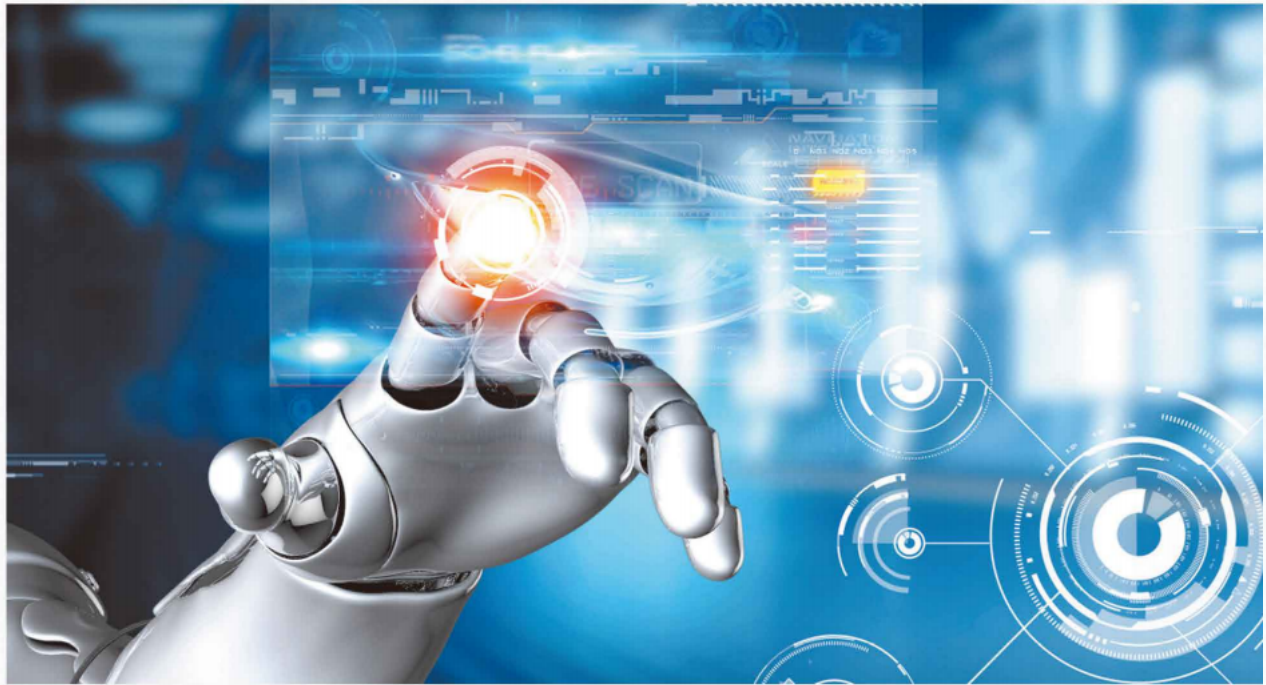


LOMOSENV[®]
vision·share



Product manual

Company Profile



Shenzhen Zhixiang Shijue Technology Co., Ltd. was founded in 2015. Our company is based in the machine vision industry and has a strong R&D team. Over the years, we have attached great importance to the research and development, production, and sales of machine vision products, and provided professional machine vision system solutions for more than 1000 domestic and foreign system integrators, equipment manufacturers, manufacturing enterprises, etc.

To meet the needs of a large customer base, the company has established its own brand, **LOMOSEN**, and In 2016, we established a higher-level dust-free workshop in Huangpu District, Yangcheng, introduced high-end technical talents, and trained high-level production personnel to achieve a customer-oriented business philosophy and a quality policy of continuous improvement. We provide stable and cost-effective machine vision products, and Zhixiang Vision hopes to become your most trusted partner and contribute our surging strength to the machine vision industry.

Catalogue

Visual SystemProject Demonstration	03
Industrial FA lens	
ZX-SF-Z series (compatible with 2K/4KC line scan cameras) 20MP 4/3 "	09
ZX-SF-T series 20MP 1.1 "	10
ZX-SF-H series 12MP 2/31	11
ZX-SF-Y series 10MP 2/3 "	12
ZX-SF-M series 6MP 1/1.8 "	13
ZX-SF-S series (compatible with near-infrared band) 5MP 1 "	14
ZX-SF-B series 5MP 2/3 "	15
ZX-SF-B series (B-type close range performance optimization) 5MP 2/3 "	16
ZX-SF-C series 5MP 1/1.8 "	17
ZX-SF-W series (macro low distortion lens) 12MP 1.1 "	18
Industrial telecentric lens	
ZX-65-B series (WD=65mm) non coaxial 5MP 2/3 "	19
ZX-65-BC series (WD=65mm) coaxial 5MP 2/3 "	20
ZX-110-B series (WD=110mm) non coaxial 5MP 2/3"	21
ZX-110-BC series (WD=110mm) coaxial 5MP 2/3 "	22
ZX-65-H series (WD=65mm) non coaxial 12MP 1.1 "	23
ZX-65-HC series (WD=65mm) coaxial 12MP 1.1 "	24
ZX-110-H series (WD=110mm) non coaxial 12MP 1.1 "	25
ZX-110-HC series (WD=110mm) - coaxial 12MP 1.1 "	26
Industrial lens accessories/experimental stand	27
Special terminology/technical explanation	30
Advantageous channels, cooperative brands	34

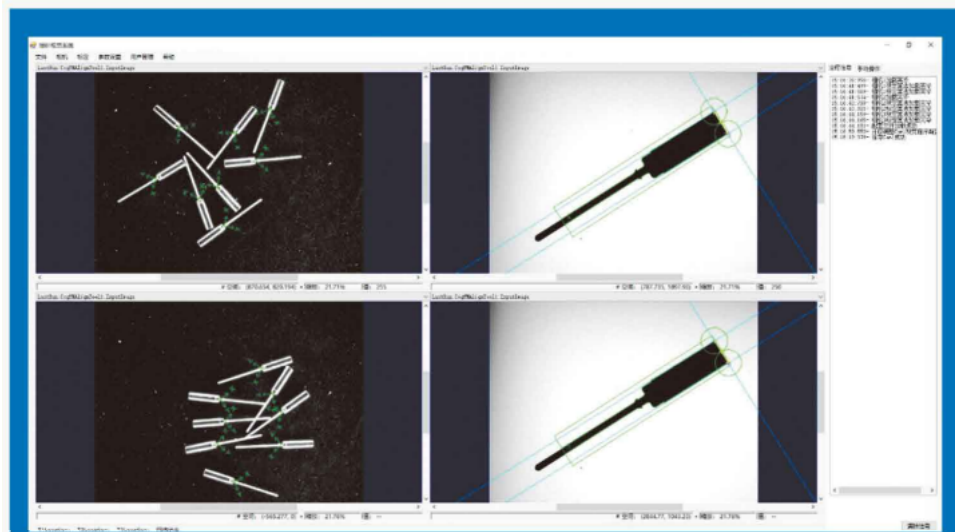
Project demonstration

Project overview

In traditional industries, assembly work is usually done manually, which leads to problems such as slow efficiency and low accuracy. This project uses machine vision positioning combined with robotic arms to complete positioning, grasping, and assembly actions. The system has high positioning accuracy and short CT, creating more benefits for enterprises to increase production capacity.

Scope of application

This system is mainly applied to visual guided automatic assembly lines, automatic grasping and bonding, automatic labeling and other equipment.



Name	Specifications
Industrial Camera	5MP CCD, Mono, GigE
Industrial lens	Focal length 25mm, 5MP
Light source	50mm coaxial light source
Software	Custom Software

Zhixiang Vision Technology Co., Ltd





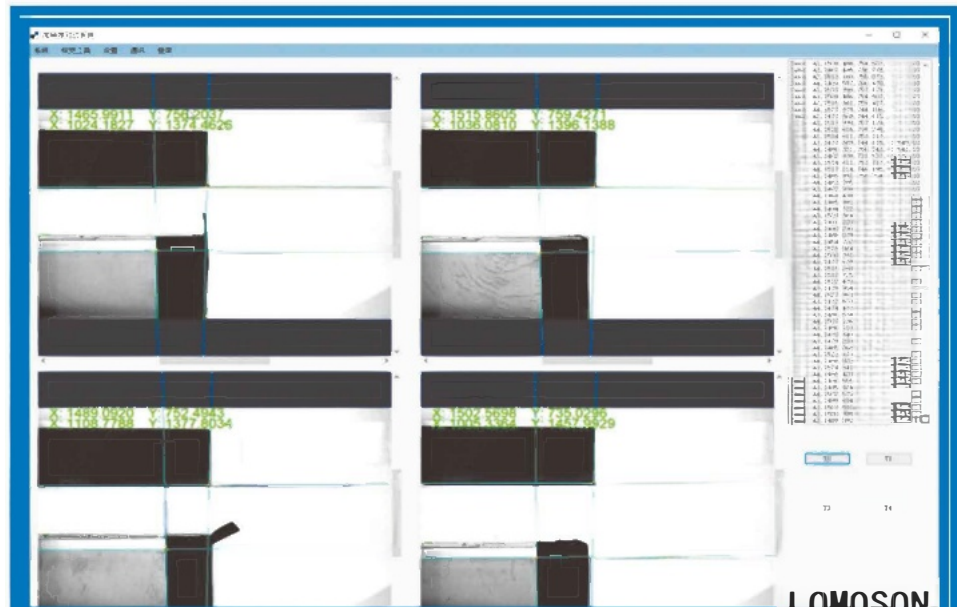
High precision alignment system

Project overview

In the panel bonding industry, alignment bonding is very common on various devices, such as film laminating machines. Binding machines, full lamination machines, etc. all require alignment and bonding systems. With the improvement of production technology and the acceleration of product updates, the production parameters of products have become more stringent. Ordinary visual alignment systems can no longer meet the requirements, and high-precision alignment and bonding systems have emerged. It can accurately guide FPC bonding sensors, sensor and CG bonding, protective film/heat dissipation film and CG bonding, etc., achieving a one-time alignment accuracy of $\pm 5\mu\text{m}$, improving product quality and competitiveness for enterprises.

Scope of application

This system is mainly used for high-precision alignment and bonding guided by vision, such as alignment and bonding of mobile phone covers, FPC alignment testing, etc.



Name	Specifications
Industrial Camera	5MP CCD, Mono, GigE
Industrial lens	Focal length 25mm, 5MP
Light source	50mm coaxial light source
Software	Custom Software

Zhixiang Vision Technology Co., Ltd



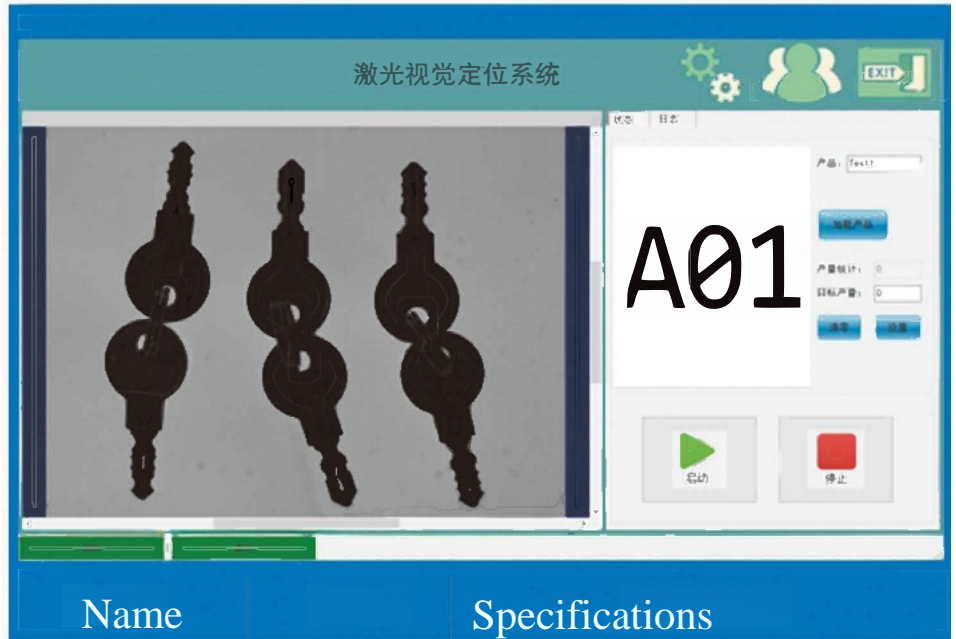
Laser guidance

Project overview

Traditional laser marking operation, as a manual positioning operation for loading and unloading fixtures, has problems such as low efficiency, insufficient production capacity, and low accuracy. Visual guidance of laser marking combined with assembly line work greatly improves production efficiency and makes the marking position more accurate. The system supports coaxial, bypass, and mobile camera installation methods; Guide high-precision laser engraving, cleaning, and welding; Supports up to 0.01mm level guidance alignment.

