C A N R I L L

BEGANIN 2009

Shenzhen Can-Rill Technologies Co., Ltd

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CE REACH RoHS

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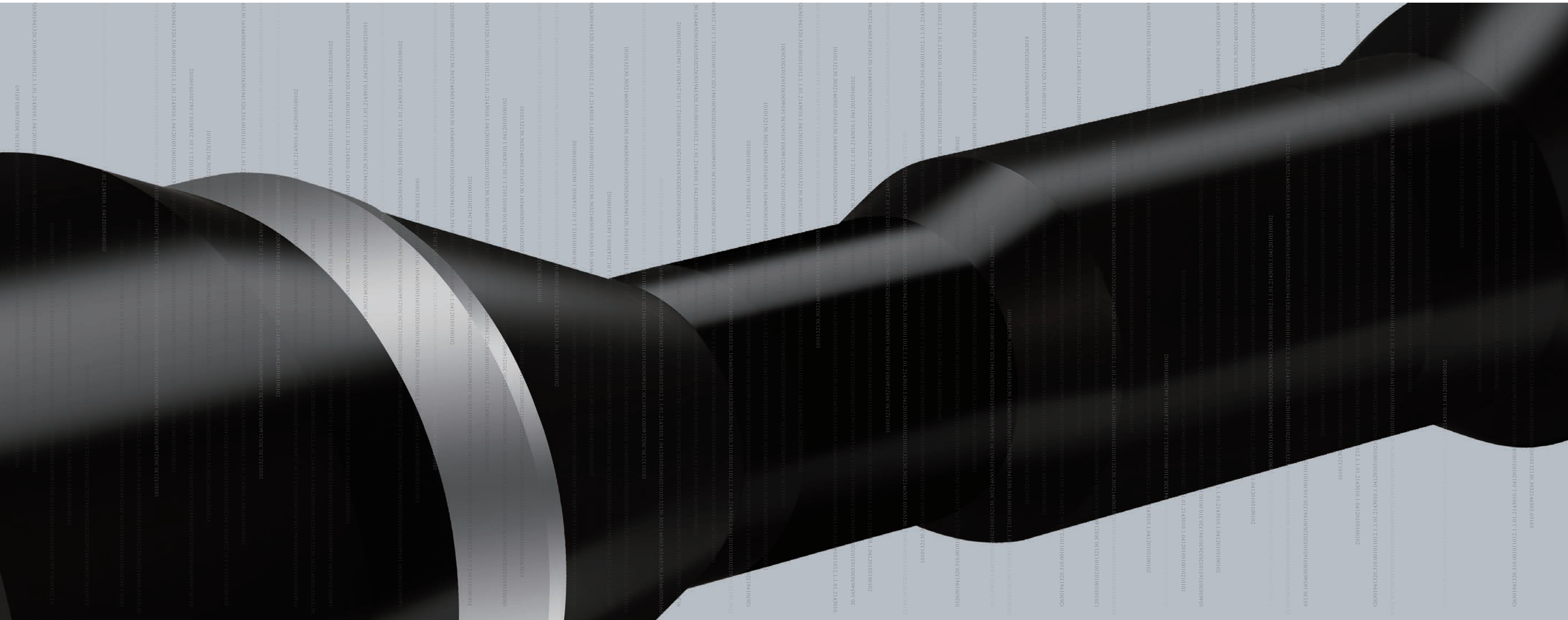


QUALITY
CRAFTSMANSHIP
KEEP
IMPROVING
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CONTENTS

ABOUT US

Shenzhen Can-Rill Technologies Co., Ltd

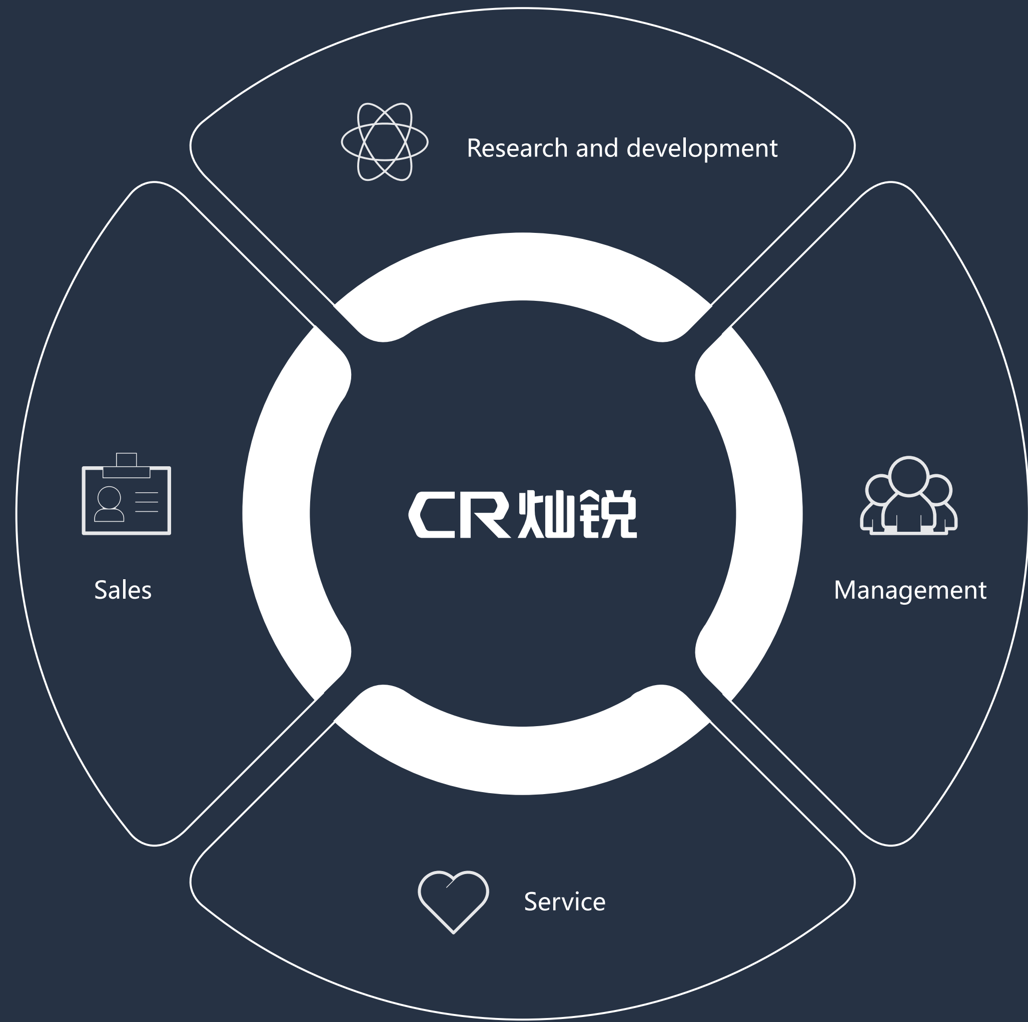
Telecentric lens has always been the core products of Can-Rill optics. We have formed an exclusive product line after a long period of accumulation to meet the different demands of FOV & Resolution from customers. In view of the market demands for high precision inspection of large field. After constantly upgrading and improving of our telecentric lens, inpectoin precition has improved primarily than old version and up to Micron level.

Our telecentric lens include the series as: Full frame telecentric lens, Line scan telecentric lens, 1' Inch telecentric lens, 4/3' telecentric lens, Perallel light, Laser foscusing lens, Microscope imaging module, Long working distance telecentric lens and other vison positioning telecentric lens. Can-Rill optics has designed series optical system, including extra largeFOV with more than 10 Megapixels Bi-telecentric lens, Megapixels series 10X zoom telecentric optics system, Submiron level ultra-high resolutioon optics, Fluorescence optical imaging system, X-ray imaging systems industry laser system and optical lithography system etc. We are looking forward to the higther achivement in the future.
Can-Rill opctis has a complete quality control system, including Star Point, Distortion, Telecentricity and SFR, and other specific professional software for evaluation system---From raw material outsourcing to prodction processes, prodct inspectoin to final product shipment, the quality control have been involved in every small part, to achieve high cost-effective & high quality prodcts supplying.
Our corporate cultrue including Integrity, Quality, Efficiency, Harmony and Services. It is our life-long goals and guidelines. Your support, make us fro good to excellent.

TEAM
INTRODUCTION

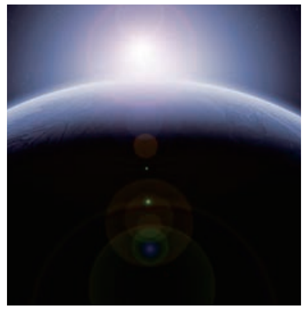
Cautious Keep Improving

Can-Rill has more than 20% R&D members, more than 50% staff with bachelor degree.
Complete team structure and strength of R&D which can provide the tip optical solutions.



R&D Team, Sales Team, Management Team, Service team

COMPANY CULTURE



Enterprise vision

Become the most influentially marked enterprise in industrial optics solutions all over the world.

Corporate mission

In the industrial optics field, proving high quality service for customers and create the value together.

Enterprise attitude

Integrity, enterprising, cooperative, innovation, pursuit.

Spirit of enterprise

Continuously surpass and Never give up.

Enterprise idea

Brand management, Integrity management, innovative development, efficiency and professional.

Enterprise vision

Professional depends on concentration and create future in details.

FULL-FRAME
BILATERAL
TELECENTRIC LENS

Bi-Telecentric Design

Available for 29 Megapixels
Industrial Camera

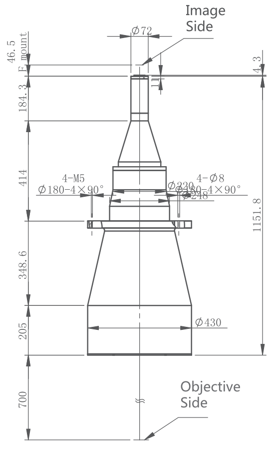
Compatible up to 44mm
Diagonal sensors.

- Magnification range: 1X-0.16X; FOV range: 36-270mm
- Compatible up to full-frame 29 megapixels industrial camera(Diagonal=44mm) or Line Scan camera with length less than 44mm.
- Bi-telecentric design to ensure the image quality.
- It is several times of inspection precision compare with 2/3' large field telecentric lens.
- F Mount and M58 Mount are available.

Model	Mag	WD (mm)	Telecentricity (°)	Optical distortion (%)	DOF (mm)	F#	MTF>0.3 (LP/mm)	Mount	Diameter	FOV for different Sensor Size(mm×mm)					
										2K×10um Line scan (20.48mm diagonal)	4K×7um Line scan (28.67mm diagonal)	8K×5um Line scan (40.94mm diagonal)	1.2"array 15.2×15.2mm (21.5mm diagonal)	4/3"array 18.1×13.6mm (22.6mm diagonal)	35FULL-FRAME 36×24mm (43mm diagonal)
XF-MDT0.115X700-D35 (Ⅲ)	0.115X	700	0.06	0.074	124	16	65	F	430	249.3	249.3	249.3	132.1x132.1	156.5x117.4	313x208.7
XF-MDT0.187X410-D35 (Ⅲ)	0.187X	410	0.057	0.065	34.8	12	85	F	300	153.3	153.3	153.3	81.2x81.2	96.3x72.2	192.5x128.3
XF-MDT0.16X410-D35 (Ⅲ)	0.16X	410	0.066	0.095	63.5	16	65	F	300	179.2	179.2	179.2	95x95	113.1x85	225x150
XF-MDT0.245X398-D35 (Ⅲ)	0.245X	398	0.05	0.055	29	16	65	F	206	117	117	117	62.04x62.04	73.88x55.51	146.94x97.96
XF-MDT0.288X398-D35 (Ⅲ)	0.288X	398	0.04	0.053	20.2	16	63	F	206	99.8	99.8	99.8	53X53	62.5X46.9	125X83.3
XF-MDT0.38X260-D35 (Ⅲ)	0.38X	260	0.04	0.05	11.6	16	63	F	143	75.4	75.4	75.4	40X40	47.4X35.5	94.74X63.16
XF-MDT0.46X260-D35 (Ⅲ)	0.46X	260	0.04	0.04	8	16	65	F	143	62.3	62.3	62.3	33.04X.33.04	39.35X29.57	78.26X52.17
XF-MDT0.48X200-D35 (Ⅲ)	0.48X	200	0.05	0.07	7.1	16	65	F	112	59.7	59.7	59.7	31.67X31.67	37.8X28.1	75X50
XF-MDT0.55X230-D35 (Ⅲ)	0.55X	230	0.05	0.03	3.6	16	65	F	112	52.1	52.1	52.1	27.6X27.6	32.7X24.5	65.5X43.6
XF-MDT0.58X200-D35 (Ⅲ)	0.58X	200	0.05	0.065	4.8	16	65	F	112	49.4	49.4	49.4	26.2X26.2	31X23.3	62.1X41.4
XF-MDT0.641X150-D35 (Ⅲ)	0.641X	150	0.65	0.03	4	16	85	F	90	44.7	44.7	44.7	23.71X23.71	28.1X21	56.2X37.4
XF-MDT0.741X150-D35 (Ⅲ)	0.741X	150	0.052	0.052	2.9	16	65	F	80	38.7	38.7	38.7	20.51X20.51	24.43X18.35	48.58X32.39
XF-MDT0.8X150-D35 (Ⅲ)	0.8X	150	0.05	0.05	2.6	16	63	F	80	35.83	35.83	35.83	19X19	22.5X16.88	45X30
XF-MDT1X150-D35 (Ⅲ)	1X	150	0.035	0.035	1.7	16	65	F	60	28.67	28.67	28.67	15.20X15.20	18.10X13.60	36.00X24.00

(Ⅲ) CANRILL Third generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

MODEL & PARAMETER



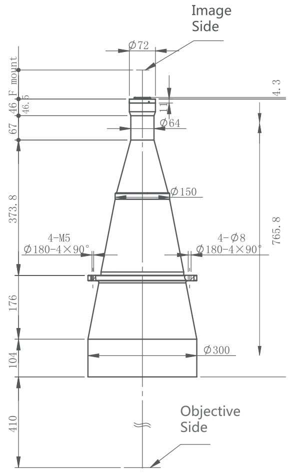
XF-MDT0.115X700-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.115
Object FOV	Φ376.5mm
Image FOV	Φ43.3mm
WD	700mm±6%
Telecentricity	<0.06°
DOF	124mm
Aperture	F16
Resolution	91.7μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.074%

Measurement range:

35film 36×24	313×208.7mm
4/3' 18×13.5	156.5×117.4mm
1' 12.8×9.6	111.3×83.5mm
2K Line Scan 2048×14μm	249.3mm
4K Line Scan 4096×7μm	249.3mm
6K Line Scan 6144×7μm	374mm
8K Line Scan 8192×3.5μm	249.3mm



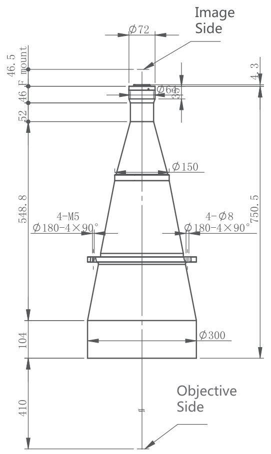
XF-MDT0.187X410-D35-HD

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.187
Object FOV	Φ231.6mm
Image FOV	Φ43.3mm
WD	410mm±3%
Telecentricity	<0.057°
DOF	34.8mm
Aperture	F12
Resolution	42.3μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.065%

Measurement range:

35film 36×24	192.5×128.3mm
4/3' 18×13.5	96.3×72.2mm
1' 12.8×9.6	68.4×51.3mm
2K Line Scan 2048×14μm	153.3mm
4K Line Scan 4096×7μm	153.3mm
6K Line Scan 6144×7μm	230mm
8K Line Scan 8192×3.5μm	153.3mm



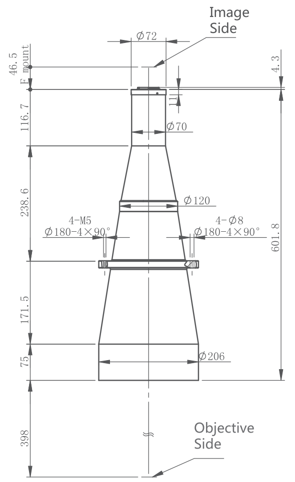
XF-MDT0.16X410-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.16
Object FOV	Φ270.6mm
Image FOV	Φ43.3mm
WD	410mm±3%
Telecentricity	<0.066°
DOF	63.5mm
Aperture	F16
Resolution	66μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.095%

Measurement range:

35film 36×24	225×150mm
4/3' 18×13.5	112.5×84.4mm
1' 12.8×9.6	80×60mm
2K Line Scan 2048×14μm	179.2mm
4K Line Scan 4096×7μm	179.2mm
6K Line Scan 6144×7μm	268.8mm
8K Line Scan 8192×3.5μm	179.2mm



XF-MDT0.245X398-D35

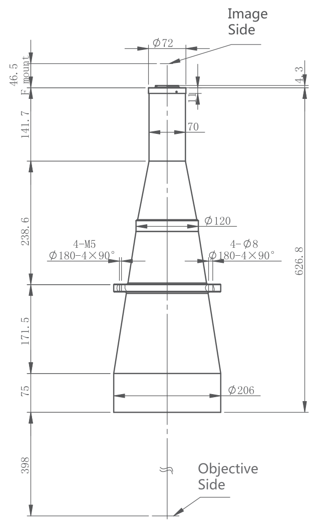
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.245
Object FOV	Φ176.7mm
Image FOV	Φ43.3mm
WD	398mm±3%
Telecentricity	<0.05°
DOF	29mm
Aperture	F16
Resolution	43.4μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.055%

Measurement range:

35film 36×24	146.9×98mm
4/3' 18×13.5	73.5×55.1mm
1' 12.8×9.6	52.2×39.2mm
2K Line Scan 2048×14μm	117mm
4K Line Scan 4096×7μm	117mm
6K Line Scan 6144×7μm	175mm
8K Line Scan 8192×3.5μm	117mm

Image
Side



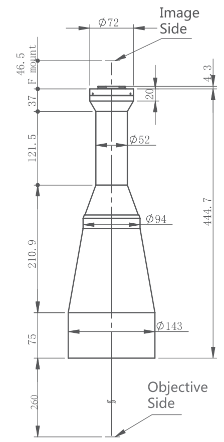
XF-MDT0.288X398-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.288
Object FOV	Φ150.4mm
Image FOV	Φ43.3mm
WD	398mm±3%
Telecentricity	<0.05°
DOF	20.2mm
Aperture	F16
Resolution	36.3μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.053%

Measurement range:

35film 36×24	125×83.3mm
4/3' 18×13.5	62.5×46.9mm
1' 12.8×9.6	44.4×33.3mm
2K Line Scan 2048×14μm	99.8mm
4K Line Scan 4096×7μm	99.8mm
6K Line Scan 6144×7μm	149.3mm
8K Line Scan 8192×3.5μm	99.8mm



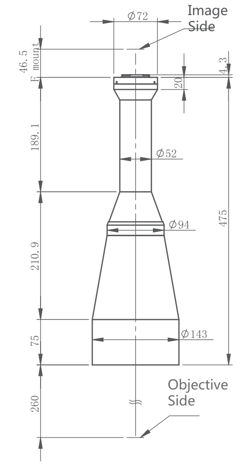
XF-MDT0.38X260-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.38
Object FOV	Φ115.9mm
Image FOV	Φ44mm
WD	260mm±3%
Telecentricity	<0.04°
DOF	11.6mm
Aperture	F16
Resolution	28μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.05%
	0.0118

Measurement range:

D35 36×34	94.7×63.2mm
7/4' 22.5×16.9	59.2×44.5mm
4/3' 18×13.5	47.4×35.5mm
1' 12.8×9.6	33.7×25.3mm
2K Line Scan 2048×14μm	75.4mm
4K Line Scan 4096×7μm	75.4mm
6K Line Scan 6144×7μm	113.1mm
8K Line Scan 8192×3.5μm	75.4mm



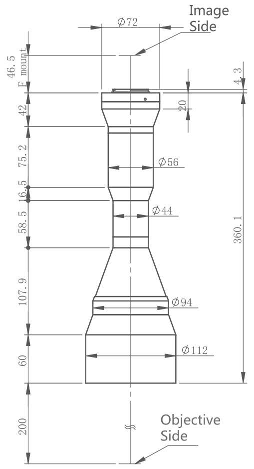
XF-MDT0.46X260-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.46
Object FOV	Φ115.9mm
Image FOV	Φ44mm
WD	260mm±3%
Telecentricity	<0.04°
DOF	8mm
Aperture	F16
Resolution	23μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.04%

Measurement range:

D35 36×34	78.3×52.2mm
7/4' 22.5×16.9	48.9×36.7mm
4/3' 18×13.5	39.1×29.3mm
1' 12.8×9.6	27.8×20.9mm
2K Line Scan 2048×14μm	62.3mm
4K Line Scan 4096×7μm	62.3mm
6K Line Scan 6144×7μm	93.4mm
8K Line Scan 8192×3.5μm	62.3mm



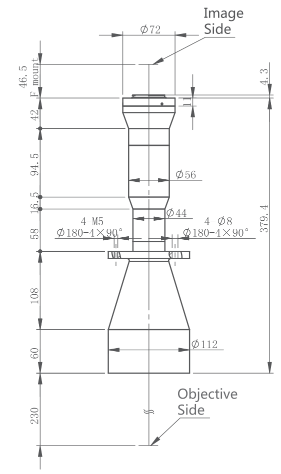
XF-MDT0.48X200-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.48
Object FOV	Φ90.2mm
Image FOV	Φ43.3mm
WD	200mm±6%
Telecentricity	<0.05°
DOF	7.1mm
Aperture	F16
Resolution	22μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.07%

Measurement range:

35film 36×24	75×50mm
4/3' 18×13.5	37.5×28.1mm
1' 12.8×9.6	26.7×20mm
2K Line Scan 2048×14μm	59.7mm
4K Line Scan 4096×7μm	59.7mm
6K Line Scan 6144×7μm	89.5mm
8K Line Scan 8192×3.5μm	59.7mm



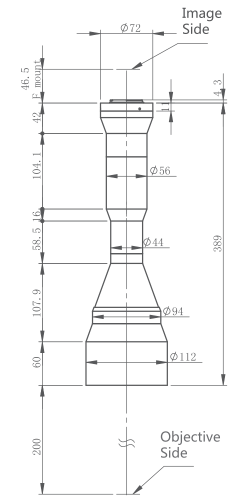
XF-MDT0.55X230-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.55
Object FOV	Φ79.3mm
Image FOV	Φ43.6mm
WD	230mm±3%
Telecentricity	<0.05°
DOF	3.6mm
Aperture	F16
Resolution	19.1μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.03%

Measurement range:

35film 36×24	65.5×43.6mm
4/3' 18×13.5	32.7×24.5mm
1'12.8×9.6	23.3×17.5mm
2K Line Scan 2048×14μm	52.1mm
4K Line Scan 4096×7μm	52.1mm
6K Line Scan 6144×7μm	78.2mm
8K Line Scan 8192×3.5μm	52.1mm



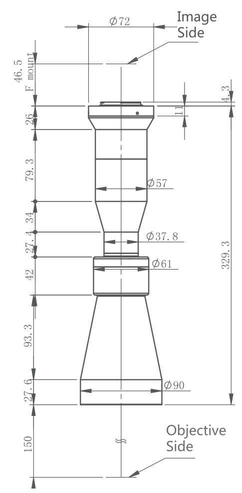
XF-MDT0.58X200-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.58
Object FOV	Φ74.7mm
Image FOV	Φ43.3mm
WD	200mm±6%
Telecentricity	<0.05°
DOF	4.8mm
Aperture	F16
Resolution	18.3μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.065%

Measurement range:

35film 36×24	62.1×41.4mm
4/3' 18×13.5	31×23.3mm
1' 12.8×9.6	22.1×16.6mm
2K Line Scan 2048×14μm	49.4mm
4K Line Scan 4096×7μm	49.4mm
6K Line Scan 6144×7μm	74.1mm
8K Line Scan 8192×3.5μm	49.4mm



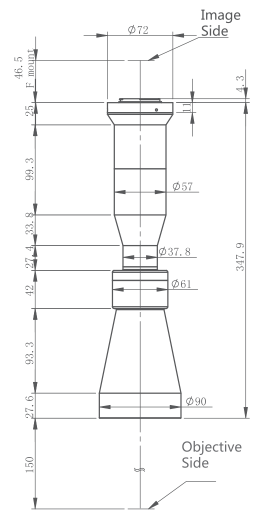
XF-MDT0.641X150-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.641
Object FOV	Φ68.6mm
Image FOV	Φ44mm
WD	150mm±3%
Telecentricity	<0.065°
DOF	4mm
Aperture	F16
Resolution	16.5μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.03%

Measurement range:

D35 36×24	56.2×37.4mm
7/4' 22.5×16.9	35.1×26.4mm
4/3' 18×13.5	28.1×21.1mm
1' 12.8×9.6	20×15mm
2K Line Scan 2048×14μm	44.7mm
4K Line Scan 4096×7μm	44.7mm
6K Line Scan 6144×7μm	67.1mm
8K Line Scan 8192×3.5μm	44.7mm



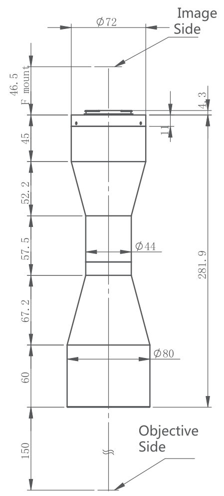
XF-MDT0.741X150-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.741
Object FOV	Φ58.4mm
Image FOV	Φ44mm
WD	150mm±3%
Telecentricity	<0.04°
DOF	2.9mm
Aperture	F16
Resolution	14.3μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.052%

Measurement range:

D35 36×24	48.6×32.4mm
7/4' 22.5×16.9	30.4×22.8mm
4/3' 18×13.5	24.3×18.2mm
1' 12.8×9.6	17.3×13mm
2K Line Scan 2048×14μm	38.7mm
4K Line Scan 4096×7μm	38.7mm
6K Line Scan 6144×7μm	58mm
8K Line Scan 8192×3.5μm	38.7mm



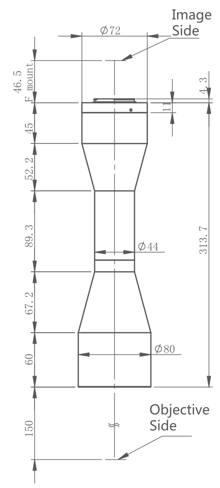
XF-MDT0.8X150-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.8
Object FOV	Φ54.1mm
Image FOV	Φ43.3mm
WD	150mm±3%
Telecentricity	<0.05°
DOF	2.6mm
Aperture	F16
Resolution	13.2μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.045%

Measurement range:

35film 36×24	45×30mm
4/3' 18×13.5	22.5×16.88mm
1' 12.8×9.6	16×12mm
2K Line Scan 2048×14μm	35.83mm
4K Line Scan 4096×7μm	35.83mm
6K Line Scan 6144×7μm	53.7mm
8K Line Scan 8192×3.5μm	35.83mm



XF-MDT1X150-D35

Specifications:

Optical Structure	Bi-Telecentric
Magnification	1
Object FOV	Φ43.3mm
Image FOV	Φ43.3mm
WD	150mm±3%
Telecentricity	<0.05°
DOF	1.7mm
Aperture	F16
Resolution	10.6μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.035%

Measurement range:

D35 36×34	36×24mm
7/4' 22.5×16.9	22.5×16.9mm
4/3' 18×13.5	18×13.5mm
1' 12.8×9.6	12.8×9.6mm
2K Line Scan 2048×14μm	28.67mm
4K Line Scan 4096×7μm	28.67mm
6K Line Scan 6144×7μm	43mm
8K Line Scan 8192×3.5μm	28.67mm

THREE QUARTERS

Bi-telecentric Design

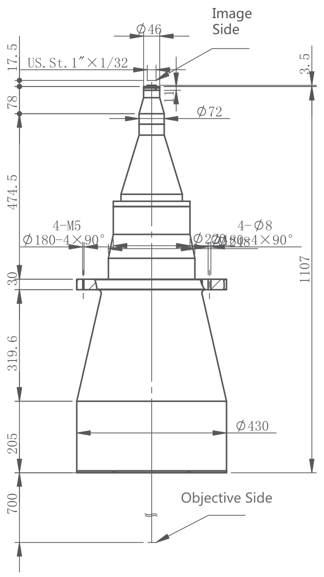
Compatible up to 4/3’ Industrial camera(Diagonal=23mm)

- Magnification: 1.35X-0.059X and cover FOV from 13mm to 205mm
- Bi-telecentric design to ensure excellent image quality
- Available for C Mount & F Mount

Model	Mag	WD (mm)	Telecentricity (°)	Optical distortion (%)	DOF (mm)	F#	MTF>0.3 (LP/MM	Mount	Diameter	FOV for different Sensor Size(mm×mm)				
										1/3"(4.8x 3.6mmdiagonal)	1/2"(6.4x 4.8mmdiagonal)	2/3"(8.8x 6.6mmdiagonal)	1"(12.8x 9.6mmdiagonal)	4/3"(18x 13.5mmdiagonal)
XF-MDT0.059X700-D23 (III)	0.059X	700	0.06	0.09	332	12	85	CorF	430	81.4x61	108.5x81.4	149.2x111.9	216.9x162.7	305.1x228.8
XF-MDT0.116X400-D23 (III)	0.116X	400	0.066	0.075	119	16	65	CorF	224	41.4x31	55.2x41.4	75.9x56.9	110.3x82.8	155.2x116.4
XF-MDT0.2X260-D23 (III)	0.2X	260	0.04	0.058	30.2	12	85	CorF	143	24x18	32x24	44x33	64x48	90x67.5
XF-MDT0.245X260-D23 (III)	0.245X	260	0.04	0.045	20.8	12	85	CorF	143	19.6x14.7	26.1x19.6	35.9x26.9	52.2x39.2	73.5x55.1
XF-MDT0.255X200-D23 (III)	0.255X	200	0.05	0.076	18.4	12	85	CorF	112	18.8x14.1	25.0x18.8	34.5x25.9	50.2x37.6	70.6x52.9
XF-MDT0.3X200-D23 (III)	0.3X	200	0.05	0.065	14.2	12	85	CorF	112	16x12	21.3x16	29.3x22	42.7X32	60x45
XF-MDT0.33X178-D23 (III)	0.33X	178	0.061	0.066	11.5	12	85	CorF	99	14.5X10.9	19.4X14.5	26.7X20	38.8X29.1	54.5X40.9
XF-MDT0.375X178-D23 (III)	0.375	178	0.062	0.044	9	12	85	CorF	99	12.8X9.6	17.1X12.8	23.5X17.6	34.1X25.6	48X36
XF-MDT0.42X150-D23 (III)	0.42X	150	0.064	0.014	6.8	12	85	CorF	77	11.4X8.6	15.2X11.4	21X15.7	30.5X22.9	42.8X32.1
XF-MDT0.5X150-D23 (III)	0.5X	150	0.053	0.055	5	12	85	CorF	77	9.6X7.2	12.8X9.6	17.6X13.2	25.6X19.2	36X27
XF-MDT0.63X110-D23 (III)	0.63X	110	0.1	0.016	3.2	12	85	CorF	60	7.6X5.7	10.2X7.6	14X10.5	20.3X15.2	28.6X21.4
XF-MDT0.63X110D-D23 (III)	0.63X	110	0.1	0.016	3.2	12	85	CorF	60	7.6X5.7	10.2X7.6	14X10.5	20.3X15.2	28.6X21.4
XF-MDT1.35X43-D23 (III)	1.35X	43	0.17	0.055	0.68	12	85	CorF	36	3.6X2.7	4.7X3.6	6.5X4.9	9.5X7.1	13.3X10
XF-MDT1.35X43D-D23 (III)	1.35X	43	0.2	0.05	0.68	12	85	CorF	36	3.6X2.7	4.7X3.6	6.5X4.9	9.5X7.1	13.3X10

(III) CANRILL Third generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

MODEL & PARAMETER



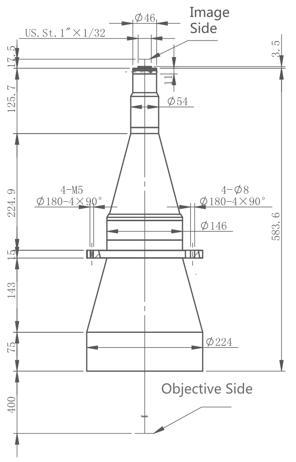
XF-MDT0.059X700-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.059
Object FOV	Φ 389.8mm
Image FOV	Φ 23mm
WD	700mm±3%
Telecentricity	<0.06°
DOF	332mm
Aperture	F12
Resolution	132μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.09%

Measurement range:

4/3' 18×13.5	305.1×228.8mm
1' 12.8×9.6	216.9×162.7mm
2/3' 8.8×6.6	149.2×111.9mm
1/2' 6.4×4.8	108.5×81.4mm
1/3' 4.8×3.6	81.4×61mm



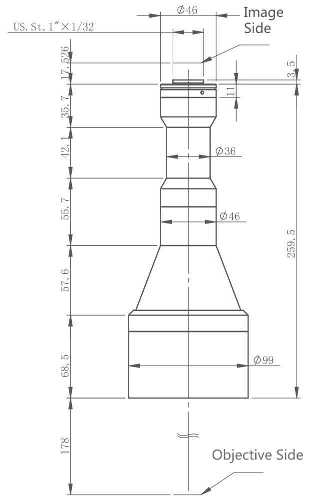
XF-MDT0.116X400-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.116
Object FOV	Φ198.3mm
Image FOV	Φ23mm
WD	400mm±3%
Telecentricity	<0.066°
DOF	119mm
Aperture	F16
Resolution	90.9μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.075%
NA	0.00363

Measurement range:

4/3' 18×13.5	155.2×116.4mm
1' 12.8×9.6	110.3×82.8mm
2/3' 8.8×6.6	75.9×56.9mm
1/2' 6.4×4.8	55.2×41.4mm
1/3' 4.8×3.6	41.4×31mm



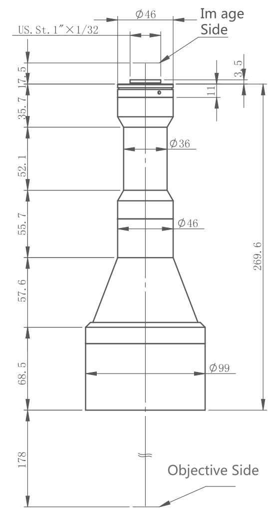
XF-MDT0.33X178-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.33
Object FOV	Φ69.7mm
Image FOV	Φ23mm
WD	178mm±3%
Telecentricity	<0.061°
DOF	11.5mm
Aperture	F12
Resolution	24.09μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.066%

Measurement range:

4/3' 18×13.5	54.5×40.9mm
1' 12.6×9.6	38.8×29.1mm
2/3' 8.8×6.6	26.7×20mm
1/2' 6.4×4.8	19.4×14.5mm
1/3' 4.8×3.6	14.5×10.9mm



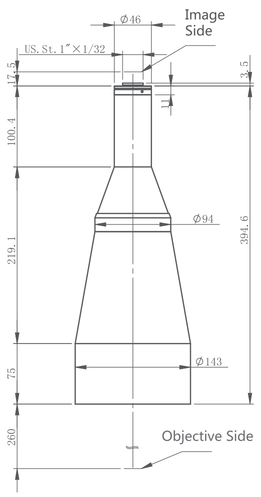
XF-MDT0.375X178-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.375
Object FOV	Φ61.3mm
Image FOV	Φ23mm
WD	178mm±3%
Telecentricity	<0.062°
DOF	9mm
Aperture	F12
Resolution	21.15μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.044%

Measurement range:

4/3' 18×13.5	48×36mm
1' 12.8×9.6	34.1×25.6mm
2/3' 8.8×6.6	23.5×17.6mm
1/2' 6.4×4.8	17.1×12.8mm
1/3' 4.8×3.6	12.8×9.6mm



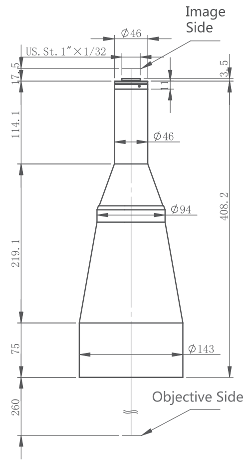
XF-MDT0.2X260-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.2
Object FOV	Φ115mm
Image FOV	Φ23mm
WD	260mm±3%
Telecentricity	<0.04°
DOF	30.2mm
Aperture	F12
Resolution	39.76μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.058%

Measurement range:

4/3' 18×13.5	90×67.5mm
1' 12.8×9.6	64×48mm
2/3' 8.8×6.6	44×33mm
1/2' 6.4×4.8	32×24mm
1/3' 4.8×3.6	24×18mm



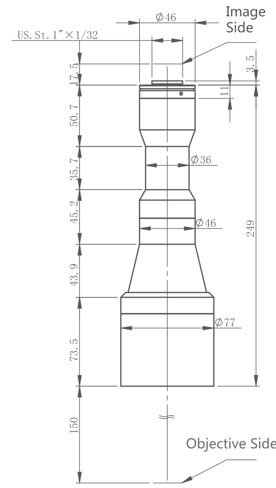
XF-MDT0.245X260-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.245
Object FOV	Φ93.9mm
Image FOV	Φ23mm
WD	260mm±3%
Telecentricity	<0.04°
DOF	20.8mm
Aperture	F12
Resolution	32.35μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.045%

Measurement range:

4/3' 18×13.5	73.5×55.1mm
1' 12.8×9.6	52.2×39..2mm
2/3' 8.8×6.6	35.9×26.9mm
1/2' 6.4×4.8	26.1×19.6mm
1/3' 4.8×3.6	19.6×14.7mm



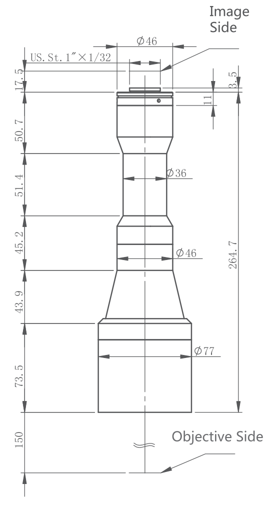
XF-MDT0.42X150-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.42
Object FOV	Φ54.8mm
Image FOV	Φ23mm
WD	150mm±3%
Telecentricity	<0.064°
DOF	6.8mm
Aperture	F12
Resolution	18.86μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.014%

Measurement range:

4/3' 18×13.5	42.9×32.1mm
1' 12.8×9.6	30.5×22.9mm
2/3' 8.8×6.6	21×15.7mm
1/2' 6.4×4.8	15.2×11.4mm
1/3' 4.8×3.6	11.4×8.6mm



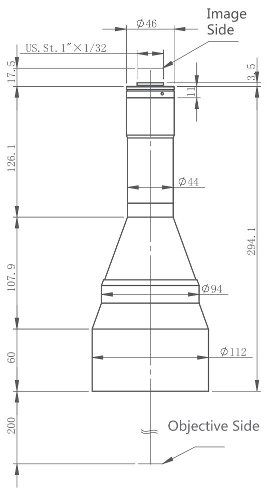
XF-MDT0.5X150-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ46mm
Image FOV	Φ23mm
WD	150mm±3%
Telecentricity	<0.053°
DOF	5mm
Aperture	F12
Resolution	15.9μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.055%

Measurement range:

4/3' 18×13.5	36×27mm
1' 12.8×9.6	25.6×19.2mm
2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



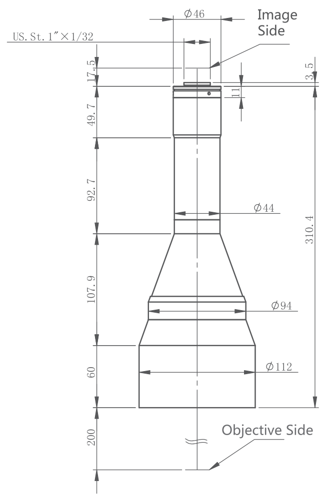
XF-MDT0.255X200-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.255
Object FOV	Φ90.2mm
Image FOV	Φ23mm
WD	200mm±3%
Telecentricity	<0.052°
DOF	18.4mm
Aperture	F12
Resolution	31.13μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.076%

Measurement range:

4/3' 18×13.5	70.6×52.9mm
1' 12.8×9.6	50.2×37.6mm
2/3' 8.8×6.6	34.5×25.9mm
1/2' 6.4×4.8	25.1×18.8mm
1/3' 4.8×3.6	18.8×14.1mm



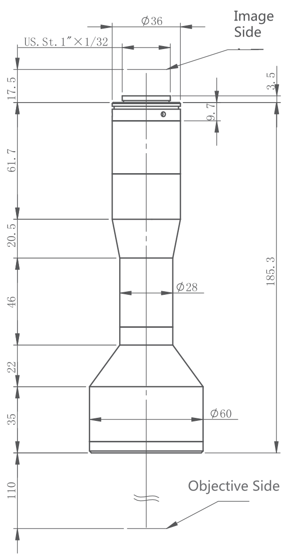
XF-MDT0.3X200-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.3
Object FOV	Φ 76.7mm
Image FOV	Φ 23mm
WD	200mm±3%
Telecentricity	<0.054°
DOF	14.2mm
Aperture	F12
Resolution	26.4μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.065%

Measurement range:

4/3' 18×13.5	60×45mm
1' 12.8×9.6	42.7×32mm
2/3' 8.8×6.6	29.3×22mm
1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm



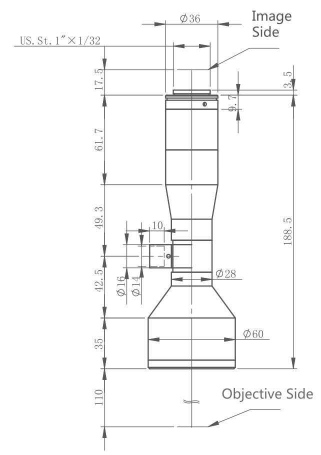
XF-MDT0.63X110-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.63
Object FOV	Φ 36.5mm
Image FOV	Φ 23mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	3.16mm
Aperture	F12
Resolution	12.6μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.016%

Measurement range:

4/3' 18×13.5	28.6×21.4mm
1' 12.8×9.6	20.3×15.2mm
2/3' 8.8×6.6	14×10.5mm
1/2' 6.4×4.8	10.2×7.6mm
1/3' 4.8×3.6	7.6×5.7mm



XF-MDT0.63X110D-D23

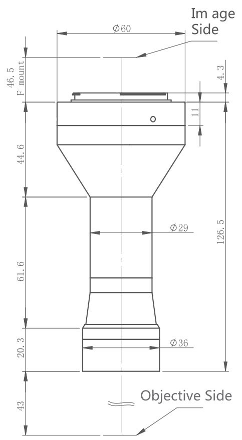
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.63
Object FOV	Φ36.5mm
Image FOV	Φ23mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	3.15mm
Aperture	F12
Resolution	12.6μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.026%

Measurement range:

4/3' 18×13.6	28.6×21.4mm
1' 12.8×9.6	20.3×15.2mm
2/3' 8.8×6.6	14×10.5mm
1/2' 6.4×4.8	10.2×7.6mm
1/3' 4.8×3.6	7.6×5.7mm

MODEL & PARAMETER



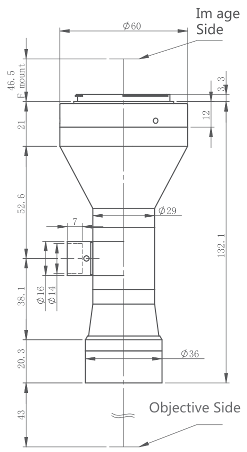
XF-MDT1.35X43-D23

Specifications:

Optical Structure	Bi-Telecentric
Magnification	1.35
Object FOV	Φ17mm
Image FOV	Φ23mm
WD	43mm±3%
Telecentricity	<0.66°
DOF	0.68mm
Aperture	F12
Resolution	5.88μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.05%

Measurement range:

4/3' 18×13.5	13.3×10mm
1' 12.8×9.6	9.5×7.1mm
2/3' 8.8×6.6	6.5×4.9mm
1/2' 6.4×4.8	4.7×3.6mm
1/3' 4.8×3.6	3.6×2.7mm



XF-MDT1.35X43D

Specifications:

Optical Structure	Bi-Telecentric
Magnification	1.35
Object FOV	Φ17mm
Image FOV	Φ23mm
WD	43mm±3%
Telecentricity	<0.173°
DOF	0.676mm
Aperture	F12
Resolution	5.86μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.055%

Measurement range:

4/3' 18×13.5	13.3×10mm
1' 12.8×9.6	9.5×7.1mm
2/3' 8.8×6.6	6.5×4.9mm
1/2' 6.4×4.8	4.7×3.6mm
1/3' 4.8×3.6	3.6×2.7mm

