
Near infrared lens resolution

Since conventional CCTV lenses are designed for the visible spectrum, once used in the (near) infrared, the focal plane will shift greatly. This will produce an out of focus and blurry image, even after re-adjusting the lens.
The Y18Z86R has extremely fine resolution in near infrared because there is no offset of focus position from visible light to near infrared. It provides a clear image because there is no drop in its recognition ability.

Y18Z86Rのレンズ Y18Z86R lens



一般のCCTVレンズ Standard CCTV lens



11. Y33, Y35 & Y64シリーズ オプション

Near Infrared Telephoto Zoom Lens : Y33, Y35 & Y64 Series

1. 自動温度焦点補正機構（TCS）（世界初）（特許取得済）

Y33, Y35 & Y64シリーズは、レンズ内蔵の温度センサーとマイコンにより、温度変化によるピントのボケ量を自動補正制御し、既存のIRレンズでは調整しきれなかったピントボケが発生することなく、温度変化のある年間を通して常に良好な映像を提供することが可能になりました。
プリセット制御時などは、季節ごとのピントボケ時にもプリセットを合わせ直す必要はありません。

1. Auto Thermal Focus Compensation System (TCS) World's First ! (Option)

- The patent application filed in Japan and Overseas -

IR Lens uses low dispersion glass (LDG) which enables sharp & clear image from visible light to NIR light. However, in contrast, due to characteristic of high coefficient of thermal expansion of LDG, focus shifting caused by temperature change occurs, which cannot be corrected by refocusing.
The Y33, Y35 & Y64 Series integrate Temperature sensors and Microprocessors which enable the lens to achieve the right focus automatically against temperature changes of -10℃ to +50℃. Also, TCS is extremely effective when used with presets because there is no need to reset preset position when the temperature changes.

気温 20℃ Temperature 20℃

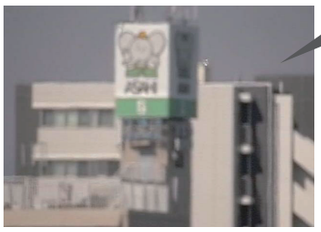
気温が±10 ℃変化すると…

When Temperature changes by ±10 ℃…

TCS付きレンズ（Y33Z15Rシリーズ）
Y33Z15R with TCS

高コントラスト＆シャープネス
ピント調整不要

High Contrast & Sharp Image !
No need of refocusing.



TCS無しレンズ
Conventional IR lens without TCS

ピンボケ
調整不可能

Out of focus !
Need Refocusing.

2.霞透過機能（切替式可視光カットフィルター）

可視光カットフィルター内蔵により、人間の目では見えなかった被写体撮影に対応！
霞が発生しやすい森林・河川・港湾・空港等の監視に最適です。

2. Built-in Visible Cut Filter for Haze Reduction (Option)

Built-in Visible Cut Filter enables to see the object which cannot be seen by human eyes!
Good for surveillance in such places as Mountains, Forest, River/Lake, Coast, Airport, etc.

可視光カットフィルターオフ時（可視光撮影像）

可視光撮影時、ビルの後には何も見えません。
Under visible light, nothing can be seen behind the buildings(1.2km).

可視光カットフィルターオン時（近赤外光撮影像）

被写体距離 WD
ビル = 1.5km BLDG = 1.5km
山 = 15km Mountain = 15km

近赤外撮影時、ビルの後に大きな山が出現！
▶ Youtubeにてデモ映像がご覧になれます。（“YamanoOptical”で検索）

With Infrared Light, big mountain (15km) appears behind the buildings.
▶ Demo Video available on Youtube （Search “YamanoOptical”）

3. RS-232C/RS-485対応（オプション）

シリアル通信制御（Pelco D、その他プロトコル）に対応可能です。PC制御可能な簡易ソフト（サンプル無償提供）あり。

3. RS-232C/RS-485 Control（Option）

Protocol : Pelco D, other protocol available. Please feel free to contact us for any request. A simple PC-controllable software is available, with free samples.

12. 特注品ズームレンズ

弊社では、ズームレンズの開発、設計、製造の委託を承っております。

Custom Made Zoom Lens or Modified Zoom Lens

We develop zoom lens as OEM products and also our products can be modified with flexibility to meet a wide variety of your requirements. Please feel free to contact us for further information.

13. CEマーキング

弊社製品は全てRohs、CE対応品となります。

CE Marking

All of our products conform to New CE Marking including Rohs Directive.

ネットワーク Network

ヴイ・エス・テクノロジーは日本をはじめ、世界のR&Dとなっているアメリカ、ヨーロッパ、中国、台湾や東南アジア（SeAsia）に拠点を配置しており、
最先端情報のご提供、及びカスタマーフォローに努めます。

In order to offer the best possible support to each country, we have localized our sales, marketing, inventory,and logistics support to each region.
All operations are tailored to fit each country's needs.

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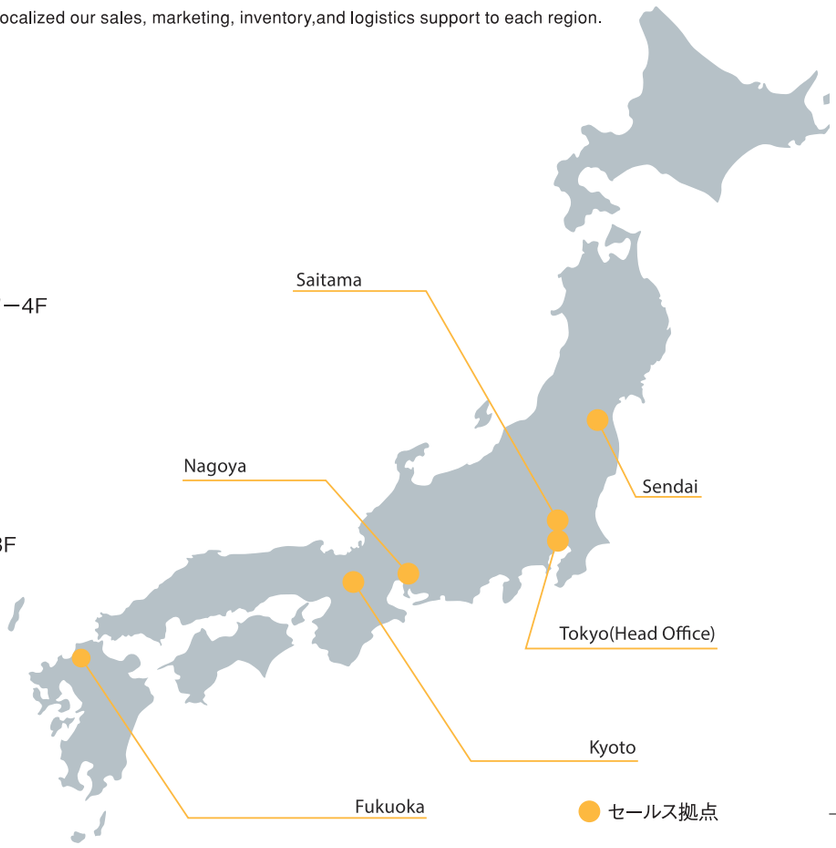

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