Scope of application

This system is suitable for various laser positioning industries



Name	Specifications
Industrial Camera	5MP CCD, Mono, GigE
Industrial lens	Focal length 25mm, 5MP
Light source	Circular shadowless light source
Laser engraved lenses	Laser specific lenses

Zhixiang Vision Technology Co., Ltd



Character detection

Project overview

With the steady improvement of people's living standards, China's food and beverage industry maintains a rapid growth momentum, and the demand for beverages in cans as containers continues to increase. The quality of products in the production and processing process is a reflection of the brand value of enterprises, and also directly affects the vital interests of consumers. In order to improve product quality, a visual system was used to detect and recognize characters at the bottom of the can, and to track product information.

Scope of application

This system is applicable to the food assembly line for packaging cans



Name	Specifications
Industrial Camera	5MP CCD, Mono, GigE
Industrial lens	Focal length 25mm, 5MP
Light source	Spherical light source
Software	Custom Software

Zhixiang Vision Technology Co., Ltd

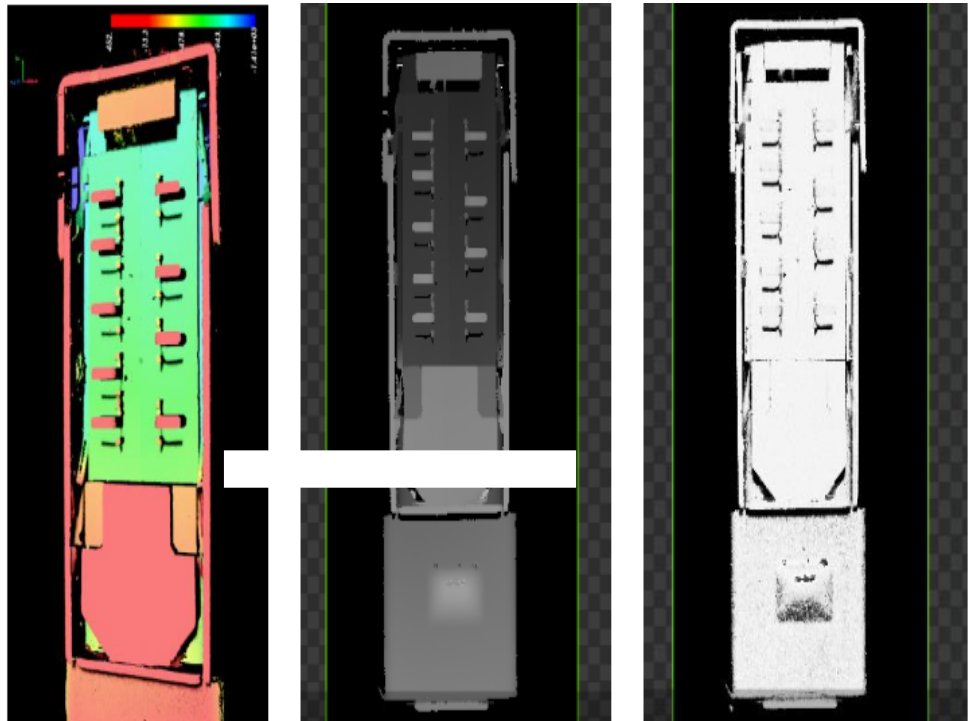
Terminal height detection

Project overview

Terminal height detection: By using 3D laser scanning, the height data of USB terminals is collected to ensure that they meet the design requirements. This method can avoid the problem of traditional 2D vision being unable to measure the Z-axis height of products, prevent poor contact between USB terminals and PCB circuit board components, and improve the accuracy and reliability of detection.

Scope of application

The main purpose of USB interface visual inspection is to ensure that the appearance, structure, and function of the USB interface meet the design requirements, as well as to detect any defects and damages that may occur during its use





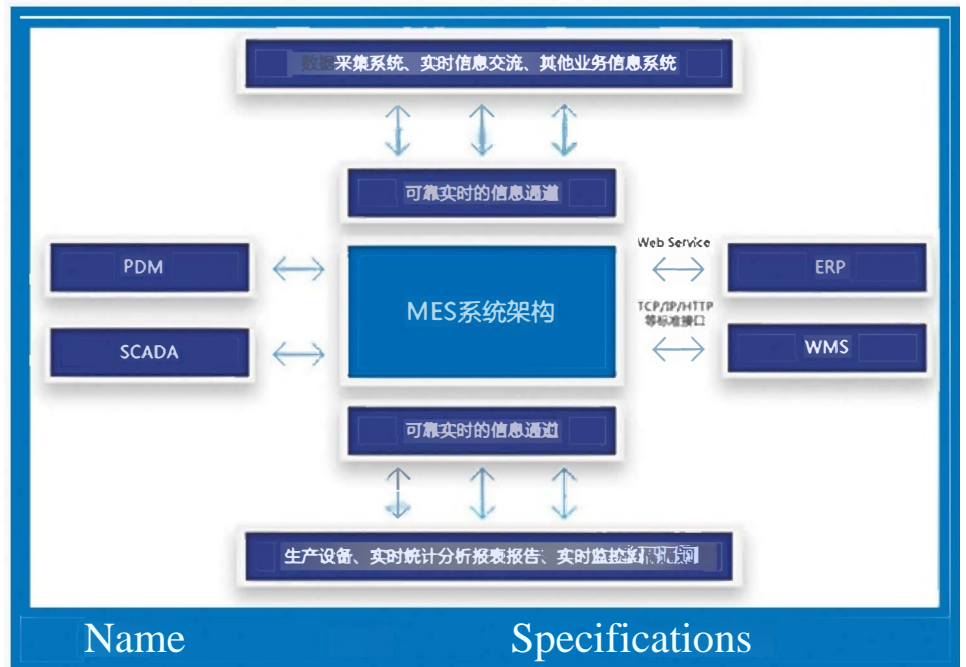
Auto post

Project overview

With the development of factory automation, in order to improve their competitiveness and automation level, factories now need to implement detailed and accurate process operation plans, product implementation tracking and control, quality management, process engineering management, real-time and accurate collection of production process parameters, monitor the production abnormalities and incoming material quality of each product. It is necessary to add an automatic posting system and MES system integration inside the machine for data statistical analysis, parameter intelligent management, and equipment intelligent control.

Scope of application

All industries that require automatic posting and product traceability, such as panels, electronics, tobacco, packaging, etc. The system operation is simple and convenient, and the data that needs to be thrown up can be set. It supports various data types. Type is beneficial for customers to adjust and modify data content. This system supports TCP/Ethernet/COM and other multiple connections. Mouth.



Name

Specifications

Software

Custom Software



Industrial F lens

ZX-SF-Zseries Project overview

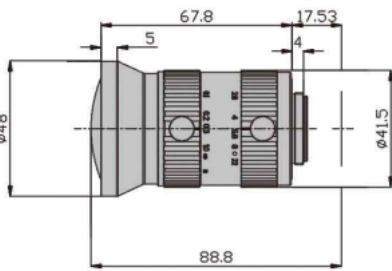


20 MP level (compatible with both 2K/4K C-port line scan cameras)

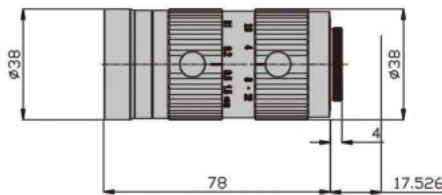
Supports 4/3-inch chips

High relative illuminance and large daylight design

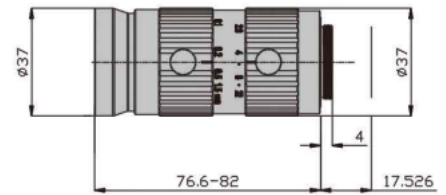
5 models with focal length ranging from 12mm to 50mm



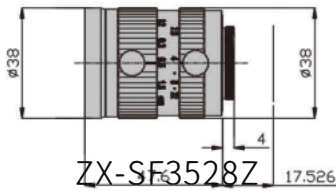
ZX-SF1228Z



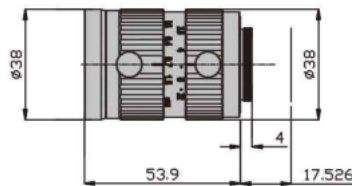
ZX-SF1628Z



ZX-SF2528Z



ZX-SF3528Z



ZX-SF5028Z

Specification	ZX-SF1228Z	ZX-SF1628Z	ZX-SF2528Z	ZX-SF3528Z	ZX-SF5028Z
Focal length	12mm	16mm	25mm	35mm	50mm
FNO	F2.8-22	F2.8-22	F2.8-22	F2.8-22	F2.8-22
View	71.2°x 56.3°	57.6°x 44.8°	37.5°x 28.5°	27.9°x 20.9°	19.8°x 14.9°
Near WD	100mm	100mm	100mm	200mm	300mm
TV distortion	<2%	<1%	<0.3%	<0.04%	<0.1%
Suitable for chips	4/3"	4/3"	4/3"	4/3"	4/3"
Filter aperture	Not	M35.5x P0.5	M35.5x P0.5	M35.5x P0.5	M35.5x P0.5

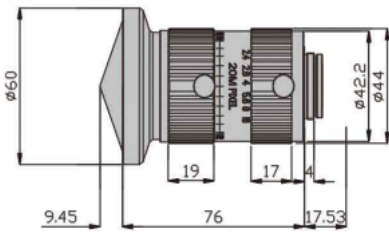
工业FA镜头
Industrial AF lens

NEW

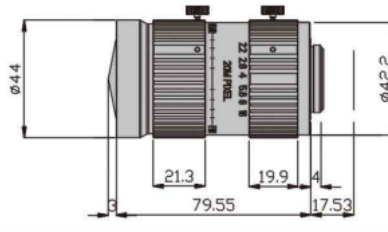
ZX-SF-Tseries
Project overview



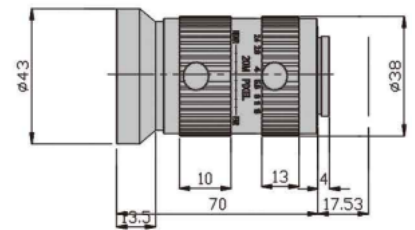
20 MP level
Supports 1.1-inch chips
Overall distortion < 0.5%, minimum distortion less than 0.1%
6 models with focal length ranging from 8mm to 50mm



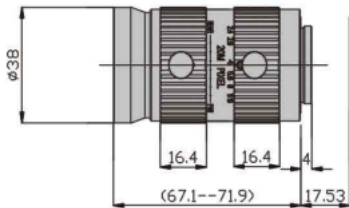
ZX-SF0824T



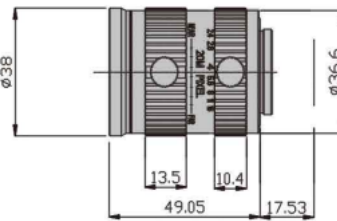
ZX-SF1224T



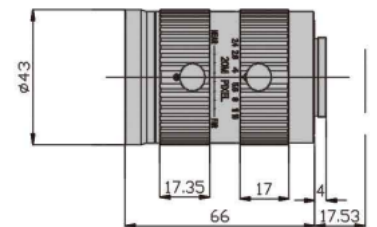
ZX-SF1624T



ZX-SF2524T



ZX-SF3524T



ZX-SF5024T

Specification	ZX-SF0824T	ZX-SF1222T	ZX-SF1624T	ZX-SF2524T	ZX-SF3524T	ZX-SF5024T
Focal length	8.5mm	12mm	16mm	25mm	35mm	50mm
FNO	F2.4-16	F2.4-16	F2.4-16	F2.4-16	F2.4-16	F2.4-16
View	78.4°x 63.2°	60.4°x 47.2°	46.1°x 35.5°	30.3°x 23.1°	21.5°x 16.3°	15.5°x 11.6°
Near WD	100mm	100mm	100mm	100mm	150mm	300mm
TV distortion	< 1%	< 0.5%	< 0.3%	< 0.2%	< 0.1%	< 0.1%
Suitable for chips	1.1"	1.1"	1.1"	1.1"	1.1"	1.1"
Filter aperture	Not	M49.0x P0.75	M40.5x P0.5	M35.5x P0.5	M35.5x P0.5	M40.5x P0.5