LARGE AREA
ARRAY BILATERAL TELECENTRIC LENS

Bi-telecentric Design

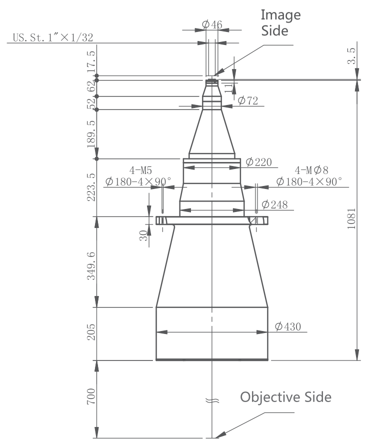
Compatible up to 1 inch camera with 16 Megapixels

Compatible up to 1' inch camera

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF (mm)	F#	MTF>0.3 (LP/mm)	mount	FOV for different Sensor Size(mm×mm)	
										2/3inches 8.8×6.6	1inches 12.8×9.6
XF-5MDT0.042X700-1C (Ⅲ)	non-coaxial	0.042X	700	0.06	0.095	440	F8	>125	C or F	209.5x157.1	304.8x228.6
XF-5MDT0.06X410-1C (Ⅲ)	non-coaxial	0.06X	410	0.066	0.011	314.8	F12	>85	C or F	146.7x110.0	213.3x160.0
XF-5MDT0.084X400-1C (Ⅲ)	non-coaxial	0.084X	400	0.066	0.054	114	F8	>125	C or F	104.x78.6	152.4x114.3
XF-5MDT0.12X280-1C (Ⅲ)	non-coaxial	0.12X	280	0.061	0.018	59	F8	>120	C or F	73.3x55	106.7x80
XF-5MDT0.15X250-1C (Ⅲ)	non-coaxial	0.15X	250	0.061	0.023	37.8	F8	>130	C or F	58.7x44	85.3x64.0
XF-5MDT0.209X178-1C (Ⅲ)	non-coaxial	0.209X	178	0.065	0.088	19	F8	>120	C or F	42.1x31.6	61.2x45.9
XF-5MDT0.25X200-1C (Ⅲ)	non-coaxial	0.25X	200	0.15	1.25	14.3	F9	>120	C or F	35.2x26.4	51.2x38.4
XF-5MDT0.275X200-1C (Ⅲ)	non-coaxial	0.275X	200	0.03	0.04	11	F8	>125	C or F	32x24	46.5x36.9
XF-5MDT0.35X110-1C (Ⅲ)	non-coaxial	0.35X	110	0.1	0.084	4.3	F8	>120	C or F	25.1x18.9	36.6x27.4
XF-5MDT0.35X110D-1C (Ⅲ)	coaxial	0.35X	110	0.1	0.05	4.3	F8	>120	C or F	25.1x18.9	36.6x27.4
XF-5MDT0.367X200-1C (Ⅲ)	non-coaxial	0.367X	200	0.03	0.04	6.2	F8	>125	C or F	24x18	34.9x26.2
XF-5MDT0.4X110-1C (Ⅲ)	non-coaxial	0.4x	110	0.1	0.08	5.2	F8	>120	C or F	22x16.5	32x24
XF-5MDT0.4X110D-1C (Ⅲ)	coaxial	0.4x	110	0.1	0.08	5.2	F8	>120	C or F	22x16.5	32x24
XF-5MDT0.44X110-1C (Ⅲ)	non-coaxial	0.44x	110	0.06	0.02	4.33	F8	>125	C or F	20x15	29.1x21.8
XF-5MDT0.44X110D-1C (Ⅲ)	coaxial	0.44x	110	0.1	0.08	5.25	F8	>120	C or F	20x15	29.1x21.8
XF-5MDT0.5X65-1C (Ⅲ)	non-coaxial	0.5X	65	0.07	0.07	2.54	F6	>165	C or F	17.6x13.2	25.6x19.2
XF-5MDT0.5X65D-1C (Ⅲ)	coaxial	0.5x	65	0.07	0.002	2.52	F6	>165	C or F	17.6x13.2	25.6x19.2
XF-5MDT0.5X220-1C (Ⅲ)	non-coaxial	0.5x	220	0.1	0.07	3.3	F8	>125	C or F	17.6x13.2	25.6x19.2
XF-5MDT0.55X220-1C (Ⅲ)	non-coaxial	0.55x	220	0.1	0.003	2.7	F8	>125	C or F	16x12	23.3x17.5
XF-5MDT0.6X80-1C (Ⅲ)	non-coaxial	0.6x	80	0.1	0.017	2.2	F8	>125	C or F	14.7x11	21.3x16
XF-5MDT0.6X80D-1C (Ⅲ)	coaxial	0.6x	80	0.1	0.062	2.2	F8	>125	C or F	14.7x11	21.3x16
XF-5MDT0.74X65-1C (Ⅲ)	non-coaxial	0.74x	65	2.58	0.065	1.6	F8.5	>120	C or F	11.9x8.9	17.3x13
XF-5MDT1X65-1C (Ⅲ)	non-coaxial	1x	65	0.1	0.008	0.75	F7	>140	C or F	8.8x6.6	12.8x9.6
XF-5MDT1X65D-1C (Ⅲ)	coaxial	1x	65	0.1	0.008	0.75	F7	>140	C or F	8.6x6.6	12.8x9.6

(Ⅲ) CANRILL Third generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

- Magnification range: 1X-0.042X and FOV 6.6-304mm can be covered
- Maximally support to 1 inch camera with 16 megapixels
- Bi-telecentric lens to keep high image quality
- Increase several times of inspection precision compare with 2/3' large field telecentric lens



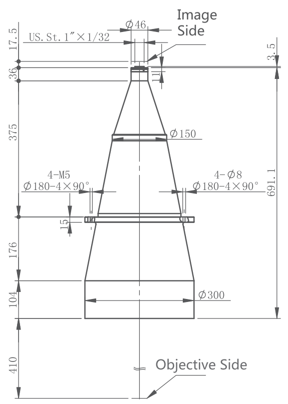
XF-5MDT0.042X700-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.042
Object FOV	Φ385.7mm
Image FOV	Φ16.2mm
WD	700mm±3%
Telecentricity	<0.06°
DOF	440mm
Aperture	F8
Resolution	126.92μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.095%

Measurement range:

1' 12.8×9.6	304.8×228.6mm
2/3' 8.8×6.6	209.5×157.1mm
1/2' 6.4×4.8	152.4×114.3mm
1/3' 4.8×3.6	114.3×85.7mm



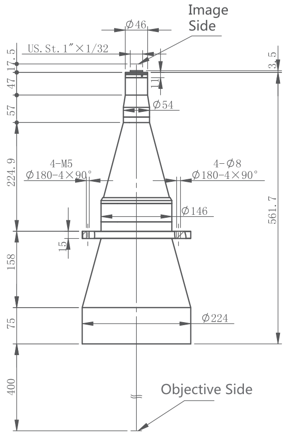
XF-5MDT0.06X410-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.06
Object FOV	Φ267mm
Image FOV	Φ16mm
WD	410mm±3%
Telecentricity	<0.066°
DOF	314.8mm
Aperture	F12
Resolution	132μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.11%

Measurement range:

1' 12.8×9.6	213.3×160mm
2/3' 8.8×6.6	146.7×110mm
1/2' 6.4×4.8	106.7×80mm
1/3' 4.8×3.6	80×60mm



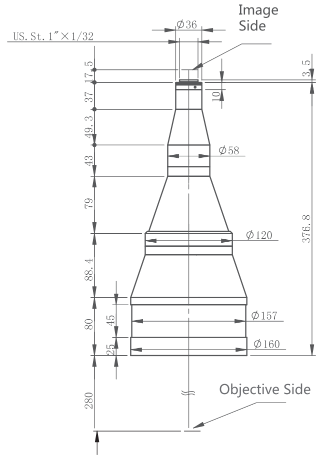
XF-5MDT0.084X400-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.084
Object FOV	Φ192.9mm
Image FOV	Φ16.2mm
WD	400mm±3%
Telecentricity	<0.066°
DOF	114mm
Aperture	F8
Resolution	62.26μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.054%

Measurement range:

1' 12.8×9.6	152.4×114.3mm
2/3' 8.8×6.6	104.8×78.6mm
1/2' 6.4×4.8	76.2×57.1mm
1/3' 4.8×3.6	57.1×42.9mm



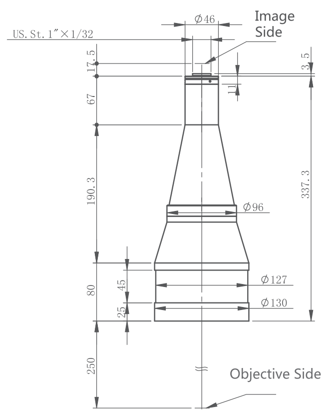
XF-5MDT0.12X280-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.12
Object FOV	Φ133mm
Image FOV	Φ16mm
WD	280mm±3%
Telecentricity	<0.061°
DOF	59mm
Aperture	F8
Resolution	44μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.018%

Measurement range:

1' 12.8×9.6	106.7×80mm
2/3' 8.8×6.6	73.3×55mm
1/2' 6.4×4.8	53.3×40mm
1/3' 4.8×3.6	40×30mm



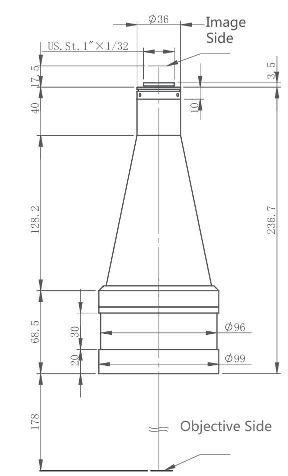
XF-5MDT0.15X250-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.15
Object FOV	Φ107mm
Image FOV	Φ16mm
WD	250mm±3%
Telecentricity	<0.061°
DOF	37.8mm
Aperture	F8
Resolution	35.1μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.023%

Measurement range:

1' 12.8×9.6	85.3×64mm
2/3' 8.8×6.6	58.7×44mm
1/2' 6.4×4.8	42.7×32mm
1/3' 4.8×3.6	32×24mm



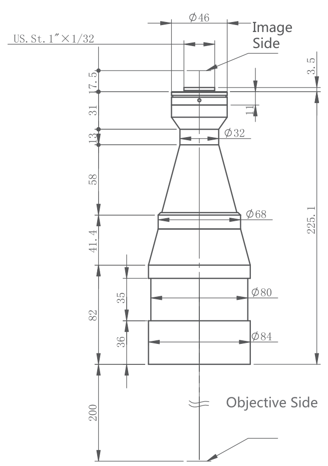
XF-5MDT0.209X178-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.209
Object FOV	Φ77mm
Image FOV	Φ16mm
WD	178mm±3%
Telecentricity	<0.065°
DOF	19mm
Aperture	F8
Resolution	25.2μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.088%

Measurement range:

1' 12.8×9.6	61.2×45.9mm
2/3' 8.8×6.6	42.1×31.6mm
1/2' 6.4×4.8	30.6×23mm
1/3' 4.8×3.6	23×17.2mm



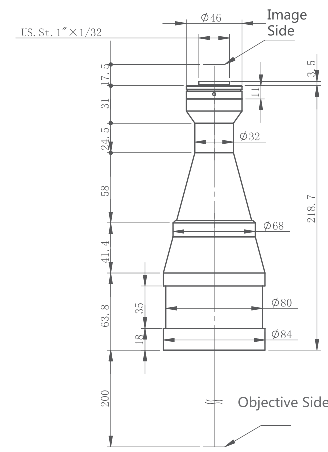
XF-5MDT0.25X200-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.25
Object FOV	Φ64mm
Image FOV	Φ16mm
WD	200mm±3%
Telecentricity	<0.15°
DOF	14.3mm
Aperture	F9
Resolution	23.6μm
Image side MTF	>0.3@105lp/mm
Optical Distortion	<1.25%

Measurement range:

1' 12.8×9.6	51.2×38.4mm
2/3' 8.8×6.6	35.2×26.4mm
1/2' 6.4×4.8	25.6×19.2mm
1/3' 4.8×3.6	19.2×14.4mm



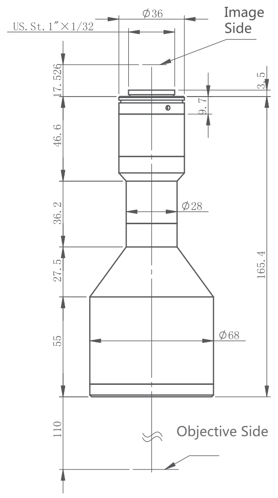
XF-5MDT0.275X200-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.275
Object FOV	Φ58mm
Image FOV	Φ16mm
WD	200mm±3%
Telecentricity	<0.03°
DOF	11mm
Aperture	F8
Resolution	19.4μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.04%

Measurement range:

1' 12.8×9.6	46.5×36.9mm
2/3' 8.8×6.6	32×24mm
1/2' 6.4×4.8	23.3×17.5mm
1/3' 4.8×3.6	17.5×13.1mm



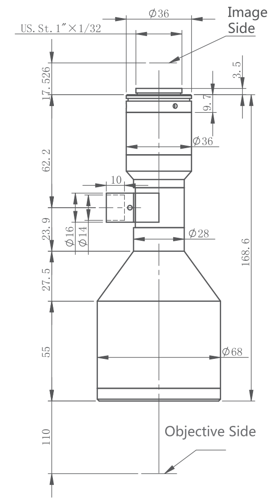
XF-5MDT0.35X110-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.35
Object FOV	Φ46.3mm
Image FOV	Φ16.2mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	4.3mm
Aperture	F8
Resolution	15μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.084%

Measurement range:

1' 12.8×9.6	36.6×27.4mm
2/3' 8.8×6.6	25.1×18.9mm
1/2' 6.4×4.8	18.3×13.7mm
1/3' 4.8×3.6	13.7×10.3mm



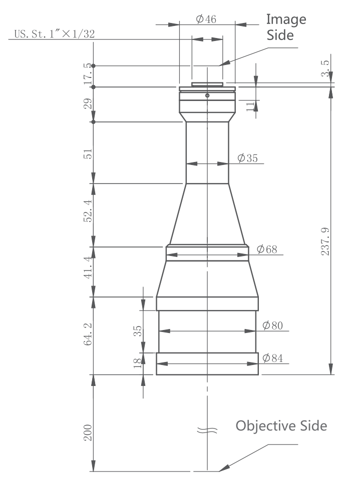
XF-5MDT0.35X110D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.35
Object FOV	Φ46.3mm
Image FOV	Φ16.2mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	4.3mm
Aperture	F8
Resolution	15μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.05%

Measurement range:

1' 12.8×9.6	36.6×27.4mm
2/3' 8.8×6.6	25.1×18.9mm
1/2' 6.4×4.8	18.3×13.7mm
1/3' 4.8×3.6	13.7×10.3mm



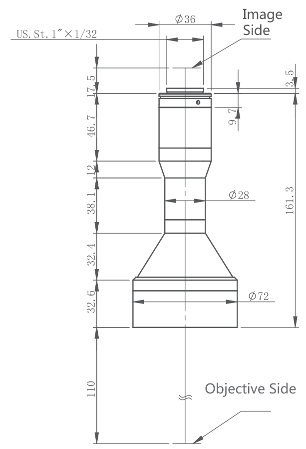
XF-5MDT0.367X200-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.367
Object FOV	Φ44mm
Image FOV	Φ16mm
WD	200mm±3%
Telecentricity	<0.03°
DOF	6.2mm
Aperture	F8
Resolution	014.3μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.04%

Measurement range:

1' 12.8×9.6	34.9×26.2mm
2/3' 8.8×6.6	24×18mm
1/2' 6.4×4.8	17.4×13.1mm
1/3' 4.8×3.6	13.1×9.8mm



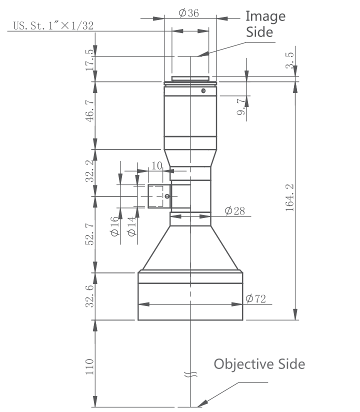
XF-5MDT0.4X110-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.4
Object FOV	Φ40mm
Image FOV	Φ16mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	5.2mm
Aperture	F8
Resolution	13.2μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.08%

Measurement range:

1' 12.8×9.6	32×24mm
2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



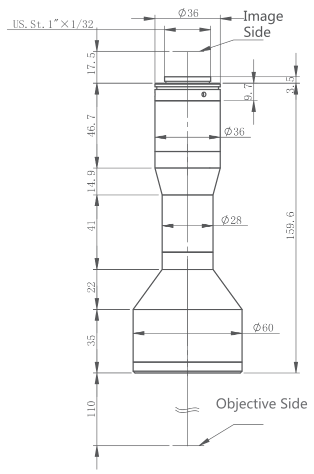
XF-5MDT0.4X110D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.4
Object FOV	Φ40mm
Image FOV	Φ16mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	5.2mm
Aperture	F8
Resolution	13.2μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.08%

Measurement range:

1' 12.8×9.6	32×24mm
2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



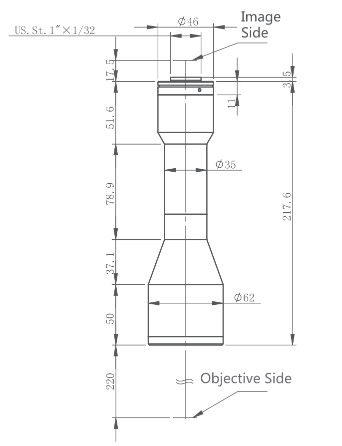
XF-5MDT0.44X110-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.44
Object FOV	Φ36mm
Image FOV	Φ16mm
WD	110mm±3%
Telecentricity	<0.06°
DOF	4.33mm
Aperture	F8
Resolution	12.04μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.02%

Measurement range:

1' 12.8×9.6	29.1×21.8mm
2/3' 8.8×6.6	20×15mm
1/2' 6.4×4.8	14.5×10.9mm
1/3' 4.8×3.6	10.9×8.2mm



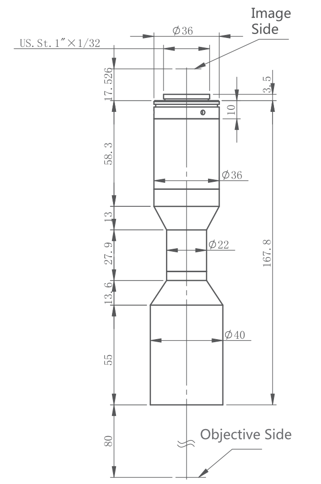
XF-5MDT0.55X220-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.55
Object FOV	Φ29mm
Image FOV	Φ16mm
WD	220mm±3%
Telecentricity	<0.1°
DOF	2.7mm
Aperture	F8
Resolution	9.7μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.003%

Measurement range:

1' 12.8×9.6	23.3×17.5mm
2/3' 8.8×6.6	16×12mm
1/2' 6.4×4.8	11.6×8.7mm
1/3' 4.8×3.6	8.7×6.5mm



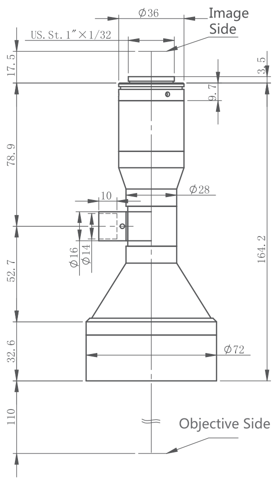
XF-5MDT0.6X80-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.6
Object FOV	Φ27mm
Image FOV	Φ16.2mm
WD	80mm±5%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F8
Resolution	8.9μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.017%

Measurement range:

1' 12.8×9.6	21.3×16mm
2/3' 8.8×6.6	14.7×11mm
1/2' 6.4×4.8	10.7×8mm
1/3' 4.8×3.6	8×6mm



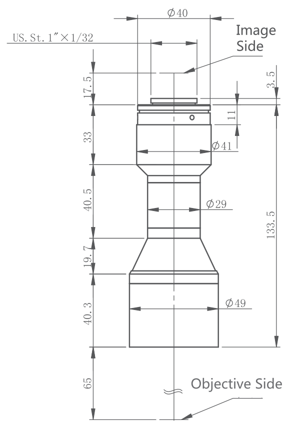
XF-5MDT0.44X110D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.44
Object FOV	Φ40.5mm
Image FOV	Φ16.2mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	5.25mm
Aperture	F8
Resolution	13.2μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.08%

Measurement range:

1' 12.8×9.6	29.1×21.8mm
2/3' 8.8×6.6	20×15mm
1/2' 6.4×4.8	14.5×10.9mm
1/3' 4.8×3.6	10.9×8.2mm



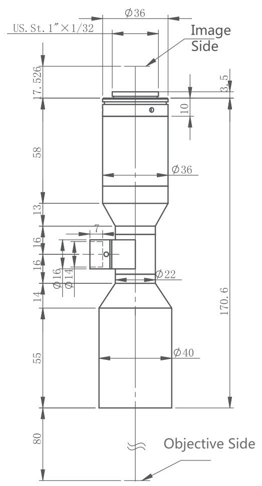
XF-5MDT0.5X65-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ32mm
Image FOV	Φ16mm
WD	65mm±3%
Telecentricity	<0.07°
DOF	2.54mm
Aperture	F6
Resolution	7.95μm
Image side MTF	>0.3@165lp/mm
Optical Distortion	<0.003%

Measurement range:

1' 12.8×9.6	25.6×19.2mm
2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



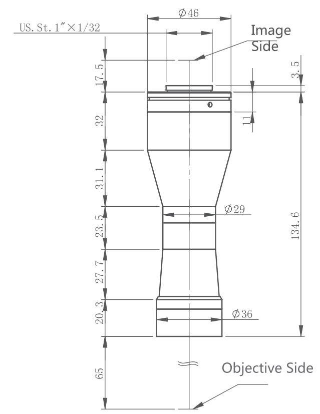
XF-5MDT0.6X80D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.6
Object FOV	Φ27mm
Image FOV	Φ16.2mm
WD	80mm±5%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F8
Resolution	8.9μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.062%

Measurement range:

1' 12.8×9.6	21.3×16mm
2/3' 8.8×6.6	14.7×11mm
1/2' 6.4×4.8	10.7×8mm
1/3' 4.8×3.6	8×6mm



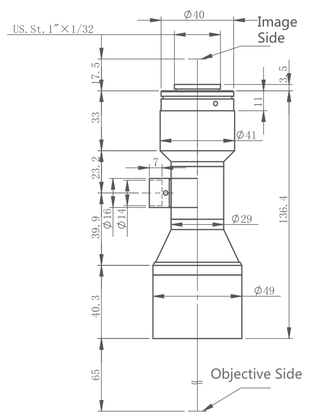
XF-5MDT0.74X65-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.74
Object FOV	Φ22mm
Image FOV	Φ16mm
WD	65mm±3%
Telecentricity	<2.58°
DOF	1.6mm
Aperture	F8.5
Resolution	7.59μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.065%

Measurement range:

1' 12.8×9.6	17.3×13mm
2/3' 8.8×6.6	11.9×8.9mm
1/2' 6.4×4.8	8.6×6.5mm
1/3' 4.8×3.6	6.5×4.9mm



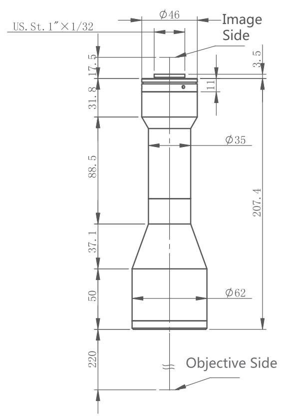
XF-5MDT0.5X65D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ32mm
Image FOV	Φ16mm
WD	65mm±3%
Telecentricity	<0.07°
DOF	2.54mm
Aperture	F6
Resolution	7.95μm
Image side MTF	>0.3@165lp/mm
Optical Distortion	<0.002%

Measurement range:

1' 12.8×9.6	25.6×19.2mm
2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



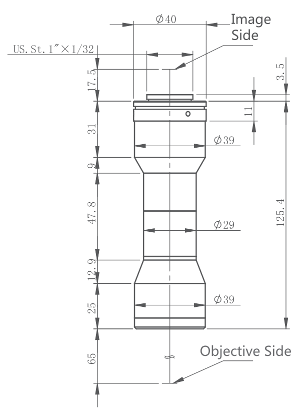
XF-5MDT0.5X220-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ32mm
Image FOV	Φ16mm
WD	220mm±3%
Telecentricity	<0.1°
DOF	3.3mm
Aperture	F8
Resolution	10.6μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.07%

Measurement range:

1' 12.8×9.6	25.6×19.2mm
2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



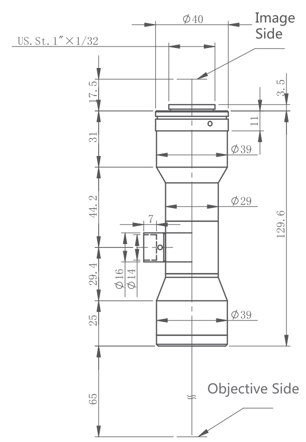
XF-5MDT1X65-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	1
Object FOV	Φ16mm
Image FOV	Φ16mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.75mm
Aperture	F7
Resolution	4.65μm
Image side MTF	>0.3@140lp/mm
Optical Distortion	<0.008%

Measurement range:

1' 12.8×9.8	12.8×9.8
2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



XF-5MDT1X65D-1C

Specifications:

Optical Structure	Bi-Telecentric
Magnification	1
Object FOV	Φ16mm
Image FOV	Φ16mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.75mm
Aperture	F7
Resolution	4.65μm
Image side MTF	>0.3@140lp/mm
Optical Distortion	<0.008%

Measurement range:

1' 12.8×9.6	12.8× 9.6mm
2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm

WIDE FIELD TWO- THIRDS IN BILATERAL TELECENTRIC LENS

Meet varies FOV requirements

Support to 2/3′ camera

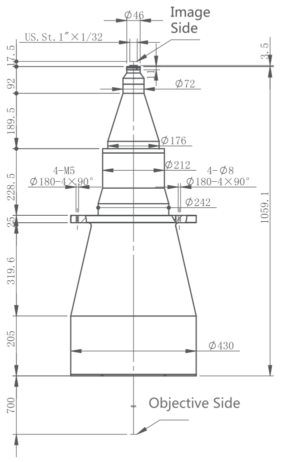
Narrowed Aperture to increase DOF.

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF (mm)	F#	MTF>0.3 (LP/mm)	mount	FOV for different Sensor Size(mm×mm)			
										1/3″ 4.8×3.6	1/2″ 6.4×4.8	1/1.8″ 7.13×5.37	2/3″ 8.8×6.6
XF-5MDT0.0285X700 (III)	non-coaxial	0.0285X	700	0.06	0.095	872	F8	>125	C	168.4x126.3	224.6x168.4	250x188.42	308.8x231.6
XF-5MDT0.041x410 (III)	non-coaxial	0.041X	410	0.064	0.1	450	F8	>125	C	117.1x87.8	156.1x117.1	173.9x130.9	191.3x143.5
XF-5MDT0.045x400	non-coaxial	0.045X	400	0.1	0.04	240	F6	>150	C	106.6x80	142.2x106.7	NA	NA
XF-5MDT0.046x535 (III)	non-coaxial	0.046X	535	0.08	0.05	230	F6	>175	C	104.3x78.3	139.1x104.3	155x116.7	191.3x104.3
XF-5MDT0.057X400 (III)	non-coaxial	0.057X	400	0.066	0.07	236	F8	>135	C	84.2x63.2	112.3x84.2	125x94.2	154.4x115.8
XF-5MDT0.08X280 (III)	non-coaxial	0.08X	280	0.04	0.016	130	F8	>130	C	60x45	80x60	89.1x67.1	110x82.5
XF-5MDT0.09X280 (III)	non-coaxial	0.09X	280	0.035	0.04	102	F8	>130	C	53.3x40	71.1x53.3	79.2x59.6	97.8x82.5
XF-5MDT0.1x250 (III)	non-coaxial	0.1X	250	0.035	0.05	85	F8	>130	C	48x36	64x48	71.3x53.7	88x66
XF-5MDT0.12X250 (III)	non-coaxial	0.12X	250	0.035	0.04	58	F8	>130	C	40x30	53.3x40	59.4x44.7	73.3x55
XF-5MDT0.145X178	non-coaxial	0.145X	178	0.1	0.06	33.5	F6	>150	C	33.1x24.8	44.1x33.1	NA	NA
XF-5MDT0.14X178 (III)	non-coaxial	0.14X	178	0.03	0.06	43.2	F8	>125	C	34.2x25.7	45.7x34.2	50.9x38.3	62.8x47.1
XF-5MDT0.16X200	non-coaxial	0.16X	200	0.1	0.056	22	F6	>175	C	30x22.5	40x30	NA	NA
XF-5MDT0.16x178 (III)	non-coaxial	0.16X	178	0.029	0.06	33	F8	>115	C	30x22.5	40x30	44.5x33.5	55x41.2
XF-5MDT0.18X178 (III)	non-coaxial	0.18X	178	0.03	0.055	26	F8	>105	C	26.6x20	35.5x26.6	39.6x29.8	48.8x36.6
XF-5MDT0.2X150 (III)	non-coaxial	0.2X	150	0.2	0.03	21	F8	>130	C	24x18	32x24	35.6x26.8	44x33
XF-5MDT0.2X178D	coaxial	0.2X	178	0.1	0.045	15.5	F6	>150	C	24x18	32x24	35.6x26.8	44x33
XF-5MDT0.2X178	non-coaxial	0.2X	178	0.1	0.035	15.5	F6	>178	C	24x18	32x24	35.6x26.8	44x33
XF-5MDT0.22X150 (III)	non-coaxial	0.22X	150	0.03	0.03	17.4	F8	>130	C	21.8X16.3	29.1X21.8	32.4X24.4	40X30
XF-5MDT0.22X200	non-coaxial	0.22X	200	0.19	0.05	12.4	F6	>150	C	21.8x16.3	29x21.8	32.4x24.4	40x30
XF-5MDT0.24X150 (III)	non-coaxial	0.24X	150	0.03	0.03	14.6	F8	>130	C	20x15	26.6x20	29.7x22.3	36.6x27.5
XF-5MDT0.3X65 (III)	non-coaxial	0.3X	65	0.044	0.043	8.8	F7.5	>135	C	16x12	21.6x16	23.7x17.9	29.3x22
XF-5MDT0.3x178	non-coaxial	0.3X	178	0.1	0.03	9.5	F8	>120	C	16x12	21.3x16	23.7x17.9	29.3x22
XF-5MDT0.3X110B (III)	non-coaxial	0.3X	110	0.1	0.025	8.6	F7.5	>135	C	16x12	21.3x16	23.7x17.9	29.3x22
XF-5MDT0.3X110BD (III)	coaxial	0.3X	110	0.1	0.065	8.6	F7.5	>135	C	16x12	21.3x16	23.7x17.9	29.3x22
XF-5MDT0.4X65 (III)	non-coaxial	0.4X	65	0.036	0.048	4.9	F7.5	>135	C	12x9	16x12	17.8x13.4	22x16.5
XF-5MDT0.4x110B (III)	non-coaxial	0.4X	110	0.03	0.02	5.3	F8	>125	C	12x9	16x12	17.8x13.4	22x16.5
XF-5MDT0.4x110BD (III)	coaxial	0.4X	110	0.09	0.011	5.19	F8	>135	C	12x9	16x12	17.8x13.4	22x16.5
XF-5MDT0.5X65 (III)	non-coaxial	0.5X	65	0.07	0.001	2.54	F6	>170	C	9.6x7.2	12.8x9.6	14.2x10.7	17.6x13.2
XF-5MDT0.5X65D (III)	coaxial	0.5X	65	0.07	0.01	2.54	F6	>170	C	9.6x7.2	12.8x9.6	14.2x10.7	17.6x13.2
XF-5MDT0.5X178 (III)	non-coaxial	0.5X	178	0.11	0.045	2.9	F7	>145	C	9.6x7.2	12.8x9.6	14.2x10.7	17.6x13.2
XF-5MDT0.5X178D (III)	coaxial	0.5X	178	0.11	0.045	2.9	F7	>145	C	9.6x7.2	12.8x9.6	14.2x10.7	17.6x13.2

(III) CANRILL Third generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

- FOV is 17.5-308mm to meet different demands
- Support up to 2/3’ industrial camera
- Bi-telecentric, large aperture, high telecentricity and ultra-low distortion to maximize optical performance sufficiently.
- Listed F# data is the largest aperture designed, it is available increase DOF by narrowing aperture according to customers demands.
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side. We can also provide customer DOF data at specific resolution and contrast requirements.

MODEL & PARAMETER



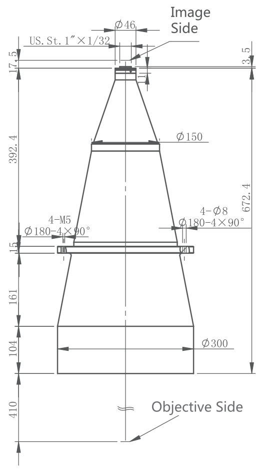
XF-5MDT0.0285X700

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.0285
Object FOV	Φ386mm
Image FOV	Φ11mm
WD	700mm±3%
Telecentricity	<0.06°
DOF	872mm
Aperture	F8
Resolution	183.3μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.095%

Measurement range:

2/3' 8.8×6.6	308.8×231.6mm
1/2' 6.4×4.8	224.6×168.4mm
1/3' 4.8×3.6	168.4×126.3mm



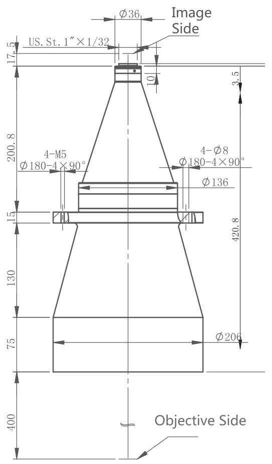
XF-5MDT0.041X410

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.041
Object FOV	Φ268.3mm
Image FOV	Φ11mm
WD	410mm±3%
Telecentricity	<0.064°
DOF	450mm
Aperture	F8
Resolution	126.92μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.1%

Measurement range:

2/3' 8.8×6.6	214.6×161mm
1/2' 6.4×4.8	156.1×117.1mm
1/3' 4.8×3.6	117.1×87.8mm



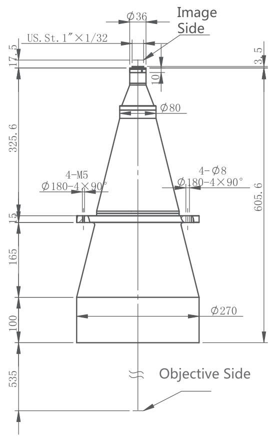
XF-5MDT0.045X400

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.045
Object FOV	Φ182.2mm
Image FOV	Φ8.2mm
WD	400mm±3%
Telecentricity	<0.1°
DOF	240mm
Aperture	F6
Resolution	88μm
Image side MTF	>0.3@150lp/mm
Optical Distortion	<0.04%

Measurement range:

1/2' 6.4×4.8	142.2×106.7mm
1/3' 4.8×3.6	106.7×80mm



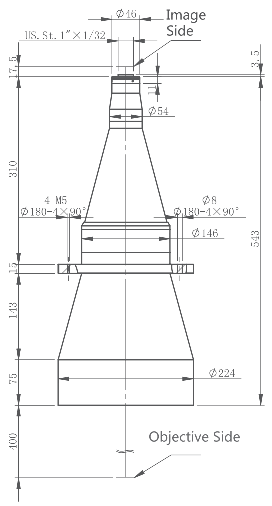
XF-5MDT0.046X535

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.046
Object FOV	Φ243.5mm
Image FOV	Φ11.2mm
WD	535mm±3%
Telecentricity	<0.08°
DOF	230mm
Aperture	F6
Resolution	86.2μm
Image side MTF	>0.3@175lp/mm
Optical Distortion	<0.05%

Measurement range:

2/3' 8.8×6.6	191.3×143.5mm
1/2' 6.4×4.8	139.1×104.3mm
1/3' 4.8×3.6	104.3×78.3mm



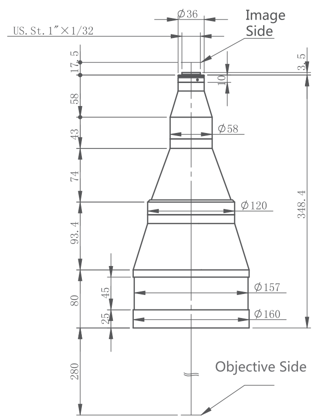
XF-5MDT0.057X400

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.057
Object FOV	Φ 193mm
Image FOV	Φ 11mm
WD	400mm±3%
Telecentricity	<0.066°
DOF	236mm
Aperture	F8
Resolution	92.4μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.07%

Measurement range:

2/3' 8.8×6.6	154.4×115.8mm
1/2' 6.4×4.8	112.3×84.2mm
1/3' 4.8×3.6	84.2×63.2mm



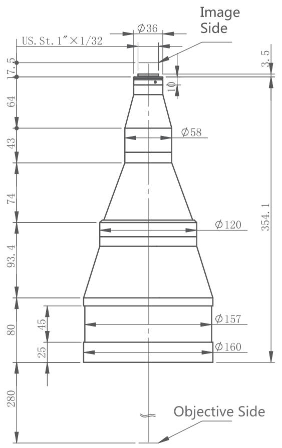
XF-5MDT0.08X280

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.08
Object FOV	Φ137.5mm
Image FOV	Φ11mm
WD	280mm±3%
Telecentricity	<0.04°
DOF	130mm
Aperture	F8
Resolution	66μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.016%

Measurement range:

2/3' 8.8×6.6	110×82.5mm
1/2' 6.4×4.8	80×60mm
1/3' 4.8×3.6	60×45mm



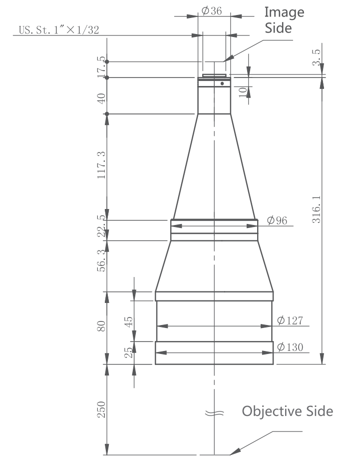
XF-5MDT0.09X280

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.09
Object FOV	Φ122.2mm
Image FOV	Φ11mm
WD	280mm±3%
Telecentricity	<0.035°
DOF	102mm
Aperture	F8
Resolution	58.9μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	97.8×73.3mm
1/2' 6.4×4.8	71.1×53.3mm
1/3' 4.8×3.6	53.3×40mm



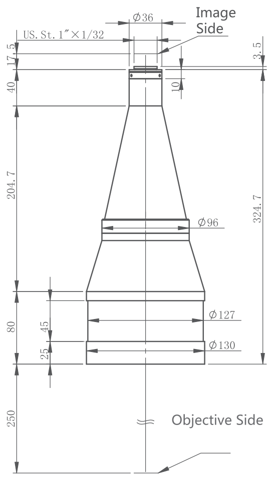
XF-5MDT0.1X250

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.1
Object FOV	Φ110mm
Image FOV	Φ11mm
WD	250mm±3%
Telecentricity	<0.035°
DOF	85mm
Aperture	F8
Resolution	52.8μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.05%

Measurement range:

2/3' 8.8×6.6	88×66mm
1/2' 6.4×4.8	64×48mm
1/3' 4.8×3.6	48×36mm



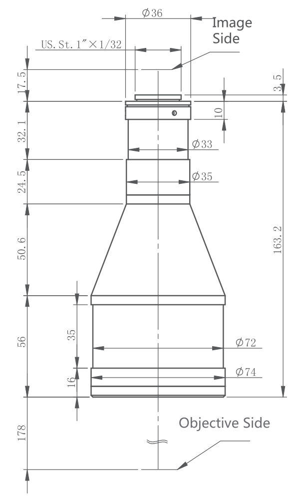
XF-5MDT0.12X250

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.12
Object FOV	Φ91.7mm
Image FOV	Φ11mm
WD	250mm±3%
Telecentricity	<0.035°
DOF	58mm
Aperture	F8
Resolution	43.7μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	73.3×55mm
1/2' 6.4×4.8	53.3×40mm
1/3' 4.8×3.6	40×30mm



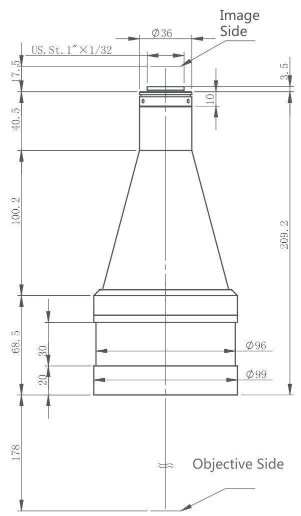
XF-5MDT0.145X178

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.145
Object FOV	Φ55.2mm
Image FOV	Φ8mm
WD	178mm±3%
Telecentricity	<0.1°
DOF	33.6mm
Aperture	F6
Resolution	30μm
Image side MTF	>0.3@150lp/mm
Optical Distortion	<0.06%

Measurement range:

1/2' 6.4×4.8	44.1×33.1mm
1/3' 4.8×3.6	33.1×24.8mm



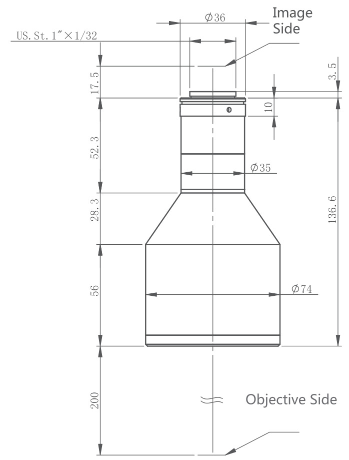
XF-5MDT0.14X178

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.14
Object FOV	Φ78.6mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.031°
DOF	43.2mm
Aperture	F8
Resolution	37.9μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.06%

Measurement range:

2/3' 8.8×6.6	62.9×47.1mm
1/2' 6.4×4.8	45.7×34.3mm
1/3' 4.8×3.6	34.3×25.7mm



XF-5MDT0.16X200

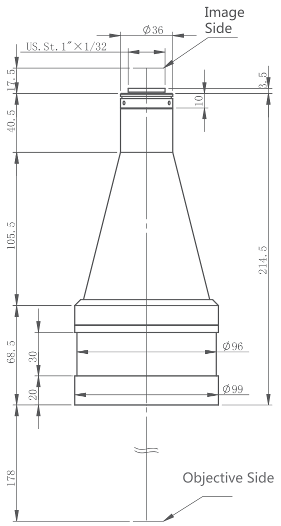
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.16
Object FOV	Φ51.3mm
Image FOV	Φ8.2mm
WD	200mm±3%
Telecentricity	<0.1°
DOF	22mm
Aperture	F6
Resolution	24.8μm
Image side MTF	>0.3@175lp/mm
Optical Distortion	<0.056%

Measurement range:

1/2' 6.4×4.8	40×30mm
1/3' 4.8×3.6	30×22.5mm

XF-5MDT0.16X178



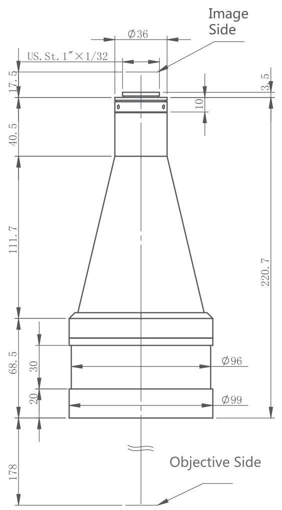
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.16
Object FOV	Φ68.8mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.029°
DOF	33mm
Aperture	F8
Resolution	33μm
Image side MTF	>0.3@115lp/mm
Optical Distortion	<0.06%

Measurement range:

2/3' 8.8×6.6	55×41.3mm
1/2' 6.4×4.8	40×30mm
1/3' 4.8×3.6	30×22.5mm

XF-5MDT0.18X178



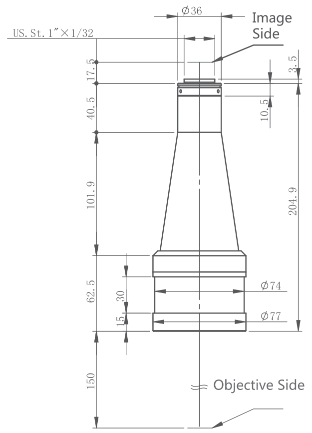
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.18
Object FOV	Φ61.1mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.031°
DOF	26mm
Aperture	F8
Resolution	30μm
Image side MTF	>0.3@105lp/mm
Optical Distortion	<0.055%

Measurement range:

2/3' 8.8×6.6	48.9×36.7mm
1/2' 6.4×4.8	35.6×26.7mm
1/3' 4.8×3.6	26.7×20mm

XF-5MDT0.2X150



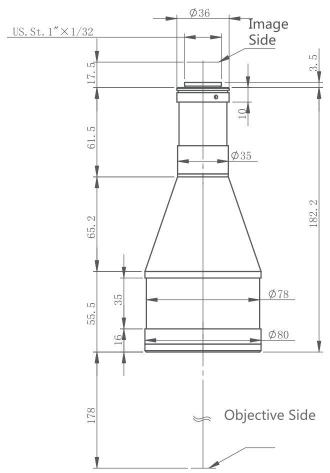
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.2
Object FOV	Φ55mm
Image FOV	Φ11mm
WD	150mm±3%
Telecentricity	<0.2°
DOF	21mm
Aperture	F8
Resolution	26.4μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	44×33mm
1/2' 6.4×4.8	32×24mm
1/3' 4.8×3.6	24×18mm

XF-5MDT0.2X178



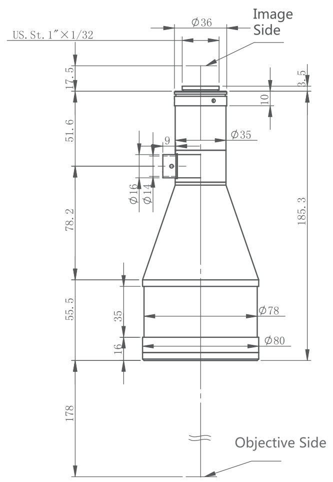
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.2
Object FOV	Φ55mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.1°
DOF	15.5mm
Aperture	F6
Resolution	19.88μm
Image side MTF	>0.3@178lp/mm
Optical Distortion	<0.035%

Measurement range:

2/3' 8.8×6.6	44×33mm
1/2' 6.4×4.8	32×24mm
1/3' 4.8×3.6	24×18mm

XF-5MDT0.2X178D



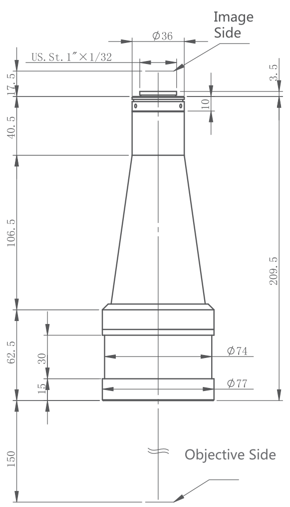
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.2
Object FOV	Φ55mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.1°
DOF	15.5mm
Aperture	F6
Resolution	19.88μm
Image side MTF	>0.3@150lp/mm
Optical Distortion	<0.045%

Measurement range:

2/3' 8.8×6.6	44×33mm
1/2' 6.4×4.8	32×24mm
1/3' 4.8×3.6	24×18mm

XF-5MDT0.22X150



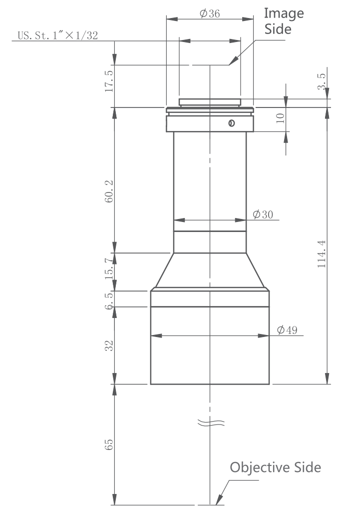
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.22
Object FOV	Φ50mm
Image FOV	Φ11mm
WD	150mm±3%
Telecentricity	<0.032°
DOF	17.4mm
Aperture	F8
Resolution	24.1μm
Image side MTF	>0.3@130lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	40×30mm
1/2' 6.4×4.8	29.1×21.8mm
1/3' 4.8×3.6	21.8×16.4mm

XF-5MDT0.3X65



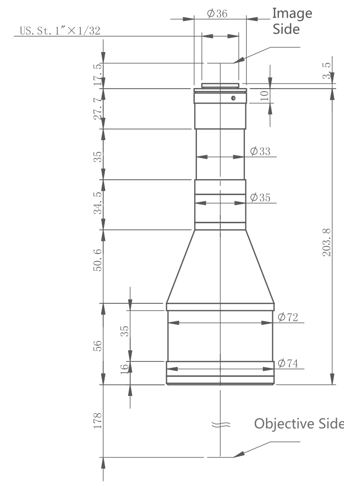
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.3
Object FOV	Φ37mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.044°
DOF	8.8mm
Aperture	F7.5
Resolution	16.5μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.043%

Measurement range:

2/3' 8.8×6.6	29.3×22mm
1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm

XF-5MDT0.3X178



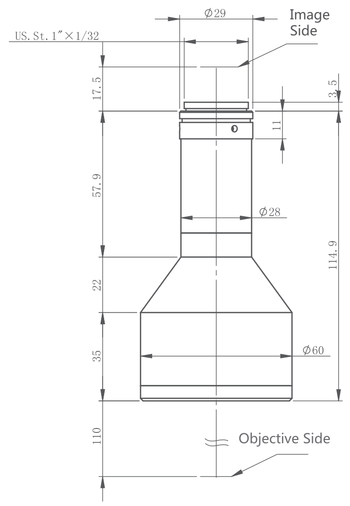
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.3
Object FOV	Φ36.7mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.1°
DOF	9.5mm
Aperture	F8
Resolution	17.4μm
Image side MTF	>0.3@120lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	29.3×22mm
1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm

XF-5MDT0.3X110B



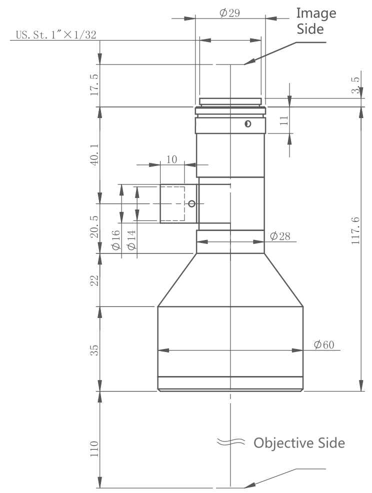
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.3
Object FOV	Φ 37mm
Image FOV	Φ 11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	8.65mm
Aperture	F7.5
Resolution	16.42μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.025%

Measurement range:

2/3' 8.8×6.6	29.3×22mm
1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm

XF-5MDT0.3X110BD



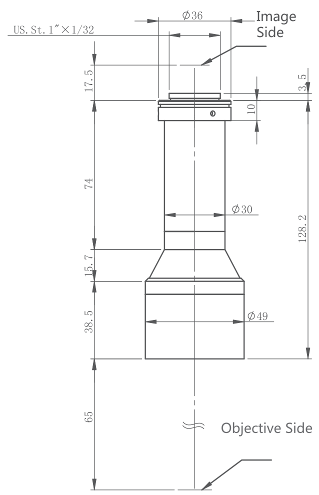
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.3
Object FOV	Φ37mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	8.68mm
Aperture	F7.5
Resolution	16.42μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.065%

Measurement range:

2/3' 8.8×6.6	29.3×22mm
1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm

XF-5MDT0.4X65



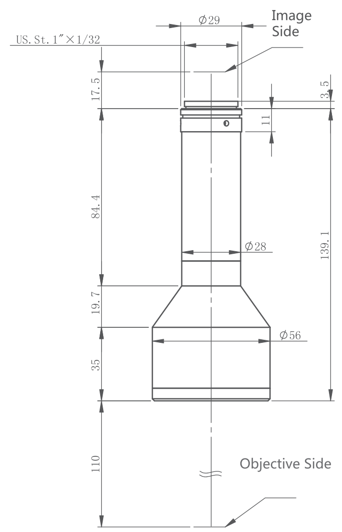
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.4
Object FOV	Φ27.5mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.036°
DOF	4.9mm
Aperture	F7.5
Resolution	12.2μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.048%

Measurement range:

2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm

XF-5MDT0.4X110B



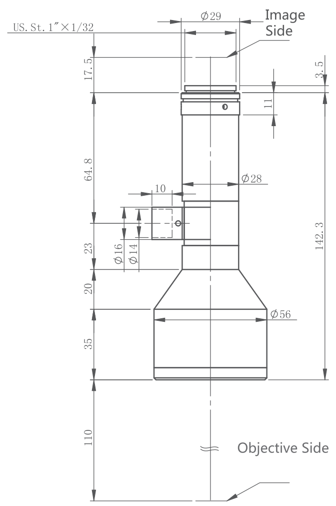
Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.4
Object FOV	Φ 27.5mm
Image FOV	Φ 11mm
WD	110mm±3%
Telecentricity	<0.03°
DOF	5.3mm
Aperture	F8
Resolution	13.2μm
Image side MTF	>0.3@125lp/mm
Optical Distortion	<0.02%

Measurement range:

2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm

MODEL & PARAMETER



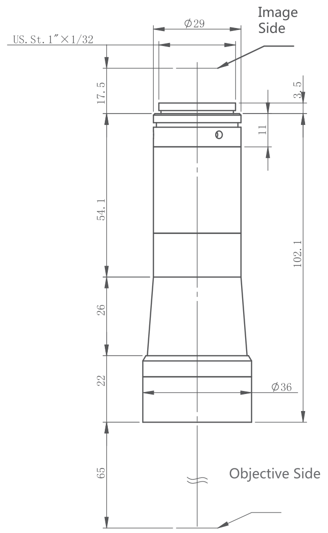
XF-5MDT04X110BD

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.4
Object FOV	Φ27.5mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.09°
DOF	5.19mm
Aperture	F8
Resolution	13.2μm
Image side MTF	>0.3@135lp/mm
Optical Distortion	<0.011%

Measurement range:

2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



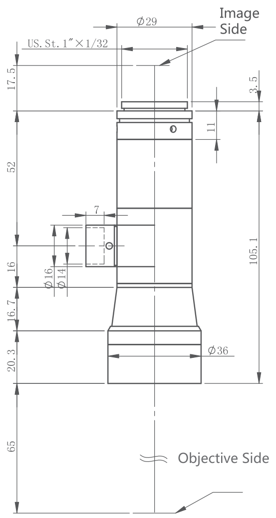
XF-5MDT0.5X65

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.07°
DOF	2.54mm
Aperture	F6
Resolution	8.04μm
Image side MTF	>0.3@170lp/mm
Optical Distortion	<0.001%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



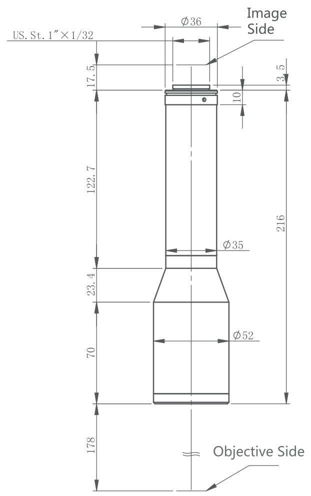
XF-5MDT0.5X65D

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.07°
DOF	2.54mm
Aperture	F6
Resolution	8.04μm
Image side MTF	>0.3@170lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



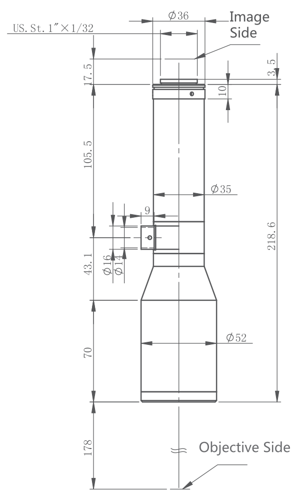
XF-5MDT0.5X178

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.11°
DOF	2.9mm
Aperture	F7
Resolution	9.2μm
Image side MTF	>0.3@145lp/mm
Optical Distortion	<0.045%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



XF-5MDT0.5X178D

Specifications:

Optical Structure	Bi-Telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	178mm±3%
Telecentricity	<0.11°
DOF	2.9mm
Aperture	F7
Resolution	9.2μm
Image side MTF	>0.3@145lp/mm
Optical Distortion	<0.045%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm

HIGH RESOLUTION TELECENTRIC LENS (110MM)

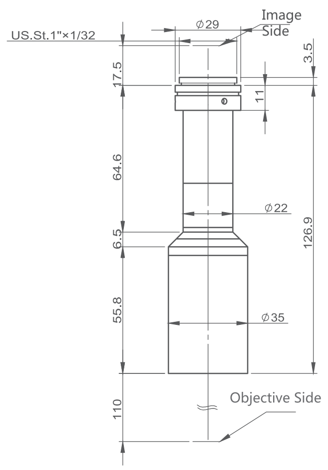
Compatible up to more than megapixels resolution industrial camera

Object telecentric design

Standard C mount

- Compatible up to more than megapixels resolution industrial camera
- WD 110mm
- Object telecentric design
- Standard C mount
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side.
  We can also provide customer DOF data at specific resolution and contrast requirements.

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	depth of field(mm)	Optical resolution (μm)	Mount	FOV for different Sensor Size(mm×mm)		
									1/3″ 4.8×3.6	1/2″ 6.4×4.8	2/3″ 8.8×6.6
XF-MT0.5X110	non-coaxial	0.5x	110	0.063	0.11	4	12.7	C	9.6x7.2	12.8x9.6	17.6x13.2
XF-MT0.5X110D	coaxial	0.5x	110	0.063	0.095	4	12.7	C	9.6x7.2	12.8x9.6	17.6x13.2
XF-MT0.8X110D	coaxial	0.8x	110	0.1	0.01	1.7	8.25	C	6x4.5	8x6	11x8.2
XF-MT0.8X110	non-coaxial	0.8x	110	0.1	0.01	1.7	8.25	C	6x4.5	8x6	11x8.2
XF-MT1X110	non-coaxial	1x	110	0.065	0.03	1.2	7.3	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1X110D	coaxial	1x	110	0.1	0.03	1.2	7.3	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1.5X110	non-coaxial	1.5x	110	0.1	0.07	0.55	5.24	C	3.2x2.4	4.26x3.2	5.8x4.4
XF-MT1.5X110D	coaxial	1.5x	110	0.1	0.07	0.55	5.24	C	3.2x2.4	4.26x3.2	5.8x4.4
XF-MT2X110	non-coaxial	2x	110	0.1	0.11	0.36	4.46	C	2.4x1.8	3.2x2.4	4.4x3.3
XF-MT2X110D	coaxial	2x	110	0.1	0.1	0.34	4.46	C	2.4x1.8	3.2x2.4	4.4x3.3
XF-MT3X110	non-coaxial	3x	110	0.15	0.037	0.2	4.02	C	1.6x1.2	2.1x1.6	2.9x2.2
XF-MT3X110D	coaxial	3x	110	0.15	0.037	0.2	4.02	C	1.6x1.2	2.1x1.6	2.9x2.2
XF-MT4X110	non-coaxial	4x	110	0.04	0.058	0.14	3.67	C	1.2x0.9	1.6x1.2	2.2x1.7
XF-MT4X110D	coaxial	4x	110	0.04	0.058	0.14	3.67	C	1.2x0.9	1.6x1.2	2.2x1.7
XF-MT6X110	non-coaxial	6x	110	0.04	0.03	0.096	3.67	C	0.8x0.6	1.1x0.8	1.5x1.1
XF-MT6X110D	coaxial	6x	110	0.04	0.03	0.096	3.67	C	0.8x0.6	1.1x0.8	1.5x1.1



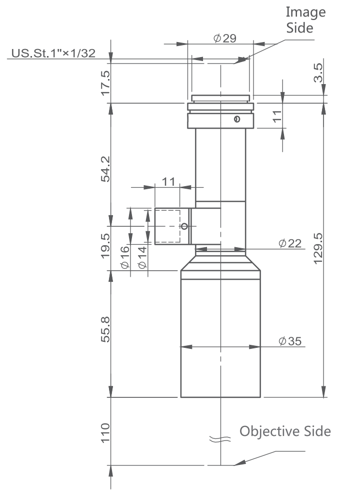
XF-MT0.5X110

Specifications:

Optical Structure	双远心
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.063°
DOF	4mm
Aperture	F9.6
Resolution	12.7μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.11%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



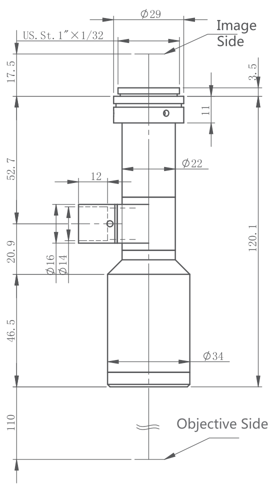
XF-MT0.5X110D

Specifications:

Optical Structure	双远心
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.063°
DOF	4mm
Aperture	F9.6
Resolution	12.7μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.095%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



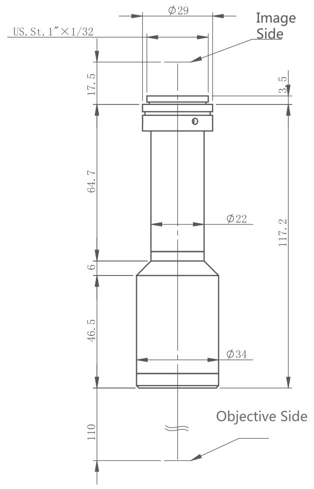
XF-MT0.8X110D

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.75mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	1.7mm
Aperture	F10
Resolution	8.25μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	11×8.25mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



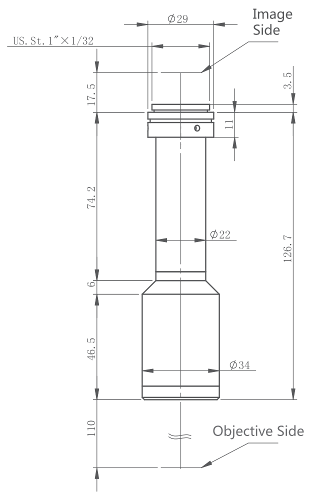
XF-MT0.8X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.75mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	1.7mm
Aperture	F10
Resolution	8.25μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	11×8.25mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



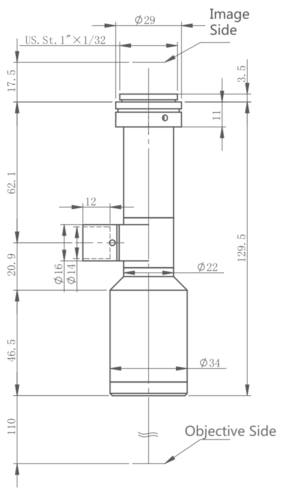
XF-MT1X110

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.065°
DOF	1.2mm
Aperture	F11.1
Resolution	7.3μm
Image side MTF	>0.3@90lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



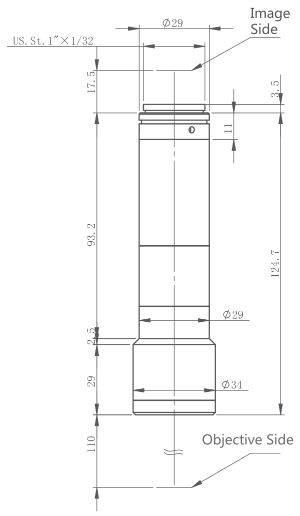
XF-MT1X110D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	1.2mm
Aperture	F11
Resolution	7.3μm
Image side MTF	>0.3@90lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



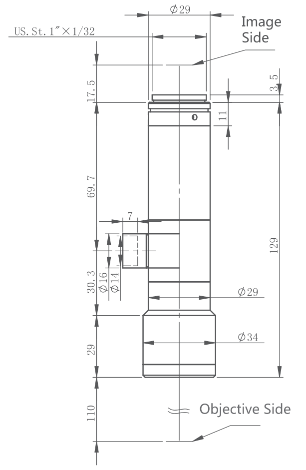
XF-MT1.5X110

Specifications:

Optical Structure	Object telecentric
Magnification	1.5
Object FOV	Φ7.3mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.55mm
Aperture	F11.9
Resolution	5.24μm
Image side MTF	>0.3@70lp/mm
Optical Distortion	<0.074%

Measurement range:

2/3' 8.8×6.6	5.9×4.4mm
1/2' 6.4×4.8	4.3×3.2mm
1/3' 4.8×3.6	3.2×2.4mm



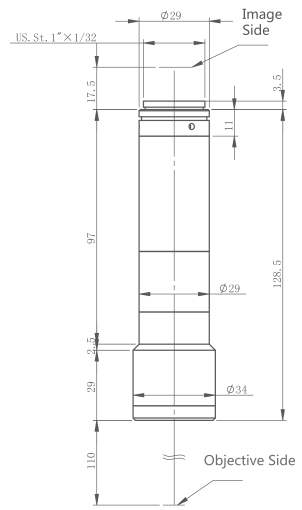
XF-MT1.5X110D

Specifications:

Optical Structure	Object telecentric
Magnification	1.5
Object FOV	Φ7.3mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.55mm
Aperture	F11.9
Resolution	5.24μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.06%

Measurement range:

2/3' 8.8×6.6	5.9×4.4mm
1/2' 6.4×4.8	4.3×3.2mm
1/3' 4.8×3.6	3.2×2.4mm



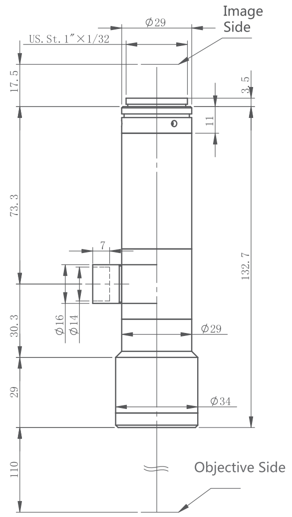
XF-MT2X110

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ5.5mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.36mm
Aperture	F13
Resolution	4.46μm
Image side MTF	>0.3@66lp/mm
Optical Distortion	<0.11%

Measurement range:

2/3' 8.8×6.6	4.4×3.3mm
1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



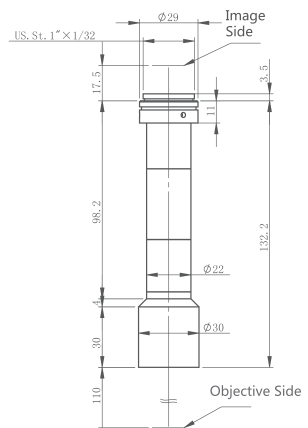
XF-MT2X110D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ5.5mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.36mm
Aperture	F13
Resolution	4.46μm
Image side MTF	>0.3@66lp/mm
Optical Distortion	<0.1%

Measurement range:

2/3' 8.8×6.6	4.4×3.3mm
1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



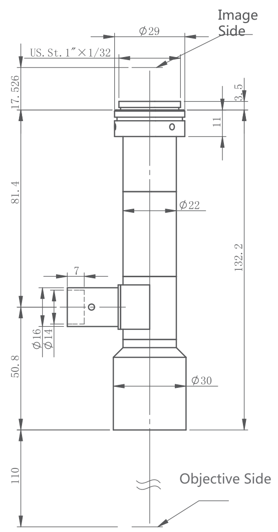
XF-MT3X110

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ3.7mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.15°
DOF	0.2mm
Aperture	F18.3
Resolution	4.02μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.037%

Measurement range:

2/3' 8.8×6.6	2.9×2.2mm
1/2' 6.4×4.8	2.1×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



XF-MT3X110D

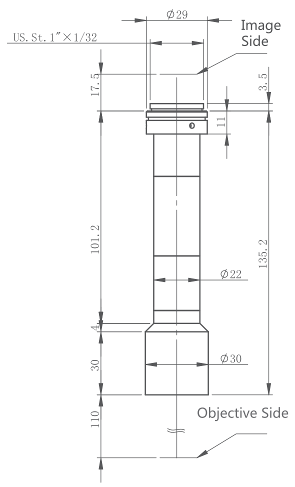
Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ3.7mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.15°
DOF	0.2mm
Aperture	F18.3
Resolution	4.02μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.037%

Measurement range:

2/3' 8.8×6.6	2.9×2.2mm
1/2' 6.4×4.8	2.1×1.6mm
1/3' 4.8×3.6	1.6×1.2mm

MODEL & PARAMETER



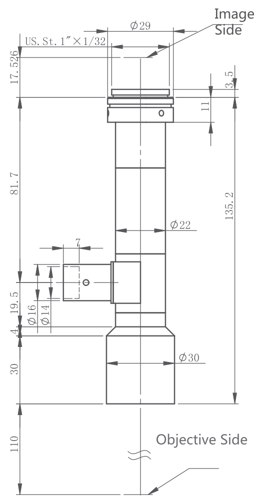
XF-MT4X110

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ 2.75mm
Image FOV	Φ 011mm
WD	110mm±3%
Telecentricity	<0.04°
DOF	0.14mm
Aperture	F22.1
Resolution	3.67μm
Image side MTF	>0.3@44lp/mm
Optical Distortion	<0.058%

Measurement range:

2/3' 8.8×6.6	2.2×1.7mm
1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



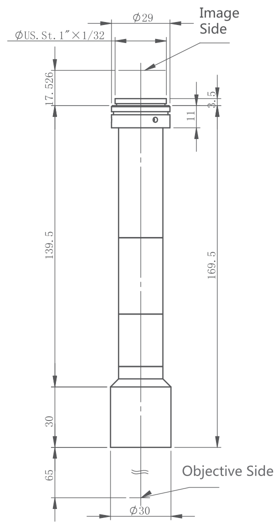
XF-MT4X110D

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2.8mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.04°
DOF	0.14mm
Aperture	F22.1
Resolution	3.67μm
Image side MTF	>0.3@44lp/mm
Optical Distortion	<0.058%

Measurement range:

2/3' 8.8×6.6	2.2×1.7mm
1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



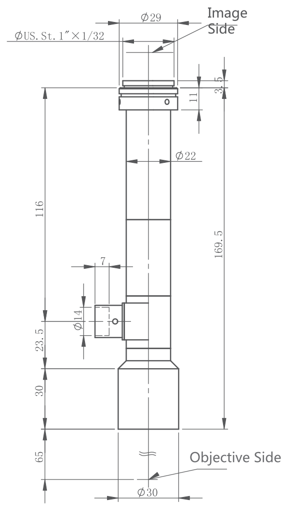
XF-MT6X110

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.8mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.04°
DOF	0.096mm
Aperture	F33.2
Resolution	3.67μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	1.5×1.1mm
1/2' 6.4×4.8	1.1×0.8mm
1/3' 4.8×3.6	0.8×0.6mm



XF-MT6X110D

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.8mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.04°
DOF	0.096mm
Aperture	F33.2
Resolution	3.67μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	1.5×1.1mm
1/2' 6.4×4.8	1.1×0.8mm
1/3' 4.8×3.6	0.8×0.6mm

HIGH RESOLUTION TELECENTRIC LENS(65MM)

Compatible up to more than megapixels resolution industrial camera

Object telecentric design

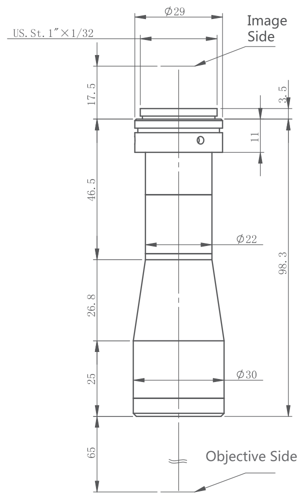
Standard C mount

- Compatible up to more than megapixels resolution industrial camera
- WD 110mm
- Object telecentric design
- Standard C mount
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side.
  We can also provide customer DOF data at specific resolution and contrast requirements.

(Ⅲ) CANRILLThird generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF(mm)	Optical resolution (μm)	Mount	FOV for different Sensor Size(mm×mm)		
									1/3″ 4.8×3.6	1/2″ 6.4×4.8	2/3″ 8.8×6.6
XF-MT0.8X65 (Ⅲ)	non-coaxial	0.8X	65	0.08	0.09	1.7	8.25	C	6x4.5	8x6	11x8.3
XF-MT0.8X65D (Ⅲ)	coaxial	0.8X	65	0.08	0.09	1.7	8.25	C	6x4.5	8x6	11x8.3
XF-MT1X65 (Ⅲ)	non-coaxial	1X	65	0.08	0.04	1.2	7.3	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1X65D (Ⅲ)	coaxial	1X	65	0.08	0.04	1.2	7.3	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1.5X65 (Ⅲ)	non-coaxial	1.5X	65	0.15	0.099	0.51	5.2	C	3.2x2.4	4.3x3.2	5.9x4.4
XF-MT1.5X65D (Ⅲ)	coaxial	1.5X	65	0.15	0.099	0.51	5.2	C	3.2x2.4	4.3x3.2	5.9x4.4
XF-MT2X65 (Ⅲ)	non-coaxial	2X	65	0.11	0.039	0.34	4.5	C	2.4x1.8	3.2x2.4	4.4x3.3
XF-MT2X65D (Ⅲ)	coaxial	2X	65	0.11	0.039	0.34	4.5	C	2.4x1.8	3.2x2.4	4.4x3.3
XF-MT3X65 (Ⅲ)	non-coaxial	3X	65	0.15	0.038	0.18	3.5	C	1.6x1.2	2.1x1.6	2.9x2.2
XF-MT3X65D (Ⅲ)	coaxial	3X	65	0.15	0.038	0.18	3.5	C	1.6x1.2	2.1x1.6	2.8x2.2
XF-MT4X65 (Ⅲ)	non-coaxial	4X	65	0.11	0.064	0.1	3	C	1.2x0.9	1.6x1.2	2.2x1.7
XF-MT4X65D (Ⅲ)	coaxial	4X	65	0.11	0.064	0.1	3	C	1.2x0.9	1.6x1.2	2.2x1.7
XF-MT6X65 (Ⅲ)	non-coaxial	6X	65	0.15	0.03	0.07	3	C	0.8x0.6	1.1x0.8	1.5×1.1
XF-MT6X65D (Ⅲ)	coaxial	6X	65	0.15	0.03	0.07	3	C	0.8x0.6	1.1x0.8	1.5×1.1

MODEL & PARAMETER



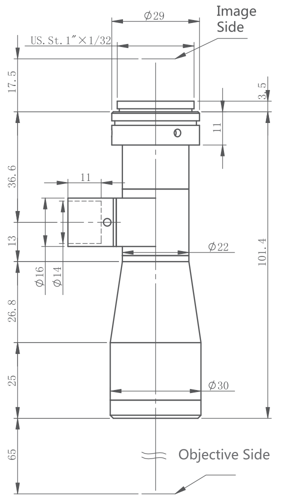
XF-MT0.8X65

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.08°
DOF	1.7mm
Aperture	F10
Resolution	8.25μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.09%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



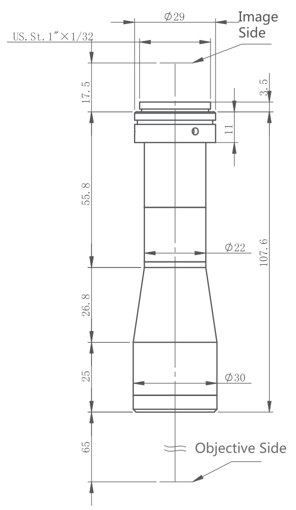
XF-MT0.8X65D

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.08°
DOF	1.7mm
Aperture	F10
Resolution	8.25μm
Image side MTF	>0.3@100lp/mm
Optical Distortion	<0.09%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



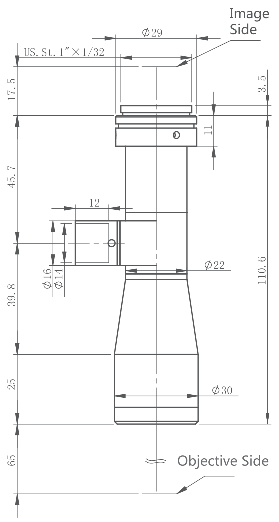
XF-MT1X65

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.08°
DOF	1.2mm
Aperture	F11
Resolution	7.33μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



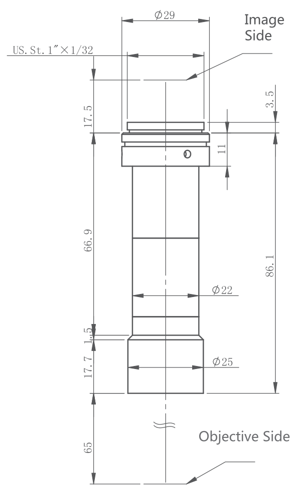
XF-MT1X65D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.08°
DOF	1.2mm
Aperture	F11.1
Resolution	7.33μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



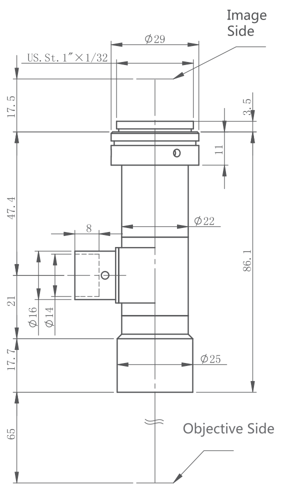
XF-MT1.5X65

Specifications:

Optical Structure	Object telecentric
Magnification	1.5
Object FOV	Φ7.3mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.51mm
Aperture	F11.91
Resolution	5.24μm
Image side MTF	>0.3@82lp/mm
Optical Distortion	<0.099%

Measurement range:

2/3' 8.8×6.6	5.9×4.4mm
1/2' 6.4×4.8	4.3×3.2mm
1/3' 4.8×3.6	3.2×24mm



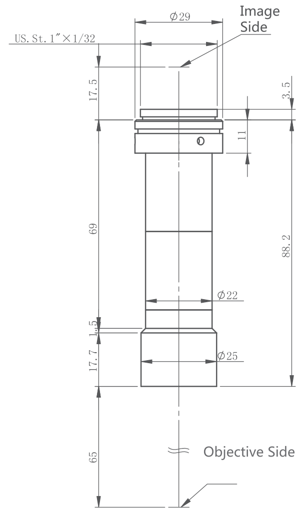
XF-MT1.5X65D

Specifications:

Optical Structure	Object telecentric
Magnification	1.5
Object FOV	Φ7.3mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.51mm
Aperture	F11.91
Resolution	5.24μm
Image side MTF	>0.3@82lp/mm
Optical Distortion	<0.099%

Measurement range:

2/3' 8.8×6.6	5.9×4.4mm
1/2' 6.4×4.8	4.3×3.2mm
1/3' 4.8×3.6	3.2×2.4mm



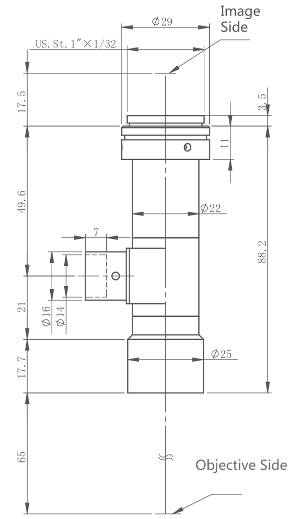
XF-MT2X65

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ5.5mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.11°
DOF	0.34mm
Aperture	F13.5
Resolution	4.5μm
Image side MTF	>0.3@74lp/mm
Optical Distortion	<0.039%

Measurement range:

2/3' 8.8×6.6	4.4×3.3mm
1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



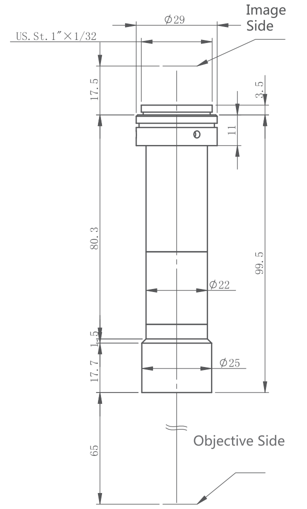
XF-MT2X65D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ5.5mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.11°
DOF	0.34mm
Aperture	F13.5
Resolution	4.5μm
Image side MTF	>0.3@74lp/mm
Optical Distortion	<0.039%

Measurement range:

2/3' 8.8×6.6	4.4×3.3mm
1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



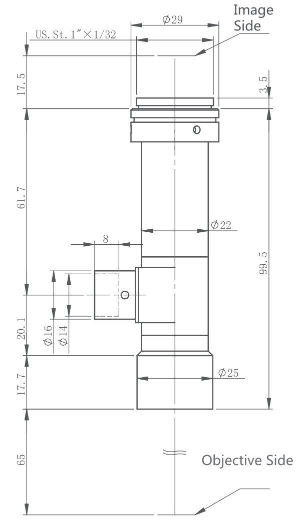
XF-MT3X65

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ3.67mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.18mm
Aperture	F15.7
Resolution	3.47μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.038%

Measurement range:

2/3' 8.8×6.6	2.9×2.2mm
1/2' 6.4×4.8	2.1×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



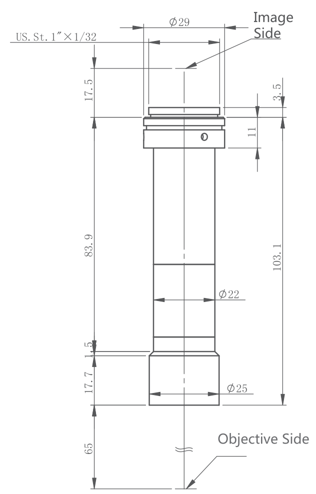
XF-MT3X65D

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ3.7mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.18mm
Aperture	F15.7
Resolution	3.5μm
Image side MTF	>0.3@63lp/mm
Optical Distortion	<0.038%

Measurement range:

2/3' 8.8×6.6	2.9×2.2mm
1/2' 6.4×4.8	2.1×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



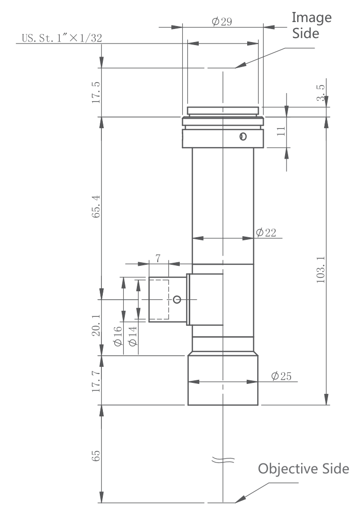
XF-MT4X65

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2.75mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.11°
DOF	0.1mm
Aperture	F17.7
Resolution	3μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.064%

Measurement range:

2/3' 8.8×6.6	2.2×1.7mm
1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



XF-MT4X65D

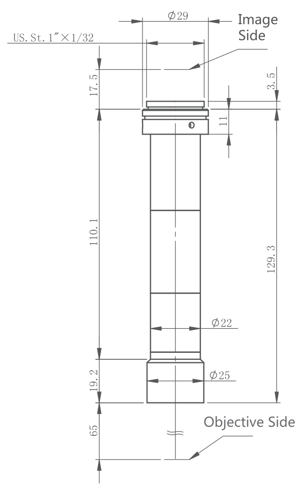
Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2.75mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.11°
DOF	0.1mm
Aperture	F17.7
Resolution	3μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.064%

Measurement range:

2/3' 8.8×6.6	2.2×1.7mm
1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm

MODEL & PARAMETER



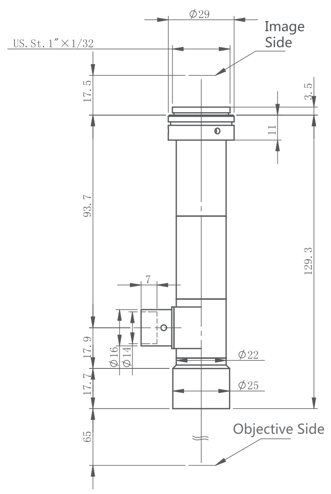
XF-MT6X65

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.07mm
Aperture	F26.8
Resolution	2.95μm
Image side MTF	>0.3@37lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	1.5×1.1mm
1/2' 6.4×4.8	1.1×0.8mm
1/3' 4.8×3.6	0.8×0.6mm



XF-MT6X65D

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.15°
DOF	0.07mm
Aperture	F26.8
Resolution	2.95μm
Image side MTF	>0.3@37lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	1.5×1.1mm
1/2' 6.4×4.8	1.1×0.8mm
1/3' 4.8×3.6	0.8×0.6mm

STANDARD RESOLUTION TELECENTRIC LENS (WD:110MM)

2/3

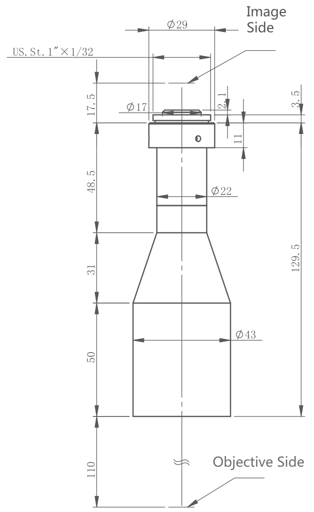
Support up to 2/3'
Industrial camera

Particularly suit for high
precision imaging positioning

Object telecentric with S
tandard C Mount

- Support up to 2/3' Industrial camera with more than 450,000 pixel resolution
- WD 110MM
- Object telecentric design
- Standard C Mount
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side.
  We can also provide customer DOF data at specific resolution and contrast requirements.