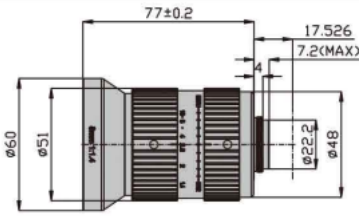


Industrial FA lens

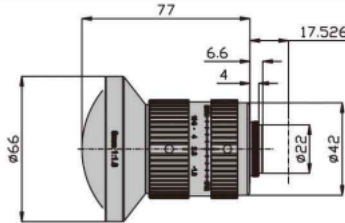
ZX-SF-Hseries Project overview



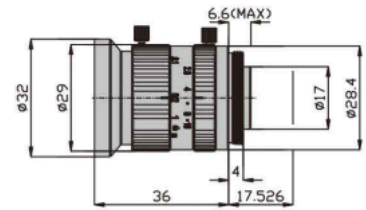
12 MP level
Supports 2/3-inch chips (some support 1.1-inch chips)
Ultra high imaging quality
height ratio
9 models with focal length ranging from 6mm to 75mm



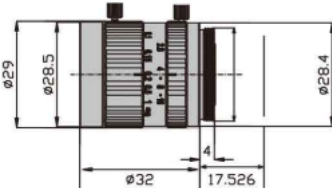
ZX-SF0618H



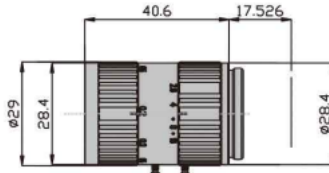
ZX-SF0814H



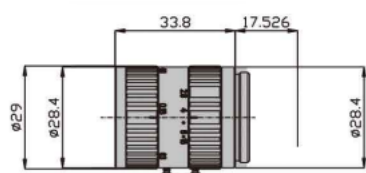
ZX-SF0828H



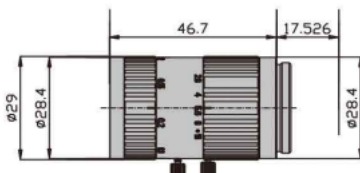
ZX-SF1228H



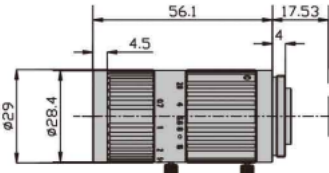
ZX-SF1628H



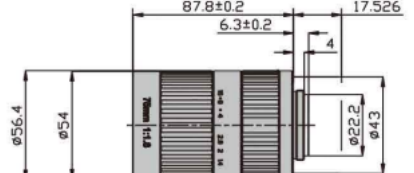
ZX-SF2528H



ZX-SF3528H



ZX-SF5028H



ZX-SF7518H

Specification	ZX-SF0618H	ZX-SF0814H	ZX-SF0828H	ZX-SF1228H	ZX-SF1628H	ZX-SF2528H	ZX-SF3528H	ZX-SF5028H	ZX-SF7518H
Focal length	6mm	8mm	8mm	12mm	16mm	25mm	35mm	50mm	75mm
FNO	F1.8-16	F1.4-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F1.8-16
View	104.9°x 86.2°	84.8°x 68.0°	57.6°x 44.0°	39.8°x 30.4°	30.8°x 23.1°	20.0°x 15.3°	13.1°x 9.9°	10.4°x 8.4°	10.8°x 8.1°
Near WD	100mm	100mm	100mm	100mm	100mm	100mm	100mm	300mm	800mm
TV distortion	<2.5%	<5.5%	<1%	<0.2%	<0.1%	<0.1%	<0.1%	<0.1%	<0.05%
Suitable for chips	1.1"	1.1"	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"	1.1"
Filter aperture	Not	Not	M30.5x P0.5	M27.0x P0.5	M27.0x P0.5	M27.0x P0.5	M27.0x P0.5	M27.0x P0.5	M52.0x P0.75

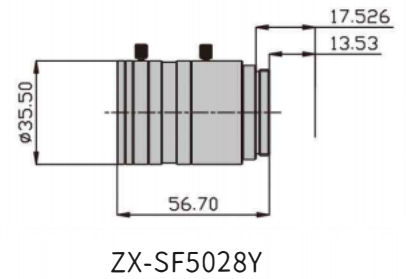
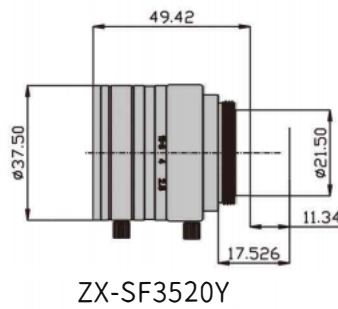
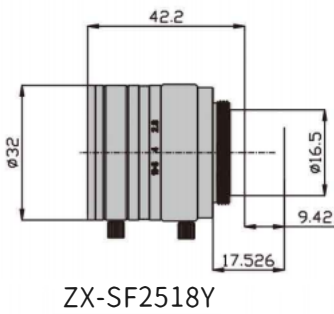
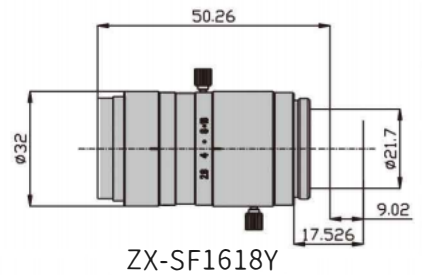
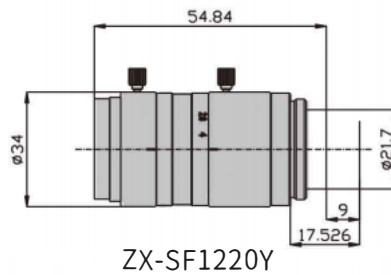
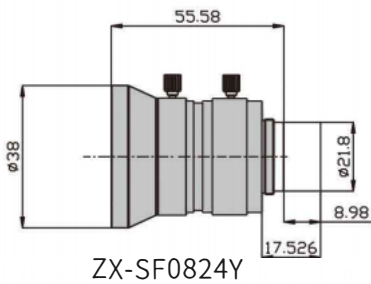
Industrial FA lens

NEW

ZX-SF-Yseries
Project overview



10 MP level
Supports 2/3-inch chips
Small size, compact design
6 models with focal length ranging from 8mm to 50mm



Specification	ZX-SF0824Y	ZX-SF1220Y	ZX-SF1618Y	ZX-SF2518Y	ZX-SF3520Y	ZX-SF5028Y
Focal length	8mm	12mm	16mm	25mm	35mm	50mm
FNO	F2.4-16	F2.0-16	F1.8-16	F1.8-16	F2.0-16	F8.8-16
View	58.2° x 45.2°	39.9° x 30.5°	3.08° x 23.3°	20.0° x 15.1°	14.3° x 10.8°	10.0° x 7.0°
Near WD	100mm	100mm	100mm	150mm	200mm	300mm
TV distortion	<1.1%	<0.2%	<0.2%	<0.1%	<0.05%	<0.03%
Suitable for chips	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"
Filter aperture	M37.0x P0.5	M28.0x P0.5	M27.0x P0.5	M27.0x P0.5	M30.5x P0.5	M30.5x P0.5

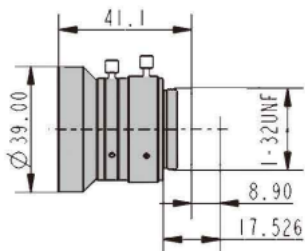
Industrial FA lens

NEW

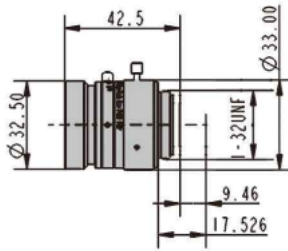
ZX-SF-Mseries
Project overview



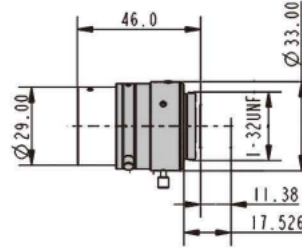
6 MP level
Supports 1/1.8-inch chips
Provide 30mm and 40mm focal lengths to fill industry gaps
8 models with focal length ranging from 6mm to 50mm



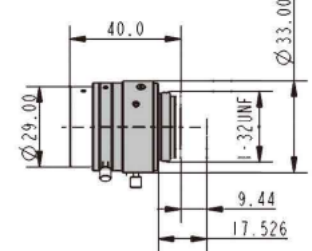
ZX-SF0628M



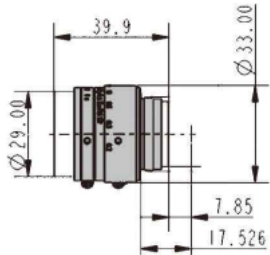
ZX-SF0828M



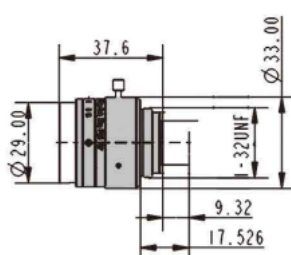
ZX-SF1228M



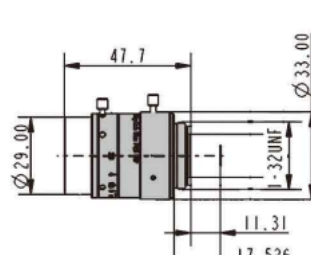
ZX-SF1628M



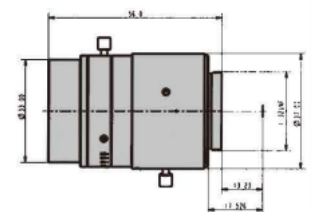
ZX-SF2528M



ZX-SF3028M



ZX-SF4028M



ZX-SF5028M

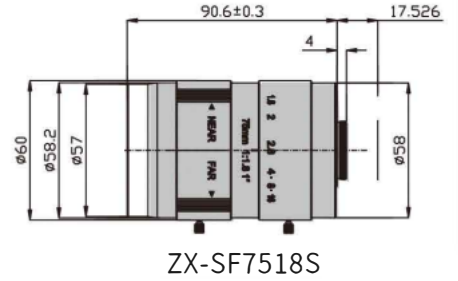
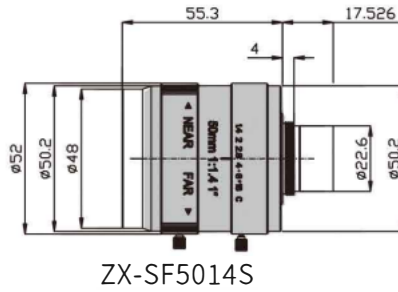
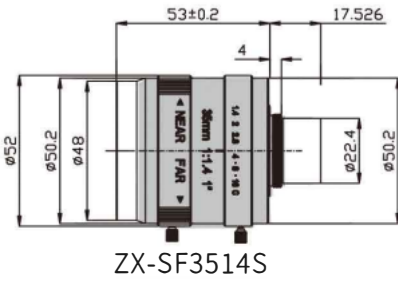
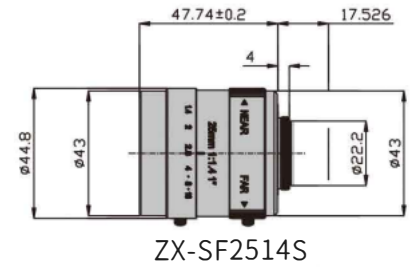
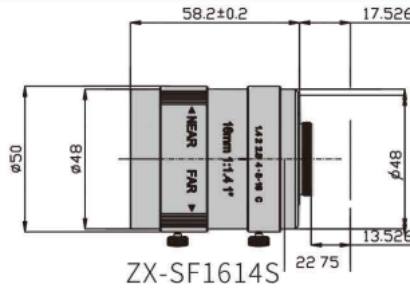
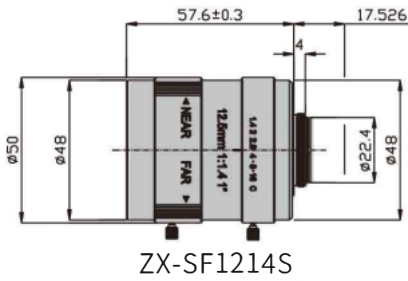
Specification	ZX-SF0628M	ZX-SF0828M	ZX-SF1228M	ZX-SF1628M	ZX-SF2528M	ZX-SF3028M	ZX-SF4028M	ZX-SF5028M
Focal length	6mm	8mm	12mm	16mm	25mm	35mm	40mm	50mm
FNO	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F2.8-16
View	61.6° x 43.4°	47.8° x 32.9°	33.2° x 22.5°	25.6° x 17.2°	16.7° x 11.1°	13.4° x 9.0°	9.9° x 6.6°	7.8° x 5.2°
Near WD	100mm	100mm	100mm	100mm	200mm	200mm	200mm	250mm
TV distortion	<0.81%	<0.11%	<0.33%	<0.23%	<0.17%	<0.22%	<0.18%	<0.1%
Suitable for chips	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"
Filter aperture	M37.5 x P0.5	M30.5 x P0.5	M27.0 x P0.5	M27.0 x P0.5	M27.0 x P0.5	M27.0 x P0.5	M27.0 x P0.5	M30.5 x P0.5