Model	Type of illumination	Mog	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF (mm)	Optical resolution (μm)	Mount	FOV for different Sensor Size (mm x mm)		
									1/3″ 4.8×3.6	1/2″ 6.4×4.8	2/3″ 8.8×6.6
XF-T0.25X110	non-coaxial	0.25X	110	0.2	0.55	17	31.7	C	19.2x14.4	25.6x19.2	NA
XF-T0.3X110	non-coaxial	0.3X	110	0.1	0.1	17	33	C	16x12	21.3x16.0	NA
XF-T0.3X110D	coaxial	0.3X	110	0.1	0.1	17	33	C	16x12	21.3x16.0	NA
XF-T0.5X110	non-coaxial	0.5X	110	0.16	0.1	7	22	C	9.6x7.2	12.8x9.6	NA
XF-T0.5X110D	coaxial	0.5X	110	0.16	0.1	7	22	C	9.6x7.2	12.8x9.6	NA
XF-T0.8x110	non-coaxial	0.8X	110	0.1	0.01	2.7	13.75	C	6x4.5	8x6	11x8.25
XF-T0.8X110D	coaxial	0.8X	110	0.1	0.01	2.7	13.75	C	6x4.5	8x6	11x8.25
XF-T1X110	non-coaxial	1X	110	0.1	0.03	2.2	13.75	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-T1X110D	coaxial	1X	110	0.1	0.03	2.2	13.75	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-T2X110	non-coaxial	2X	110	0.1	0.04	0.5	7.3	C	2.4x1.8	3.2x2.4	NA
XF-T2X110D	coaxial	2X	110	0.1	0.04	0.5	7.3	C	2.4x1.8	3.2x2.4	NA
XF-T3X110	non-coaxial	3X	110	0.1	0.08	0.27	6	C	1.6x1.2	2.13x1.6	NA
XF-T3X110D	coaxial	3X	110	0.1	0.08	0.27	6	C	1.6x1.2	2.13x1.6	NA
XF-T4X110	non-coaxial	4X	110	0.1	0.015	0.26	7.3	C	1.2x0.9	1.6x1.2	NA
XF-T4X110D	coaxial	4X	110	0.1	0.01	0.26	7.3	C	1.2x0.9	1.6x1.2	NA



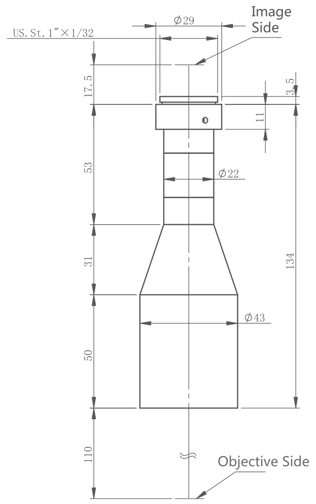
XF-T0.25X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.25
Object FOV	Φ32mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.2°
DOF	17mm
Aperture	F8
Resolution	31.7μm
Image side MTF	>0.3@85lp/mm
Optical Distortion	<0.55%

Measurement range:

1/2' 6.4×4.8	25.6×19.2mm
1/3' 4.8×3.6	19.2×14.4mm



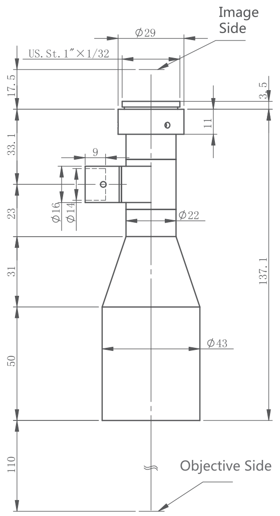
XF-T0.3X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.3
Object FOV	Φ26.7mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	17mm
Aperture	F15
Resolution	33μm
Image side MTF	>0.3@70lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	21.3×16.0mm
1/3' 4.8×3.6	16.0×12.0mm



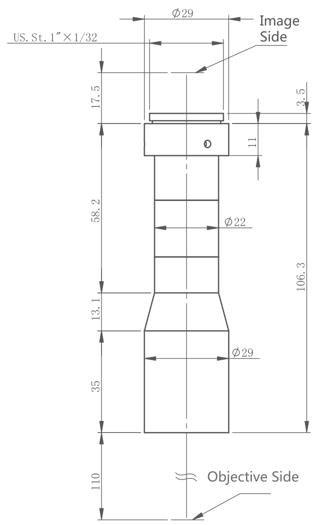
XF-T0.3X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.3
Object FOV	Φ26.7mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	17mm
Aperture	F15
Resolution	33μm
Image side MTF	>0.3@70lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	21.3×16.0mm
1/3' 4.8×3.6	16.0×12.0mm



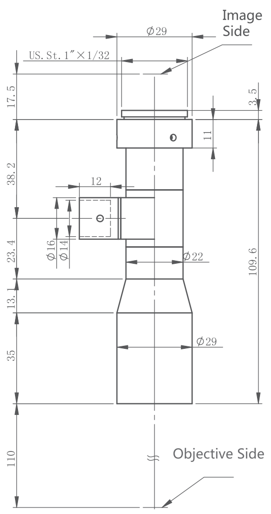
XF-T0.5X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ 16mm
Image FOV	Φ 8mm
WD	110mm±3%
Telecentricity	<0.16°
DOF	7mm
Aperture	F16.7
Resolution	22μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



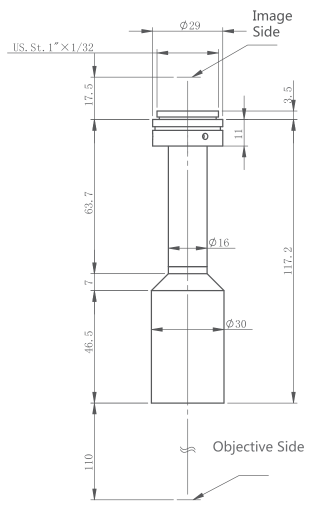
XF-T0.5X110D

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ16mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.16°
DOF	7mm
Aperture	F16.7
Resolution	22μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



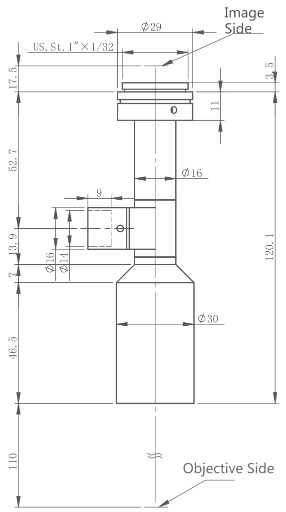
XF-T0.8X110

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ 13.75mm
Image FOV	Φ 11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	2.7mm
Aperture	F17
Resolution	13.75μm
Image side MTF	>0.3@64lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	11×8.25mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



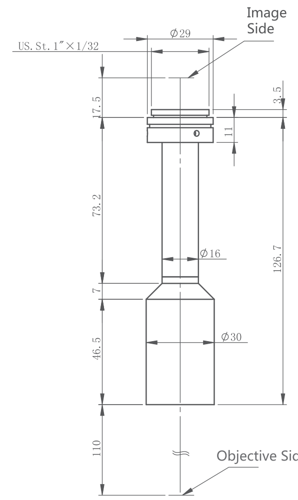
XF-T0.8X110D

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.75mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	2.7mm
Aperture	F17
Resolution	13.75μm
Image side MTF	>0.3@64lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	11×8.25mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



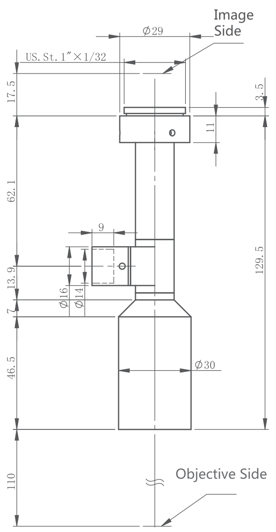
XF-T1X110

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F21
Resolution	13.75μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



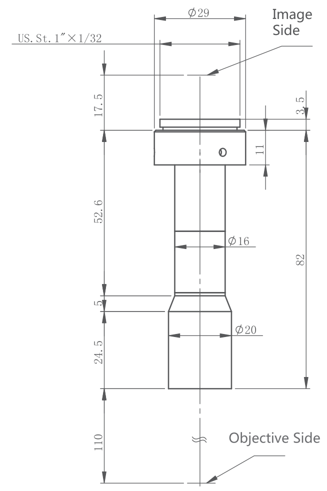
XF-T1X110D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F21
Resolution	13.75μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<0.03%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



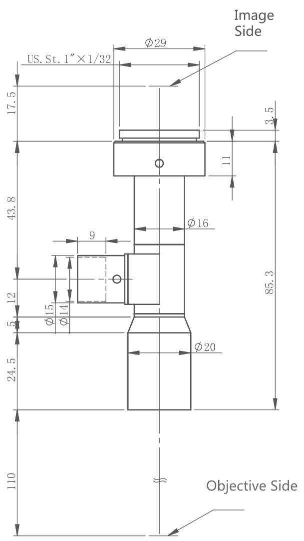
XF-T2X110

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ 4mm
Image FOV	Φ 8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.5mm
Aperture	F22
Resolution	7.3μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.04%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



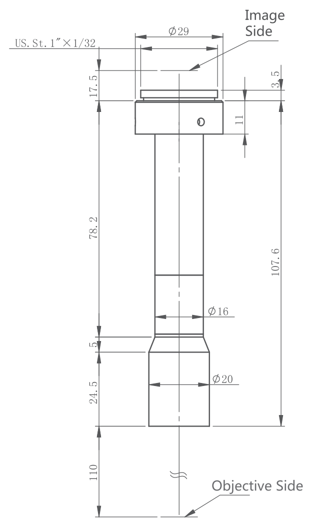
XF-T2X110D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ 4mm
Image FOV	Φ 8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.5mm
Aperture	F22
Resolution	7.3μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.04%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



XF-T3X110

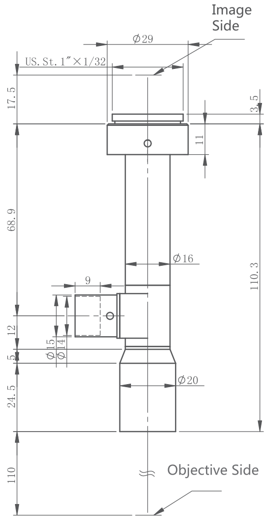
Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ2.67mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.27mm
Aperture	F27
Resolution	6μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.08%

Measurement range:

1/2' 6.4×4.8	2.13×1.6mm
1/3' 4.8×3.6	1.6×1.2mm

MODEL & PARAMETER



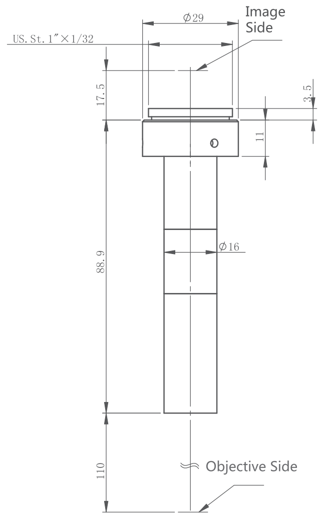
XF-T3X110D

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ2.67mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.27mm
Aperture	F27
Resolution	6μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.08%

Measurement range:

1/2' 6.4×4.8	2.13×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



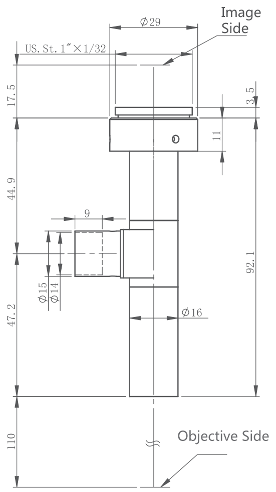
XF-T4X110

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.26mm
Aperture	F44
Resolution	7.3μm
Image side MTF	>0.3@22lp/mm
Optical Distortion	<0.015%

Measurement range:

1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



XF-T4X110D

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2mm
Image FOV	Φ8mm
WD	110mm±3%
Telecentricity	<0.1°
DOF	0.26mm
Aperture	F44
Resolution	7.3μm
Image side MTF	>0.3@22lp/mm
Optical Distortion	<0.01%

Measurement range:

1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm

STANDARD RESOLUTION TELECENTRIC LENS-WD 65MM

2/3

Support up to 2/3′
Industrial camera

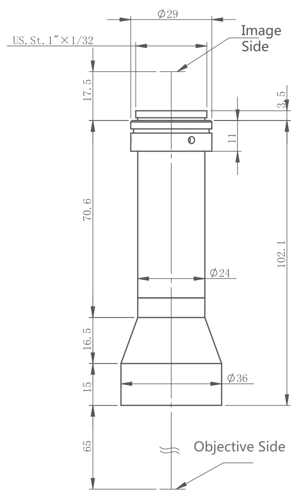
Particularly suit for high
precision imaging positioning

Object telecentric with
Standard C Mount

- Support up to 2/3′ Industrial camera with more than 450,000 pixel resolution
- WD 65MM
- Object telecentric design
- Standard C Mount
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side. We can also provide customer DOF data at specific resolution and contrast requirements.

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF (mm)	Optical resolution (μm)	Mount	FOV for different Sensor Size (mm x mm)		
									1/3″ 4.8×3.6	1/2″ 6.4×4.8	2/3″ 8.8×6.6
XF-T0.5x65	non-coaxial	0.5x	65	0.1	0.001	7	22	C	9.6x7.2	12.8x9.6	17.6x13.2
XF-T0.5X65D	coaxial	0.5x	65	0.1	0.01	7	22	C	9.6x7.2	12.8x9.6	17.6x13.2
XF-T0.8X65	non-coaxial	0.8x	65	0.1	0.09	2.4	12.22	C	6.0x4.5	8.0x6.0	11x8.3
XF-T0.8X65D	coaxial	0.8x	65	0.1	0.09	2.4	12.22	C	6.0x4.5	8.0x6.0	11x8.3
XF-T1X65	non-coaxial	1x	65	0.1	0.04	1.7	11	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-T1X65D	coaxial	1x	65	0.1	0.04	1.7	11	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-T2X65	non-coaxial	2x	65	0.1	0.03	0.45	5.8	C	2.2x1.65	3.2x2.4	NA
XF-T2X65D	coaxial	2x	65	0.1	0.03	0.45	5.8	C	2.2x1.65	3.2x2.4	NA
XF-T3X65	non-coaxial	3x	65	0.1	0.13	0.27	5.6	C	1.6x1.2	2.13x1.6	NA
XF-T3X65D	coaxial	3x	65	0.1	0.13	0.27	5.6	C	1.6x1.2	2.13x1.6	NA
XF-T4X65	non-coaxial	4x	65	0.1	0.12	0.145	4.5	C	1.2x0.9	1.6x1.2	NA
XF-T4X65D	coaxial	4x	65	0.1	0.12	0.145	4.5	C	1.2x0.9	1.6x1.2	NA
XF-T6X65	non-coaxial	6x	65	0.1	0.03	0.092	4.3	C	0.8x0.6	1.07x0.8	NA
XF-T6x65D	coaxial	6x	65	0.1	0.03	0.092	4.3	C	0.8x0.6	1.07x0.8	NA
XF-T8X65	non-coaxial	8x	65	0.1	0.03	0.07	4.3	C	0.6x0.45	0.8x0.6	NA
XF-T8X65D	coaxial	8x	65	0.1	0.03	0.07	4.3	C	0.6x0.45	0.8x0.6	NA

MODEL & PARAMETER



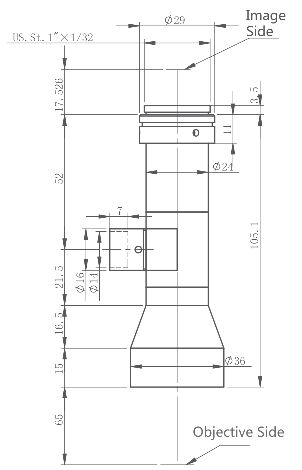
XF-T0.5X65

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	7mm
Aperture	F16.7
Resolution	22μm
Image side MTF	>0.3@170lp/mm
Optical Distortion	<0.001%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



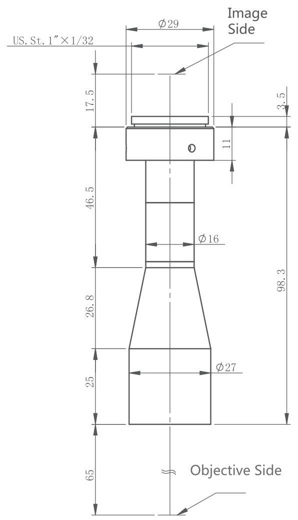
XF-T0.5X65D

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ22mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	7mm
Aperture	F16.7
Resolution	22μm
Image side MTF	>0.3@170lp/mm
Optical Distortion	<0.01%

Measurement range:

2/3' 8.8×6.6	17.6×13.2mm
1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



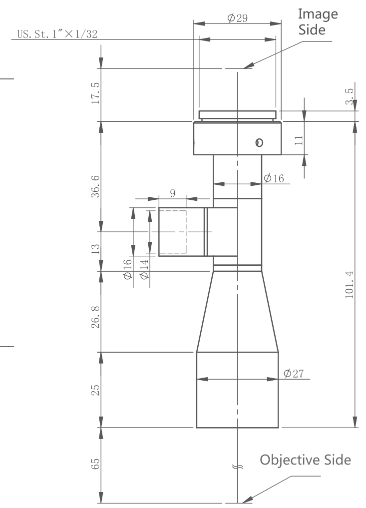
XF-T0.8X65

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	2.4mm
Aperture	F15
Resolution	12.22μm
Image side MTF	>0.3@70lp/mm
Optical Distortion	<0.09%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



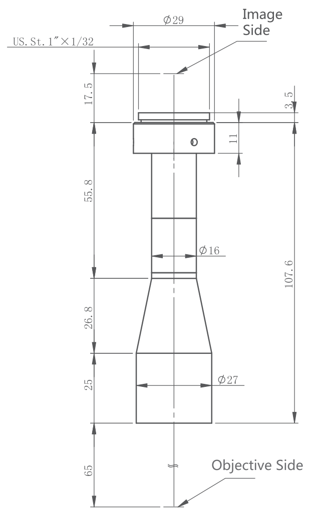
XF-T0.8X65D

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.8mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	2.4mm
Aperture	F15
Resolution	12.22μm
Image side MTF	>0.3@70lp/mm
Optical Distortion	<0.09%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



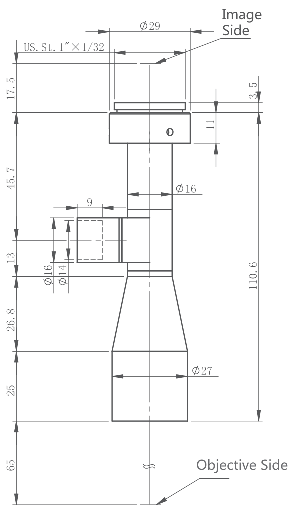
XF-T1X65

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	1.7mm
Aperture	F15
Resolution	11μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



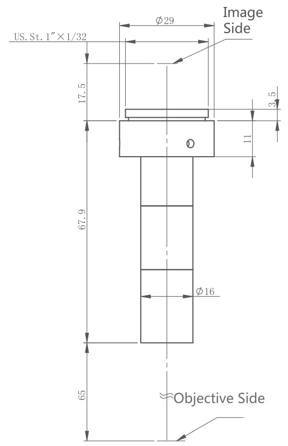
XF-T1X65D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	1.7mm
Aperture	F15
Resolution	11μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



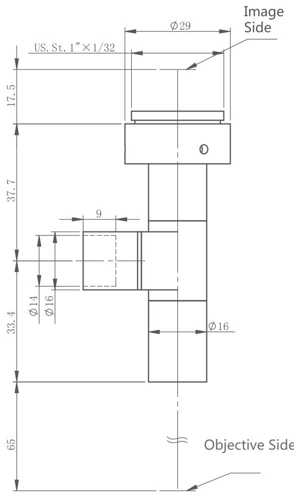
XF-T2X65

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ4mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.45mm
Aperture	F17
Resolution	5.8μm
Image side MTF	>0.3@48lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



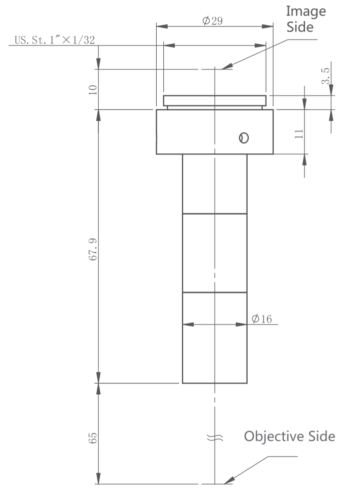
XF-T2X65D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ4mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.45mm
Aperture	F17
Resolution	5.8μm
Image side MTF	>0.3@48lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.65mm



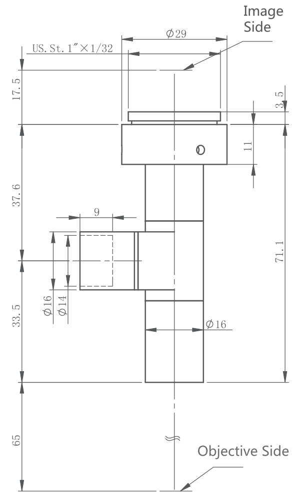
XF-T3X65

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ2.76mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.27mm
Aperture	F25
Resolution	5.6μm
Image side MTF	>0.3@33lp/mm
Optical Distortion	<0.13%

Measurement range:

1/2' 6.4×4.8	2.13×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



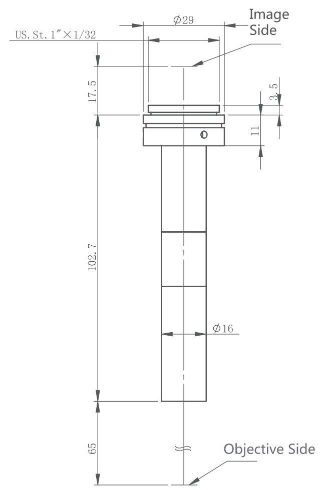
XF-T3X65D

Specifications:

Optical Structure	Object telecentric
Magnification	3
Object FOV	Φ2.8mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.27mm
Aperture	F25
Resolution	5.6μm
Image side MTF	>0.3@33lp/mm
Optical Distortion	<0.13%

Measurement range:

1/2' 6.4×4.8	2.13×1.6mm
1/3' 4.8×3.6	1.6×1.2mm



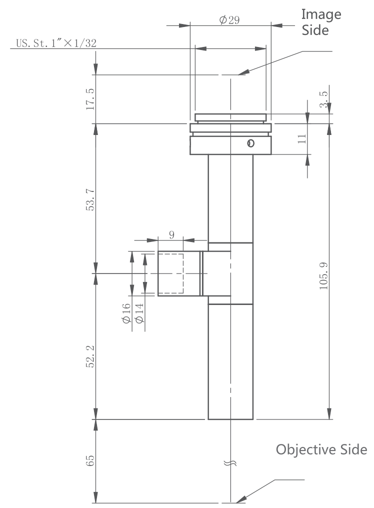
XF-T4X65

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.145mm
Aperture	F27
Resolution	4.5μm
Image side MTF	>0.3@34lp/mm
Optical Distortion	<0.12%

Measurement range:

1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



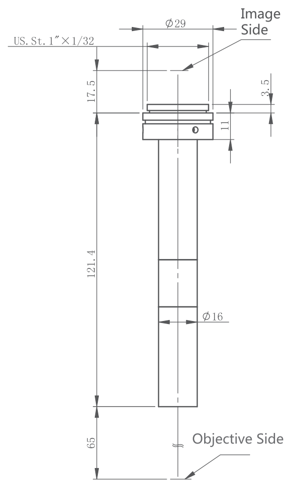
XF-T4X65D

Specifications:

Optical Structure	Object telecentric
Magnification	4
Object FOV	Φ2mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.145mm
Aperture	F27
Resolution	4.5μm
Image side MTF	>0.3@34lp/mm
Optical Distortion	<0.12%

Measurement range:

1/2' 6.4×4.8	1.6×1.2mm
1/3' 4.8×3.6	1.2×0.9mm



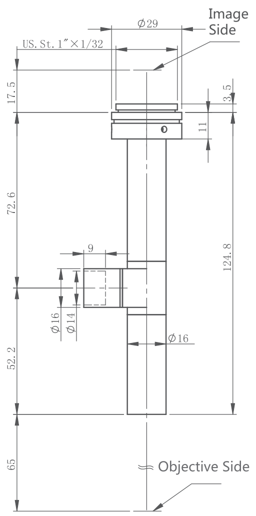
XF-T6X65

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.3mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.092mm
Aperture	F39
Resolution	4.3μm
Image side MTF	>0.3@24lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	1.07×0.8mm
1/3' 4.8×3.6	0.8×0.6mm



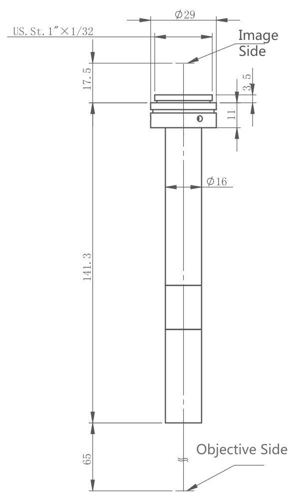
XF-T6X65D

Specifications:

Optical Structure	Object telecentric
Magnification	6
Object FOV	Φ1.3mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.092mm
Aperture	F39
Resolution	4.3μm
Image side MTF	>0.3@24lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	1.07×0.8mm
1/3' 4.8×3.6	0.8×0.6mm



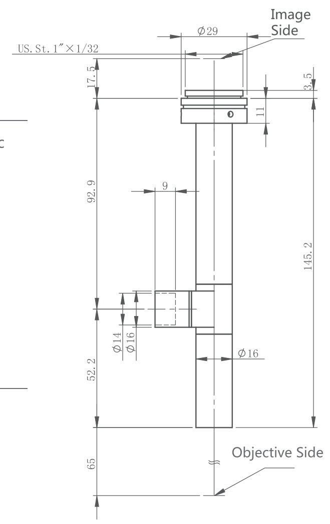
XF-T8X65

Specifications:

Optical Structure	Object telecentric
Magnification	8
Object FOV	Φ1.0mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.07mm
Aperture	F52
Resolution	4.3μm
Image side MTF	>0.3@17lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	0.8×0.6mm
1/3' 4.4×3.3	0.6×0.45mm



XF-T8X65D

Specifications:

Optical Structure	Object telecentric
Magnification	8
Object FOV	Φ1.0mm
Image FOV	Φ8mm
WD	65mm±3%
Telecentricity	<0.1°
DOF	0.07mm
Aperture	F52
Resolution	4.3μm
Image side MTF	>0.3@17lp/mm
Optical Distortion	<0.03%

Measurement range:

1/2' 6.4×4.8	0.8×0.6mm
1/3' 4.4×3.3	0.6×0.45mm

ULTRA LONG WORKING DISTANCE TELECENTRIC LENS

2/3

Compatible with 2/3' Industrial camera

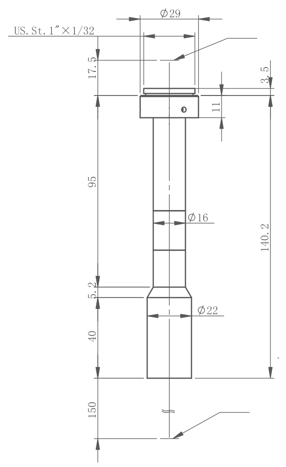
2 Megapixels industrial camera

- Support to 0.45-2 megapixels resolution of industrial camera. Part of maximally support to 2/3' inch camera.
- WD is more than 150mm and up to 530mm
- Depth of focus is calculated by permissive circle radius of confusion<20um on the image side. We can also provide customer DOF data at specific resolution and contrast requirements.
- Long Working Distancce is suit for high precision image positioning of special assembling structure.
- Standard C mount
- Object telecentric design

Model	Type of illumination	Mag	WD (mm)	Telecentricity (°)	Optical distortion(%)	DOF (mm)	Optical resolution (μm)	Mount	FOV for different Sensor Size (mm x mm)		
									1/3" 4.8×3.6	1/2" 6.4×4.8	2/3" 8.8×6.6
XF-T1X150D	coaxial	1X	150	0.1	0.15	1.5	13.75	C	4.8×3.6	6.4×4.8	NA
XF-T1X150	non-coaxial	1X	150	0.1	0.15	1.5	13.75	C	4.8×3.6	6.4×4.8	NA
XF-T1X250	non-coaxial	1X	250	0.05	0.12	1.2	14.3	C	4.8x3.6	6.4x4.8	NA
XF-T1X250D	coaxial	1X	250	0.05	0.12	1.2	14.3	C	4.8x3.6	6.4x4.8	NA
XF-T1X300	non-coaxial	1X	300	0.1	0.1	2.2	13.75	C	4.8x3.6	6.4x4.8	NA
XF-T1X300D	coaxial	1X	300	0.1	0.1	2.2	13.75	C	4.8x3.6	6.4x4.8	NA
XF-T1x420	non-coaxial	1X	420	0.1	0.2	2.6	18.3	C	4.8x3.6	NA	NA
XF-T1X420D	coaxial	1X	420	0.1	0.2	2.6	18.3	C	4.8x3.6	NA	NA
XF-T2X150	non-coaxial	2X	150	0.56	0.11	0.78	13.2	C	2.4x1.8	NA	NA
XF-T2X150D	coaxial	2X	150	0.56	0.11	0.78	13.2	C	2.4x1.8	NA	NA
XF-T2X200	non-coaxial	2X	200	0.42	0.055	0.98	13.75	C	2.4x1.8	NA	NA
XF-T2X200D	coaxial	2X	200	0.42	0.055	0.98	13.75	C	2.4x1.8	NA	NA
XF-T2X300	non-coaxial	2X	300	0.1	0.16	0.8	11	C	2.4x1.8	3.2x2.4	NA
XF-T2X300D	coaxial	2X	300	0.1	0.17	0.8	11	C	2.4x1.8	3.2x2.4	NA
XF-T0.3X200	non-coaxial	0.3X	200	0.5	0.47	16.5	33	C	16x12	21.3x16	NA
XF-T0.3X200D	coaxial	0.3X	200	0.2	0.44	16.5	33	C	16x12	21.3x16	NA
XF-T0.4X150	non-coaxial	0.4X	150	0.11	2	11.8	33	C	12x9	16x12	NA
XF-T0.4X150D	coaxial	0.4X	150	0.11	1.5	11.8	33	C	12x9	16x12	NA
XF-T0.5X150	non-coaxial	0.5X	150	0.11	0.1	7	23.5	C	9.6x7.2	12.8x9.6	NA
XF-T0.5x150D	coaxial	0.5X	150	0.11	0.11	7	23.5	C	9.6x7.2	12.8x9.6	NA
XF-T0.5X200	non-coaxial	0.5X	200	0.16	0.3	7	25.4	C	9.6x7.2	12.8x9.6	NA
XF-MT0.27X510 (III)	non-coaxial	0.27X	510	0.2	0.28	23	39.3	C	17.7x13.3	23.7x17.7	32.5x24.4
XF-MT0.33X530 (III)	non-coaxial	0.33X	530	0.2	0.08	15.6	33	C	14.5x10.9	19.3x14.5	26.6x20
XF-MT0.36X530 (III)	non-coaxial	0.36X	530	0.2	0.15	13	30	C	13.3x10	17.78x13.3	24.4x18.3
XF-MT0.38X300 (III)	non-coaxial	0.38X	300	0.064	0.18	10.8	28	C	13.3x10	17.8x13.3	23.2x17.4
XF-MT0.4X350 (III)	non-coaxial	0.4X	350	0.2	0.012	9.4	26.4	C	12.0x9.0	16.0x12.0	22.0x16.5
XF-MT0.42X530 (III)	non-coaxial	0.42X	530	0.2	0.1	9	25.4	C	11.4x8.6	15.2x11.4	21x15.7
XF-MT0.48X530 (III)	non-coaxial	0.48X	530	0.2	0.04	7.5	22	C	10x7.5	13.3x10	18.3x13.7
XF-MT0.55X360 (III)	non-coaxial	0.55X	360	0.2	0.2	4.4	16.8	C	8.7x6.5	11.6x8.7	16x12
XF-MT0.6X530 (III)	non-coaxial	0.6X	530	0.2	0.15	4	17.6	C	8x6	10.7x8	14.7x11
XF-MT0.7X530 (III)	non-coaxial	0.7X	530	0.2	0.09	3	15.1	C	6.8x5.1	9.1x6.8	12.5x9.4
XF-MT0.8X530 (III)	non-coaxial	0.8X	530	0.15	0.15	2.3	13.2	C	6x4.5	8x6	11x8.3
XF-MT0.8X530D (III)	coaxial	0.8X	530	0.2	0.055	2.5	13	C	6.0x4.5	8.0x6.0	11.0x8.3
XF-MT1X200D (III)	coaxial	1X	200	0.2	0.07	1.42	9.4	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1X200 (III)	non-coaxial	1X	200	0.2	0.07	1.42	9.4	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1X350D (III)	coaxial	1X	350	0.15	0.08	1.5	10.3	C	4.8x3.6	6.4x4.8	8.8x6.6
XF-MT1.2X350D (III)	coaxial	1.2X	350	0.15	0.15	1.16	8.9	C	4x3	5.3x4	7.3x5.5
XF-MT1.2X350 (III)	non-coaxial	1.2X	350	0.15	0.15	1.16	8.9	C	4x3	5.3x4	7.3x5.5
XF-MT1X350 (III)	non-coaxial	1X	350	0.15	0.15	1.5	10.3	C	4.8x3.6	6.4x4.8	8.8x6.6

(III) CANRILL third generation lens bilateral telecentric lens, can greatly improve measurement accuracy, several times better than peers

MODEL & PARAMETER



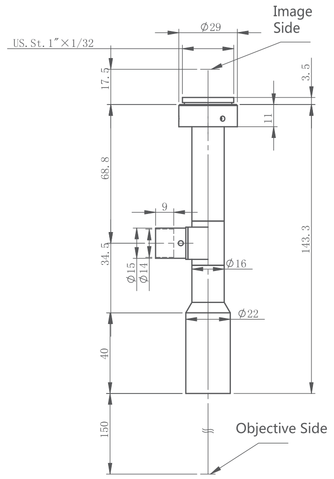
XF-T1X150

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ8mm
Image FOV	Φ8mm
WD	150mm±3%
Telecentricity	<0.1°
DOF	1.5mm
Aperture	F20.8
Resolution	13.75μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.15%

Measurement range:

1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



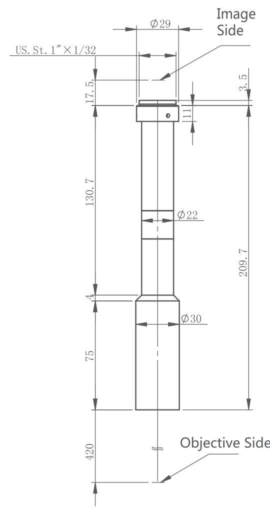
XF-T1X150D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ8mm
Image FOV	Φ8mm
WD	150mm±3%
Telecentricity	<0.1°
DOF	1.5mm
Aperture	F20.8
Resolution	13.75μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.15%

Measurement range:

1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



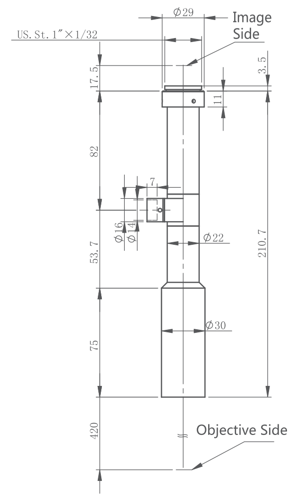
XF-T1X420

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ6mm
Image FOV	Φ6mm
WD	420mm±3%
Telecentricity	<0.1°
DOF	2.6mm
Aperture	F27
Resolution	18.3μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.2%

Measurement range:

1/3' 4.8×3.6	4.8×3.6mm



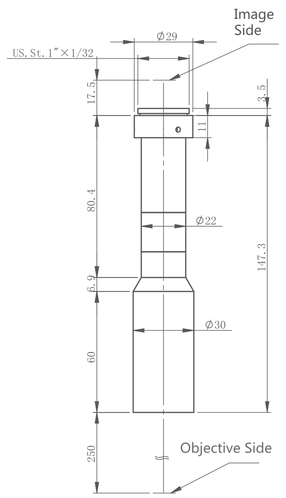
XF-T1X420D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ6mm
Image FOV	Φ6mm
WD	420mm±3%
Telecentricity	<0.1°
DOF	2.6mm
Aperture	F27
Resolution	18.3μm
Image side MTF	>0.3@30lp/mm
Optical Distortion	<0.2%

Measurement range:

1/3' 4.8×3.6	4.8×3.6mm



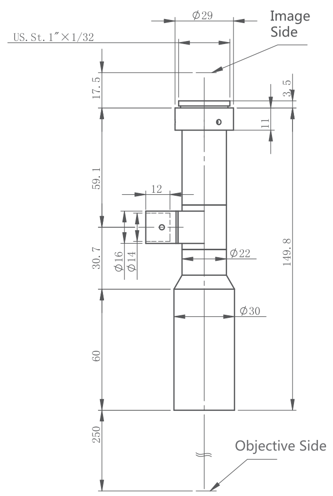
XF-T1X250

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ8mm
Image FOV	Φ8mm
WD	250mm±3%
Telecentricity	<0.05°
DOF	1.2mm
Aperture	F21.3
Resolution	14.35μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.12%

Measurement range:

1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



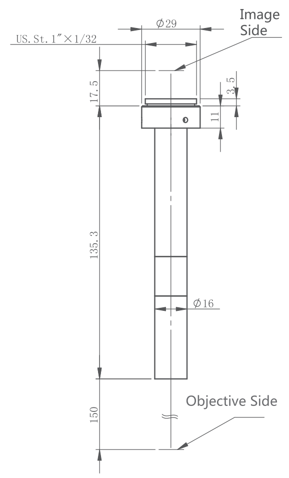
XF-T1X250D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ8mm
Image FOV	Φ8mm
WD	250mm±3%
Telecentricity	<0.05°
DOF	1.2mm
Aperture	F21.1
Resolution	14.35μm
Image side MTF	>0.3@40lp/mm
Optical Distortion	<0.12%

Measurement range:

1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



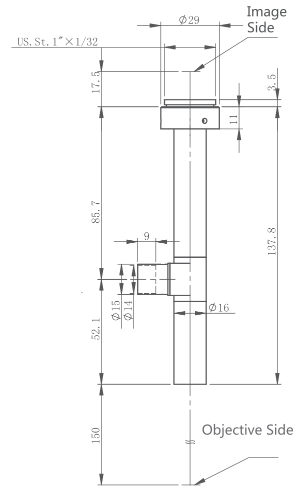
XF-T2X150

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ3mm
Image FOV	Φ6mm
WD	150mm±3%
Telecentricity	<0.56°
DOF	0.78mm
Aperture	F31.3
Resolution	13.2μm
Image side MTF	>0.3@35lp/mm
Optical Distortion	<0.11%

Measurement range:

1/3' 4.8×3.6	2.4×1.8mm



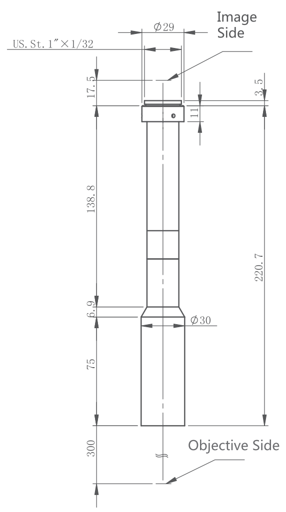
XF-T2X150D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ3mm
Image FOV	Φ6mm
WD	150mm±3%
Telecentricity	<0.56°
DOF	0.78mm
Aperture	F31.3
Resolution	13.2μm
Image side MTF	>0.3@35lp/mm
Optical Distortion	<0.11%

Measurement range:

1/3' 4.8×3.6	2.4×1.8mm



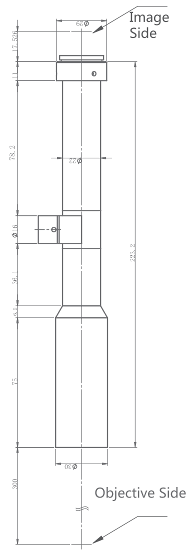
XF-T1X300

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ8mm
Image FOV	Φ8mm
WD	300mm±3%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F21
Resolution	13.75μm
Image side MTF	>0.3@42lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



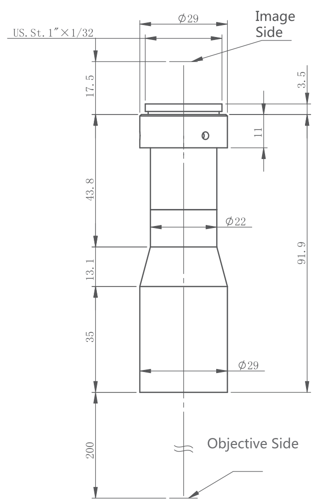
XF-T1X300D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ 8mm
Image FOV	Φ 8mm
WD	300mm±3%
Telecentricity	<0.1°
DOF	2.2mm
Aperture	F21
Resolution	13.75μm
Image side MTF	>0.3@42lp/mm
Optical Distortion	<0.11%

Measurement range:

2/3' 8.8×6.6	--
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



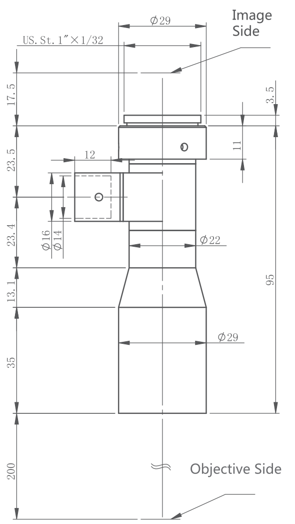
XF-T0.5X200

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ16mm
Image FOV	Φ8mm
WD	200mm±3%
Telecentricity	<0.16°
DOF	7mm
Aperture	F18.8
Resolution	25.4μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<0.36%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



XF-T0.5X200D

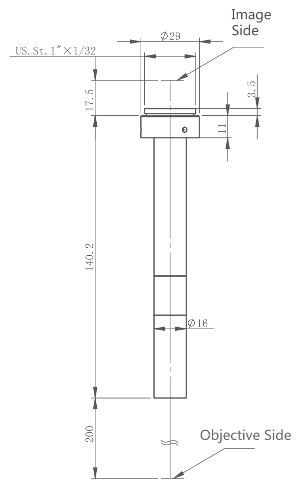
Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ16mm
Image FOV	Φ8mm
WD	200mm±3%
Telecentricity	<0.16°
DOF	7mm
Aperture	F18.8
Resolution	25.4μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<0.3%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm

MODEL & PARAMETER



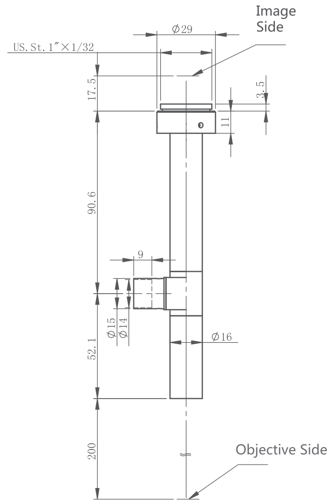
XF-T2X200

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ3mm
Image FOV	Φ6mm
WD	200mm±3%
Telecentricity	<0.42°
DOF	0.98mm
Aperture	F41.6
Resolution	13.75μm
Image side MTF	>0.3@25lp/mm
Optical Distortion	<0.055%

Measurement range:

1/3' 4.8×3.6	2.4×1.8mm



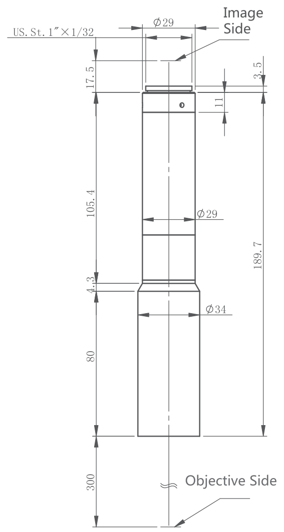
XF-T2X200D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ3mm
Image FOV	Φ6mm
WD	200mm±3%
Telecentricity	<0.42°
DOF	0.98mm
Aperture	F41.6
Resolution	13.75μm
Image side MTF	>0.3@25lp/mm
Optical Distortion	<0.055%

Measurement range:

1/3' 4.8×3.6	2.4×1.8mm



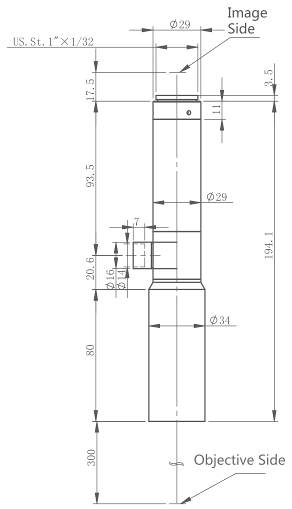
XF-T2X300

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ4mm
Image FOV	Φ8mm
WD	300mm±3%
Telecentricity	<0.1°
DOF	0.8mm
Aperture	F33
Resolution	11μm
Image side MTF	>0.3@28lp/mm
Optical Distortion	<0.16%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



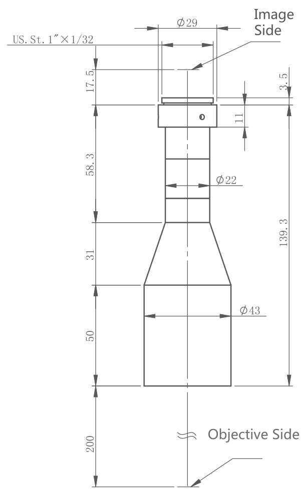
XF-T2X300D

Specifications:

Optical Structure	Object telecentric
Magnification	2
Object FOV	Φ4mm
Image FOV	Φ8mm
WD	300mm±3%
Telecentricity	<0.1°
DOF	0.8mm
Aperture	F33
Resolution	11μm
Image side MTF	>0.3@28lp/mm
Optical Distortion	<0.17%

Measurement range:

1/2' 6.4×4.8	3.2×2.4mm
1/3' 4.8×3.6	2.4×1.8mm



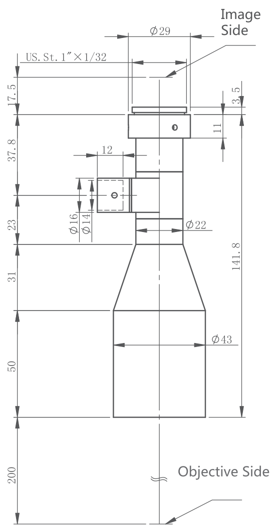
XF-T0.3X200

Specifications:

Optical Structure	Object telecentric
Magnification	0.3
Object FOV	Φ26.7mm
Image FOV	Φ8mm
WD	200mm±3%
Telecentricity	<0.5°
DOF	16.5mm
Aperture	F15
Resolution	33μm
Image side MTF	>0.3@45lp/mm
Optical Distortion	<0.47%

Measurement range:

1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm



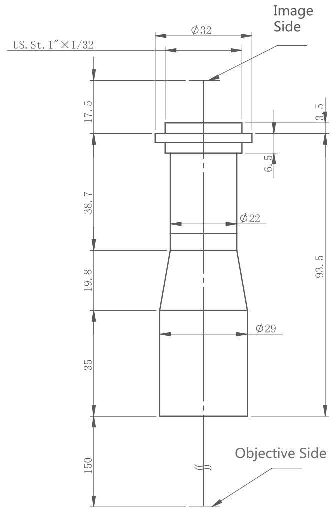
XF-T0.3X200D

Specifications:

Optical Structure	Object telecentric
Magnification	0.3
Object FOV	Φ26.7mm
Image FOV	Φ8mm
WD	200mm±3%
Telecentricity	<0.2°
DOF	16.5mm
Aperture	F15
Resolution	33μm
Image side MTF	>0.3@45lp/mm
Optical Distortion	<0.44%

Measurement range:

1/2' 6.4×4.8	21.3×16mm
1/3' 4.8×3.6	16×12mm



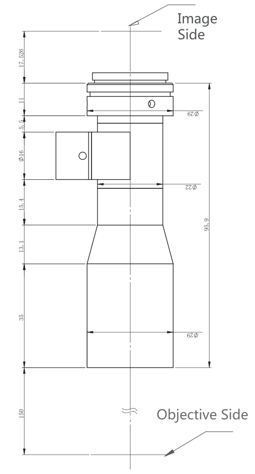
XF-T0.4X150

Specifications:

Optical Structure	Object telecentric
Magnification	0.4
Object FOV	Φ20mm
Image FOV	Φ8mm
WD	150mm±3%
Telecentricity	<0.11°
DOF	11.8mm
Aperture	F20
Resolution	33μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<2%

Measurement range:

1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



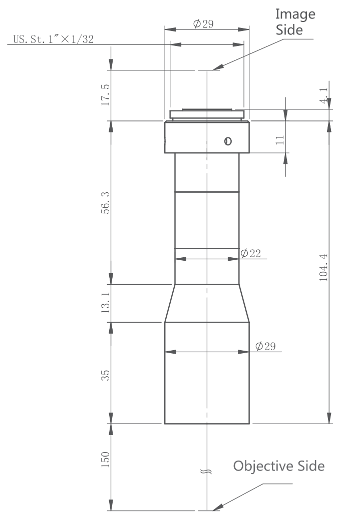
XF-T0.4X150D

Specifications:

Optical Structure	Object telecentric
Magnification	0.4
Object FOV	Φ4mm
Image FOV	Φ8mm
WD	150mm±3%
Telecentricity	<0.11°
DOF	11.8mm
Aperture	F20
Resolution	9.4μm
Image side MTF	>0.3@50lp/mm
Optical Distortion	<1.5%

Measurement range:

1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



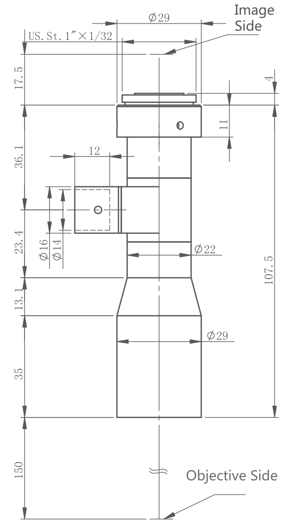
XF-T0.5X150

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ16mm
Image FOV	Φ8mm
WD	150mm±3%
Telecentricity	<0.11°
DOF	7mm
Aperture	F17.5
Resolution	23.5μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.1%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



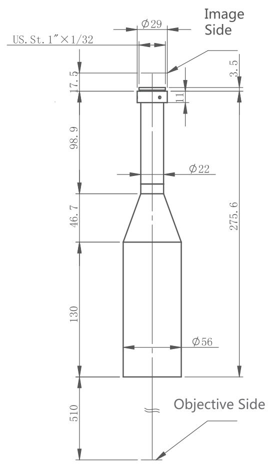
XF-T0.5X150D

Specifications:

Optical Structure	Object telecentric
Magnification	0.5
Object FOV	Φ 16mm
Image FOV	Φ 8mm
WD	150mm±3%
Telecentricity	<0.11°
DOF	7mm
Aperture	F17.5
Resolution	23.5μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.11%

Measurement range:

1/2' 6.4×4.8	12.8×9.6mm
1/3' 4.8×3.6	9.6×7.2mm



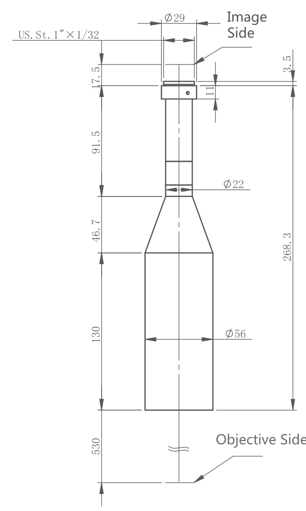
XF-MT0.27X510

Specifications:

Optical Structure	Object telecentric
Magnification	0.27
Object FOV	Φ40.7mm
Image FOV	Φ11mm
WD	510mm±3%
Telecentricity	<0.2°
DOF	23mm
Aperture	F16
Resolution	39.3μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.28%

Measurement range:

2/3' 8.8×6.6	32.6×24.4mm
1/2' 6.4×4.8	23.7×17.8mm
1/3' 4.8×3.6	17.8×13.3mm



XF-MT0.33X530

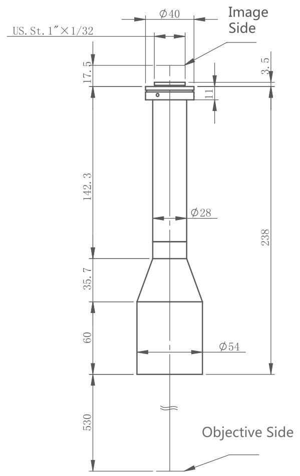
Specifications:

Optical Structure	Object telecentric
Magnification	0.33
Object FOV	Φ33.3mm
Image FOV	Φ11mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	15.6mm
Aperture	F16
Resolution	33μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.08%

Measurement range:

2/3' 8.8×6.6	26.7×20mm
1/2' 6.4×4.8	19.4×14.5mm
1/3' 4.8×3.6	14.5×10.9mm

MODEL & PARAMETER



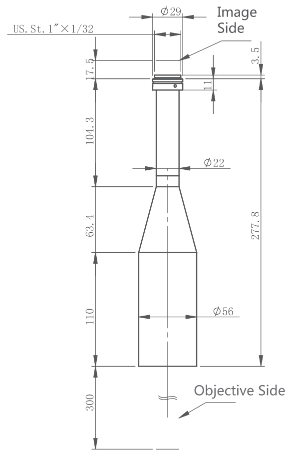
XF-MT0.36X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.36
Object FOV	Φ30.6mm
Image FOV	Φ11mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	13mm
Aperture	F16
Resolution	30μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.15%

Measurement range:

2/3' 8.8×6.6	24.4×18.3mm
1/2' 6.4×4.8	17.8×13.3mm
1/3' 4.8×3.6	13.3×10mm



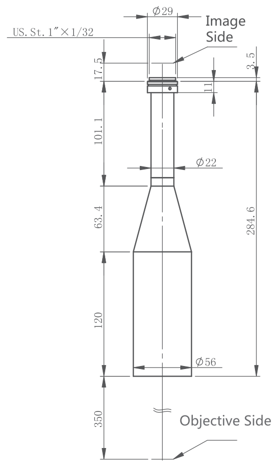
XF-MT0.38X300

Specifications:

Optical Structure	Object telecentric
Magnification	0.38
Object FOV	Φ28.9mm
Image FOV	Φ11mm
WD	300mm±3%
Telecentricity	<0.064°
DOF	10.8mm
Aperture	F16
Resolution	27.97μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.18%

Measurement range:

2/3' 8.8×6.6	23.2×17.4mm
1/2' 6.4×4.8	16.8×12.6mm
1/3' 4.8×3.6	12.6×9.5mm



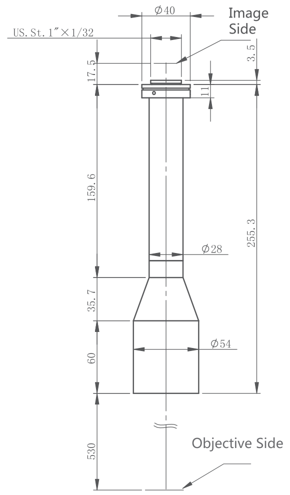
XF-MT0.4X350

Specifications:

Optical Structure	Object telecentric
Magnification	0.4
Object FOV	Φ27.5mm
Image FOV	Φ11mm
WD	350mm±3%
Telecentricity	<0.2°
DOF	9.4mm
Aperture	F16
Resolution	26.4μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.012%

Measurement range:

2/3' 8.8×6.6	22×16.5mm
1/2' 6.4×4.8	16×12mm
1/3' 4.8×3.6	12×9mm



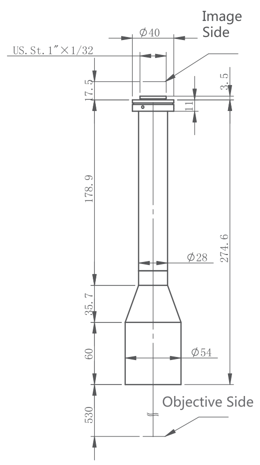
XF-MT0.42X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.42
Object FOV	Φ28.6mm
Image FOV	Φ12mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	9mm
Aperture	F16
Resolution	25.4μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.1%

Measurement range:

2/3' 8.8×6.6	21×15.7mm
1/2' 6.4×4.8	15.2×11.4mm
1/3' 4.8×3.6	11.4×8.6mm



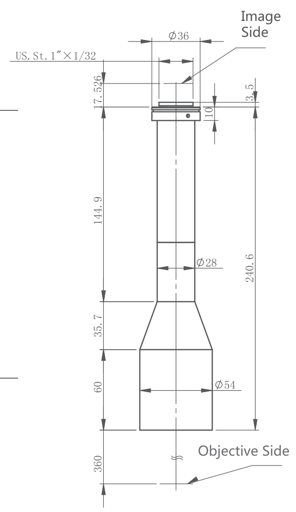
XF-MT0.48X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.48
Object FOV	Φ27.1mm
Image FOV	Φ13mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	7.5mm
Aperture	F16
Resolution	22μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.04%

Measurement range:

2/3' 8.8×6.6	18.3×13.8mm
1/2' 6.4×4.8	13.3×10mm
1/3' 4.8×3.6	10×7.5mm



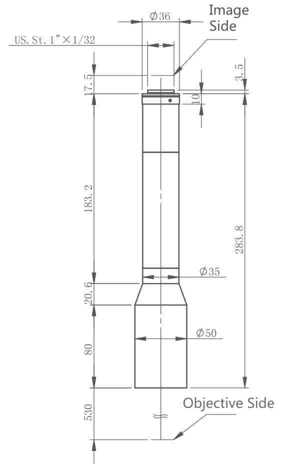
XF-MT0.55X360

Specifications:

Optical Structure	Object telecentric
Magnification	0.55
Object FOV	Φ20mm
Image FOV	Φ11mm
WD	360mm±3%
Telecentricity	<0.2°
DOF	4.4mm
Aperture	F14
Resolution	16.8μm
Image side MTF	>0.3@75lp/mm
Optical Distortion	<0.2%

Measurement range:

2/3' 8.8×6.6	16×12mm
1/2' 6.4×4.8	11.6×8.7mm
1/3' 4.8×3.6	8.7×6.5mm



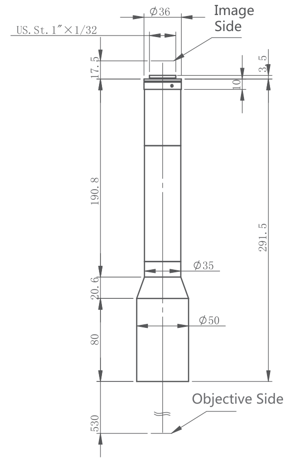
XF-MT0.6X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.6
Object FOV	Φ18.3mm
Image FOV	Φ11mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	4mm
Aperture	F16
Resolution	17.6μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.15%

Measurement range:

2/3' 8.8×6.6	14.7×11mm
1/2' 6.4×4.8	10.7×8mm
1/3' 4.8×3.6	8×6mm



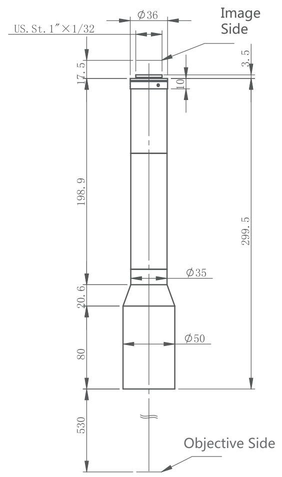
XF-MT0.7X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.7
Object FOV	Φ17.1mm
Image FOV	Φ12mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	3mm
Aperture	F16
Resolution	15.1μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.09%

Measurement range:

2/3' 8.8×6.6	12.6×9.4mm
1/2' 6.4×4.8	9.1×6.9mm
1/3' 4.8×3.6	6.9×5.1mm



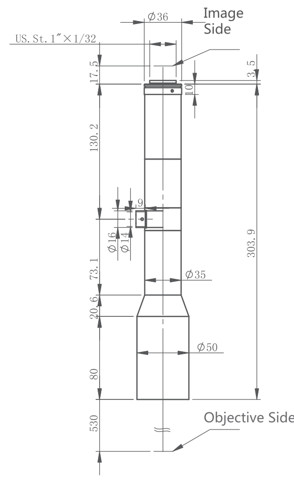
XF-MT0.8X530

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ16.25mm
Image FOV	Φ13mm
WD	530mm±3%
Telecentricity	<0.2°
DOF	2.5mm
Aperture	F16
Resolution	13μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.055%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



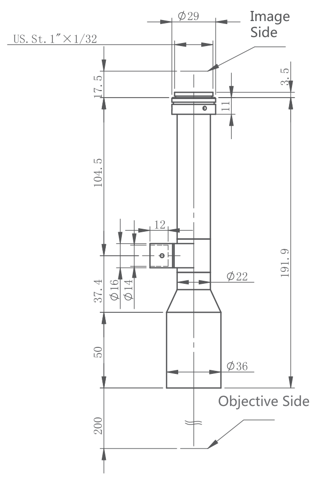
XF-MT0.8X530D

Specifications:

Optical Structure	Object telecentric
Magnification	0.8
Object FOV	Φ13.75mm
Image FOV	Φ11mm
WD	530mm±3%
Telecentricity	<0.14°
DOF	2.8mm
Aperture	F16
Resolution	13μm
Image side MTF	>0.3@55lp/mm
Optical Distortion	<0.055%

Measurement range:

2/3' 8.8×6.6	11×8.3mm
1/2' 6.4×4.8	8×6mm
1/3' 4.8×3.6	6×4.5mm



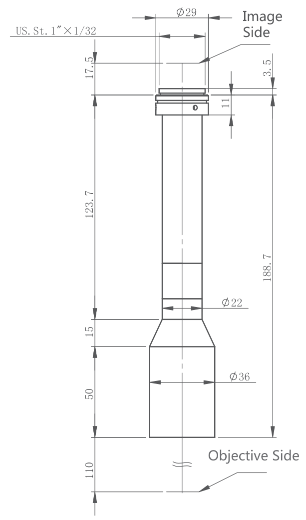
XF-MT1X200D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ 11mm
Image FOV	Φ 11mm
WD	200mm±3%
Telecentricity	<0.2°
DOF	1.42mm
Aperture	F14.3
Resolution	9.4μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.07%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



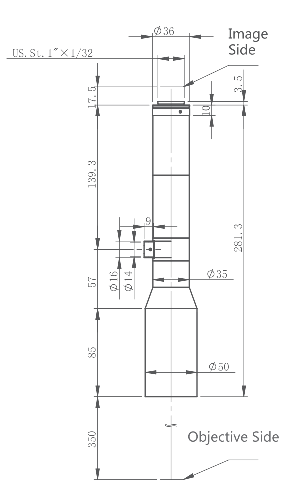
XF-MT1X200

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	200mm±3%
Telecentricity	<0.2°
DOF	1.42mm
Aperture	F14.3
Resolution	9.4μm
Image side MTF	>0.3@65lp/mm
Optical Distortion	<0.07%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



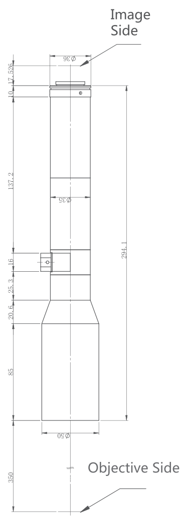
XF-MT1X350D

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	350mm±3%
Telecentricity	<0.15°
DOF	1.5mm
Aperture	F16
Resolution	10.3μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.08%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



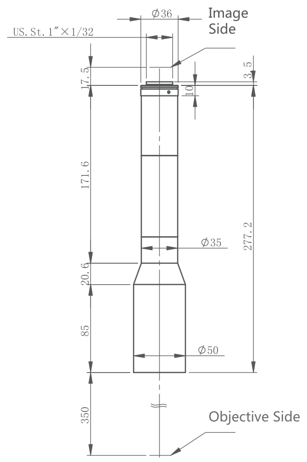
XF-MT1.2X350D

Specifications:

Optical Structure	Object telecentric
Magnification	1.2
Object FOV	Φ9.2mm
Image FOV	Φ11mm
WD	350mm±3%
Telecentricity	<0.15°
DOF	1.16mm
Aperture	F16
Resolution	8.9μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.15%

Measurement range:

2/3' 8.8×6.6	7.3×5.5mm
1/2' 6.4×4.8	5.3×4mm
1/3' 4.8×3.6	4×3mm



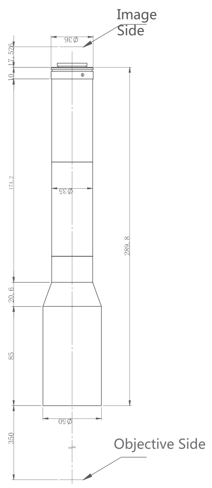
XF-MT1X350

Specifications:

Optical Structure	Object telecentric
Magnification	1
Object FOV	Φ11mm
Image FOV	Φ11mm
WD	350mm±3%
Telecentricity	<0.15°
DOF	1.5mm
Aperture	F16
Resolution	10.3μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.08%

Measurement range:

2/3' 8.8×6.6	8.8×6.6mm
1/2' 6.4×4.8	6.4×4.8mm
1/3' 4.8×3.6	4.8×3.6mm



XF-MT1.2X350

Specifications:

Optical Structure	Object telecentric
Magnification	1.2
Object FOV	Φ9.2mm
Image FOV	Φ11mm
WD	350mm±3%
Telecentricity	<0.15°
DOF	1.16mm
Aperture	F16
Resolution	8.9μm
Image side MTF	>0.3@60lp/mm
Optical Distortion	<0.15%

Measurement range:

2/3' 8.8×6.6	7.3×5.5mm
1/2' 6.4×4.8	5.3×4mm
1/3' 4.8×3.6	4×3mm

PARALLEL LIGHT
SOURCE

Specially suitable for the measurement of circle shape components.

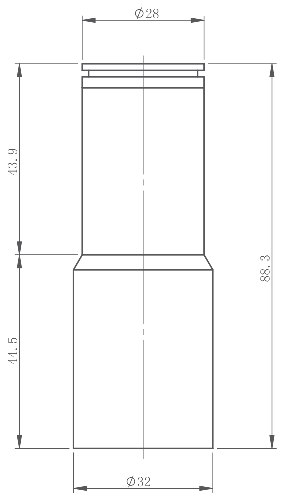
Higher Clarity and Contrast

Better DOF and Telecentricity

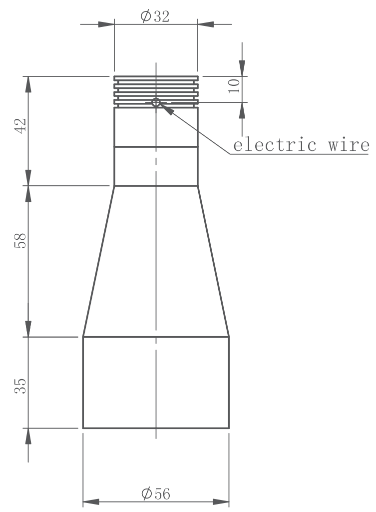
Model	The output light spot diameter (mm)	颜色				LED power rating
		/W(white 430-680nm)	/R(red 630nm)	/G(green 520nm)	/B(blue 460nm)	
XF-TD20III	20	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD50B	50	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD70-III	70	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD100	100	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD120	120	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD120-L90	120	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD140	140	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD200-III-WRGB	200	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD200-IIIS	200	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD200-IIIS-L90	200	✓	✓	✓	✓	1W/3W (standard 1W)
XF-TD280	280	✓	✓	✓	✓	1W/3W (standard 1W)

- Telecntric lens cooperate with TD series light, can remove diffused back-illumination introduced border confuse, and increase profile measurement accuracy
- Telecentric illumination can provide telecentric optical system with higher light couple efficiency and signal-noise ratio.
- Getting better DOF and telecentricity.

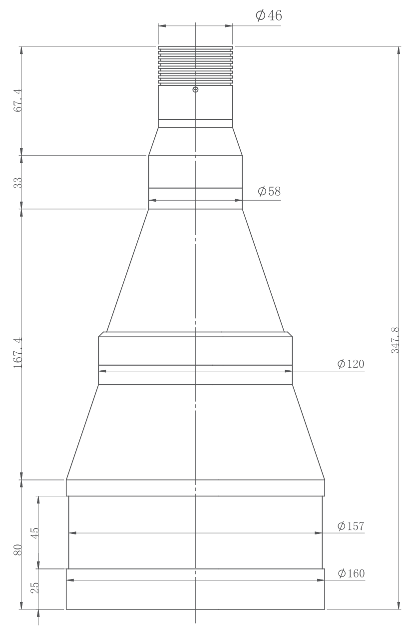
XF-TD20III



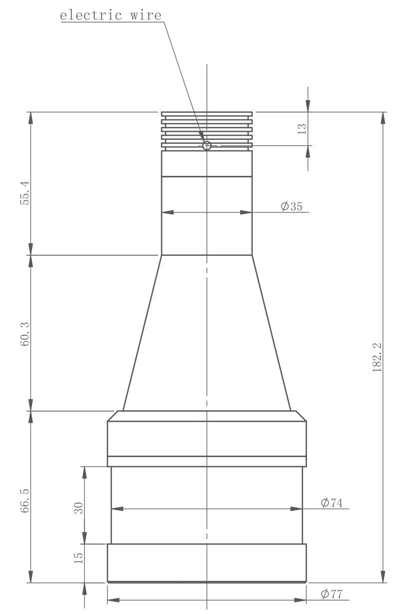
XF-TD50B



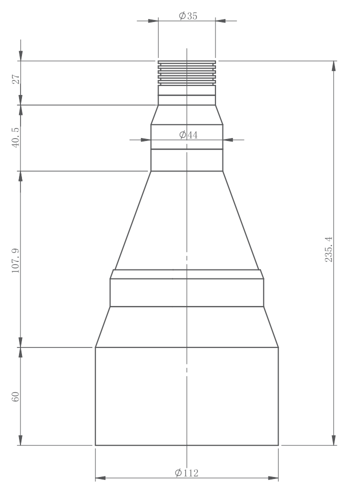
XF-TD140



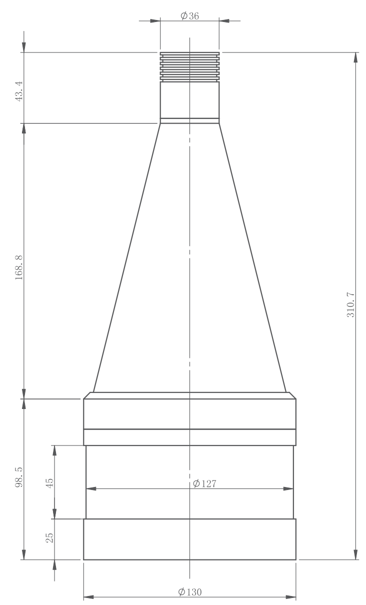
XF-TD70-III



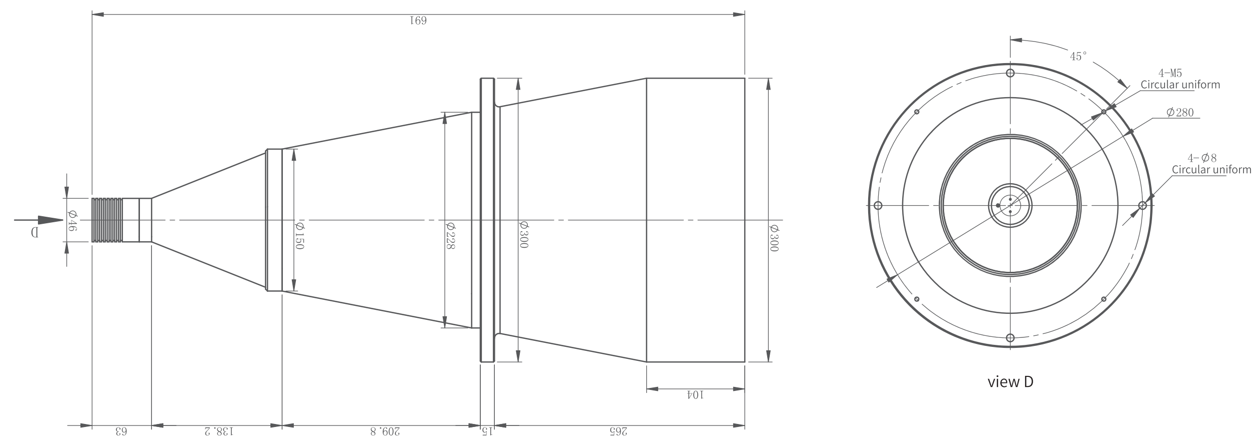
XF-TD100



XF-TD120

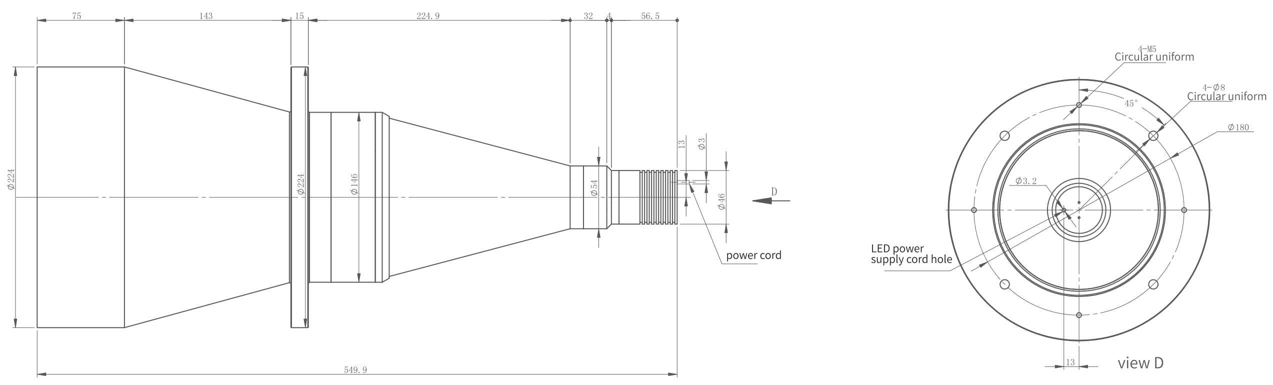


XF-TD280

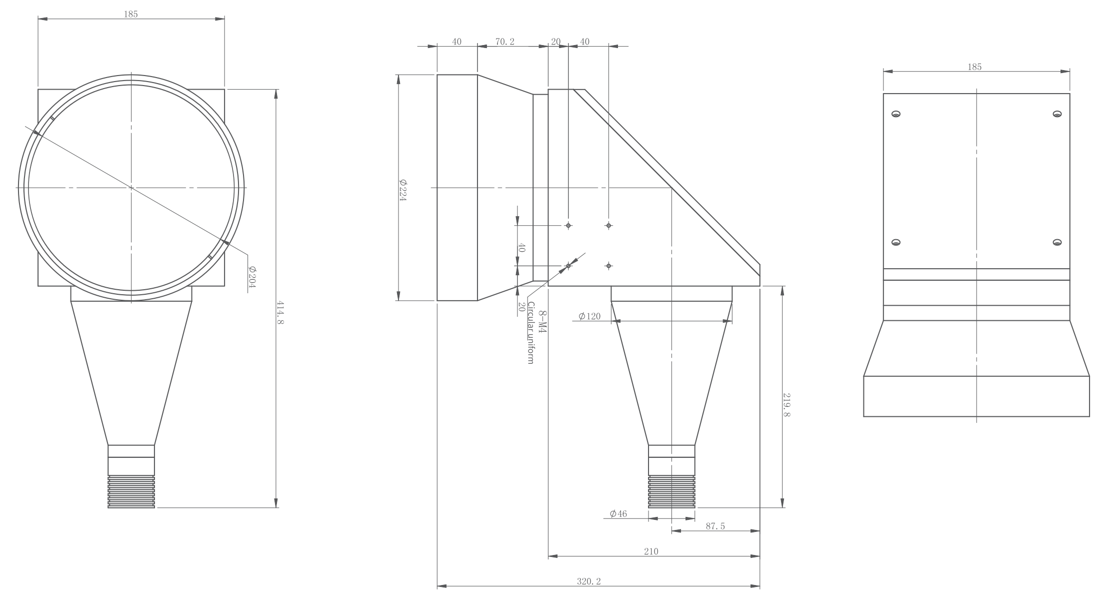


MODEL & SIZE

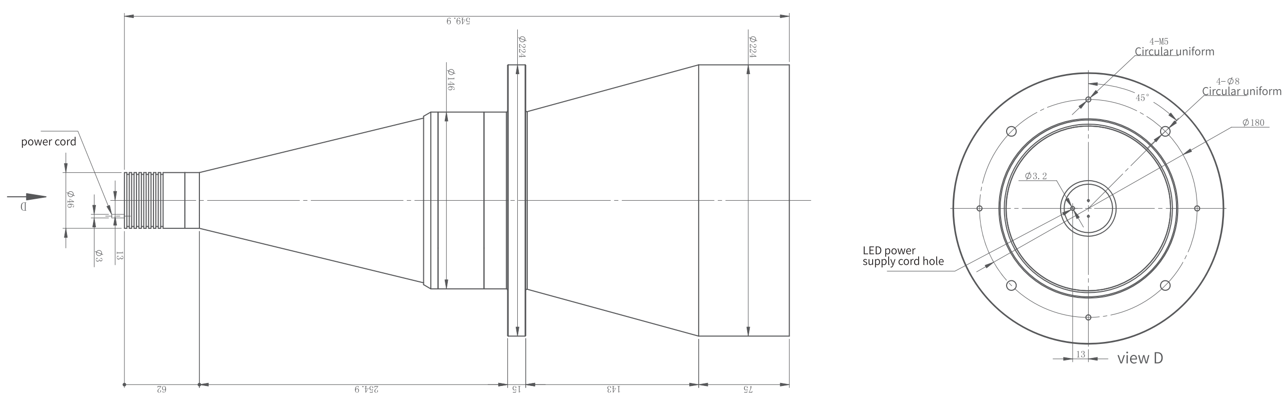
XF-TD200-III-WRGB



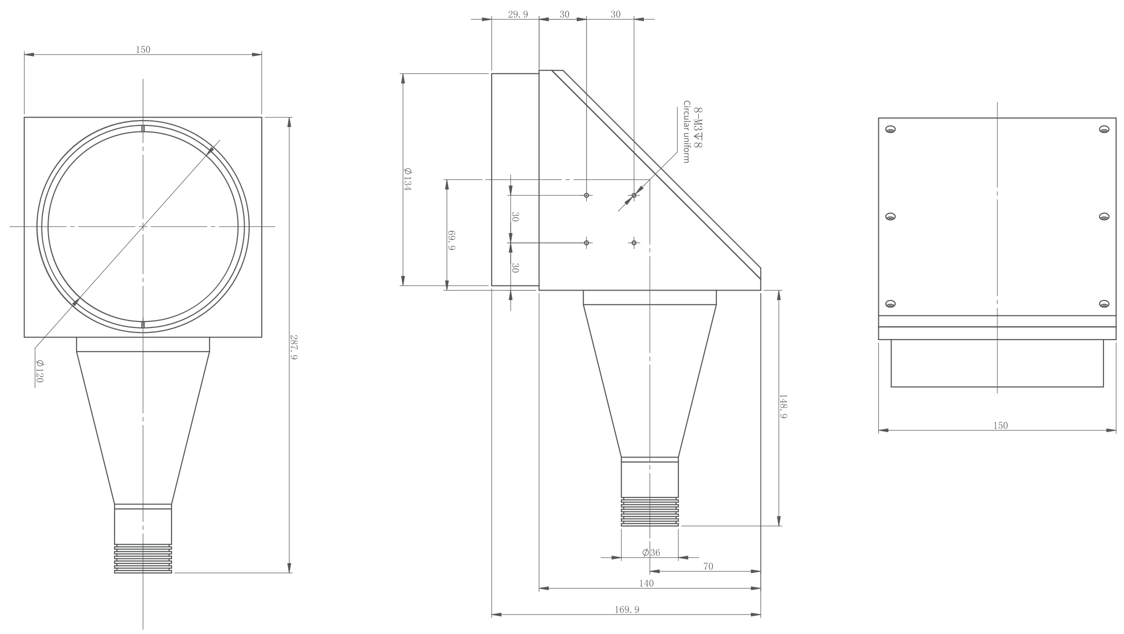
XF-TD200-IIIS-L90



XF-TD200-IIIS



XF-TD120-L90



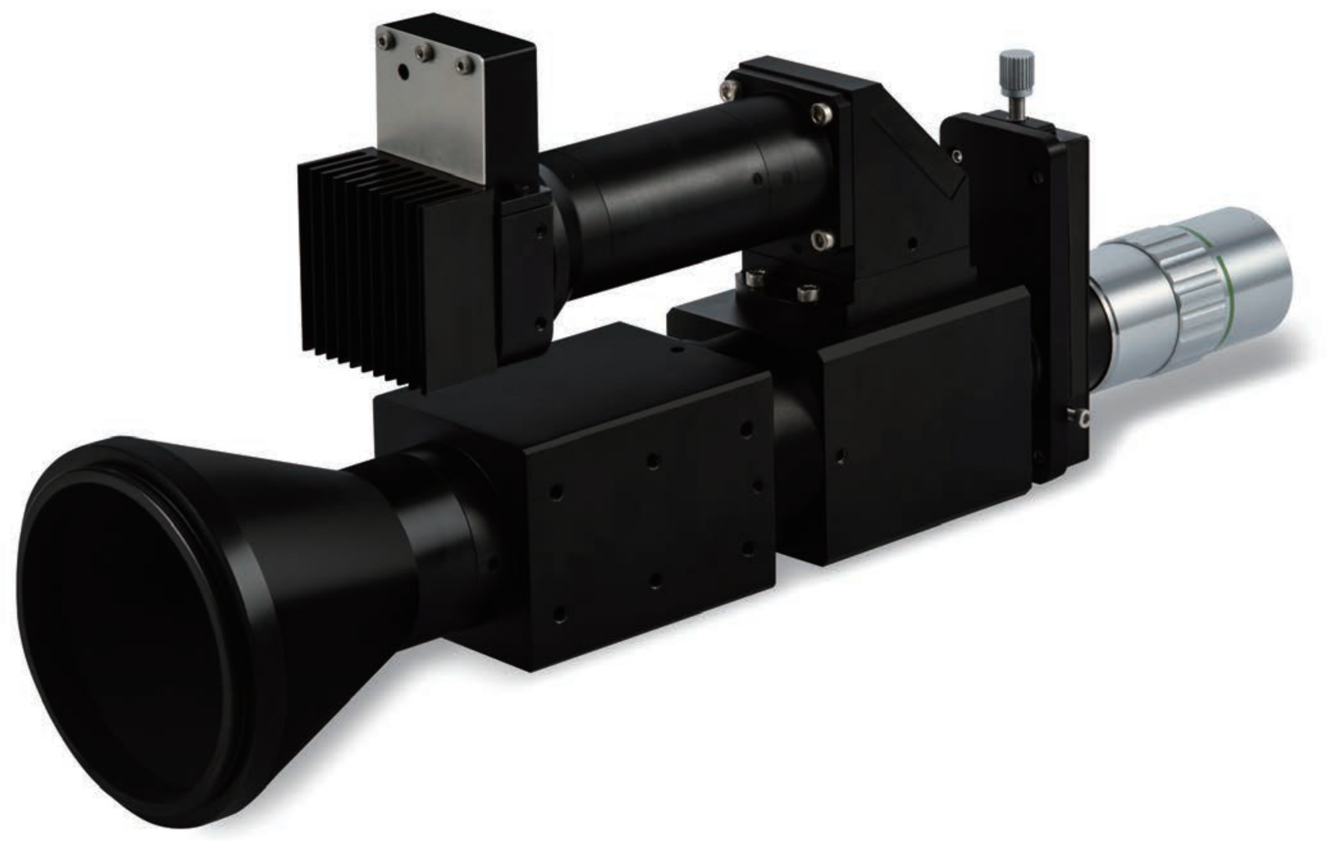
DIC MICROSCOPE IMAGING MODEULE

Infinity corrected optical structure design

With coaxial illuminating

Excellent achromatic design

- Adapting the third generation infinity corrected optical structure design, compatible with different magnification infinity corrected objective lenses.
- Using achromatic microscope objective lenses, excellent apochromatic design ensure perfect image quality with ultra-long working distance.
- Adapting new modular design, besides the standard models, it can also be a combination of a variety of configurations according to customer' s demands.
- With coaxial illuminating.



VM3 standard models

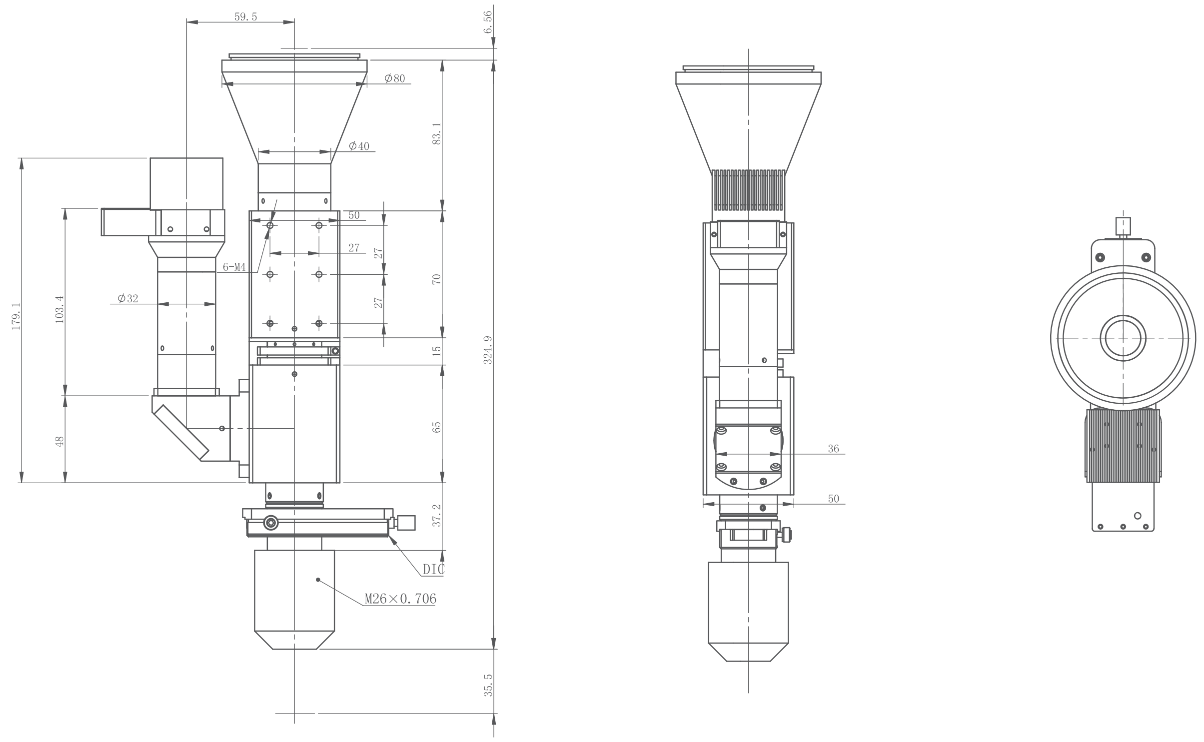
Model	Main Body optical magnification	Coaxial (Yes or No)	Objective operating wavelength	Mount	Maximally support CCD size
XF-VM3-1X-DIC	1X	LED lighting	Visible light	C/F/M58/M72 Custom	4/3
XF-VM3-1X-N	1X	non-coaxial	Visible light	C or F-Mount	4/3
XF-VM3-1X-C	1X	coaxial	Visible light	C or F-Mount	4/3
XF-VM3-0.5x-N	0.5X	non-coaxial	Visible light	C or F-Mount	2/3
XF-VM3-0.5x-C	0.5X	coaxial	Visible light	C or F-Mount	2/3
XF-VM3-D1010	1X	coaxial	Visible light	C or F-Mount	4/3
XF-VM3-D0510	0.5X、1X	coaxial	Visible light	C or F-Mount	2/3、4/3

Referable objective lens

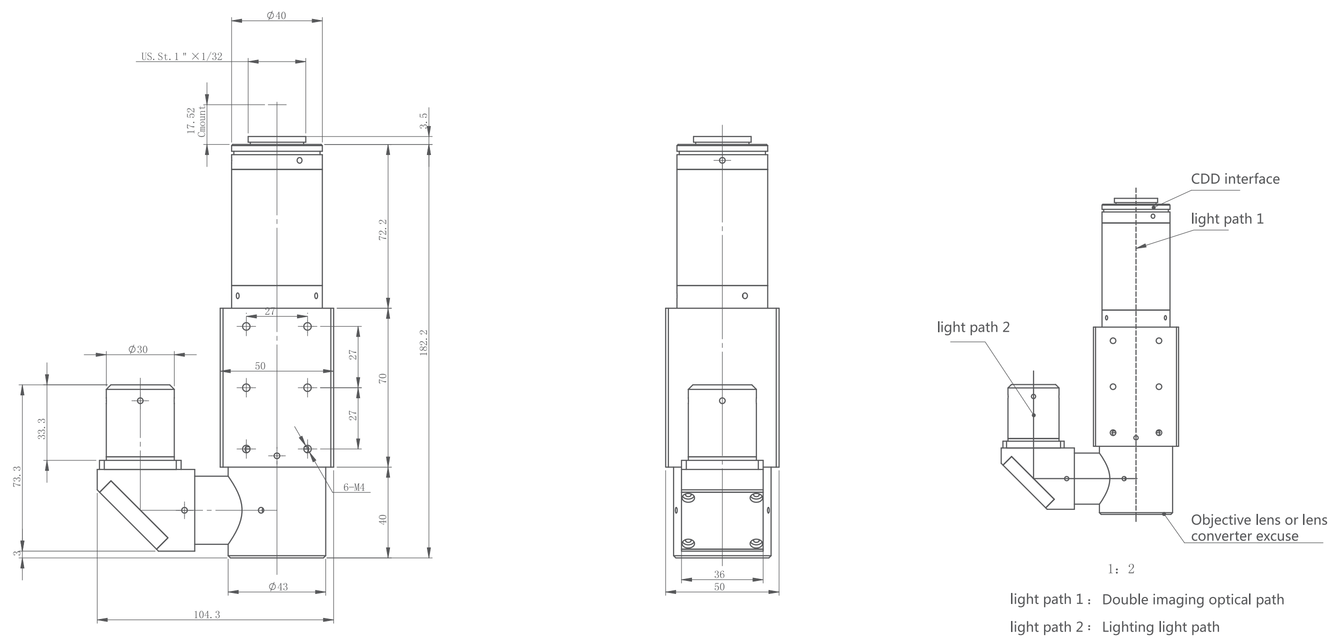
Model	OPTICAL MAGNIFICATION	N.A	WD(mm)	(μm)	DOF(μm)	biggest supp ort CCD Maximally support CCD size
M Plan Apo 5X	5x	0.14	34	2.3	28	4/3
M Plan Apo 10X	10x	0.28	34	1.2	7	4/3
M Plan Apo 20X	20x	0.42	20	0.79	3.1	4/3
M Plan Apo 50X	50x	0.55	13	0.6	1.8	4/3
M Plan Apo 100X	100x	0.7	6	0.47	1.1	4/3

MODEL & SIZE

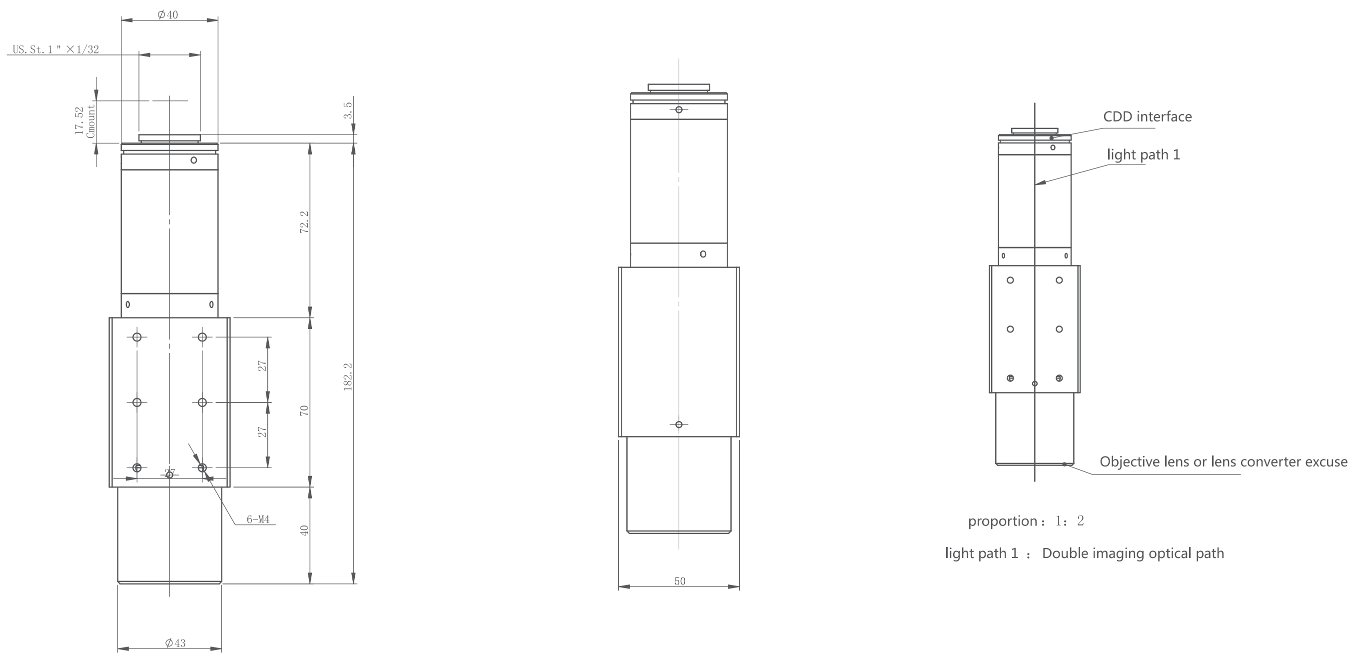
XF-VM3-1X-DIC



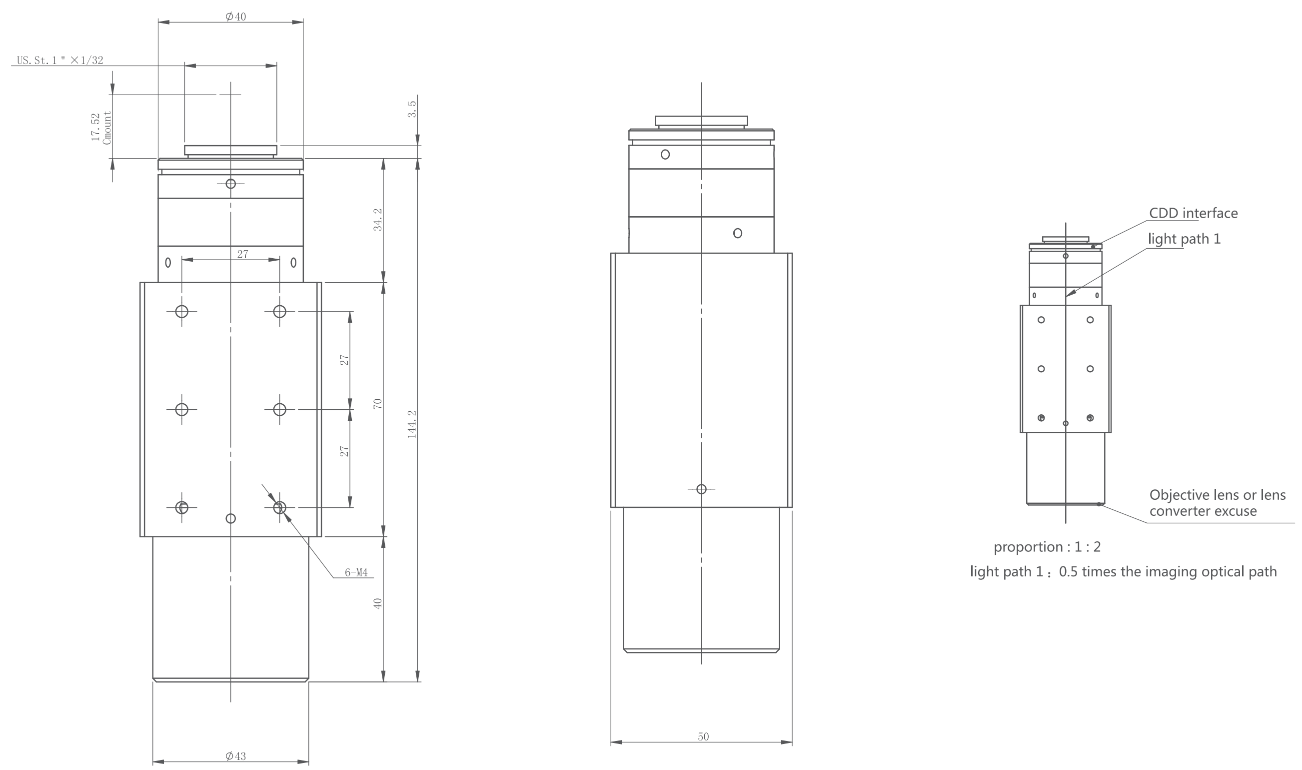
XF-VM3-1X-C



XF-VM3-1X-N

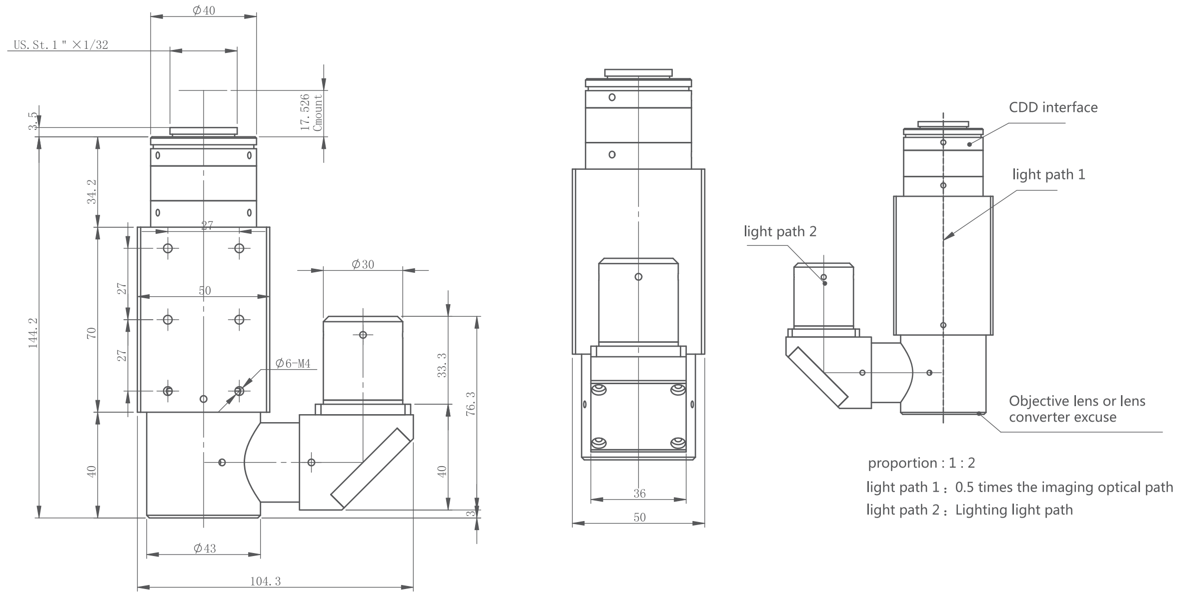


XF-VM3-0.5X-N

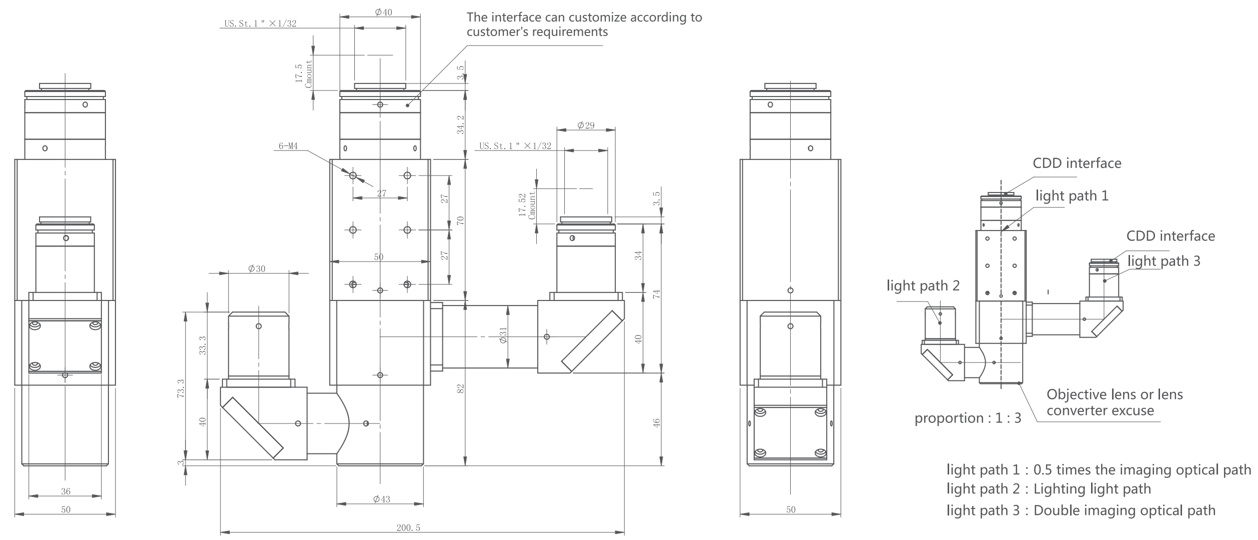


MODEL & SIZE

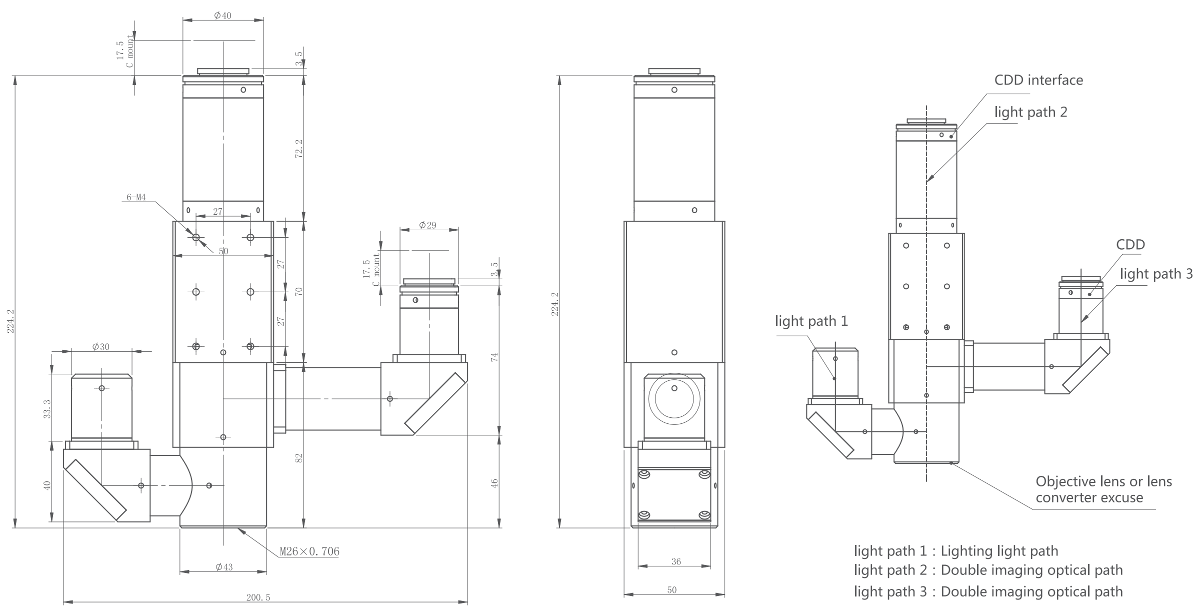
XF-VM3-0.5X-C



XF-VM3-D0510



XF-VM3-D1010



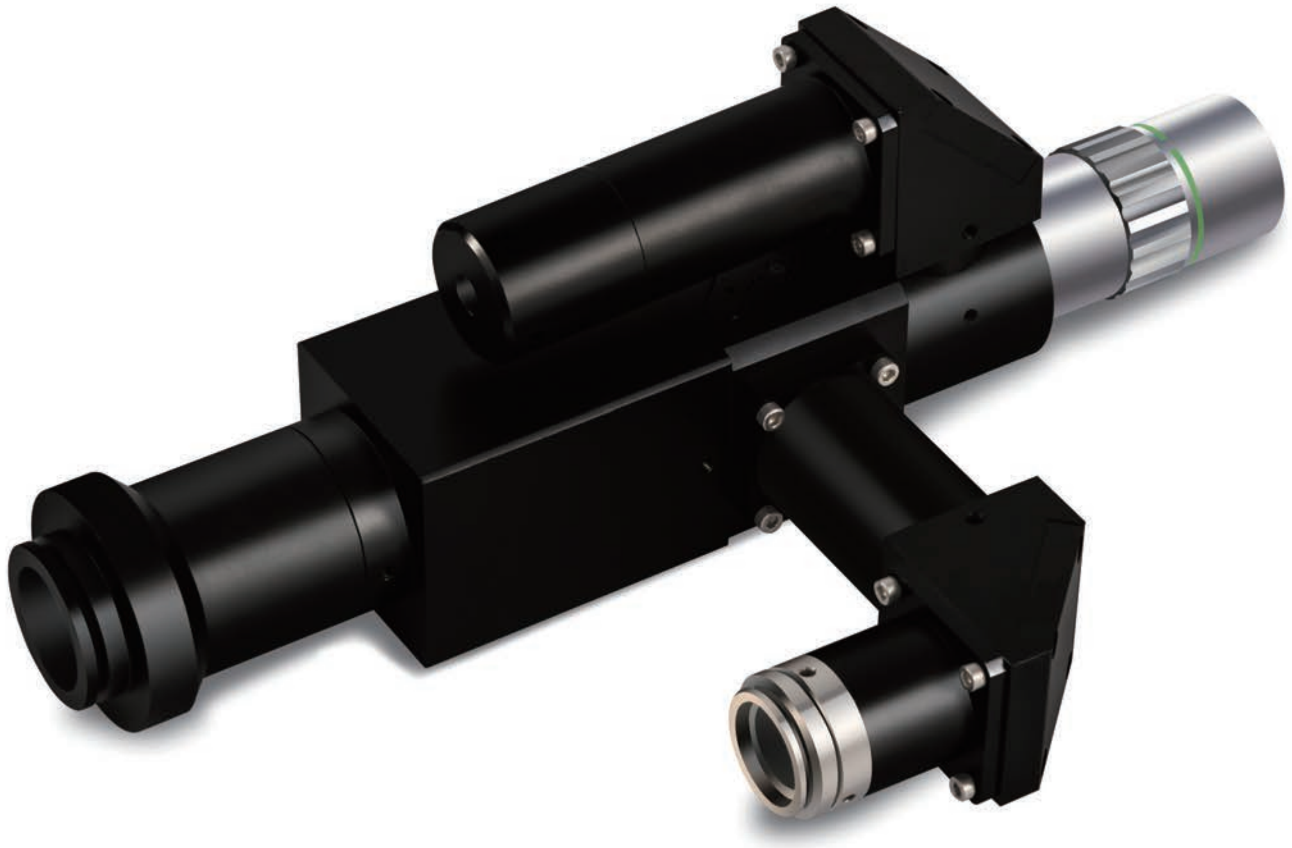
LASER FOCUSING
IMAGING MODULE

Infinity corrected optical structure design

With coaxial illuminating

Excellent achromatic design

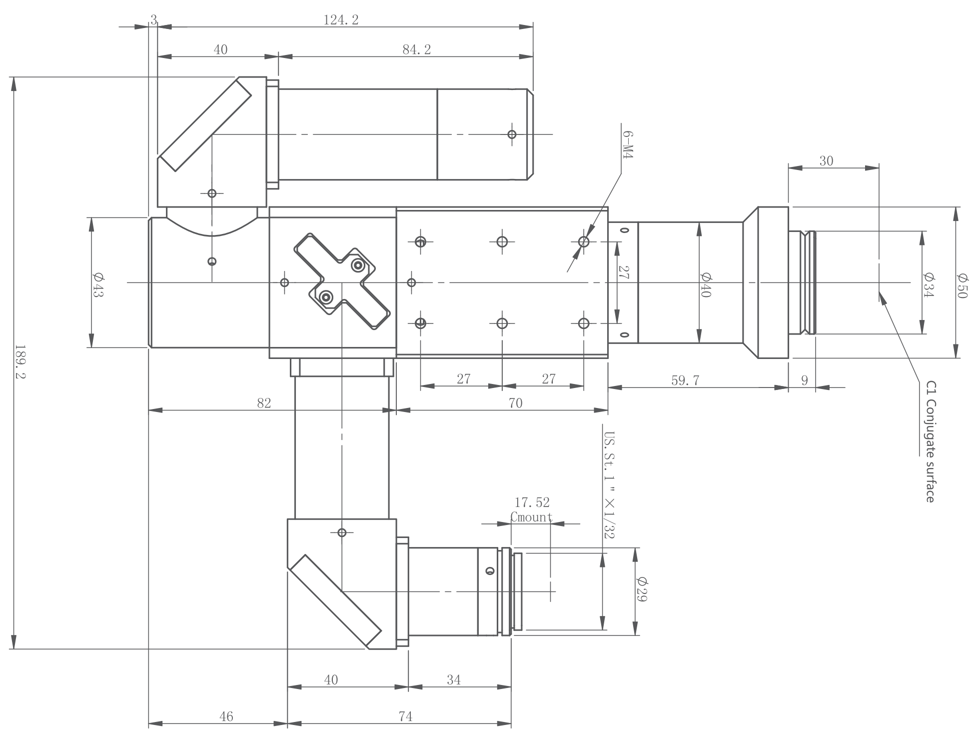
- Illuminating light path, laser light path, and imaging light path are individually designed, maximized to ensure the efficiency of the laser and high quality of imaging.
- Compatible with different parallel objectives(VIS laser with visible light objectives, NUV laser with NUV objectve, NIR with NIR objective)
- Imaging light path maximally support to 2/3’ industrial camera.
- With coaxial illuminating, the illuminating optical axis coincides with laser optical axis focus.

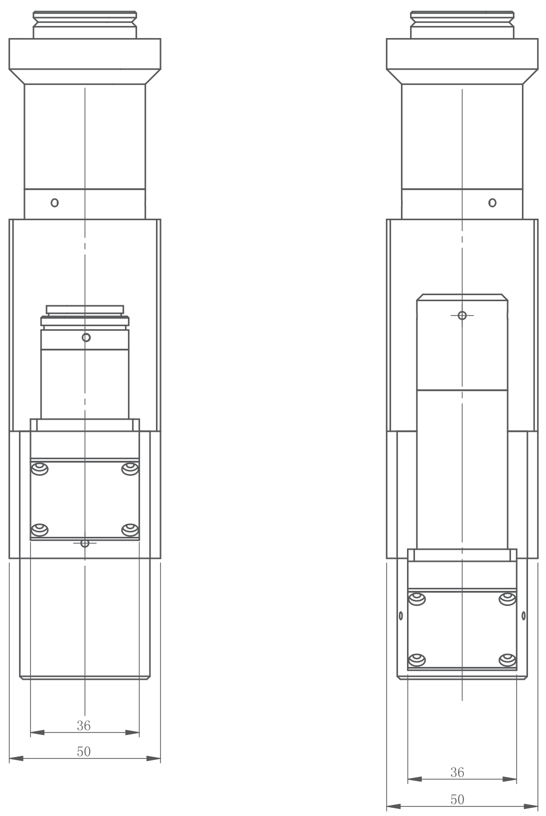


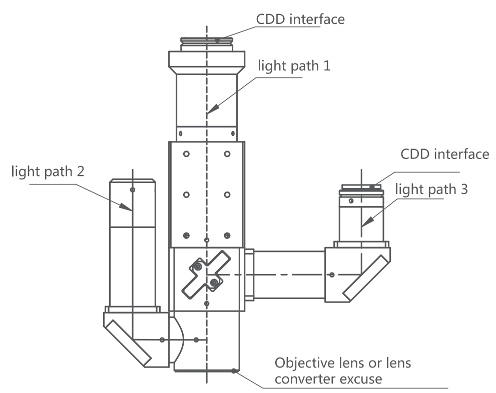
Model	Main Body optical magnification	Coaxial (Yes or No)	Objective operating wavelength	Mount	Maximally support CCD size
XF-VM3-LA-VIS	1x	coaxial	400-700nm	C-Mount	2/3
XF-VM3-LA-NUV	1x	coaxial	355-620nm	C-Mount	2/3
XF-VM3-LA-NIR	1x	coaxial	480-1800nm	C-Mount	2/3

MODEL & SIZE

1.XF-VM3-LA-VIS



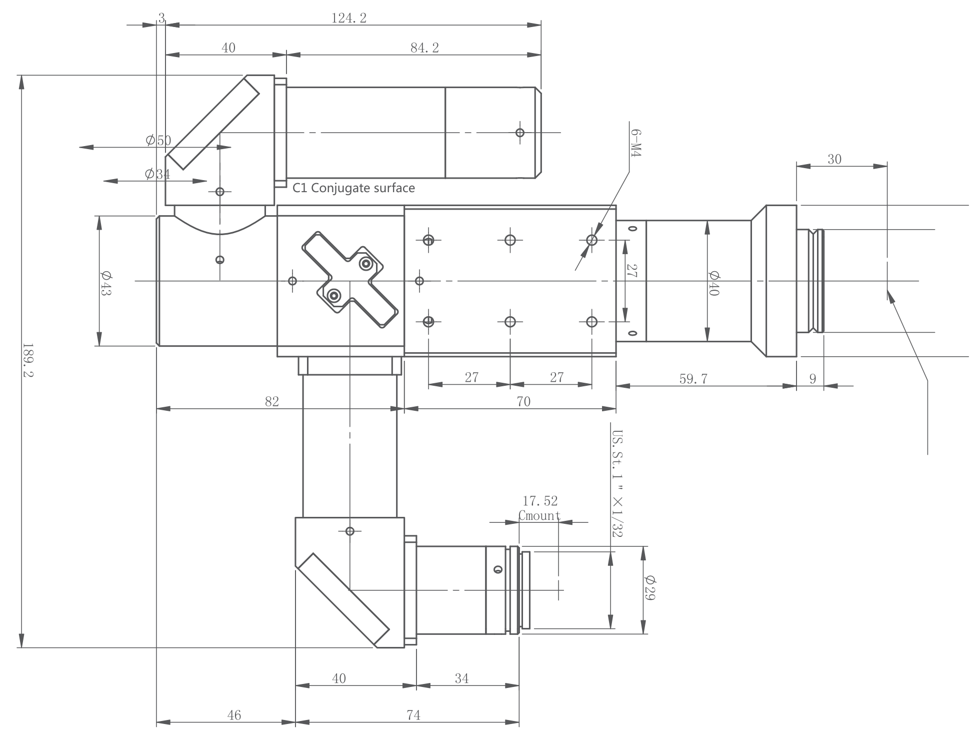


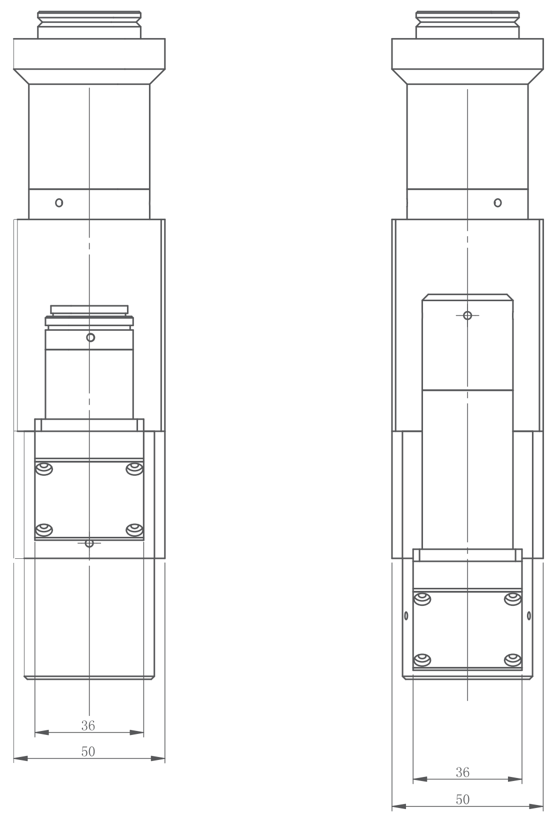


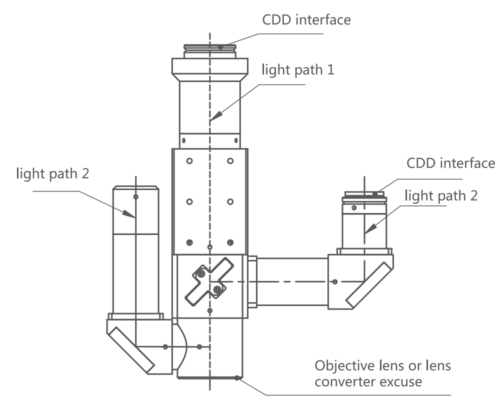
proportion : 1 : 3

light path 1：Double imaging optical path
light path 2：Lighting light path
light path 3：Double imaging optical path

2.XF-VM3-LA-NUV



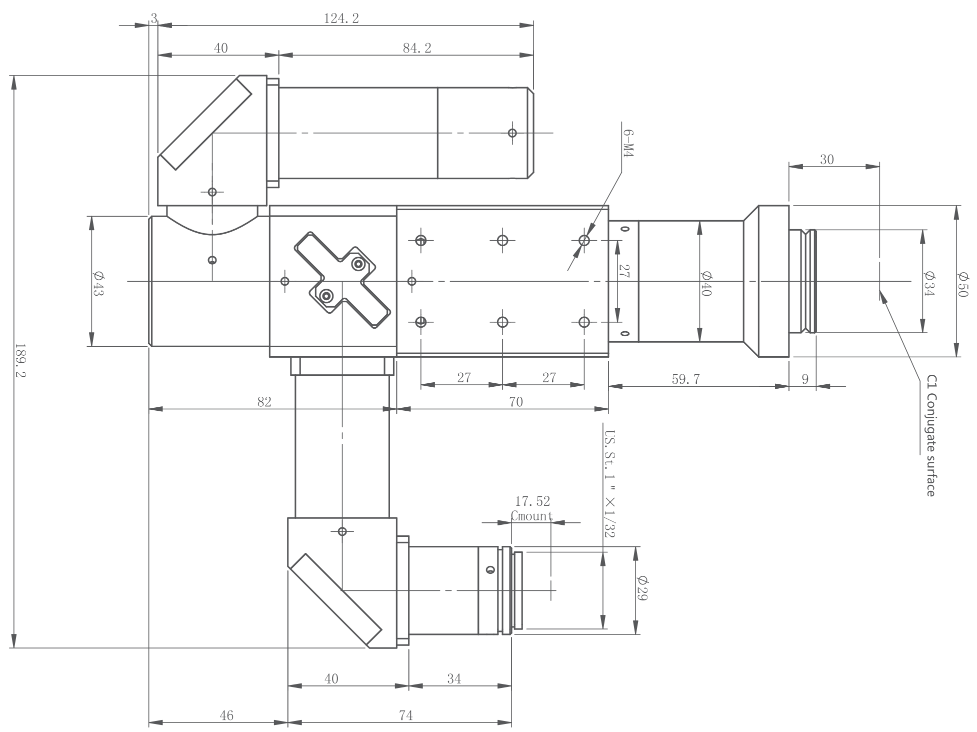


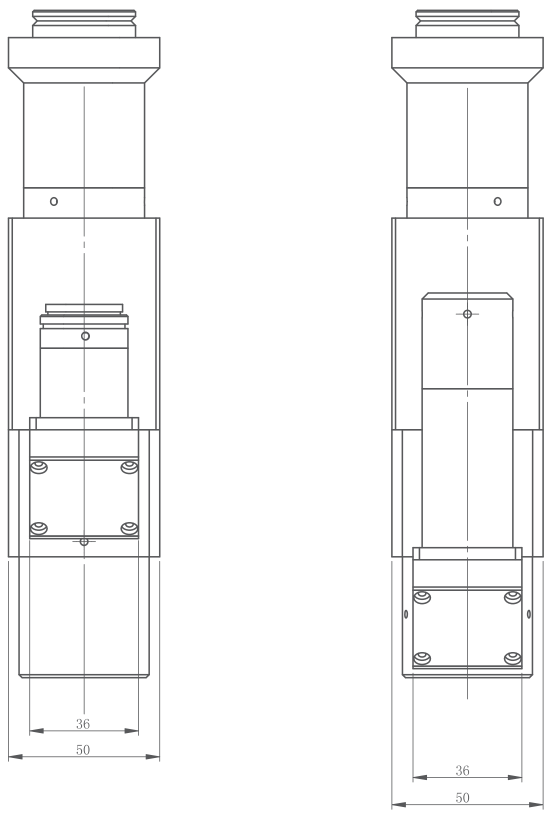


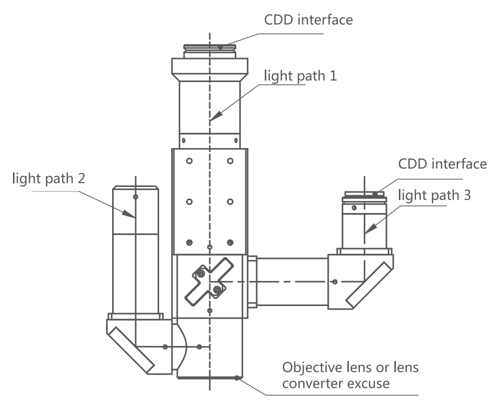
proportion : 1 : 3

light path 1：Double imaging optical path
light path 2：Lighting light path
light path 2：Double imaging optical path

3.XF-VM3-LA-NIR







proportion : 1 : 3

light path 1：Double imaging optical path
light path 2：Lighting light path
light path 2：Double imaging optical path

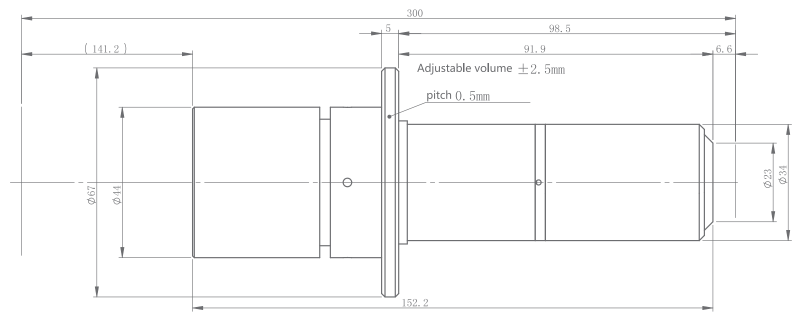
DMD
PHOTOLITHOGRAPHIC LENS

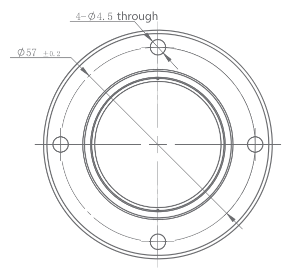
Bi-telecentric design

Support I line(365nm), LED illuminating,
1um photolithographic resolution.

Compatible up to
25.4 mm DMD sensor

- Customized individually according to customer' s demands
- Bi-telecentric design to ensure the magnification within DOF
- Specially optimized constant UV to ensure the image quality and transmittance
- Long object side working distance and compatible with oblique incidence illuminating ways





XF-DMD7.56X4K

Specifications:

Magnification :	7.56X
Image side NA:	0.25
Object FOV:	Φ26mm
Designed wave length:	357-376nm, center wave length 365nm
Distortion:	Absolute distortion<0.2um
Curvature field:	designed curvature<3um

UTL SERIES

Object telecentric optical structure design

With telecentric lens function at FA price

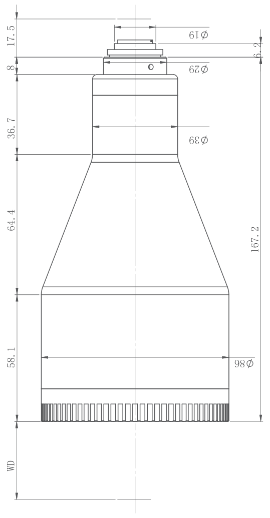
Excellent imaging uniformity

- Magnification from 0.53X-0.115X and cover the FOV from 9.1-55.7mm
- Support up to 1/2' (Diagonal=8mm) megapixels industrial camera.
- Object telecentric structure design
- High cost performance optical solutions
- Excellent imaging uniformity to ensure the inspection precision of within whole FOV

Model	Type of illumination	Mag	WD (mm)	Like a party FOV (mm)	Telecentricity (°)	Optical resolution (μm)	DOF (mm)	F#	MTF30 (LP/mm)	Distortion(%)	FOV for different Sensor Size (mm x mm)	
											1/3″	1/2″
XF-UTL-0.115X190	non-coaxial	0.115	190	8	0.1	80.1	95.8	14	75	0.24	41.7×31.3	55.7×41.7
XF-UTL-0.118X170	non-coaxial	0.118	170	8	0.1	78.0	96	14	75	0.25	40.7×30.5	54.2×40.7
XF-UTL-0.122X150	non-coaxial	0.122	150	8	0.1	75.5	84	14	75	0.24	39.3×29.	52.5×39.3
XF-UTL-0.126X130	non-coaxial	0.126	130	8	0.1	73.3	77.6	14	75	0.23	38.1×28.6	50.8×38.1
XF-UTL-0.130X110	non-coaxial	0.130	110	8	0.1	71.1	75.4	14	75	0.22	36.9×27.7	49.2×36.9
XF-UTL-0.142X190	non-coaxial	0.142	190	8	0.1	65.3	66.6	14	75	0.26	33.8×25.4	45.1×33.8
XF-UTL-0.145X170	non-coaxial	0.145	170	8	0.1	63.8	66.6	14	75	0.27	33.1×24.8	44.1×33.1
XF-UTL-0.149X150	non-coaxial	0.149	150	8	0.1	62.3	65.2	14	75	0.27	32.2×24.2	43×32.2
XF-UTL-0.152X130	non-coaxial	0.152	130	8	0.1	60.8	59.2	14	75	0.27	31.6×23.7	42.1×31.6
XF-UTL-0156X110	non-coaxial	0.156	110	8	0.1	59.2	56.8	14	75	0.27	30.8×23.1	41×30.8
XF-UTL-0.156X190	non-coaxial	0.156	190	8	0.1	59.2	58.8	14	75	0.15	30.8×23.1	41×30.8
XF-UTL-0.160X170	non-coaxial	0.160	170	8	0.1	57.9	54.4	14	75	0.16	30×22.5	40×30
XF-UTL-0.164X150	non-coaxial	0.164	150	8	0.1	56.3	52.8	14	75	0.16	29.3×22	39×29.3
XF-UTL-0.168X130	non-coaxial	0.168	130	8	0.1	54.9	47.8	14	75	0.16	28.6×21.4	38.1×28.6
XF-UTL-0.173X110	non-coaxial	0.173	110	8	0.1	53.4	46.6	14	75	0.16	27.7×20.8	37×27.7
XF-UTL-0.176X190	non-coaxial	0.176	190	8	0.1	52.5	46.4	14	75	0.11	27.3×20.5	36.4×27.3

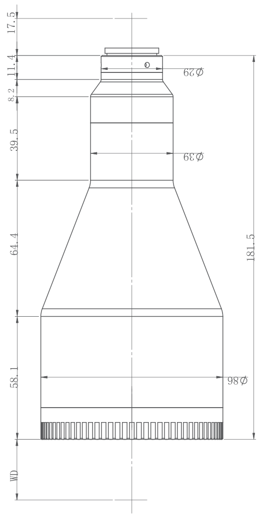
Model	Type of illumination	Mag	WD (mm)	Like a party FOV (mm)	Telecentricity (°)	Optical resolution (μm)	DOF(mm)	F#	MTF30 (LP/mm)	Distortion(%)	FOV for different Sensor Size (mm x mm)	
											1/3″	1/2″
XF-UTL-0.180X170	non-coaxial	0.180	170	8	0.1	51.2	44.6	14	75	0.12	26.7×20	35.6×26.7
XF-UTL-0.181X175	non-coaxial	0.181	175	8	0.1	51.1	40.6	14	75	0.105	26.5×19.9	35.4×26.5
XF-UTL-0.183X175D	coaxial	0.183	175	8	0.1	50.4	40.6	14	75	0.14	26.2×19.7	35×26.2
XF-UTL-0.184X155	non-coaxial	0.184	151	8	0.1	50.2	41	14	75	0.145	26.1×19.6	34.8×26.1
XF-UTL-0.185X150	non-coaxial	0.185	150	8	0.1	49.8	39.6	14	75	0.13	25.9×19.5	34.6×25.9
XF-UTL-0.186X155D	coaxial	0.184	155	8	0.1	49.7	42	14	75	0.175	25.8×19.4	34.4×25.8
XF-UTL-0.188X135	non-coaxial	0.188	135	8	0.1	49.1	39	14	75	0.18	25.5×19.1	34×25.5
XF-UTL-0.188X135D	coaxial	0.188	135	8	0.1	48.7	39	14	75	0.196	25.5×19.1	34×25.5
XF-UTL-0.190X130	non-coaxial	0.190	130	8	0.1	48.5	38.8	14	75	0.13	25.3×18.9	33.7×25.3
XF-UTL-0.194X115	non-coaxial	0.194	115	8	0.1	47.8	38.6	14	75	0.21	24.7×18.6	33×24.7
XF-UTL-0.194X115D	coaxial	0.194	115	8	0.1	47.6	38.6	14	75	0.205	24.7×18.6	33×24.7
XF-UTL-0.196X110	non-coaxial	0.196	110	8	0.1	471	36	14	75	0.13	24.5×18.4	32.7×24.5
XF-UTL-0.198X175	non-coaxial	0.198	175	8	0.1	46.5	34.8	14	75	0.03	24.2×18.2	32.3×24.2
XF-UTL-0.2X95	non-coaxial	0.2	95	8	0.1	46.2	36.2	14	75	0.22	24×18	32×24
XF-UTL-0.2X95D	coaxial	0.2	95	8	0.1	46.2	36.2	14	75	0.21	24×18	32×24
XF-UTL-0.201X175D	coaxial	0.201	175	8	0.1	45.9	34.8	14	75	0.059	23.9×17.9	31.8×23.9
XF-UTL-0.202X155	non-coaxial	0.202	155	8	0.1	45.7	32.6	14	75	0.06	23.8×17.8	31.7×23.8
XF-UTL-0.205X155D	coaxial	0.205	155	8	0.1	15.1	32.6	14	75	0.08	23.4×17.6	31.2×23.4
XF-UTL-0.207X135	non-coaxial	0.207	135	8	0.1	44.5	32.3	14	75	0.09	23.2×17.4	30.9×23.2
XF-UTL-0.207X135D	coaxial	0.207	135	8	0.1	44.2	32.3	14	75	0.095	23.2×17.4	30.9×23.2
XF-UTL-0.214X115	non-coaxial	0.214	115	8	0.1	43.2	29.8	14	75	0.11	22.4×16.8	29.9×22.4
XF-UTL-0.215X115D	coaxial	0.215	115	8	0.1	43	29.8	14	75	0.105	22.3×16.7	29.8×22.3
XF-UTL-0.222X95	non-coaxial	0.222	95	8	0.1	41.7	31.2	14	75	0.13	21.6×16.2	28.8×21.6
XF-UTL-0.222X95D	coaxial	0.222	95	8	0.1	41.7	31.2	14	75	0.11	21.6×16.2	28.8×21.6
XF-UTL-0.224X175	non-coaxial	0.224	175	8	0.1	41.3	27	14	75	0.019	21.4×16.1	28.6×21.4
XF-UTL-0.227X175D	coaxial	0.227	175	8	0.1	40.6	27	14	75	0.019	21.1×15.9	28.2×21.1
XF-UTL-0.228X155	non-coaxial	0.228	155	8	0.1	40.5	25.6	14	75	0.045	21.1×15.8	28.1×21.1
XF-UTL-0.231X155D	coaxial	0.231	155	8	0.1	40	25.6	14	75	0.045	20.8×15.6	27.7×20.8
XF-UTL-0.234X135	non-coaxial	0.234	135	8	0.1	39.4	26	14	75	0.07	20.5×15.4	27.4×20.5
XF-UTL-0.234X135D	coaxial	0.234	135	8	0.1	39.1	26	14	75	0.07	20.5×15.4	27.4×20.5
XF-UTL-0.242X115	non-coaxial	0.242	115	8	0.1	38.2	25.6	14	75	0.09	19.8×14.9	26.4×19.8
XF-UTL-0.243X115D	coaxial	0.243	115	8	0.1	38.1	25.6	14	75	0.09	19.8×14.8	26.3×19.8
XF-UTL-0.251X95	non-coaxial	0.251	95	8	0.1	36.8	22	14	75	0.105	19.1×14.3	25.5×19.1
XF-UTL-0.251X95D	coaxial	0.251	95	8	0.1	36.8	22	14	75	0.105	19.1×14.3	25.5×19.1
XF-UTL-0.262X175	non-coaxial	0.262	175	8	0.1	35.3	19.2	14	74	0.14	18.3×13.7	24.4×18.3
XF-UTL-0.262X175D	coaxial	0.262	175	8	0.1	35.3	19.2	14	74	0.14	18.3×13.7	24.4×18.3
XF-UTL-0.265X155	non-coaxial	0.265	155	8	0.1	34.8	21	14	74	0.1	18.1×13.6	24.4×18.1
XF-UTL-0.265X155D	coaxial	0.265	155	8	0.1	34.8	21	14	74	0.1	18.1×13.6	24.4×18.1
XF-UTL-0.271X135	non-coaxial	0.271	135	8	0.1	34.2	19.6	14	74	0.053	17.7×13.3	23.6×17.7
XF-UTL-0.271X135D	coaxial	0.271	135	8	0.1	34.2	19.6	14	74	0.053	17.7×13.3	23.6×17.7
XF-UTL-0.278X115	non-coaxial	0.278	115	8	0.1	33.2	18.8	14	74	0.022	17.3×12.9	23×17.3
XF-UTL-0.278X115D	coaxial	0.278	115	8	0.1	33.2	18.8	14	74	0.022	17.3×12.9	23×17.3
XF-UTL-0.288X95	non-coaxial	0.288	95	8	0.1	32.1	16.8	14	74	0.06	16.7×12.5	22.2×16.7
XF-UTL-0.288X95D	coaxial	0.288	95	8	0.1	32.1	16.8	14	74	0.06	16.7×12.5	22.2×16.7
XF-UTL-0.296X175	non-coaxial	0.296	175	8	0.1	31.2	16.1	14	74	0.12	16.2×12.2	21.6×16.2
XF-UTL-0.299X155	non-coaxial	0.299	155	8	0.1	31.2	16.1	14	74	0.12	16.1×12	21.4×16.1
XF-UTL-0.305X135	non-coaxial	0.305	135	8	0.1	30.3	15.4	14	74	0.05	15.7×11.8	21×15.7
XF-UTL-0.314X115	non-coaxial	0.314	115	8	0.1	29.4	15.2	14	74	0.018	15.3×11.5	20.4×15.3
XF-UTL-0.326X95	non-coaxial	0.326	95	8	0.1	28.4	12.2	14	74	0.055	14.7×11	19.6×14.7
XF-UTL-0.351X175	non-coaxial	0.351	175	8	0.1	36.3	11	14	74	0.032	13.7×10.3	18.2×13.7
XF-UTL-0.351X175D	coaxial	0.351	175	8	0.1	26.3	11	14	74	0.032	13.7×10.3	18.2×13.7
XF-UTL-0.353X155	non-coaxial	0.353	155	8	0.1	26.2	11.3	14	74	0.017	13.6×10.2	18.1×13.6
XF-UTL-0.353X155D	coaxial	0.353	155	8	0.1	26.2	11.3	14	74	0.017	13.6×10.2	18.1×13.6
XF-UTL-0.359X135	non-coaxial	0.359	135	8	0.1	25.7	11	14	74	0.018	13.4×10	17.8×13.4
XF-UTL-0.359X135D	coaxial	0.359	135	8	0.1	25.7	11	14	74	0.018	13.4×10	17.8×13.4
XF-UTL-0.369X115	non-coaxial	0.369	115	8	0.1	25	10.3	14	74	0.055	13×9.8	17.3×13
XF-UTL-0.369X115D	coaxial	0.369	115	8	0.1	25	10.3	14	74	0.055	13×9.8	17.3×13
XF-UTL-0.386X95	non-coaxial	0.386	95	8	0.1	23.9	9.2	14	74	0.09	12.4×9.3	16.6×12.4
XF-UTL-0.386X95D	coaxial	0.386	95	8	0.1	23.9	9.2	14	74	0.09	12.4×9.3	16.6×12.4
XF-UTL-0.387X150	non-coaxial	0.387	150	8	0.1	23.9	8.5	14	74	0.2	12.5×9.4	16.7×12.5
XF-UTL-0.387X150D	coaxial	0.387	150	8	0.1	23.9	8.5	14	74	0.2	12.5×9.4	16.7×12.5
XF-UTL-0.384X130	non-coaxial	0.384	130	8	0.1	24.1	9.2	14	74	0.2	12.5×9.4	16.7×12.5
XF-UTL-0.384X130D	coaxial	0.384	130	8	0.1	24.1	9.2	14	74	0.2	12.5×9.4	16.7×12.5
XF-UTL-0.393X110	non-coaxial	0.393	110	8	0.1	23.5	9.1	14	74	0.12	12.2×9.2	16.3×12.2
XF-UTL-0.393X110D	coaxial	0.393	110	8	0.1	23.5	9.1	14	74	0.12	12.2×9.2	16.3×12.2
XF-UTL-0.413X90	non-coaxial	0.413	90	8	0.1	22.4	8.3	14	74	0.03	11.6×8.7	15.5×11.6
XF-UTL-0.413X90D	coaxial	0.413	90	8	0.1	22.4	8.3	14	74	0.03	11.6×8.7	15.5×11.6
XF-UTL-0.448X70	non-coaxial	0.448	70	8	0.1	20.6	6.6	14	74	0.08	10.7×8	14.3×10.7
XF-UTL-0.448X70D	coaxial	0.448	70	8	0.1	20.6	6.6	14	74	0.08	10.7×8	14.3×10.7
XF-UTL-0.446X130	non-coaxial	0.446	130	8	0.1	20.7	7	14	74	0.12	10.8×8.1	14.3×10.8
XF-UTL-0.446X130D	coaxial	0.446	130	8	0.1	20.7	7	14	74	0.12	10.8×8.1	14.3×10.8
XF-UTL-0.457X150	non-coaxial	0.457	150	8	0.1	20.2	5.4	14	74	0.12	10.5×7.9	14×10.5
XF-UTL-0.457X150D	coaxial	0.457	150	8	0.1	20.2	5.4	14	74	0.12	10.5×7.9	14×10.5
XF-UTL-0.48X90	non-coaxial	0.48	90	8	0.1	19.2	7	14	74	0.07	10×7.5	13.3×10
XF-UTL-0.48X90D	coaxial	0.48	90	8	0.1	19.2	7	14	74	0.07	10×7.5	13.3×10
XF-UTL-0.454X110	non-coaxial	0.454	110	8	0.1	20.3	7.4	14	74	0.45	10.6×7.9	14.1×10.6
XF-UTL-0.454X110D	coaxial	0.454	110	8	0.1	20.3	7.4	14	74	0.45	10.6×7.9	14.1×10.6
XF-UTL-0.53X70	non-coaxial	0.53	70	8	0.1	17.4	5.8	14	74	0.055	9.1×6.8	12.1×9.1
XF-UTL-0.53X70D	coaxial	0.53	70	8	0.1	17.4	5.8	14	74	0.055	9.1×6.8	12.1×9.1