Industrial FA lens

ZX-SF-Sseries Project overview



5 MP level
Supports 1-inch chips
Compatible with near-infrared band
6 models with focal length ranging from 12.5mm to 75mm



Specification	ZX-SF1214S	ZX-SF1614S	ZX-SF2514S	ZX-SF3514S	ZX-SF5014S	ZX-SF7518S
Focal length	12.5mm	25mm	25mm	35mm	50mm	75mm
FNO	F1.4-16	F1.4-16	F1.4-16	F1.4-16	F1.4-16	F1.8-16
View	54.5°x 42.0°	42.4°x 32.4°	28.7°x 22.0°	19.2°x 14.3°	13.8°x 10.4°	9.8°x 7.4°
Near WD	100mm	100mm	100mm	150mm	300mm	800mm
TV distortion	<1.8%	<0.2%	<0.1%	<0.1%	<0.1%	<0.1%
Suitable for chips	1"	1"	1"	1"	1"	1"
Filter aperture	M46.0x P0.75	M46.0x P0.75	M40.5x P0.5	M46.0x P0.75	M46.0x P0.75	M55.0x P0.75

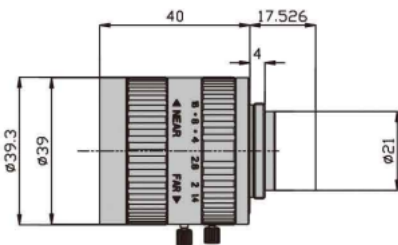


Industrial FA lens

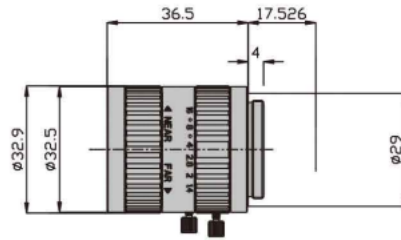
ZX-SF-Bseries Project overview



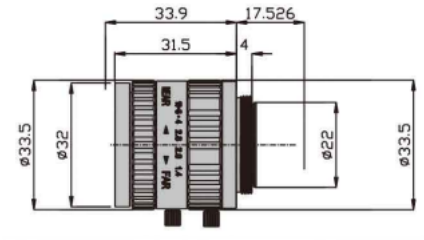
5 MP level
Supports 2/3-inch chips
All models in the series adopt the F1.4 ultra large aperture design with a focal length of 8mm to 50mm, totaling 6 models



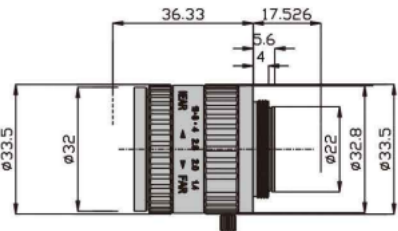
ZX-SF0814B



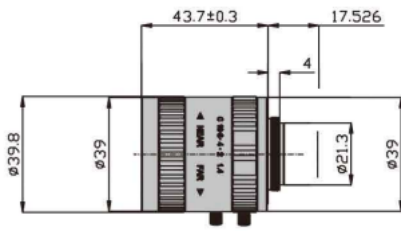
ZX-SF1214B



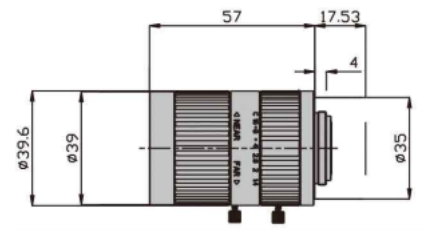
ZX-SF1614B



ZX-SF2514B



ZX-SF3514B



ZX-SF5014B

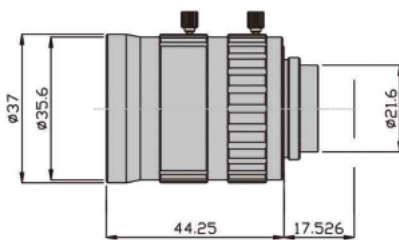
Specification	ZX-SF0814B	ZX-SF1214B	ZX-SF1614B	ZX-SF2514B	ZX-SF3514B	ZX-SF5014B
Focal length	8mm	12mm	16mm	25mm	35mm	50mm
FNO	F1.4-16	F1.4-16	F1.4-16	F1.4-16	F1.4-16	F1.4-C
View	56.3°x 43.7°	39.0°x 30.3°	30.3°x 23.0°	20.0°x 15.0°	13.9°x 10.4°	10.4°x 7.8°
Near WD	100mm	150mm	300mm	300mm	200mm	300mm
TV distortion	<1%	<0.8%	<0.1%	<0.2%	<0.8%	<0.8%
Suitable for chips	2/3"	2/3"	2/3"	2/3"	2/3'	2/3"
Filter aperture	M37.0x P0.5	M30.5x P0.5	M30.5x P0.5	M30.5x P0.5	M37.0x P0.5	M37.0x P0.5

Industrial FA lens

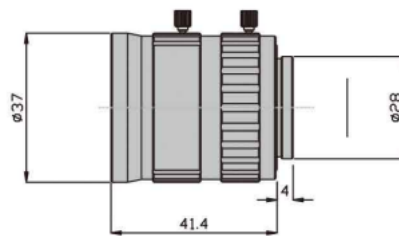
ZX-SF-Bseries+
Project overview
(performance optimization)



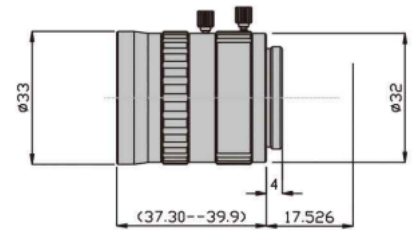
5 MP level
Supports 2/3-inch chips
Optimization of close range imaging effect, suitable for working distances within 1.5m
6 models with focal length ranging from 8mm to 50mm



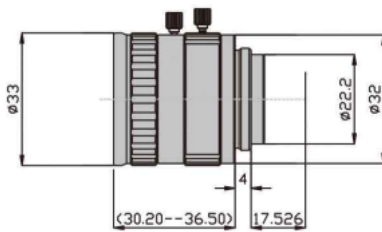
ZX-SF0816B



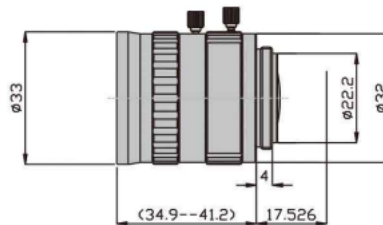
ZX-SF1216B



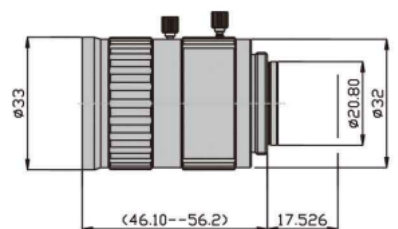
ZX-SF1616B



ZX-SF2516B



ZX-SF3516B



ZX-SF5016B

Specification	ZX-SF0816B	ZX-SF1216B	ZX-SF1616B	ZX-SF2516B	ZX-SF3516B	ZX-SF5020B
Focal length	8mm	12mm	16mm	25mm	35mm	50mm
FNO	F1.6-16	F1.6-16	F1.6-16	F1.6-16	F1.6-16	F2.0-16
View	57.1°x 44.3°	39.4°x 30.1°	30.7°x 23.2°	18.7°x 14.1°	13.7°x 10.2°	10.6°x 8.0°
Near WD	100-1500mm	100-1500mm	100-1500mm	100-1500mm	150-1500mm	300-1500mm
TV distortion	<0.3%	<0.15%	<0.1%	<0.1%	<0.15%	<0.8%
Suitable for chips	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"
Filter aperture	M35.5x P0.5	M35.5x P0.5	M30.5x P0.5	M30.5x P0.5	M30.5x P0.5	M30.5x P0.5

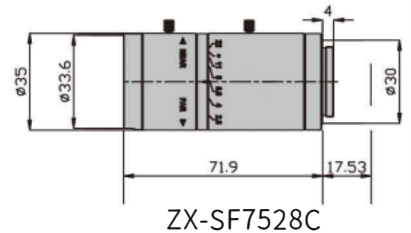
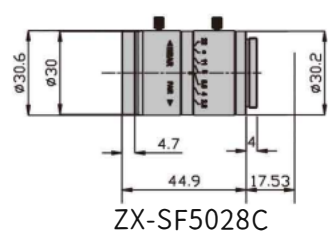
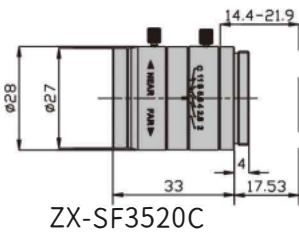
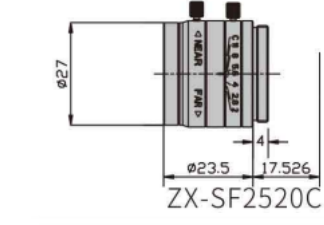
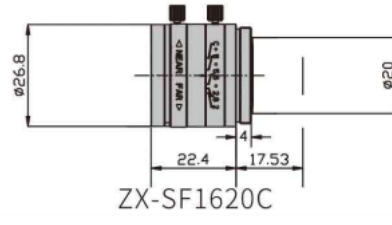
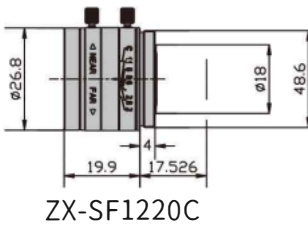
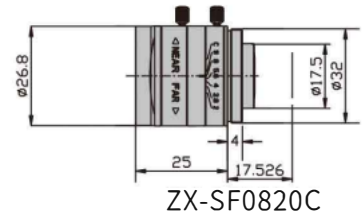
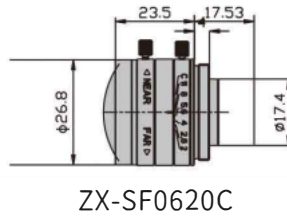
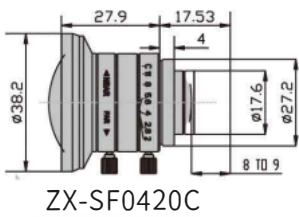


Industrial FAlens

ZX-SF-Cseries Project overview



5 MP level
Supports 1/1.8-inch chips
Small and compact design, high-definition economy version with focal length ranging from 4mm to 75mm, 9 models in total