MODEL & SIZE



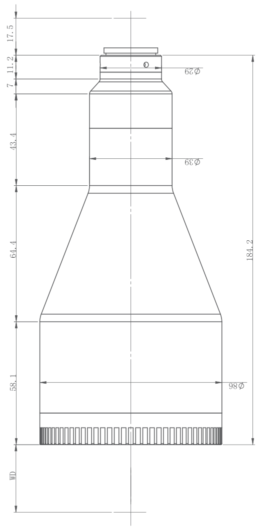
	XF-UTL 0.115X190	XF-UTL 0.118X170	XF-UTL 0.122X150	XF-UTL 0.126X130	XF-UTL 0.130X110
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.115	0.118	0.122	0.126	0.130
Object FOV	Φ69.6mm	Φ67.8mm	Φ65.6mm	Φ63.5mm	Φ61.5mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	190mm±5%	170mm±5%	150mm±5%	130mm±5%	110mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	95.8mm	96mm	84mm	77.6mm	75.4mm
Aperture	F14	F14	F14	F14	F14
Resolution	80.1μm	78μm	75.5μm	73.3μm	71.1μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@74lp/mm
Optical Distortion	<0.24%	<0.25%	<0.24%	<0.23%	<0.22%
Measurement range:					
1/2' 6.4×4.8	55.7×41.7mm	54.2×40.7mm	52.5×39.3mm	50.8×38.1mm	49.2×36.9mm
1/3' 4.8×3.6	41.7×31.3mm	40.7×30.5mm	39.3×29.5mm	38.1×28.6mm	36.9×27.7mm

This series of lens can ratio between 0.115 to 0.130, can work from between 110-190, according to customer demand for rapid customization



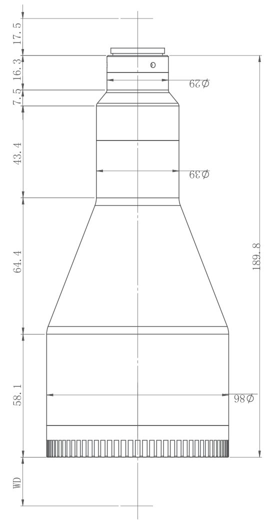
	XF-UTL 0.142X190	XF-UTL 0.145X170	XF-UTL 0.149X150	XF-UTL 0.152X130	XF-UTL 0.156X110
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.142	0.145	0.149	0.152	0.156
Object FOV	Φ56.3mm	Φ55.2mm	Φ53.7mm	Φ52.6mm	Φ51.3mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	190mm±5%	170mm±5%	150mm±5%	130mm±5%	110mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	66.6mm	66.6mm	65.2mm	59.2mm	56.8mm
Aperture	F14	F14	F14	F14	F14
Resolution	65.3μm	63.8μm	62.3μm	60.8μm	59.2μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@745lp/mm	>0.3@75lp/mm
Optical Distortion	<0.26%	<0.27%	<0.27%	<0.27%	<0.27%
Measurement range:					
1/2' 6.4×4.8	45.1×33.8mm	44.1×33.1mm	43×32.2mm	42.1×31.6mm	41×30.8mm
1/3' 4.8×3.6	33.8×25.4mm	33.1×24.8mm	32.2×24.2mm	31.6×23.7mm	30.8×23.1mm

This series of lens can ratio between 0.142 to 0.156, can work from between 110-190, according to customer demand for rapid customization



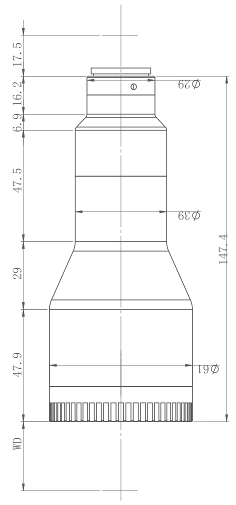
	XF-UTL 0.156X190	XF-UTL 0.16X170	XF-UTL 0.164X150	XF-UTL 0.168X130	XF-UTL 0.173X110
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.156	0.16	0.164	0.168	0.173
Object FOV	Φ51.3mm	Φ50mm	Φ48.8mm	Φ47.6mm	Φ46.2mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	190mm±5%	170mm±5%	150mm±5%	130mm±5%	110mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	58.8mm	54.4mm	52.8mm	47.8mm	46.6mm
Aperture	F14	F14	F14	F14	F14
Resolution	59.2μm	57.9μm	56.3μm	54.9μm	53.4μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.15%	<0.16%	<0.16%	<0.16%	<0.16%
Measurement range:					
1/2' 6.4×4.8	41×30.8mm	40×30mm	39×29.3mm	38.1×28.6mm	37×27.7mm
1/3' 4.8×3.6	30.8×23.1mm	30×22.5mm	29.3×22mm	28.6×21.4mm	27.7×20.8mm

This series of lens can ratio between 0.156 to 0.173, can work from between 110-190, according to customer demand for rapid customization



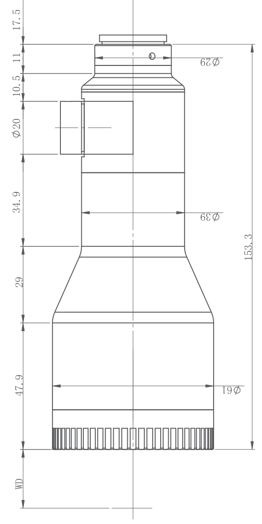
	XF-UTL 0.176X190	XF-UTL 0.180X170	XF-UTL 0.185X150	XF-UTL 0.190X130	XF-UTL 0.196X110
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.176	0.180	0.185	0.190	0.196
Object FOV	Φ45.5mm	Φ44.4mm	Φ43.2mm	Φ42.1mm	Φ40.8mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	190mm±5%	170mm±5%	150mm±5%	130mm±5%	110mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	46.4mm	44.6mm	39.6mm	38.8mm	36mm
Aperture	F14	F14	F14	F14	F14
Resolution	52.5μm	51.2μm	49.8μm	48.5μm	47.1μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.11%	<0.12%	<0.13%	<0.13%	<0.13%
Measurement range:					
1/2' 6.4×4.8	36.4×27.3mm	35.6×26.7mm	34.6×25.9mm	33.7×25.3mm	32.7×24.5mm
1/3' 4.8×3.6	27.3×20.5mm	26.7×20mm	25.9×19.5mm	25.3×18.9mm	24.5×18.4mm

This series of lens can ratio between 0.176 to 0.196, can work from between 110-190, according to customer demand for rapid customization



	XF-UTL 0.181X175	XF-UTL 0.184X155	XF-UTL 0.188X135	XF-UTL 0.194X115	XF-UTL 0.2X95
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.181	0.184	0.188	0.194	0.2
Object FOV	Φ41.2mm	Φ43.5mm	Φ42.5mm	Φ41.2mm	Φ40mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	40.6mm	42mm	39mm	38.6mm	36.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	51.1μm	50.2μm	49.1μm	47.8μm	46.2μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.105%	<0.145%	<0.18%	<0.21%	<0.22%
Measurement range:					
1/2' 6.4×4.8	35.4×26.5mm	34.8×26.1mm	34×25.5mm	33×24.7mm	32×24mm
1/3' 4.8×3.6	26.5×19.9mm	26.1×19.6mm	25.5×19.1mm	24.7×18.6mm	24×18mm

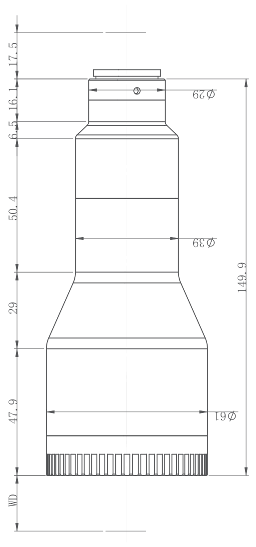
This series of lens can ratio between 0.181 to 0.2, can work from between 95-175, according to customer demand for rapid customization



	XF-UTL 0.183X175D	XF-UTL 0.186X155D	XF-UTL 0.188X135D	XF-UTL 0.194X115D	XF-UTL 0.2X95D
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.183	0.186	0.188	0.194	0.2
Object FOV	Φ43.7mm	Φ43mm	Φ42.5mm	Φ41.2mm	Φ40mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	40.6mm	42mm	39mm	38.6mm	36.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	50.4μm	49.7μm	48.7μm	47.6μm	46.2μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.14%	<0.175%	<0.196%	<0.205%	<0.21%
Measurement range:					
1/2' 6.4×4.8	35×26.2mm	34.4×25.8mm	34×25.5mm	33×24.7mm	32×24mm
1/3' 4.8×3.6	26.2×19.7mm	25.8×19.4mm	25.5×19.1mm	24.7×18.6mm	24×18mm

This series of lens can ratio between 0.183 to 0.2, can work from between 95-175, according to customer demand for rapid customization

MODEL & SIZE



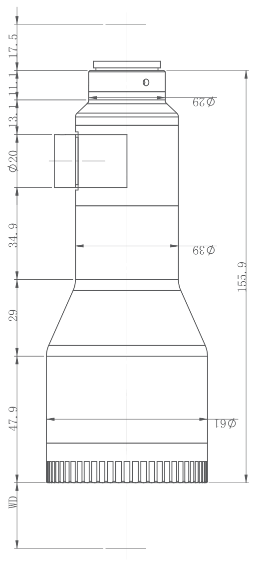
Specifications:

	XF-UTL 0.198X175	XF-UTL 0.202X155	XF-UTL 0.207X135	XF-UTL 0.214X115	XF-UTL 0.222X95
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.198	0.202	0.207	0.214	0.222
Object FOV	Φ40.4mm	Φ39.6mm	Φ38.6mm	Φ37.4mm	Φ36mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	34.8mm	32.6mm	32.3mm	29.8mm	31.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	46.5μm	45.7μm	44.5μm	43.2μm	41.7μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.03%	<0.06%	<0.09%	<0.11%	<0.13%

Measurement range:

1/2' 6.4×4.8	32.3×24.2mm	31.7×23.8mm	30.9×23.2mm	29.9×22.4mm	28.8×21.6mm
1/3' 4.8×3.6	24.2×18.2mm	23.8×17.8mm	23.2×17.4mm	22.4×16.8mm	21.6×16.2mm

This series of lens can ratio between 0.198 to 0.222, can work from between 95-175, according to customer demand for rapid customization



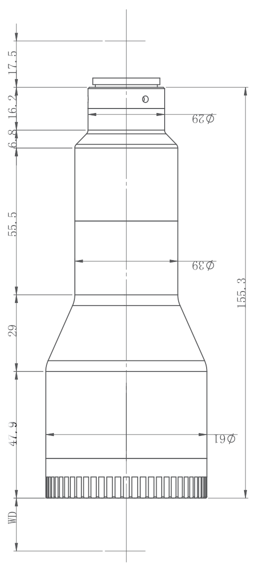
Specifications:

	XF-UTL 0.201X175D	XF-UTL 0.205X155D	XF-UTL 0.207X135D	XF-UTL 0.215X115D	XF-UTL 0.222X95D
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.201	0.205	0.207	0.215	0.222
Object FOV	Φ39.8mm	Φ37.2mm	Φ38.6mm	Φ37.2mm	Φ36mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	95mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	34.8mm	32.6mm	32.3mm	29.8mm	31.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	45.9μm	45.1μm	44.2μm	43μm	41.7μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.059%	<0.08%	<0.095%	<0.105%	<0.11%

Measurement range:

1/2' 6.4×4.8	31.8×23.9mm	31.2×23.4mm	30.9×23.2mm	29.8×22.3mm	28.8×21.6mm
1/3' 4.8×3.6	23.9×17.9mm	23.4×17.6mm	23.2×17.4mm	22.3×16.7mm	21.6×16.2mm

This series of lens can ratio between 0.201 to 0.222, can work from between 95-175, according to customer demand for rapid customization



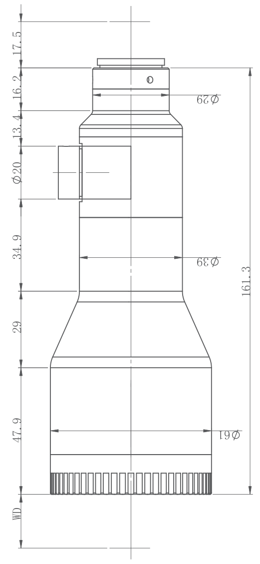
Specifications:

	XF-UTL 0.224X175	XF-UTL 0.228X155	XF-UTL 0.234X135	XF-UTL 0.242X115	XF-UTL 0.251X95
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.224	0.228	0.234	0.242	0.251
Object FOV	Φ35.7mm	Φ35.1mm	Φ34.2mm	Φ33.1mm	Φ31.9mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	27mm	25.6mm	26mm	25.6mm	22mm
Aperture	F14	F14	F14	F14	F14
Resolution	41.3μm	40.5μm	39.4μm	38.2μm	36.8μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.019%	<0.045%	<0.07%	<0.09%	<0.105%

Measurement range:

1/2' 6.4×4.8	28.6×21.4mm	28.1×21.1mm	27.4×20.5mm	26.4×19.8mm	25.5×19.1mm
1/3' 4.8×3.6	21.4×16.1mm	21.1×15.8mm	20.5×15.4mm	19.8×14.9mm	19.1×14.3mm

This series of lens can ratio between 0.224 to 0.251, can work from between 95-175, according to customer demand for rapid customization



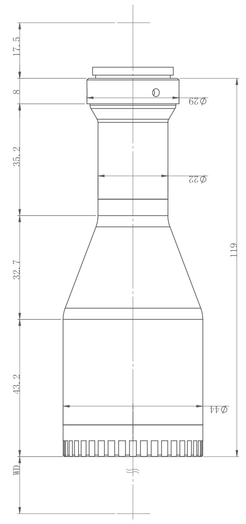
Specifications:

	XF-UTL 0.227X175D	XF-UTL 0.231X155D	XF-UTL 0.234X135D	XF-UTL 0.243X115D	XF-UTL 0.251X95D
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.227	0.231	0.234	0.243	0.251
Object FOV	Φ35.2mm	Φ34.6mm	Φ34.2mm	Φ32.9mm	Φ31.9mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	27mm	25.6mm	26mm	25.6mm	22mm
Aperture	F14	F14	F14	F14	F14
Resolution	40.6μm	40μm	39.1μm	38.1μm	36.8μm
Image side MTF	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm	>0.3@75lp/mm
Optical Distortion	<0.019%	<0.045%	<0.07%	<0.09%	<0.105%

Measurement range:

1/2' 6.4×4.8	28.2×21.1mm	27.7×20.8mm	27.4×20.5mm	26.3×19.8mm	25.5×19.1mm
1/3' 4.8×3.6	21.1×15.9mm	20.8×15.6mm	20.5×15.4mm	19.8×14.8mm	19.1×14.3mm

This series of lens can ratio between 0.227 to 0.251, can work from between 95-175, according to customer demand for rapid customization



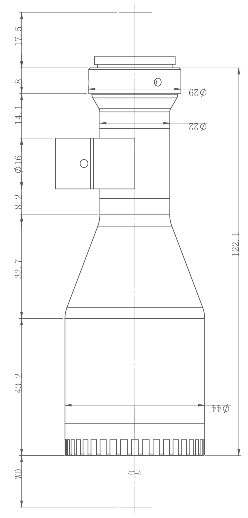
Specifications:

	XF-UTL 0.262X175	XF-UTL 0.265X155	XF-UTL 0.271X135	XF-UTL 0.278X115	XF-UTL 0.288X95
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.262	0.265	0.271	0.278	0.288
Object FOV	Φ30.5mm	Φ30.1mm	Φ29.5mm	Φ28.7mm	Φ27.7mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	19.2mm	21mm	19.6mm	18.8mm	16.8mm
Aperture	F14	F14	F14	F14	F14
Resolution	35.3μm	34.8μm	34.2μm	33.2μm	32.1μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.14%	<0.1%	<0.053%	<0.022%	<0.06%

Measurement range:

1/2' 6.4×4.8	24.4×18.3mm	24.4×18.1mm	23.6×17.7mm	23×17.3mm	22.2×16.7mm
1/3' 4.8×3.6	18.3×13.7mm	18.1×13.6mm	17.7×13.3mm	17.3×12.9mm	16.7×12.5mm

This series of lens can ratio between 0.262 to 0.288, can work from between 95-175, according to customer demand for rapid customization



Specifications:

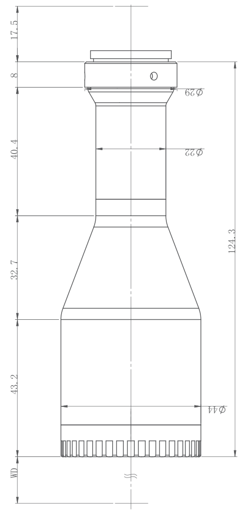
	XF-UTL 0.262X175D	XF-UTL 0.265X155D	XF-UTL 0.271X135D	XF-UTL 0.278X115D	XF-UTL 0.288X95D
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.262	0.265	0.271	0.278	0.288
Object FOV	Φ30.5mm	Φ30.1mm	Φ29.5mm	Φ28.7mm	Φ27.7mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	19.2mm	21mm	19.6mm	18.8mm	16.8mm
Aperture	F14	F14	F14	F14	F14
Resolution	35.3μm	34.8μm	34.2μm	33.2μm	32.1μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.14%	<0.1%	<0.053%	<0.022%	<0.06%

Measurement range:

1/2' 6.4×4.8	24.4×18.3mm	24.4×18.1mm	23.6×17.7mm	23×17.3mm	22.2×16.7mm
1/3' 4.8×3.6	18.3×13.7mm	18.1×13.6mm	17.7×13.3mm	17.3×12.9mm	16.7×12.5mm

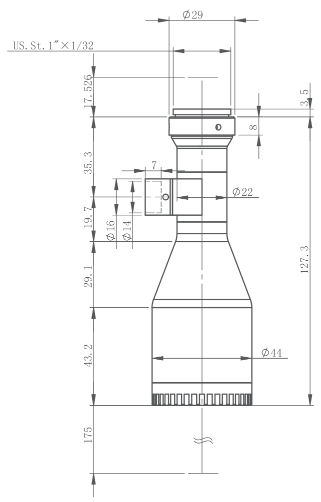
This series of lens can ratio between 0.262 to 0.288, can work from between 95-175, according to customer demand for rapid customization

MODEL & SIZE



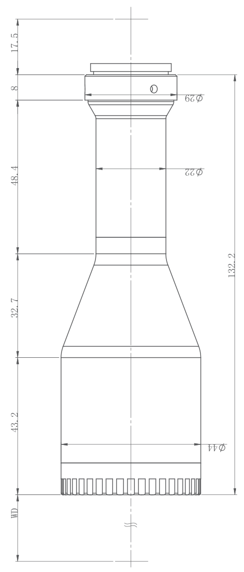
	XF-UTL 0.296X175	XF-UTL 0.299X155	XF-UTL 0.305X135	XF-UTL 0.314X115	XF-UTL 0.326X95
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.296	0.299	0.305	0.314	0.326
Object FOV	Φ27mm	Φ26.8mm	Φ26.2mm	Φ25.4mm	Φ24.5mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	16.1mm	18.8mm	15.4mm	15.2mm	12.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	31.2μm	30.9μm	30.3μm	29.4μm	28.4μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.12%	<0.1%	<0.05%	<0.018%	<0.055%
Measurement range:					
1/2' 6.4×4.8	21.6×16.2mm	21.4×16.1mm	21×15.7mm	20.4×15.3mm	19.6×14.7mm
1/3' 4.8×3.6	16.2×12.2mm	16.1×12mm	15.7×11.8mm	15.3×11.5mm	14.7×11mm

This series of lens can ratio between 0.296 to 0.326, can work from between 95-175, according to customer demand for rapid customization



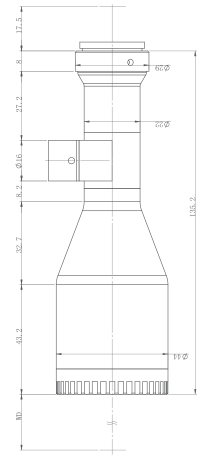
	XF-UTL 0.296X175D	XF-UTL 0.299X155D	XF-UTL 0.305X135D	XF-UTL 0.314X115D	XF-UTL 0.326X95D
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.296	0.299	0.305	0.314	0.326
Object FOV	Φ27mm	Φ26.8mm	Φ26.2mm	Φ25.4mm	Φ24.5mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	16.1mm	18.8mm	15.4mm	15.2mm	12.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	31.2μm	30.9μm	30.3μm	29.4μm	28.4μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.12%	<0.1%	<0.05%	<0.018%	<0.055%
Measurement range:					
1/2' 6.4×4.8	21.6×16.2mm	21.4×16.1mm	21×15.7mm	20.4×15.3mm	19.6×14.7mm
1/3' 4.8×3.6	16.2×12.2mm	16.1×12mm	15.7×11.8mm	15.3×11.5mm	14.7×11mm

This series of lens can ratio between 0.296 to 0.326, can work from between 95-175, according to customer demand for rapid customization



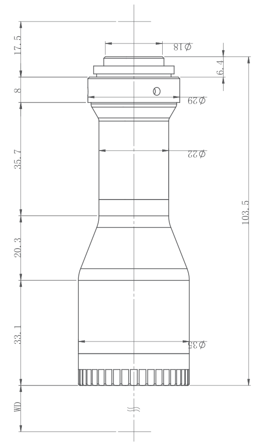
	XF-UTL 0.351X175	XF-UTL 0.353X155	XF-UTL 0.359X135	XF-UTL 0.369X115	XF-UTL 0.386X95
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.351	0.353	0.359	0.369	0.386
Object FOV	Φ22.8mm	Φ22.7mm	Φ22.3mm	Φ21.7mm	Φ20.7mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	11mm	11.3mm	11mm	10.3mm	9.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	26.3μm	26.2μm	25.7μm	25μm	23.9μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.032%	<0.017%	<0.018%	<0.055%	<0.09%
Measurement range:					
1/2' 6.4×4.8	18.2×13.7mm	18.1×13.6mm	17.8×13.4mm	17.3×13mm	16.6×12.4mm
1/3' 4.8×3.6	13.7×10.3mm	13.6×10.2mm	13.4×10mm	13×9.8mm	12.4×9.3mm

This series of lens can ratio between 0.351 to 0.386, can work from between 95-175, according to customer demand for rapid customization



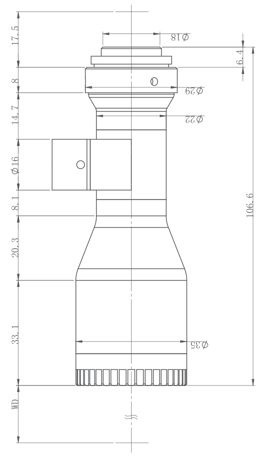
	XF-UTL 0.351X175D	XF-UTL 0.353X155D	XF-UTL 0.359X135D	XF-UTL 0.369X115D	XF-UTL 0.386X95D
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.351	0.353	0.359	0.369	0.386
Object FOV	Φ22.8mm	Φ22.7mm	Φ22.3mm	Φ21.7mm	Φ20.7mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	11mm	11.3mm	11mm	10.3mm	9.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	26.3μm	26.2μm	25.7μm	25μm	23.9μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.032%	<0.017%	<0.018%	<0.055%	<0.09%
Measurement range:					
1/2' 6.4×4.8	18.2×13.7mm	18.1×13.6mm	17.8×13.4mm	17.3×13mm	16.6×12.4mm
1/3' 4.8×3.6	13.7×10.3mm	13.6×10.2mm	13.4×10mm	13×9.8mm	12.4×9.3mm

This series of lens can ratio between 0.351 to 0.386, can work from between 95-175, according to customer demand for rapid customization



	XF-UTL 0.387X150	XF-UTL 0.384X130	XF-UTL 0.393X110	XF-UTL 0.413X90	XF-UTL 0.448X70
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.387	0.384	0.393	0.413	0.448
Object FOV	Φ20.7mm	Φ20.8mm	Φ20.4mm	Φ19.4mm	Φ17.9mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	150mm±5%	130mm±5%	110mm±5%	90mm±5%	70mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	8.5mm	9.2mm	9.1mm	8.3mm	6.6mm
Aperture	F14	F14	F14	F14	F14
Resolution	23.9μm	24.1μm	23.5μm	22.4μm	20.6μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.2%	<0.2%	<0.12%	<0.03%	<0.08%
Measurement range:					
1/2' 6.4×4.8	16.7×12.5mm	16.7×12.5mm	16.3×12.2mm	15.5×11.6mm	14.3×10.7mm
1/3' 4.8×3.6	12.5×9.4mm	12.5×9.4mm	12.2×9.2mm	11.6×8.7mm	10.7×8mm

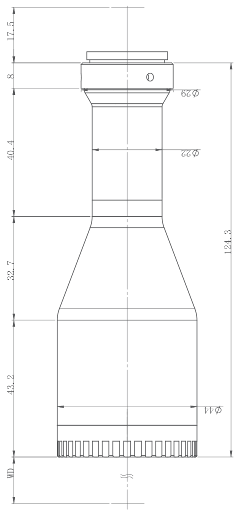
This series of lens can ratio between 0.387 to 0.448, can work from between 70-150, according to customer demand for rapid customization



	XF-UTL 0.387X150D	XF-UTL 0.384X130D	XF-UTL 0.393X110D	XF-UTL 0.413X90D	XF-UTL 0.448X70D
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.387	0.384	0.393	0.413	0.448
Object FOV	Φ20.7mm	Φ20.8mm	Φ20.4mm	Φ19.4mm	Φ17.9mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	150mm±5%	130mm±5%	110mm±5%	90mm±5%	70mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	8.5mm	9.2mm	9.1mm	8.3mm	6.6mm
Aperture	F14	F14	F14	F14	F14
Resolution	23.9μm	24.1μm	23.5μm	22.4μm	20.6μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.2%	<0.2%	<0.12%	<0.03%	<0.08%
Measurement range:					
1/2' 6.4×4.8	16.7×12.5mm	16.7×12.5mm	16.3×12.2mm	15.5×11.6mm	14.3×10.7mm
1/3' 4.8×3.6	12.5×9.4mm	12.5×9.4mm	12.2×9.2mm	11.6×8.7mm	10.7×8mm

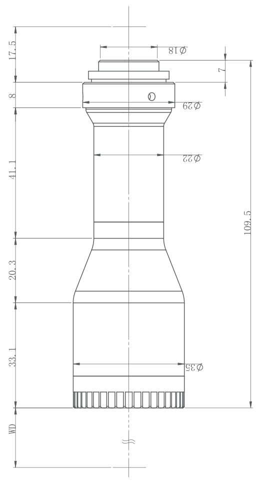
This series of lens can ratio between 0.387 to 0.448, can work from between 70-150, according to customer demand for rapid customization

MODEL & SIZE



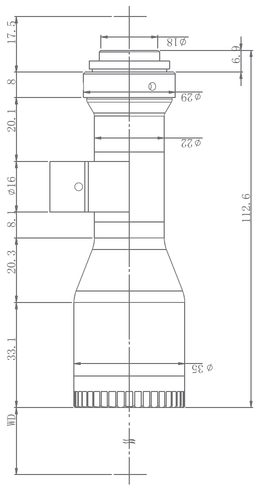
	XF-UTL 0.296X175	XF-UTL 0.299X155	XF-UTL 0.305X135	XF-UTL 0.314X115	XF-UTL 0.326X95
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.296	0.299	0.305	0.314	0.326
Object FOV	Φ27mm	Φ26.8mm	Φ26.2mm	Φ25.4mm	Φ24.5mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	175mm±5%	155mm±5%	135mm±5%	115mm±5%	95mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	16.1mm	18.8mm	15.4mm	15.2mm	12.2mm
Aperture	F14	F14	F14	F14	F14
Resolution	31.2μm	30.9μm	30.3μm	29.4μm	28.4μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.12%	<0.1%	<0.05%	<0.018%	<0.055%
Measurement range:					
1/2' 6.4×4.8	21.6×16.2mm	21.4×16.1mm	21×15.7mm	20.4×15.3mm	19.6×14.7mm
1/3' 4.8×3.6	16.2×12.2mm	16.1×12mm	15.7×11.8mm	15.3×11.5mm	14.7×11mm

This series of lens can ratio between 0.296 to 0.326, can work from between 95-175, according to customer demand for rapid customization



	XF-UTL 0.457X150	XF-UTL 0.446X130	XF-UTL 0.454X110	XF-UTL 0.48X90	XF-UTL 0.53X70
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.457	0.446	0.454	0.48	0.53
Object FOV	Φ17.5mm	Φ17.9mm	Φ17.6mm	Φ16.7mm	Φ15.1mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	150mm±5%	130mm±5%	110mm±5%	90mm±5%	70mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	5.4mm	7mm	7.4mm	7mm	5.8mm
Aperture	F14	F14	F14	F14	F14
Resolution	20.2μm	20.7μm	20.3μm	19.2μm	17.4μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.12%	<0.12%	<0.45%	<0.07%	<0.055%
Measurement range:					
1/2' 6.4×4.8	14×10.5mm	14.3×10.8mm	14.1×10.6mm	13.3×10mm	12.1×9.1mm
1/3' 4.8×3.6	10.5×7.9mm	10.8×8.1mm	10.6×7.9mm	10×7.5mm	9.1×6.8mm

This series of lens can ratio between 0.457 to 0.53, can work from between 70-150, according to customer demand for rapid customization



	XF-UTL 0.457X150D	XF-UTL 0.446X130D	XF-UTL 0.454X110D	XF-UTL 0.48X90D	XF-UTL 0.53X70D
Specifications:					
Optical Structure	Object telecentric	Object telecentric	Object telecentric	Object telecentric	Object telecentric
Magnification	0.457	0.446	0.454	0.48	0.53
Object FOV	Φ17.5mm	Φ17.9mm	Φ17.6mm	Φ16.7mm	Φ15.1mm
Image FOV	Φ8mm	Φ8mm	Φ8mm	Φ8mm	Φ8mm
WD	150mm±5%	130mm±5%	110mm±5%	90mm±5%	70mm±5%
Telecentricity	<0.1°	<0.1°	<0.1°	<0.1°	<0.1°
DOF	5.4mm	7mm	7.4mm	7mm	5.8mm
Aperture	F14	F14	F14	F14	F14
Resolution	20.2μm	20.7μm	20.3μm	19.2μm	17.4μm
Image side MTF	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm	>0.3@74lp/mm
Optical Distortion	<0.12%	<0.12%	<0.45%	<0.07%	<0.055%
Measurement range:					
1/2' 6.4×4.8	14×10.5mm	14.3×10.8mm	14.1×10.6mm	13.3×10mm	12.1×9.1mm
1/3' 4.8×3.6	10.5×7.9mm	10.8×8.1mm	10.6×7.9mm	10×7.5mm	9.1×6.8mm

This series of lens can ratio between 0.457 to 0.53, can work from between 70-150, according to customer demand for rapid customization

CR-FA PRIME LENS SERIES
(500W-1000W-2900W)

High definition

The target surface

High uniformity

Low distortion

5 Megapixels Prism Lens

Model	focal length (mm)	Aperture range	WD (mm)	Filter installation	distortion	weight (g)	Available Sensors	View Angle (diagonal*level*vertical)		
CR-FAC0420-5M	4	2.0~16	80-∞	M39*P0.5	<1.7%	126	1/2"	72.4°	60.6°	47.2°
							1/3"	88.2°	76°	60.6°
CR-FAC0620-5M	6	2.0~16	80-∞	M30.5*P0.5	<1.05%	112	1/2"	53.6°	44°	33.5°
							1/3"	67°	56.6°	44°
CR-FAC0825-5M	8	2.5~16	100-∞	M30.5*P0.5	<0.7%	131	2/3"	41.8°	33.8°	25.8°
							1/1.8"	54°	44.2°	33.8°
							1/2"	59.6°	49.2°	37.9°
							1/3"	69°	58°	45°
CR-FAC1216-5M	12	1.6~16	150-∞	M30.5*P0.5	<0.55%	94	2/3"	27.9°	22.4°	16.9°
							1/1.8"	37°	29.6°	22.4°
							1/2"	41°	33.2°	25.2°
							1/3"	49.1°	40.2°	30.6°
CR-FAC1614-5M	16	1.4~16	200-∞	M30.5*P0.5	<0.56%	141	2/3"	21.1°	17°	12.7°
							1/1.8"	28.2°	22.4°	16.9°
							1/2"	31.4°	25.2°	19°
							1/3"	38.2°	30.8°	23.2°
CR-FAC2514-5M	25	1.4~16	200-∞	M30.5*P0.5	<0.3%	83.5	2/3"	13.7°	11°	8.3°
							1/1.8"	18.2°	14.6°	11°
							1/2"	20.4°	16.5°	12.4°
							1/3"	24.8°	20°	15°
CR-FAC3514-5M	35	1.4~16	390-∞	M30.5*P0.5	<0.1%	127	2/3"	10°	8°	6°
							1/1.8"	13.2°	10.6°	8°
							1/2"	14.8°	11.9°	9°
							1/3"	18°	14.4°	10.8°
CR-FAC5025-5M	50	2.5~22	570-∞	M30.5*P0.5	<0.1%	111	1/2"	6.9°	5.5°	4.1°
							1/3"	9.2°	7.3°	5.5°
							1/1.8"	10.3°	8.2°	6.2°
							2/3"	12.5°	10°	7.6°
CR-FAC7528-5M	75	2.8~32	600-∞	M30.5*P0.5	<0.1%	222	1/3"	4.56°	3.65°	2.72°
							1/2"	6.1°	4.84°	3.62°
							1/2.5"	5.4°	4.35°	3.24°
							2/3"	8.34°	6.66°	5.0°

10 Megapixels Prism Lens

Model	focal length (mm)	Aperture range	WD (mm)	Filter installation	distortion	Optical Back Focal Length (mm)	Working temperature (℃)	weight (g)	View Angle (level*vertical)			
									2/3"		1"	
CR-C1220-10M	12	F2.0 - F16	100~∞	M37.5*P0.5	<0.77%	10.36	-20 ~ +60	190	40.2	30.6 °	55.8	43.6 °
CR-C1616-10M	16	F1.6 - F16	100~∞	M37.5*P0.5	<0.68%	10.7	-20 ~ +60	190	30.7	23.2 °	43.3	33.4 °
CR-C2514-10M	25	F1.4 - F16	150~∞	M37.5*P0.5	<0.3%	10.8	-20 ~ +60	102	20.1 °	15.4 °	28.9 °	21.9 °
CR-C3514-10M	35	F1.4 - F16	150~∞	M40.5*P0.5	<0.39%	11.3	-20 ~ +60	120	14.4	10.8 °	20.9	15.7 °
CR-C5024-10M	50	F2.4 - F22	550~∞	M37.5*P0.5	<0.1%	16.24	-20 ~ +60	126	10°	7.6 °	14.6 °	11°
CR-C7528-10M	75	F2.8 - F32	600~∞	M37.5*P0.5	<0.1%	36.9	-20 ~ +60	250	6.66	5.0 °	9.75	7.3 °

29 Megapixels Prism Lens

Model	focal length (mm)	Aperture range	WD (mm)	Filter installation	distortion	Optical Back Focal Length (mm)	Working temperature (℃)	weight (g)	View Angle (level)					
									44mm	35mm	23mm	16mm	11mm	8mm
CR-C2528-29M	25	F2.8 - F32	140-∞	M77*P0.75	<0.9%	26.4	-20 ~ +60	710	84°	71.3 °	50°	36°	24.9 °	18.1 °
CR-C3528-29M	35	F2.8 - F32	180-∞	M58*P0.75	<0.4%	27.9	-20 ~ +60	650	65°	53.6 °	37°	26°	18°	6.7 °
CR-C5028-29M	50	F2.8 - F32	180-∞	M58*P0.75	<0.2%	36.1	-20 ~ +60	593	47.8	38.8 °	26°	18.2 °	12.6 °	9.1 °

MODEL & PARAMETER

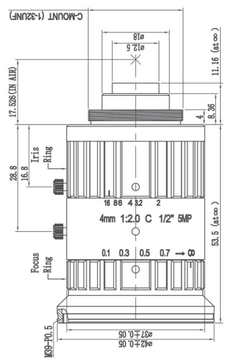
5 Megapixels Lens Specs

4mm-5Megapixels Lens Specs

CR-FAC0420-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	1/2"
Focal length	4mm
element size	3.45 μm
Aperture type	Manual
F-Range	F2.0-F16
Distortion	<1.7%
back focal length	6.45mm
Overall dimensions	Φ42x53.5
filter size	M39x0.5
Working temperature	-20℃ ~ +60℃
view point	1/3" (Diagonal) 72.4°
	1/3" (Horizontal) 60.6°
	1/3" (Vertical) 47.2°
	1/2" (Diagonal) 88.2°
	1/2" (Horizontal) 76°
	1/2" (Vertical) 60.6°

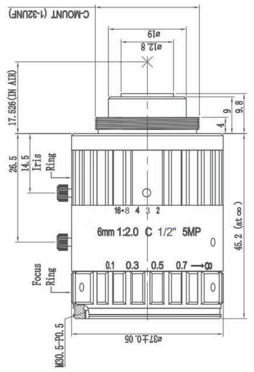


6mm-5Megapixels Lens Specs

CR-FAC0620-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	1/2"
Focal length	6mm
element size	3.45 μm
Aperture type	Manual
F-Range	F2.0-F16
Distortion	<1.05%
back focal length	7.44mm
Overall dimensions	Φ37x45.2
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	1/3" (Diagonal) 3.6°
	1/3" (Horizontal) 44°
	1/3" (Vertical) 33.5°
	1/2" (Diagonal) 67°
	1/2" (Horizontal) 56.6°
	1/2" (Vertical) 44°

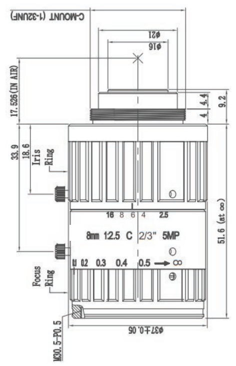


8mm-5Megapixels Lens Specs

CR-FAC0825-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	8mm
element size	3.45 μm
Aperture type	Manual
F-Range	F2.5-F16
Distortion	<0.9%
back focal length	7.854mm
Overall dimensions	Φ37x51.6
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 69°
	2/3" (Horizontal) 58°
	2/3" (Vertical) 45°
	1/2" (Diagonal) 54°
	1/2" (Horizontal) 44.2°
	1/2" (Vertical) 33.8°

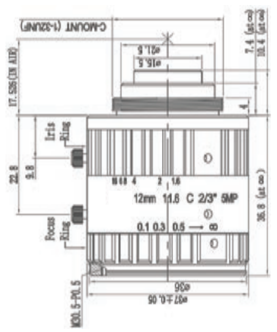


12mm-5Megapixels Lens Specs

CR-FAC1216-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	12mm
element size	3.45 μm
Aperture type	Manual
F-Range	F1.6-F16
Distortion	<0.8%
back focal length	8mm
Overall dimensions	Φ37x36.8
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 49.1°
	2/3" (Horizontal) 40.2°
	2/3" (Vertical) 30.6°
	1/2" (Diagonal) 37°
	1/2" (Horizontal) 29.6°
	1/2" (Vertical) 22.4°

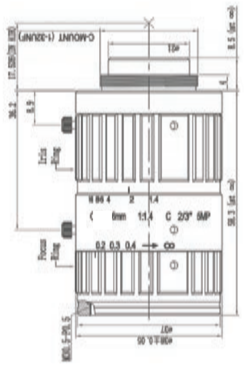


16mm-5Megapixels Lens Specs

CR-FAC1614-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	16mm
element size	3.45 μm
Aperture type	Manual
F-Range	F1.4-F16
Distortion	<1.6%
back focal length	10.25mm
Overall dimensions	Φ38x58.3
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 38°
	2/3" (Horizontal) 30.7°
	2/3" (Vertical) 23.2°
	1/2" (Diagonal) 28.2°
	1/2" (Horizontal) 22.4°
	1/2" (Vertical) 16.9°

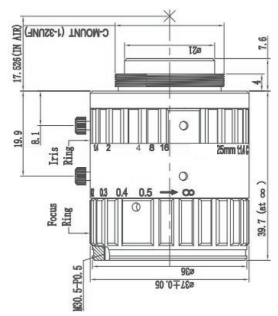


25mm-5Megapixels Lens Specs

CR-FAC2514-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	25mm
element size	3.45 μm
Aperture type	Manual
F-Range	F1.4-F16
Distortion	<0.3%
back focal length	11.06mm
Overall dimensions	Φ37x39.7
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 24.82°
	2/3" (Horizontal) 20.06°
	2/3" (Vertical) 15°
	1/2" (Diagonal) 18.2°
	1/2" (Horizontal) 14.6°
	1/2" (Vertical) 11°

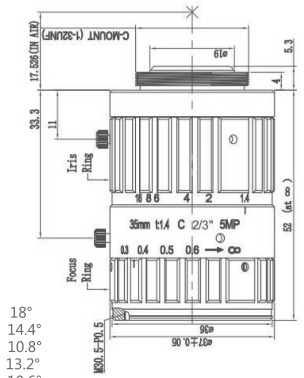


35mm-5Megapixels Lens Specs

CR-FAC3514-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	35mm
element size	3.45 μm
Aperture type	Manual
F-Range	F1.4-F16
Distortion	<0.3%
back focal length	11.06mm
Overall dimensions	Φ37x39.7
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 18°
	2/3" (Horizontal) 14.4°
	2/3" (Vertical) 10.8°
	1/2" (Diagonal) 13.2°
	1/2" (Horizontal) 10.6°
	1/2" (Vertical) 8°

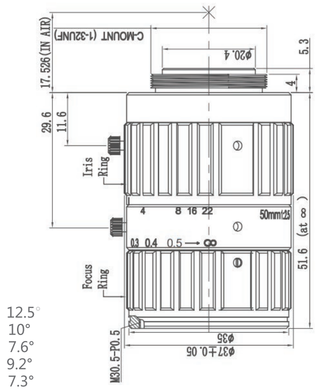


50mm-5Megapixels Lens Specs

CR-FAC5025-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	50mm
element size	3.45 μm
Aperture type	Manual
F-Range	F2.5-F22
Distortion	<0.1%
back focal length	13.185mm
Overall dimensions	Φ37x51.6
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 12.5°
	2/3" (Horizontal) 10°
	2/3" (Vertical) 7.6°
	1/2" (Diagonal) 9.2°
	1/2" (Horizontal) 7.3°
	1/2" (Vertical) 5.5°

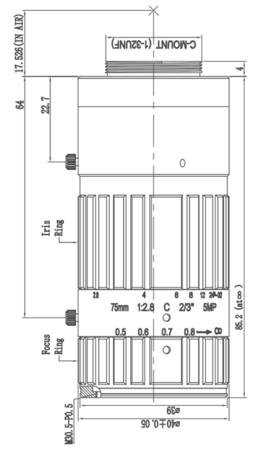


75mm-5Megapixels Lens Specs

CR-FAC7528-5M

Main Parameters

Resolution	5 Megapixels
Mount	C Mount
Sensor size	2/3"
Focal length	75mm
element size	3.45 μm
Aperture type	Manual
F-Range	F2.8-F32
Distortion	<0.02%
back focal length	31.37mm
Overall dimensions	Φ40x85.2
filter size	M30.5x0.5
Working temperature	-20℃ ~ +60℃
view point	2/3" (Diagonal) 8.34°
	2/3" (Horizontal) 6.66°
	2/3" (Vertical) 5.0°
	1/2" (Diagonal) 6.1°
	1/2" (Horizontal) 4.84°
	1/2" (Vertical) 3.62°