Specification	ZX-SF0420C	ZX-SF0620C	ZX-SF0820C	ZX-SF1220C	ZX-SF1620C	ZX-SF2520C	ZX-SF3520C	ZX-SF5028C	ZX-SF7528C
Focal length	4mm	6mm	8mm	12mm	16mm	25mm	35mm	50mm	75mm
FNO	F2.0-C	F2.0-C	F2.0-C	F2.0-C	F2.0-C	F2.0-C	F2.0-C	F2.8-22	F2.8-22
View	82.9°x 66.5°	59.6°x 46.0°	46.8°x 36°	33.0°x 24.3°	24.7°x 18.2°	13.6°x 11.3°	8.8°x 7.0°	8.2°x 6.1°	5.4°x 4.0°
Near WD	100mm	100mm	100mm	100mm	100mm	100mm	200mm	300mm	500mm
TV distortion	<0.5%	<0.1%	<0.1%	<0.3%	<0.1%	<0.1%	<0.1%	<0.05%	<0.05%
Suitable for chips	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"
Filter aperture	无	M25.5x P0.5	M25.5x P0.5	M25.5x P0.5	M25.5x P0.5	M25.5x P0.5	M25.5x P0.5	M28.5x P0.5	M30.5x P0.5

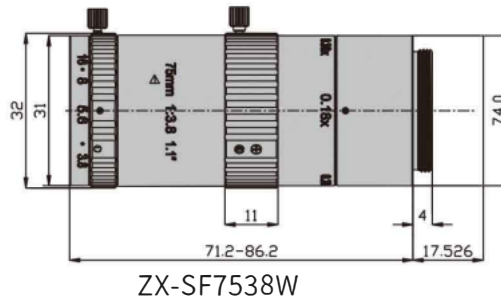
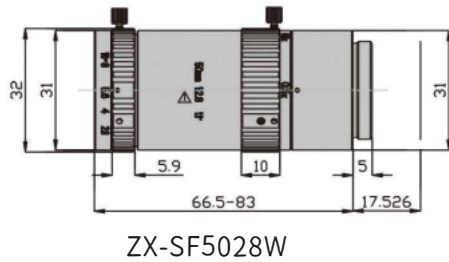
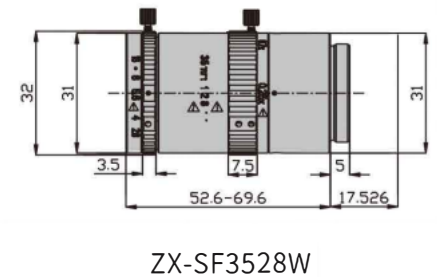
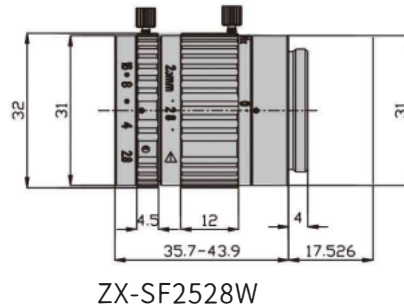
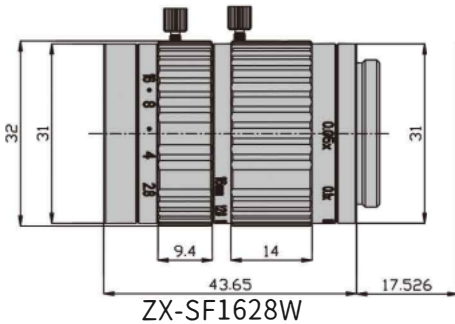


Industrial FA lens

ZX-SF-Wseries
Project overview



12 MP level
Supports 1.1-inch chips
Specially designed to meet the requirements of precise macroimaging
Magnification range 0.03X-0.8X, working distance 52-546mm
5 models with focal length ranging from 16mm to 75mm



Specification	ZX-SF1628W	ZX-SF2528W	ZX-SF3528W	ZX-SF5028W	ZX-SF7538W
Focal length	16mm	25mm	35mm	50mm	75mm
FNO	F2.8-16	F2.8-16	F2.8-16	F2.8-16	F3.8-16
View	0.25X - 0.03X	0.4X - 0.1X	0.7X - 0.25X	0.8X - 0.5X	0.38X - 0.18X
Near WD	52 - 546mm	65 - 260mm	59 - 150mm	95 - 132mm	257 - 471mm
TV distortion	<0.33%	<0.07%	<0.05%	<0.05%	<0.05%
Suitable for chips	1.1"	1.1"	1.1"	1.1"	1.1"
Filter aperture	M28.5x P0.5	M27.5x P0.5	M27.5x P0.5	M27.5x P0.5	M27.5x P0.5

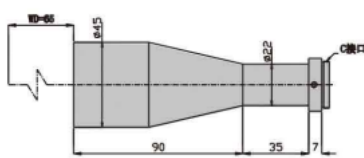


Industrial telecentric lens

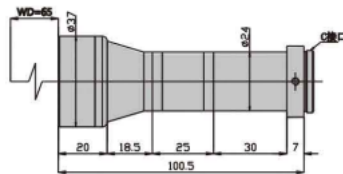
ZX-65-Bseries
Project overview



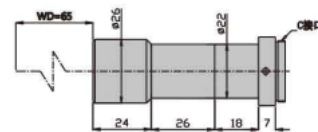
5 MP level
Supports 2/3-inch chips
WD=65mm, 0.3X~4X, a total of 8 models with remote center design
Non coaxial shooting



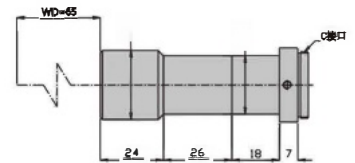
ZX-0365B



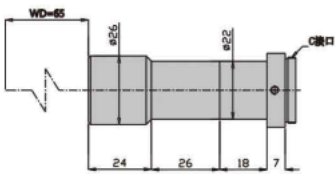
ZX-0565B



ZX-0865B



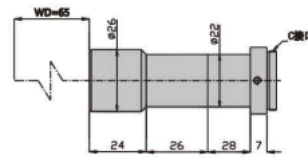
ZX-1065B



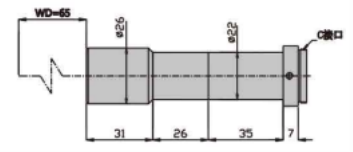
ZX-1565B



ZX-2065B



ZX-3065B



ZX-4065B

specifications	ZX-0365B	ZX-0565B	ZX-0865B	ZX-1065B	ZX-1565B	ZX-2065B	ZX-3065B	ZX-4065B	
magnification	0.3X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X	
View	1/3 "	16.0 x 12.0mm	9.6 x 7.2mm	6.0 x 4.5mm	4.8 x 3.6mm	3.2 x 2.4mm	2.4 x 1.8mm	1.6 x 1.2mm	1.2 x 0.9mm
	1/2"	21.3 x 16.0mm	12.8 x 9.6mm	8.0 x 6.0mm	6.4 x 4.8mm	4.2 x 3.2mm	3.2 x 2.4mm	2.1 x 1.6mm	1.6 x 1.2mm
	2/3 "	29.3 x 22.0mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.4 x 3.3mm	2.9 x 2.2mm	2.2 x 1.7mm
WD	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	
Depth	5mm	2.5mm	2.3mm	2mm	1.3mm	1mm	0.5mm	0.3mm	
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	
Suitable Chips	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	
Coaxial	Not	Not	Not	Not	Not	Not	Not	Not	
Interface Type	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	

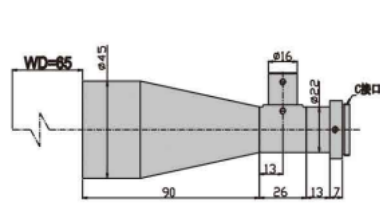
Zhixiang Vision Technology Co., Ltd

Industrial telecentric lens

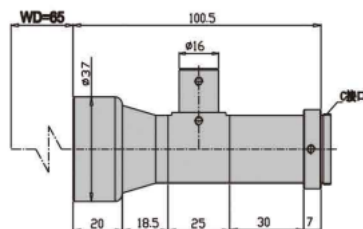
ZX-65-BCseries Project overview



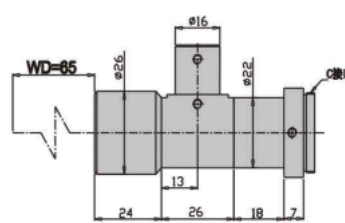
5 MP level
Support 2/3-inch chip
WD=65mm 0.3X~4X 8 kinds
of models are designed.
Coaxial fallout



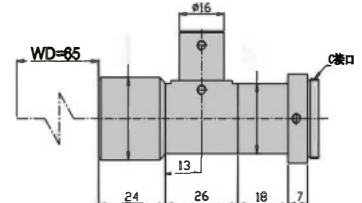
ZX-0365BC



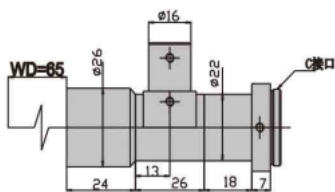
ZX-0565C



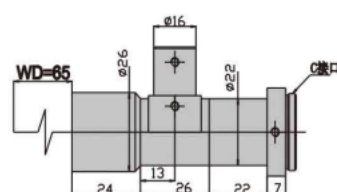
ZX-0865BC



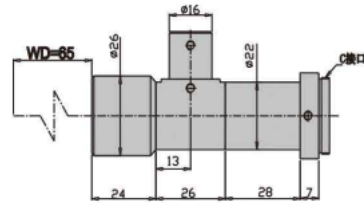
ZX-1065BC



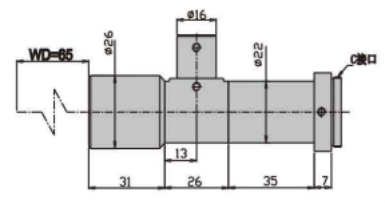
ZX-1565BC



ZX-2065BC



ZX-3065BC



ZX-4065BC

specifications	ZX-0365BC	ZX-0565C	ZX-0865BC	ZX-1065BC	ZX-1565BC	ZX-2065BC	ZX-3065BC	ZX-4065BC	
magnification	0.3X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X	
View	1/3 "	16.0 x 12.0mm	9.6 x 7.2mm	6.0 x 4.5mm	4.8 x 3.6mm	3.2 x 2.4mm	2.4 x 1.8mm	1.6 x 1.2mm	1.2 x 0.9mm
	1/2"	21.3 x 16.0mm	12.8 x 9.6mm	8.0 x 6.0mm	6.4 x 4.8mm	4.2 x 3.2mm	3.2 x 2.4mm	2.1 x 1.6mm	1.6 x 1.2mm
	2/3 "	29.3 x 22.0mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.4 x 3.3mm	2.9 x 2.2mm	2.2 x 1.7mm
WD	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	
Depth	5mm	2.5mm	2.3mm	2mm	1.3mm	1mm	0.5mm	0.3mm	
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	
Suitable Chips	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	
Coaxial	Not	Not	Not	Not	Not	Not	Not	Not	
Interface Type	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	

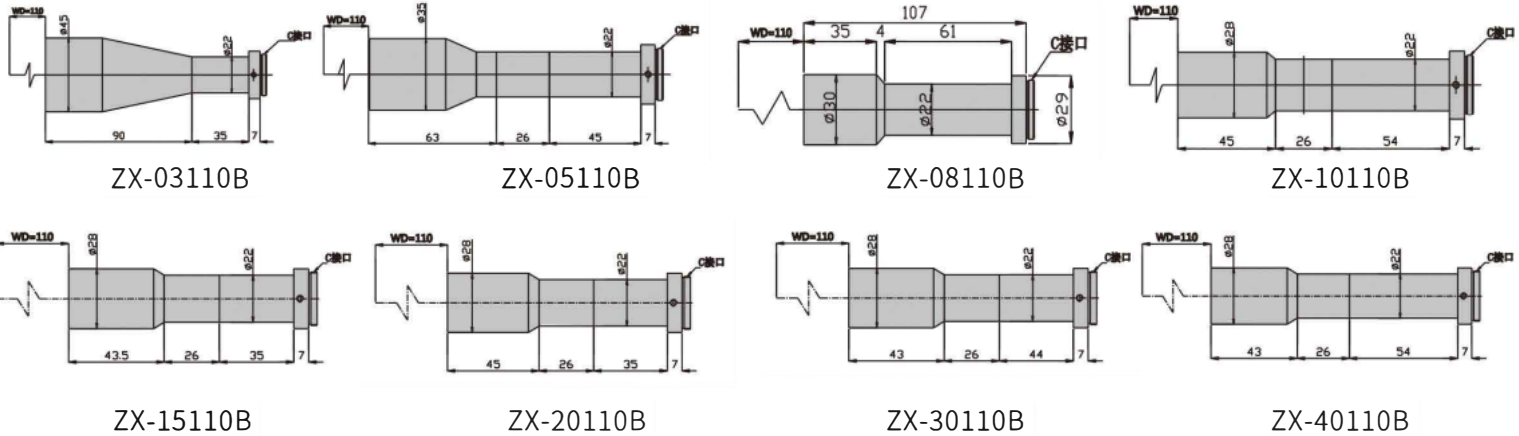


Industrial telecentric lens

ZX-110-Bseries Project overview



5 MP level
Supports 2/3-inch chips
WD=110mm 0.3X~4X, a total
of 8 models with remote center
design Non coaxial shooting



specifications	ZX-03110B	ZX-05110B	ZX-08110B	ZX-10110B	ZX-15110B	ZX-20110B	ZX-30110B	ZX-40110B
magnification	0.3X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X
View	1/3 "	16.0 x 12.0mm	9.6 x 7.2mm	6.0 x 4.5mm	4.8 x 3.6mm	3.2 x 2.4mm	2.4 x 1.8mm	1.6 x 1.2mm
	1/2"	21.3 x 16.0mm	12.8 x 9.6mm	8.0 x 6.0mm	6.4 x 4.8mm	4.2 x 3.2mm	3.2 x 2.4mm	2.1 x 1.6mm
	2/3	29.3 x 22.0mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.4 x 3.3mm	2.9 x 2.2mm
WD	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm
Depth	6mm	4mm	1.5mm	1.6mm	1.1mm	0.9mm	0.7mm	0.3mm
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%
Suitable Chips	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "	2/3 "
Coaxial	Not	Not	Not	Not	Not	Not	Not	Not
Interface Type	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount

Zhixiang Vision Technology Co., Ltd

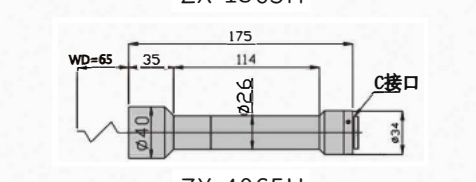
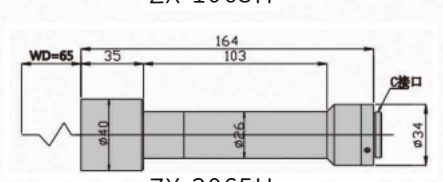
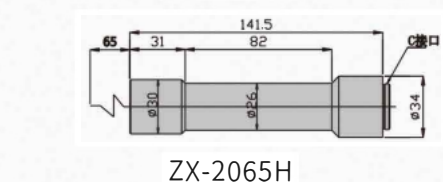
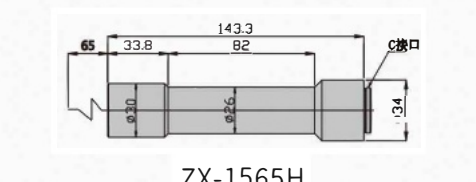
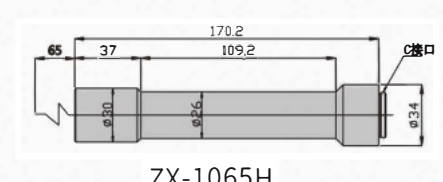
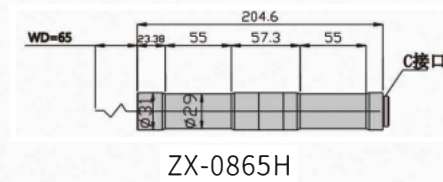
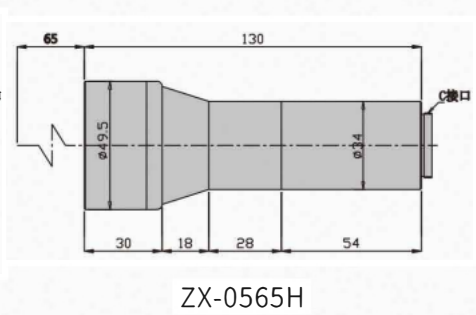
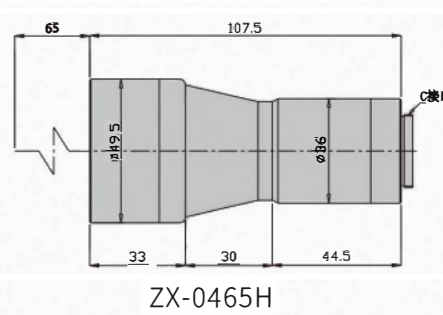
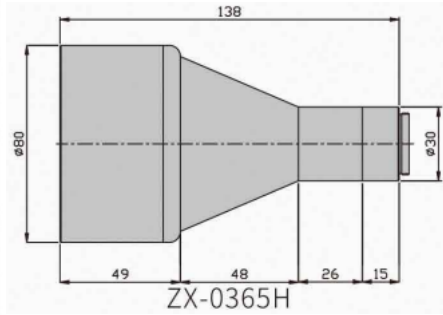


Industrial telecentric lens

ZX-65-Hseries Project overview



12-20 MP level
Supports 1.1-inch chips
WD=65mm 0.3X~4X, a total of 9 models with dual telecentric design
Non coaxial shooting



Specifications	ZX-0365H	ZX-0465H	ZX-0565H	ZX-0865H	ZX-1065H	ZX-1565H	ZX-2065H	ZX-3065H	ZX-4065H	
magnification	0.3X	0.4X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X	
View	2/3 "	29.3 x 22.0mm	22.0 x 16.5mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.2 x 3.6mm	2.9 x 2.2mm	2.2 x 1.7mm
	1"	42.7 x 32.0mm	NA	25.6 x 19.2mm	16.0 x 12.0mm	12.8 x 9.6mm	8.5 x 6.4mm	6.2 x 4.9mm	4.3 x 3.2mm	3.2 x 2.4mm
	1.1 "	46.7 x 34.3mm	NA	28.0 x 20.6mm	17.5 x 12.9mm	14.0 x 10.3mm	9.3 x 6.9mm	7.1 x 5.2mm	4.7 x 3.4mm	3.5 x 2.6mm
WD	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	
Depth	7.4mm	4.2mm	2.7mm	1mm	0.7mm	0.3mm	0.9mm	0.07mm	0.04mm	
Aperture	F11	F11	F11	F11	F11	F11	F13	F11	F11	
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	
Suitable Chips	1.1 "	2/3 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	
Coaxial	Not	Not	Not	Not	Not	Not	Not	Not	Not	

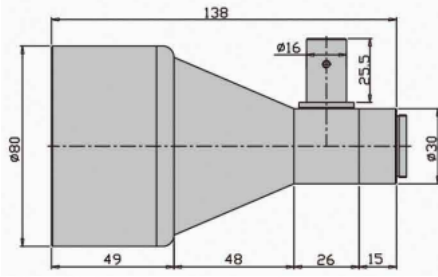
Zhixiang Vision Technology Co., Ltd

Industrial telecentric lens

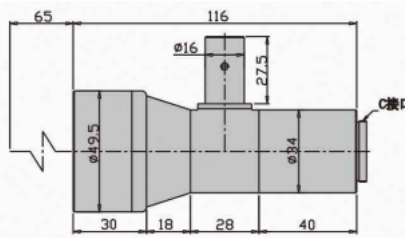
ZX-65-HCseries Project overview



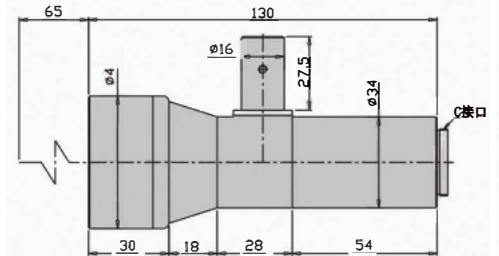
12-20 MPI level
Supports 1.1-inch chips
WD=65mm, 0.3X~4X, a total of 9 models with dual telecentric design
Coaxial shooting



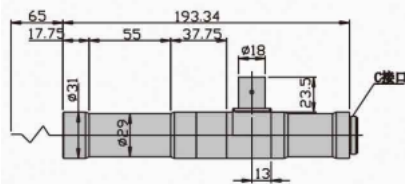
ZX-0365HC



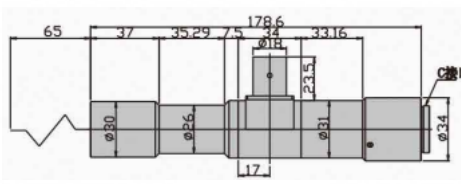
ZX-0465HC



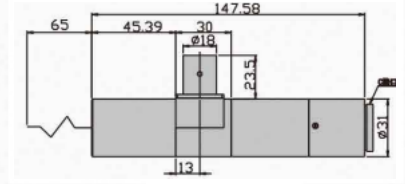
ZX-0565HC



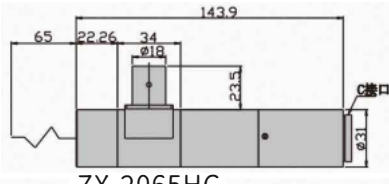
ZX-0865HC



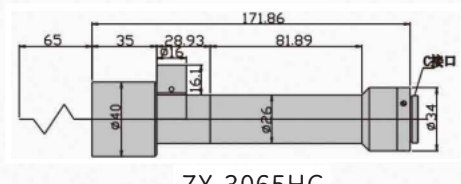
ZX-1065HC



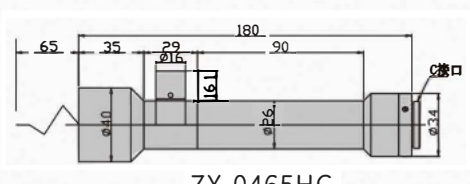
ZX-1565HC



ZX-2065HC



ZX-3065HC



ZX-0465HC

Specifications	ZX-0365HC	ZX-0465HC	ZX-0565HC	ZX-0865HC	ZX-1065HC	ZX-1565HC	ZX-2065HC	ZX-3065HC	ZX-0465HC	
magnification	0.3X	0.4X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X	
View	2/3 "	29.3 x 22.0mm	22.0 x 16.5mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.2 x 3.6mm	2.9 x 2.2mm	2.2 x 1.7mm
	1 "	42.7 x 32.0mm	NA	25.6 x 19.2mm	16.0 x 12.0mm	12.8 x 9.6mm	8.5 x 6.4mm	6.2 x 4.9mm	4.3 x 3.2mm	3.2 x 2.4mm
	1.1 "	46.7 x 34.3mm	NA	28.0 x 20.6mm	17.5 x 12.9mm	14.0 x 10.3mm	9.3 x 6.9mm	7.1 x 5.2mm	4.7 x 3.4mm	3.5 x 2.6mm
WD	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	65mm	
Depth	7.4mm	4.2mm	2.7mm	1mm	0.7mm	0.3mm	0.2mm	0.07mm	0.04mm	
Aperture	F11	F11	F11	F11	F11	F11	F11	F11	F11	
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	
Suitable chips	1.1 "	2/3 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	
Coaxial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Interface Type	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	

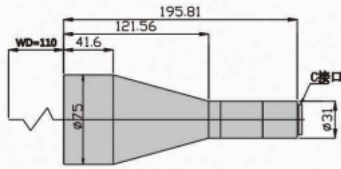
Zhixiang Vision Technology Co., Ltd

Industrial telecentric lens

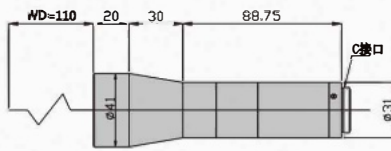
ZX-110-H series Project overview



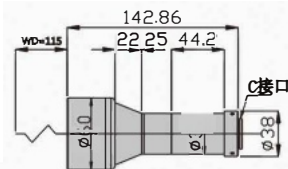
12-20 MP level
Supports 1.1-inch chips
WD=110mm 0.3X~4X, a total of 9 models with dual telecentric design
Non coaxial shooting



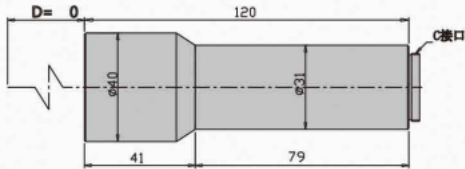
ZX-03110H



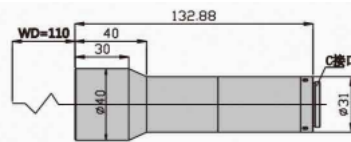
ZX-04110H



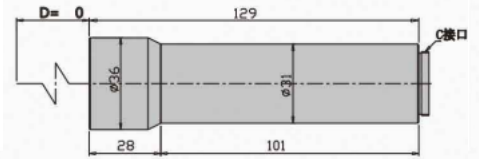
ZX-05110H



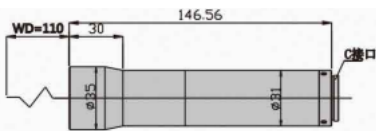
ZX-08110H



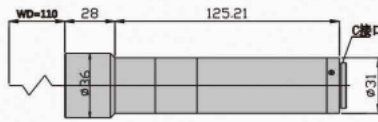
ZX-10110H



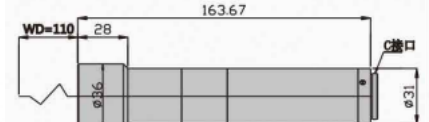
ZX-15110H



ZX-20110H



ZX-30110H



ZX-40110H

specifications	ZX-03110H	ZX-04110H	ZX-05110H	ZX-08110H	ZX-10110H	ZX-15110H	ZX-20110H	ZX-30110H	ZX-40110H
magnification	0.3X	0.4X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X
View	2/3 "	29.3 x 22.0mm	22.0 x 16.5mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9 x 4.4mm	4.2 x 3.6mm	2.9 x 2.2mm
	1"	42.7 x 32.0mm	NA	25.6 x 19.2mm	16.0 x 12.0mm	12.8 x 9.6mm	8.5 x 6.4mm	6.2 x 4.9mm	4.3 x 3.2mm
	1.1 "	46.7 x 34.3mm	NA	28.0 x 20.6mm	17.5 x 12.9mm	14.0 x 10.3mm	9.3 x 6.9mm	7.1 x 5.2mm	4.7 x 3.4mm
WD	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm
Depth	7mm	4.2mm	2.7mm	1mm	0.7mm	0.5mm	0.2mm	0.07mm	0.04mm
Aperture	adjustable	F11	F11	F11	F11	F11	F11	F11	F11
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%
Suitable chips	1.1 "	2/3 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "
Coaxial interface type	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount	Not C-Mount

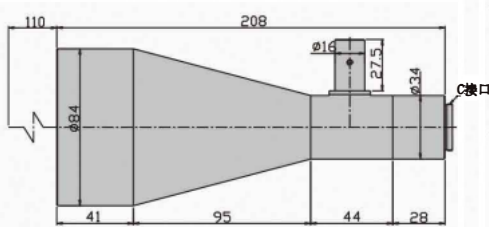


Industrial telecentric lens

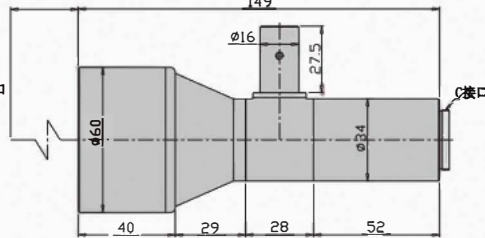
ZX-110-HCseries Project overview



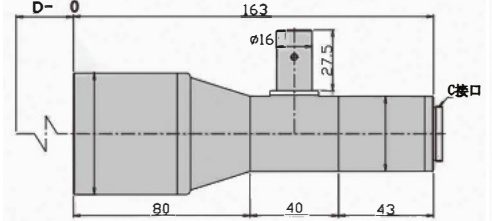
12-20 MP level
Supports 1.1-inch chips
WD=110mm 0.3X~4X, a total
of 9 models with dual telecentric
design Coaxial shooting



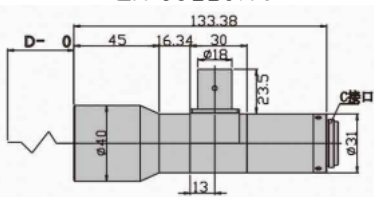
ZX-03110HC



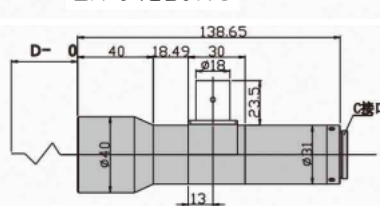
ZX-04110HC



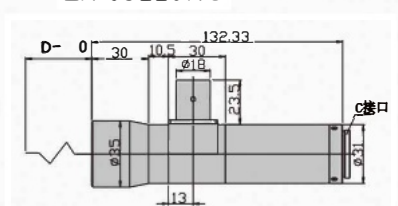
ZX-05110HC



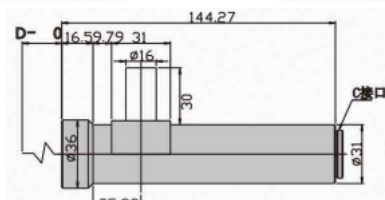
ZX-0865HC



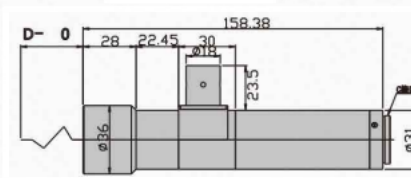
ZX-10110HC



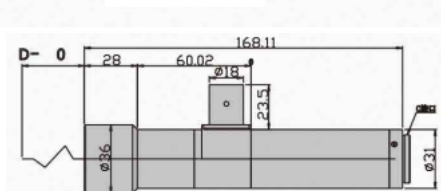
ZX-1565HC



ZX-20110HC



ZX-30110HC



ZX-40110HC

specifications	ZX-03110HC	ZX-04110HC	ZX-05110HC	ZX-0865HC	ZX-10110HC	ZX-1565HC	ZX-20110HC	ZX-30110HC	ZX-40110HC	
magnification	0.3X	0.4X	0.5X	0.8X	1.0X	1.5X	2.0X	3.0X	4.0X	
View	2/3 "	29.3 x 22.0mm	22.0 x 16.5mm	17.6 x 13.2mm	11.0 x 8.3mm	8.8 x 6.6mm	5.9x 4.4mm	4.2 x 3.6mm	2.9 x 2.2mm	2.2 x 1.7mm
	1"	42.7 x 32.0mm	32.0 x 24.0mm	25.6 x 19.2mm	16.0 x 12.0mm	12.8 x 9.6mm	8.5 x 6.4mm	6.2 x 4.9mm	4.3 x 3.2mm	3.2 x 2.4mm
	1.1 "	46.7 x 34.3mm	35.0 x 25.6mm	28.0 x 20.6mm	17.5 x 12.9mm	14.0 x 10.3mm	9.3 x 6.9mm	7.1 x 5.2mm	4.7 x 3.4mm	3.5 x 2.6mm
WD	110mm	110mm	110mm	110mm	110mm	65mm	110mm	110mm	110mm	
Depth	7.4mm	4.2mm	2.7mm	1.2mm	0.9mm	0.3mm	0.2mm	0.07mm	0.04mm	
Aperture	F11	F11	F11	F11	F11	F11	F11	F11	F11	
Distortion	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	≤0.1%	
Suitable chips	1.1 "	2/3 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	1.1 "	
Coaxial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
interface type	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount	

Zhixiang Vision Technology Co., Ltd

Experimental frame

Rotating polarizer ZX-PLRseries

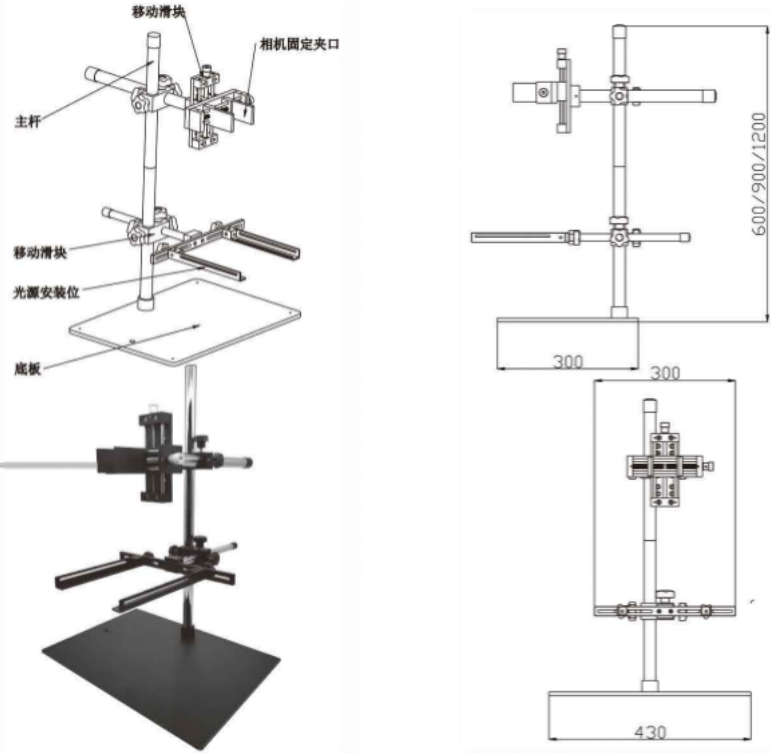
Prevent random reflection applications, commonly used in high reflective or mirror reflective environments



Model	ZX-PLR22.5	ZX-PLR25.5	ZX-PLR27.0	ZX-PLR30.0	ZX-PLR34.0	ZX-PLR35.5	ZX-PLR定制
specifications	M22.5 P0.5	M25.5 P0.5	M27.0 P0.5	M30.0 P0.5	M34.0 P0.5	M35.5 P0.5	customized

Machine vision experimental bracket ZX-SH series

To meet the experimental needs of various machine vision project selection



Zhixiang Vision Technology Co., Ltd

Experimental frame

Standard & customized filters

Conventional wavelength

[IR(unit:nm)]:

1060, 1000, 940, 920

880, 870, 850, 830, 815, 808, 800

780, 750, 735, 720, 715

[VIS (unit: nm)]:

695, 675, 665, 660, 645, 635,

630, 625, 610, 590, 570, 550, 525,

505, 500

470, 440, 415, 400

[UV(unit:nm)]:

390, 365, 340, 330, 324, 285, 250,

240, 220



Experimental filter set

Conventional thread size

Thread(Dia. x Pitch, unit: mm)	
22.5 x 0.5	49.0 x 0.75
C-port full thread	52.0 x 0.75
25.4 x 32TPI	55.0 x 0.75
25.5 x 0.5	58.0 x 0.75
27.0 x 0.5	62.0 x 0.75
30.5 x 0.5	67.0 x 0.75
34.0 x 0.5	68.0 x 0.75
35.5 x 0.5	72.0 x 0.75
37.0 x 0.75	77.0 x 0.75
37.5 x 0.5	82.0 x 0.75
40.5 x 0.5	86.0 x 0.75
43.0 x 0.75	95.0 x 1.0
46.0 x 0.75	105.0 x 1.0

M30.5x05 column display

Product and code	Adapter ring 30.5 to 27.0 ZX27.0U30.5
Purple 440nm bandpass filter ZX03-BP440-30.5	Infrared bandpass filter 808nm ZX03-BP808-30.5
Blue 470nm bandpass filter ZX03-BP470-30.5	Infrared 850nm bandpass filter ZX03-BP850-30.5
Blue 500nm bandpass filter ZX03-BP500-30.5	Visible&Infrared 860nm ZX03-BPD86060-30.5
Green 525nm bandpass filter ZX03-BP525-30.5	Infrared 940nm bandpass filter ZX03-BP940-30.5
Yellow 570nm bandpass filter ZX03-BP570-30.5	Visible , UV/NIR cut-off filters ZX03-SP650-30.5
Orange 590nm bandpass filter ZX03-BP590-30.5	UV 365nm bandpass filter ZX03-BP365-30.5
Light red 635nm bandpass filter ZX03-BP635-30.5	Light red 635nm bandpass filter ZX01-BP635-30.5
Deep red 660nm bandpass filter ZX03-BP660-30.5	Deep red 660nm bandpass filter ZX01-BP660-30.5
Adapter ring 30.5 to 25.5 ZX25.5U30.5	Equipped with a fastening mirror ZX03-PLR30.5W

Experimental frame

Connecting ring

The main component is the auxiliary joint ring installed between the CCTV lens and the camera during close range shooting. By increasing the distance between the camera and lens, the working distance can be shortened and the scope of work will also be reduced.

cylinder

WD shortens increases the magnification

型号	ZX-SF005	ZX-SF010	ZX-SF010	ZX-SF010	ZX-SF010	ZX-SF010	ZX-SF010
spec	0.5mm	1mm	2mm	5mm	10mm	20mm	40mm

Glass lens protective cover ZX-PG series

Prevent dust, oil stains, and metal shavings from damaging the surface of the lens

Dust

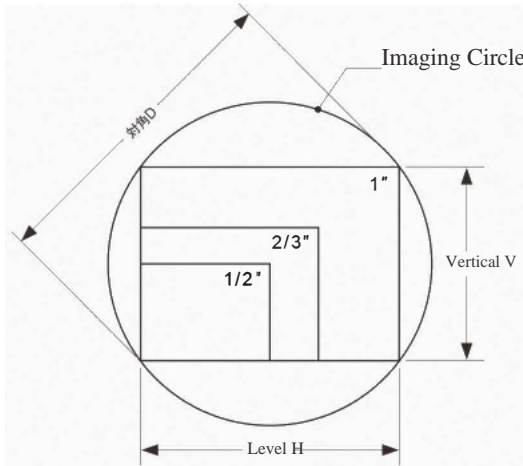
Protect the surface of the lens

Dust prevention measures

型号	ZX-PG22.5	ZX-PG25.5	ZX-PG27.0	ZX-PG30.0	ZX-PG34.0	ZX-PG35.5	ZX-PG 定制
规格	M22.5 P0.5	M25.5 P0.5	M27.0 P0.5	M30.0 P0.5	M34 P0.5	M35.5 P0.5	定制 (螺丝直径)

Technical commentary

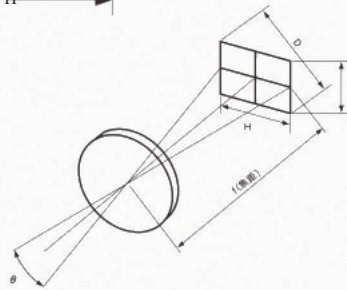
Image size



Model definition	image size	Image size (mm)		
		水平·H	垂直·V	对角·D
C	1"	12.8	9.6	16.0
H	2/3"	8.8	6.6	11.0
D	1/2"	6.4	4.8	8.0
35m full frame	35m film	36.0	24.0	43.3

Angle of view

Perspective refers to the range that can be captured within a specified image field. Usually refers to the angle at which the lens is at infinity. The focal length is the same, but if the field size is different, the viewing angle will be different.



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

θ : 视角
Y' : 图像尺寸
f : 焦距

例 若使用1/2"摄像机配套12.5mm焦距镜头,
水平视角为: $\frac{Y'}{f} = \frac{6.4}{12.5}$
 $\theta = 2 \tan^{-1} \frac{6.4}{2 \times 12.5} = 28.72^\circ$

Calculation of Depth of Field

When focusing on a subject, even if the subject is a three-dimensional object, the focus appears real within a certain range before and after the focus point. The certain range before and after this is called depth of field. This is because once the blur of the image is less than a certain size, the focus appears clear. The size of this fuzzy quantity is called the allowable fuzzy circle.

Depth of field properties:

- 1) The larger the aperture index F, the greater the depth of field.
- 2) The shorter the focal length, the greater the depth of field.
- 3) The farther the scenery, the greater the depth of field.
- 4) The depth of field on the rear side is greater than that on the front side.

image size	Allow fuzzy circles
1"	0.03 mm
2/3"	0.021 mm
1/2"	0.015 mm
1/3"	0.011 mm
1/4"	0.008 mm

Rear depth of field

f: focal length

Near depth of field

δ: Allow fuzzy graph

depth = Tr + Tf = 2δ · F

F: F value

L: object distance

Technical commentary

Focal length

Focal length refers to the distance from the rear principal point of the lens to the imaging plane.

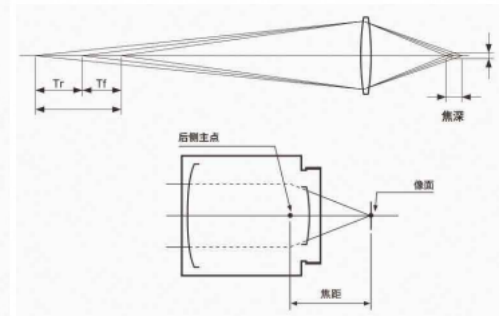


Image brightness

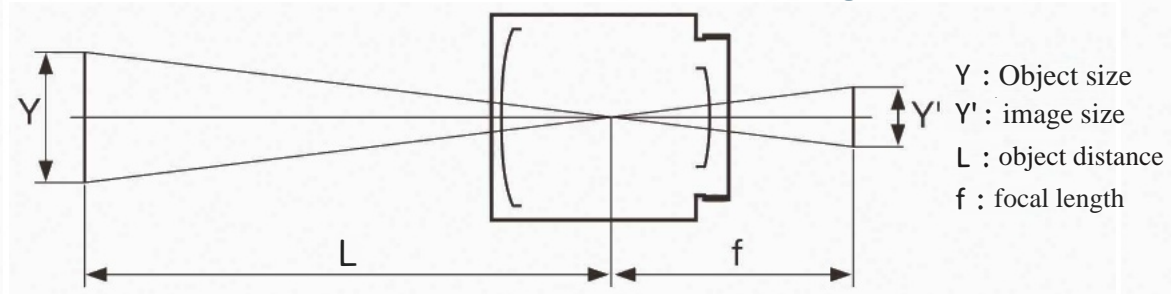
The aperture index (F) is a representation of the brightness of an image. The smaller the value, the higher the brightness. The aperture index can be calculated by the ratio of the focal length to the effective diameter of the lens. The aperture index is determined assuming that the transmittance of the lens is 100%, but in reality, different lenses have different transmittance. In this way, the aperture index will be the same, but the brightness of the image will be different. To eliminate this inconvenience, a system was established that comprehensively considers the aperture index and light transmittance, namely the T-type aperture. The relationship between aperture index (F) and T-stop aperture is as follows.

$$F \text{ No.} = \frac{f}{d}$$

f: focal length

d: Effective diameter of lens

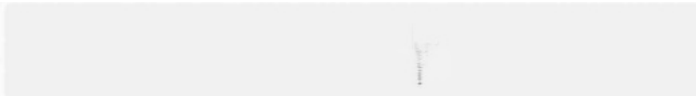
Calculation of field of view and focal length



Technical commentary

(1) Calculation of field of view

The example of the calculation method for field of view is as follows



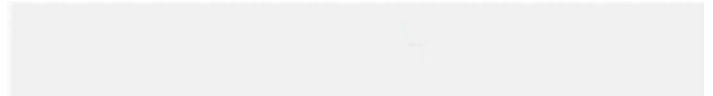
If using a 1/3 inch camera with an 8mm focal length lens and an object distance of 3m, the horizontal dimension of the monitor's full screen capture is:

$$Y = 4.8 \times \frac{3000}{8} = 1800$$

Y' : 4.8
L : 3000
f : 8

(2) Calculation of focal length

The calculation example of the focal length formula is as follows



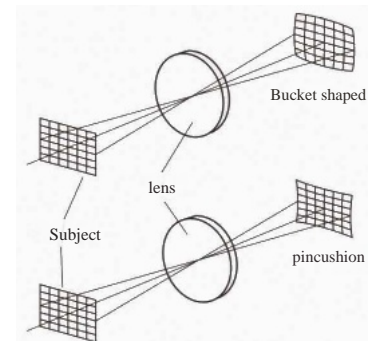
Using a 1/3-inch camera with a distance of 3m and a subject width of 2m, the focal length is:

$$f = 4.8 \times \frac{3000}{2000} = 7.2$$

Y' : 4.8
L : 3000
Y : 2000

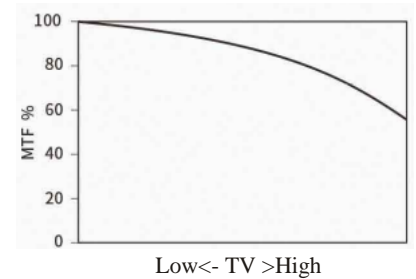
Distortion

The phenomenon where the subject becomes curved on the imaging surface after being captured by the lens. Distortion is divided into barrel distortion and pillow distortion.

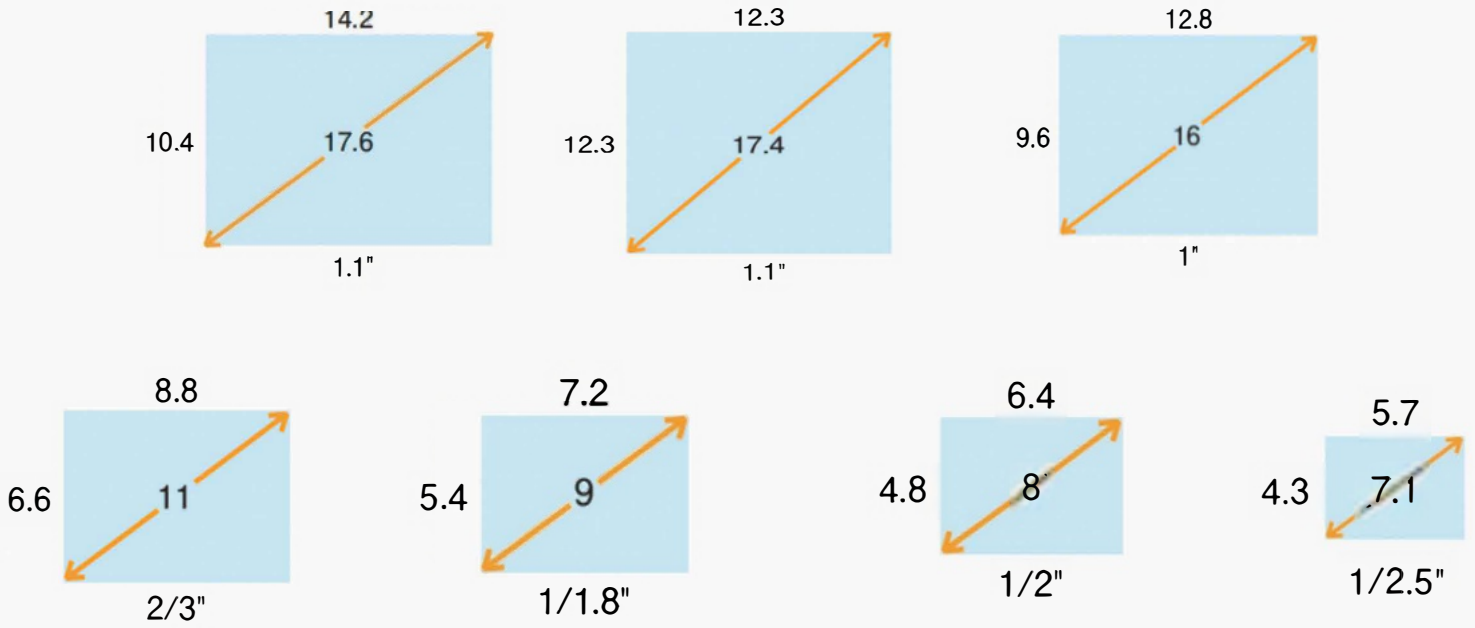


MTF (Decomposition Power and Modulation Transfer Function)

The accuracy of faithfully reproducing the contrast of the subject (black and white striped pattern) on the image plane using a ratio is called MTF. Decomposition power refers to the ability of a lens to reproduce black and white bar shapes with different intervals. On the contrary, the modulation transfer function refers to the accuracy of the lens in reproducing black and white stripe patterns. MTF is commonly used to describe the performance of a lens and is considered one of the good ways to evaluate its performance.



Chip size



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