MODEL & PARAMETER

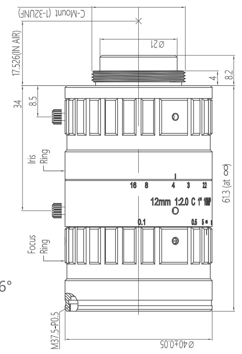
10 Fixed Focal Lens Specs

12 mm - 10Megapixels Lens Specs

CR-FAC1220-10M

Main Parameters

Resolution	10 Megapixels
Focal length	12mm
Working distance	0.1m~∞
F-Range	F2.0-F16
F-stops	F2.0
Distortion	<0.77%
Optical back focal length	10.36mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	2/3" 49.1°x 40.2°x30.6°
	1" 68°x55.8°x43.6°

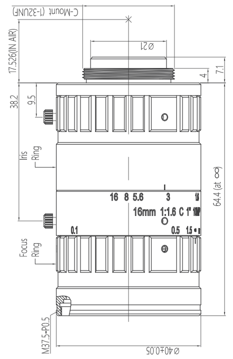


16 mm - 10Megapixels Lens Specs

CR-FAC1616-10M

Main Parameters

Resolution	10 Megapixels
Focal length	16mm
Working distance	0.1m~∞
F-Range	F1.6-F16
F-stops	F1.6
Distortion	<0.68%
Optical back focal length	10.7mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	M37.5X0.5
	Φ40x64.4mm
	2/3" 38°x30.7°x23.2°
	1" 53.4°x43.3°x33.4°

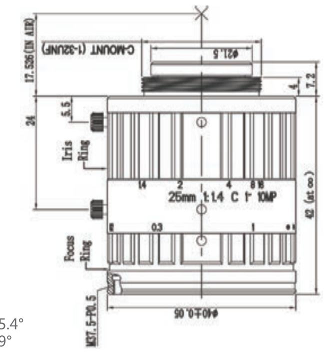


25 mm - 10Megapixels Lens Specs

CR-FAC2514-10M

Main Parameters

Resolution	10 Megapixels
Focal length	25mm
Working distance	0.15m~∞
F-Range	F1.4-F16
F-stops	F1.4
Distortion	<0.3%
Optical back focal length	10.8mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	M37.5X0.5
	Φ40x42mm
	2/3" 24.9°x20.1°x15.4°
	1" 36°x28.9°x21.9°

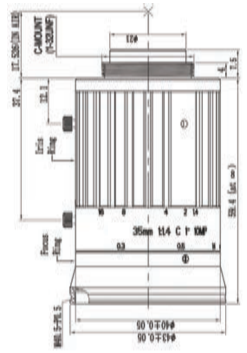


35 mm - 10Megapixels Lens Specs

CR-FAC3514-10M

Main Parameters

Resolution	10 Megapixels
Focal length	35mm
Working distance	0.15m~∞
F-Range	F1.4-F16
F-stops	F1.4
Distortion	<0.39%
Optical back focal length	11.3mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	M40.5X0.5
	Φ43x59.4mm
	2/3" 18°x14.4°x10.8°
	1" 26.1°x20.9°x15.7°

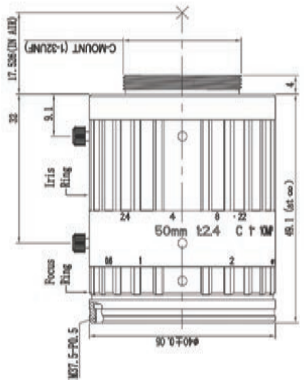


50 mm - 10Megapixels Lens Specs

CR-FAC5024-10M

Main Parameters

Resolution	10 million pixels
Focal length	50mm
Working distance	0.55m~∞
F-Range	F2.4-F22
F-stops	F2.4
Distortion	<0.1%
Optical back focal length	16.24mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	M37.5X0.5
	Φ40x49.1mm
	2/3" 12.5°x10°x7.6°
	1" 18.1°x14.6°x11°

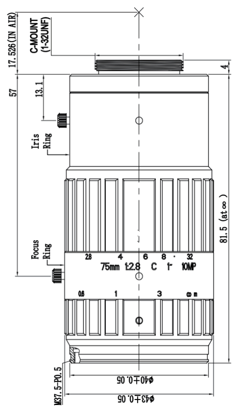


75 mm - 10Megapixels Lens Specs

CR-FAC7528-10M

Main Parameters

Resolution	10 million pixels
Focal length	75mm
Working distance	0.6m~∞
F-Range	F2.8-F32
F-stops	F2.8
Distortion	<0.1%
Optical back focal length	36.9mm
Mount	C Mount
Sensor size	1"
Working temperature	-20℃ ~ +60℃
View angle	M37.5X0.5
	Φ43x81.5mm
	2/3" 8.3°X6.7°X5.0°
	1" 12.2°x9.8°x7.3°



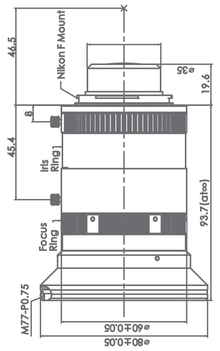
29 Megapixels Line Scan Lens Specs

25mm - 29Megapixels Lens Specs

CR-FAF2528-29M

Main Parameters

Resolution	29 Megapixels
Focal length	25mm
Working distance	0.14m~∞
F-Range	F2.8-F32
F-stops	F2.8
Distortion	<0.9%
Optical back focal length	26.4mm
Mount	F Mount
Sensor size	-20℃ ~ +60℃
Working temperature	M77x0.75
View angle	Φ80x93.7mm
	H=44mm 84°
	H=35mm 71.3°
	H=23mm 50°
	H=16mm 36°
	H=11mm 24.9°
	H=8.0mm 18.1°

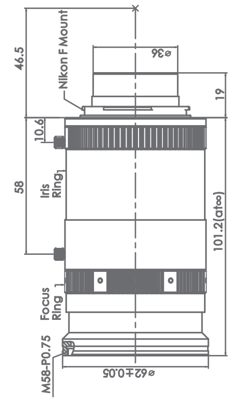


35mm - 29Megapixels Lens Specs

CR-FAF3528-29M

Main Parameters

Resolution	29 Megapixels
Focal length	35mm
Working distance	0.18m~∞
F-Range	F2.8-F32
F-stops	F2.8
Distortion	<0.4%
Optical back focal length	27.9mm
Mount	F Mount
Sensor size	-20℃ ~ +60℃
Working temperature	M58X0.75
View angle	Φ62x101.2mm
	H=44mm 65°
	H=35mm 53.6°
	H=23mm 37°
	H=16mm 26°
	H=11mm 18°
	H=8.0mm 6.7°

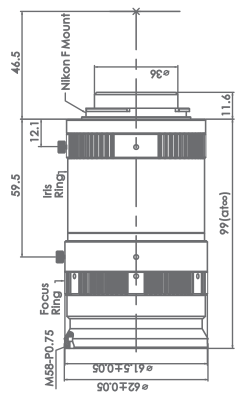


50mm - 29Megapixels Lens Specs

CR-FAF5028-29M

Main Parameters

Resolution	29 Megapixels
Focal length	50mm
Working distance	0.18m~∞
F-Range	F2.8-F32
F-stops	F2.8
Distortion	<0.2%
Optical back focal length	36.1mm
Mount	F Mount
Sensor size	-20℃ ~ +60℃
Working temperature	M58X0.75
View angle	Φ62x99mm
	H=44mm 47.8°
	H=35mm 38.8°
	H=23mm 26°
	H=16mm 18.2°
	H=11mm 12.6°
	H=8.0mm 9.1°



CONSTANT CURRENT
DIGITAL CONTROLLER

256 Levels of brightness
adjustment

Can be controlled by
RS232 serial port

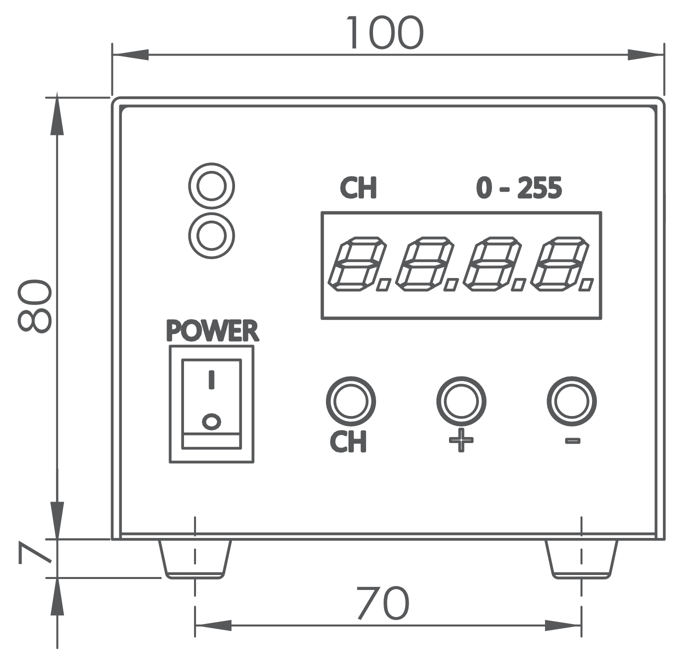
Access to customers software
through the open SDK

This constant digital controller can be remotely via serial communication, access to customers' software through the open SDK to realize the function extension. Can set different voltages and currents according to customers' demands(requiring pre-factory setting)

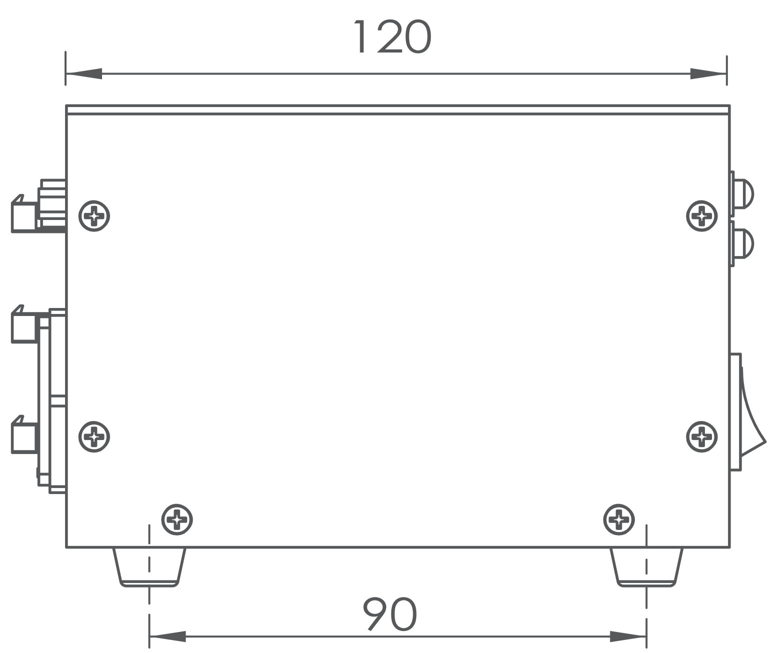
characteristics:
High frequency PWM digital dimming 280 k, the high fast shutter flicker-free
Brightness control level 256, step by step to adjust brightness Settings more accurately
After the power is power off memory function, can save the previous Settings

Model	HGDC-XVYW-HZ *X: Voltage Y: Power Z: Chanel Numbers
The Chanel Numbers	2, 4,6 channels optional
Output Power	Max 24W
Single-Chanel Output Current	Max 2.8A
Output Voltage	5v, 12, 24v optional(can shoose to output any 2 group voltages at one time, to control the point & diffuse light
Output Control	Constant current control(variablel current)
Remote-Control Mode	RS 232 Serial communication control
Input Voltage	AC 100-240V
Install	Put the rubber feet column on a flat surface

CONSTANT CURRENT DIGITAL CONTROLLER



positive



side

HIGH POWER LED
COAXIAL - POINT ILLUMINATION

Model	Emitting light colors	main wavelength range	Maximum current	Constant current driver (voltage is not more than)	Constant voltage driver (voltage is not more than)
XF-ADLED1W	White	430~680nm	350MA	5v	3.2v
XF-ADLED1R	Red	620~630nm	350MA	5v	2.1v
XF-ADLED1G	Green	520~530nm	350MA	5v	2.9v
XF-ADLED1B	Blue	460~470nm	350MA	5v	3v
XF-ADLED3W	White	430~680nm	700MA	5v	3.5v
XF-ADLED3R	Red	620~630nm	700MA	5v	2.5v
XF-ADLED3G	Green	520~530nm	700MA	5v	3.1v
XF-ADLED3B	Blue	460~470nm	700MA	5v	3.3v
XF-ADLED10W	White	430~680nm	3000MA	5v	4.5v

With special optical design

Higher brightness

Perfectly solve the problem of un-uniform illuminating of low magnificaton coaxial lenses.

- 2 times brighter than conventional LED illuminating
- Using unique heat dissipation design, to improve light-emitting efficiency, ensuring longer life & stable quality of the lights
- Applying professional optical principle, effectively using the light energy, to get larger and more uniform lighting area
- Small & light, easy to install

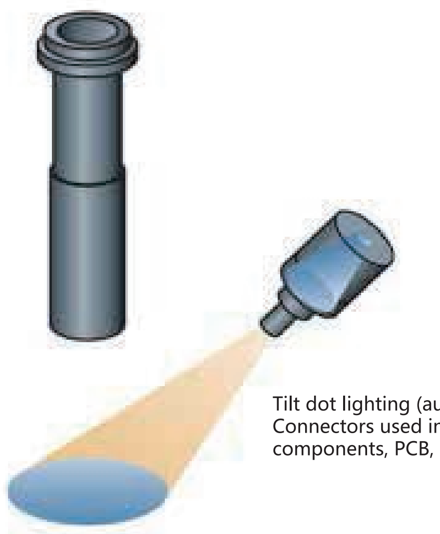
XF-ADLED ?1 ?2

?1 Power 1(1W) 3(3W) 10(10W)

?2 Emitting light colors W(white) R(Red) B(Blue) G(Green)

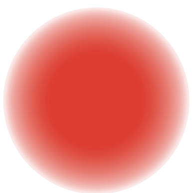
GENERAL APPLICATION OF LEGEND

Coaxial illumination
And some for wafer and glass panel
High reflectivity material, etc



Tilt dot lighting (auxiliary lighting)
Connectors used in electronic components, PCB, etc

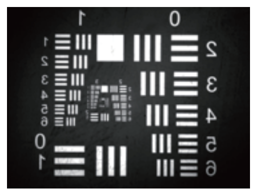
UNIFORMITY OF CONTRAST



Light small and to the spread of from inside to outside

Ordinary electrical point lighting

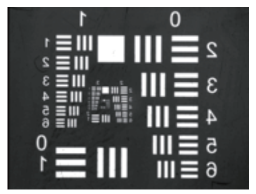
Uneven illumination of edge has dark corners



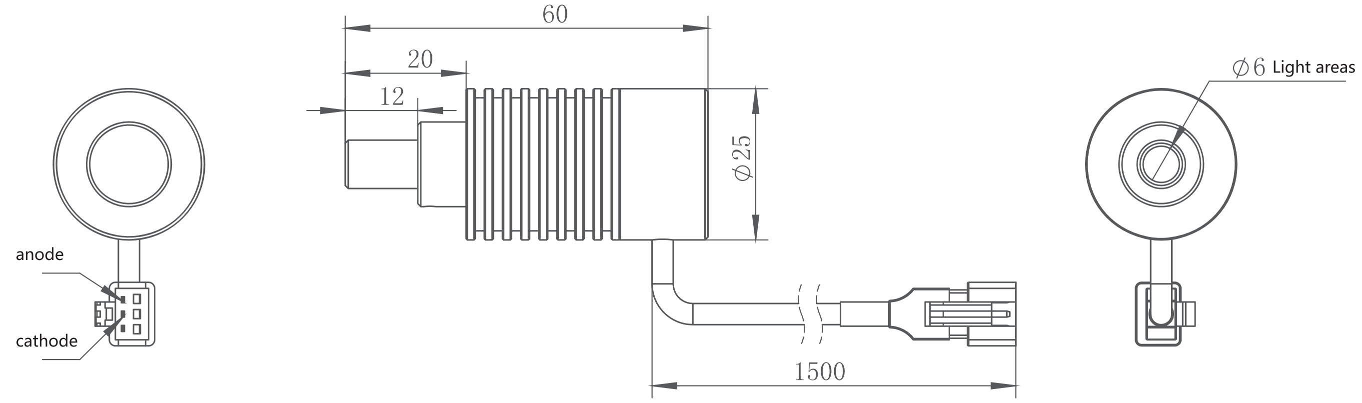
Spot large and uniform, the effective use of light energy

XF - ADLED series high power point lighting

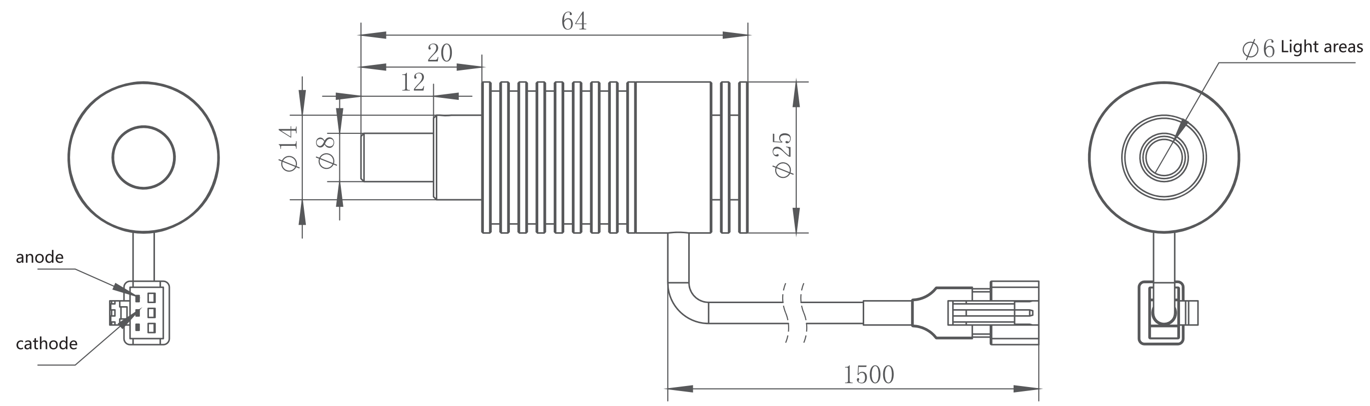
Clean uniform illumination image



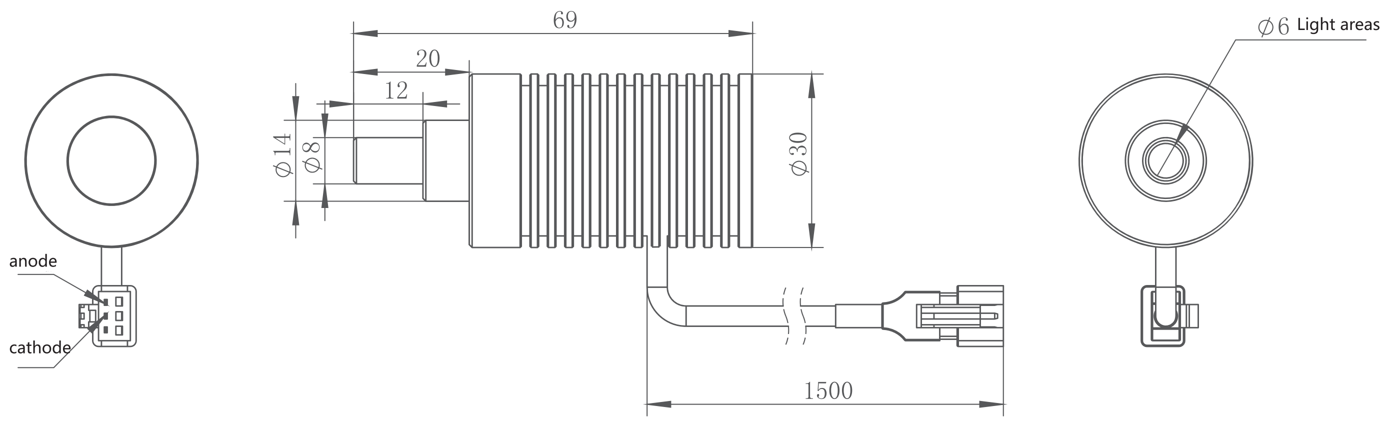
XF-ADLED1W



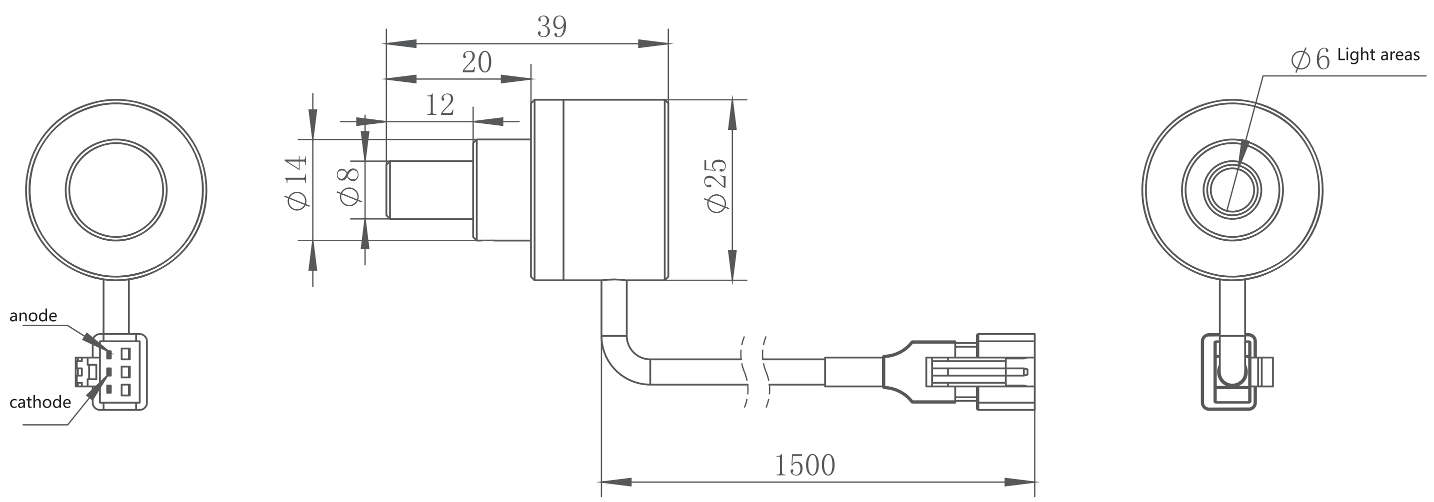
XF-ADLED3W



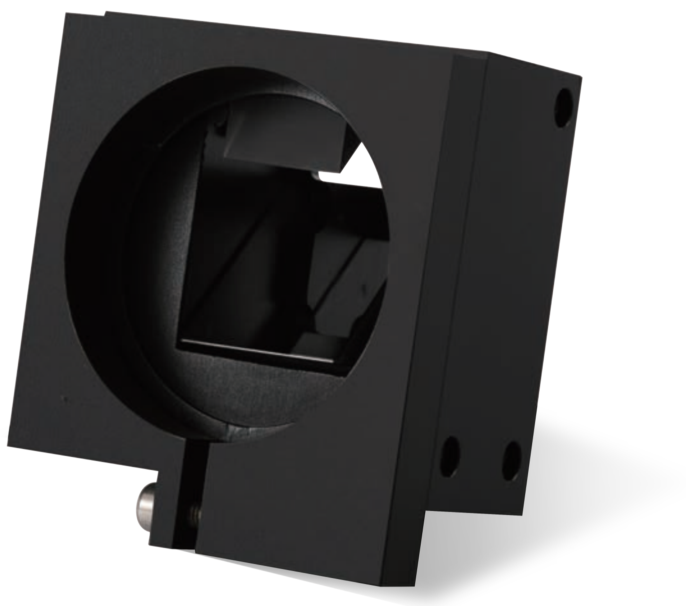
1.XF-ADLED1W



1.XF-ADLED1W (mini)



STEERING
PRISM



	Model	Lens Mount(nm)	Internal consumed optical path(mm)	Single minimum pitch (mm)
L a prism	XF-ADL90-16D-1	16	24.2	1
	XF-ADL90-16D-1.5	16	23.7	1.5
	XF-ADL90-16D-1.5B	16	25	1.5
	XF-ADL90-16D-3	16	23.5	3
	XF-ADL90-16D-3S	16	23.5	3
	XF-ADL90-16D-5	16	22	5
	XF-ADL90-16D-6-IOE	16	20	6
	XF-ADL90-16D-10	16	20	10
	XF-ADL90-16D-QG	16	20	10
	XF-ADL90-20D-3.2	20	42	3.2
	XF-ADL90-20D-6.2	20	30	6.2
	XF-ADL90-22D-2.5	22	21.8	2.5
	XF-ADL90-22D-3.2	22	21	3.2
	XF-ADL90-26D-7.5	26	25	7.5
	XF-ADL90-27D-14.3	27	31	14.3
	XF-ADL90-28D-14.3	28	31	14.3
	XF-ADL90-29D-12	29	33.4	12
	XF-ADL90-29D-12B	29	63.4	12
	XF-ADZ-29D-14.3	29	30.9	14.3
	XF-ADL90-30D-5	30	28.5	5
	XF-ADL90-30D-13	30	13	13
	XF-ADL90-34D-3	34	35.5	3
	XF-ADL90-32D-12.2	32	32.4	12.2
	XF-ADL90-34D-12.2	34	31.9	12.2
	XF-ADL90-35D-12.6	35	32.5	12.6
	XF-ADL90-35D-12.6B	35	39	12.6
	XF-ADL90-36D-12.2	36	32.9	12.2
	XF-ADL90-36D-12.2B	36	32.9	12.2
	XF-ADL90-43D-23.5	43	53.5	23.5
	XF-ADL90-43D-23.5B	43	48.5	23.5
	XF-ADL90-51D-23.5	51	58.5	23.5
	XF-ADL90-52D-23.5	52	53.5	23.5
	XF-ADL90-56D-23.5	56	53.6	23.5
Z prism	XF-ADZ-16D-1.5	16	39.5	1.5
	XF-ADZ-16D-3	16	36.4	3
	XF-ADZ-20D-3	16	38	3
	XF-ADZ-20D-5	20	44.8	5
	XF-ADZ-20D-7.8	20	42	7.8
	XF-ADZ-22D-3	22	38	3
	XF-ADZ-22D-7.8	22	42	7.8
	XF-ADZ-22D-9	22	38.5	9
	XF-ADZ-26D-7.8	26	42	7.8
	XF-ADZ-27D-3.5	27	38.5	3.5
	XF-ADZ-27D-5	27	37	5
	XF-ADZ-29D-5	29	37	5
	XF-ADZ-29D-6	29	36	6
	XF-ADZ-30D-4	30	63.3	4
	XF-ADZ-30D-4-1i3寸	30	38	4
	XF-ADZ-30D-5	30	37	5
	XF-ADZ-30D-6	30	59.3	6
	XF-ADZ-30D-8.3	30	52	8.3
	XF-ADZ-30D-13	30	62.2	13
	XF-ADZ-33D-6	33	46.3	6
	XF-ADZ-34D-7.3	34	45	7.3
	XF-ADZ-35D-6	35	45	6
	XF-ADZ-40D-5	40	76.4	5
	XF-ADZ-50D-8	50	79.7	5
ZL type of prism	XF-ADZL-16D-1.5L	16	31	1.5
	XF-ADZL-16D-1.5R	16	31	1.5
	XF-ADZL-16D-3L	16	29.5	3
	XF-ADZL-16D-3R	16	29.5	3
	XF-ADZ-22D-3L	22	54.5	3
	XF-ADZ-22D-3R	22	54.5	3
	XF-ADZL-22D-10.8L	22	47.7	10.8
	XF-ADZL-22D-10.8R	22	47.7	10.8
	XF-ADZL-29D-7.5L	29	54.7	7.5
	XF-ADZL-29D-7.5R	29	54.7	7.5
	XF-ADZL-30D-7.5L	30	54.7	7.5
	XF-ADZL-30D-7.5R	30	54.7	7.5
	XF-ADZL-43D-13L	43	67.1	13
	XF-ADZL-43D-13R	43	67.1	13

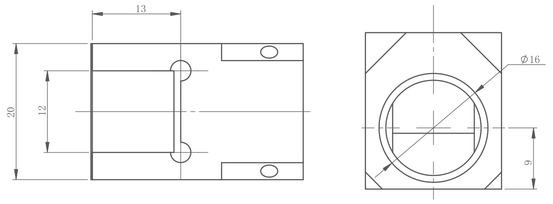
Change the optical path direction

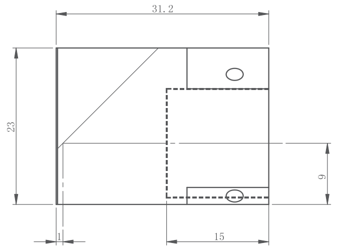
The prisms can be satisfied with different mechanical structures

To achive the minimum pitch(two prism paired)

MODEL & SIZE

XF-ADL90-16D-1

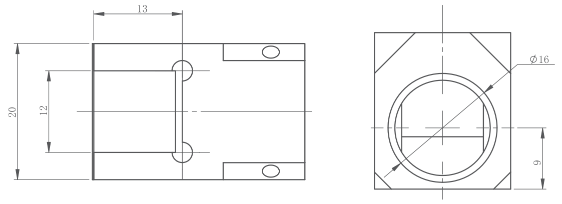


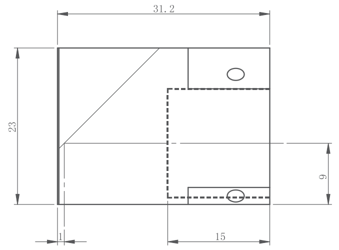


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1mm
internal optical path	24.2mm

XF-ADL90-16D-1.5

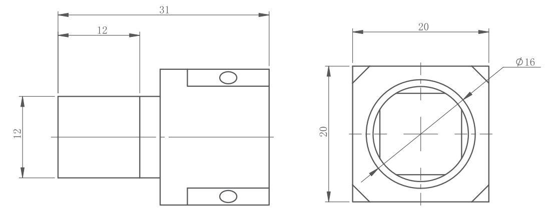


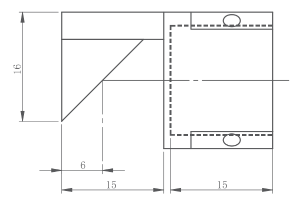


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1.5mm
internal optical path	23.7mm

XF-ADL90-16D-6-IOE

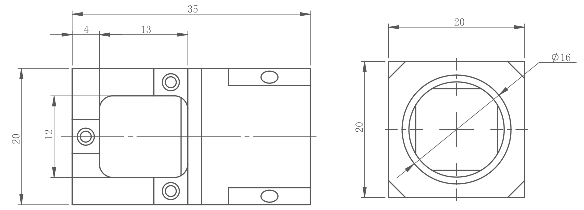


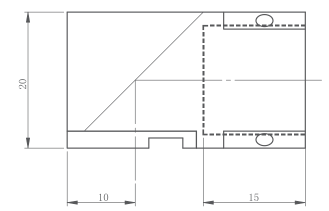


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	6mm
internal optical path	20mm

XF-ADL90-16D-10

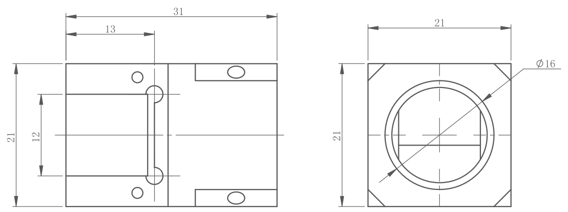


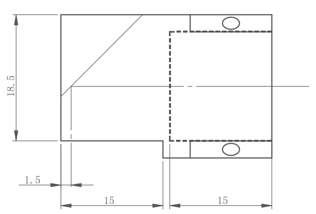


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	10mm
internal optical path	20mm

XF-ADL90-16D-1.5B

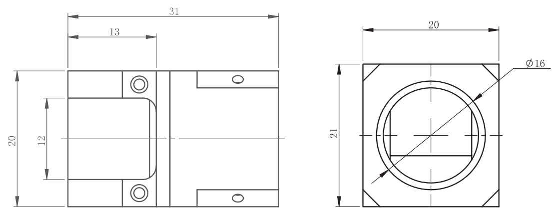


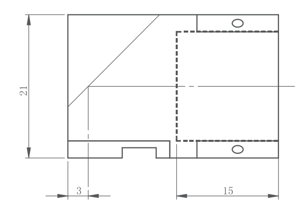


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1.5mm
internal optical path	25mm

XF-ADL90-16D-3

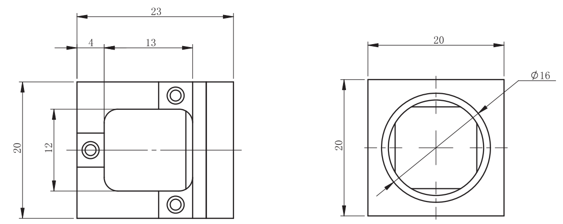


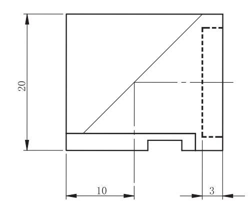


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	3mm
internal optical path	23.5mm

XF-ADL90-16D-QG

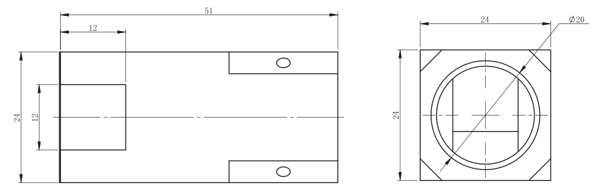


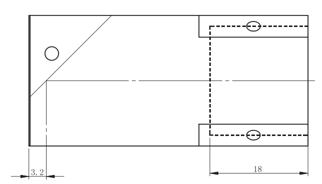


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	10mm
internal optical path	20mm

XF-ADL90-20D-3.2

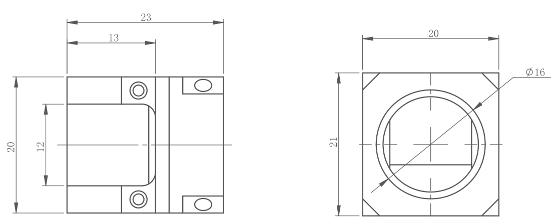


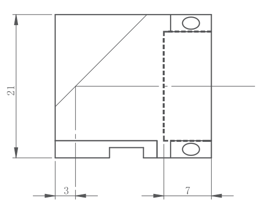


Specifications:

Apply lens aperture	Φ20mm
Optical axis interval	3.2mm
internal optical path	42mm

XF-ADL90-16D-3S

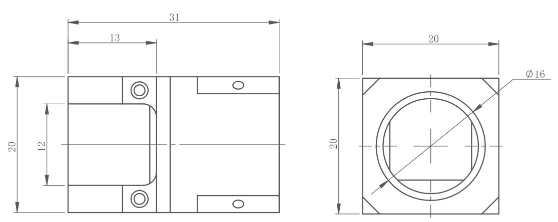


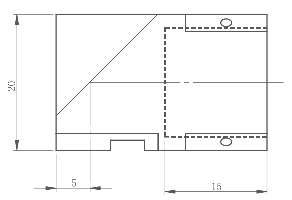


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	3mm
internal optical path	23.5mm

XF-ADL90-16D-5

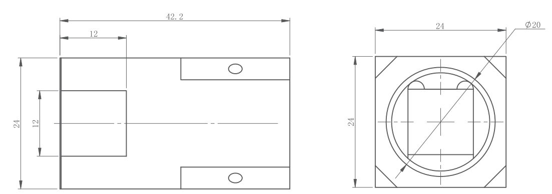


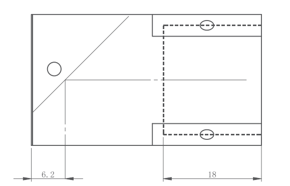


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	5mm
internal optical path	22mm

XF-ADL90-20D-6.2

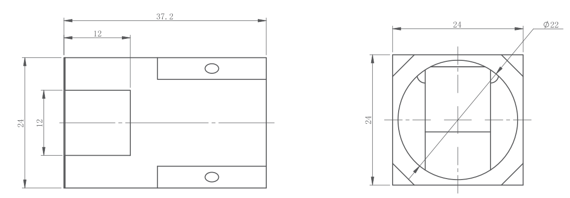


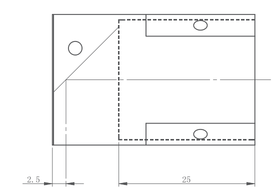


Specifications:

Apply lens aperture	Φ20mm
Optical axis interval	6.2mm
internal optical path	30mm

XF-ADL90-22D-2.5



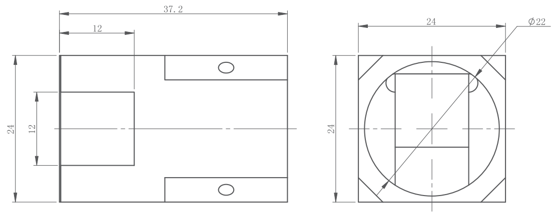


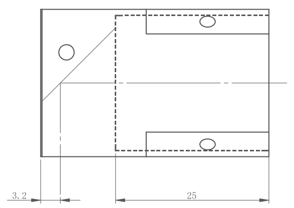
Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	2.5mm
internal optical path	21.8mm

MODEL & SIZE

XF-ADL90-22D-3.2

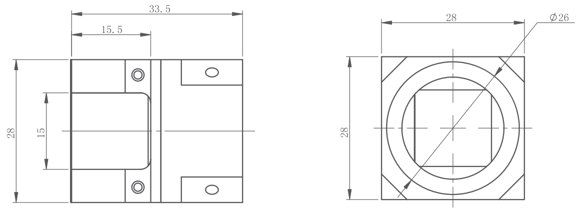


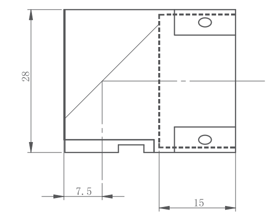


Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	3.2mm
internal optical path	21mm

XF-ADL90-26D-7.5

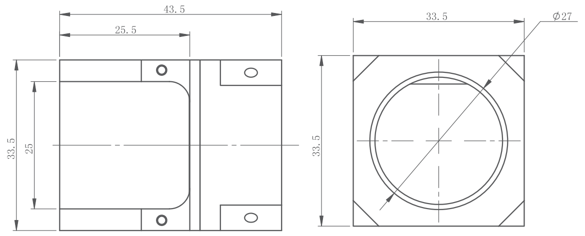


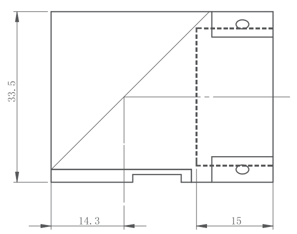


Specifications:

Apply lens aperture	Φ26mm
Optical axis interval	7.5mm
internal optical path	25mm

XF-ADL90-27D-14.3

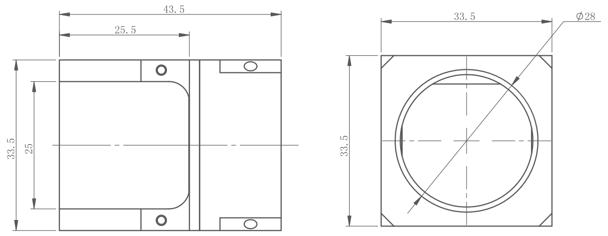


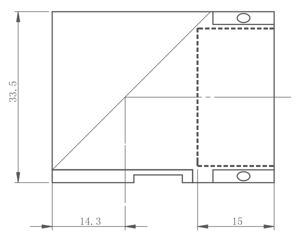


Specifications:

Apply lens aperture	Φ27mm
Optical axis interval	14.3mm
internal optical path	31mm

XF-ADL90-28D-14.3

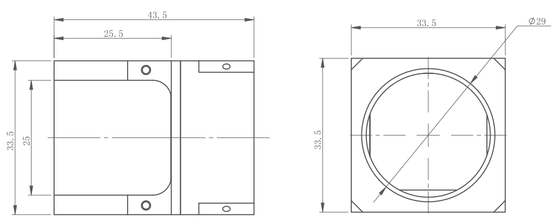


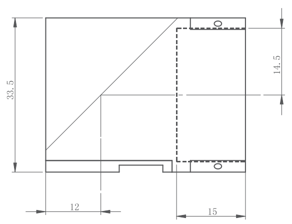


Specifications:

Apply lens aperture	Φ28mm
Optical axis interval	14.3mm
internal optical path	31mm

XF-ADL90-29D-12

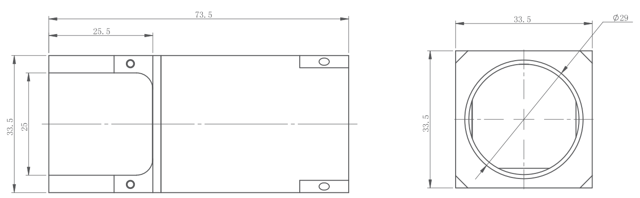


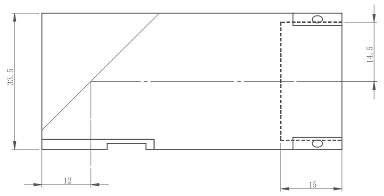


Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	12mm
internal optical path	33.4mm

XF-ADL90-29D-12B

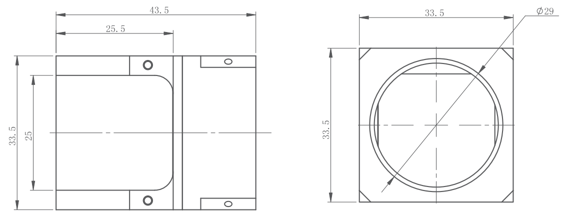


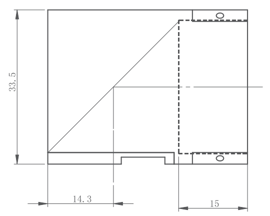


Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	12mm
internal optical path	63.4mm

XF-ADL90-29D-14.3

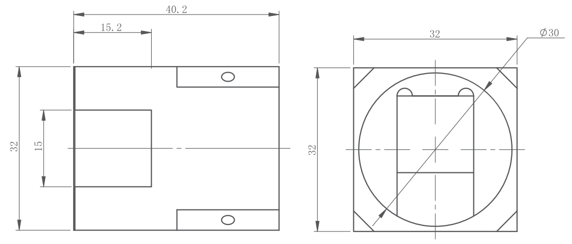


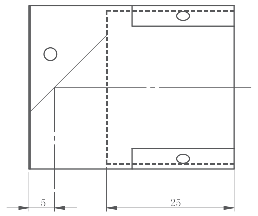


Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	14.3mm
internal optical path	30.9mm

XF-ADL90-30D-5

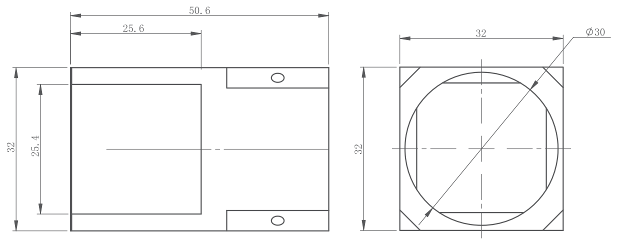


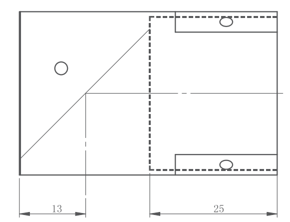


Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	5mm
internal optical path	28.5mm

XF-ADL90-30D-13

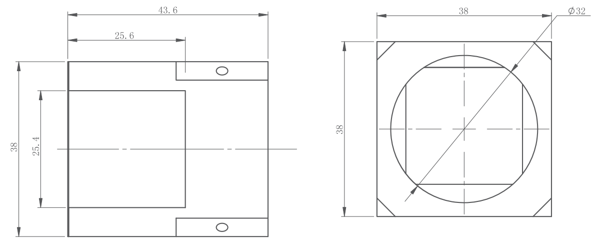


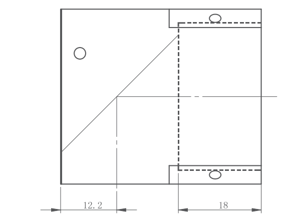


Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	13mm
internal optical path	28.9mm

XF-ADL90-32D-12.2

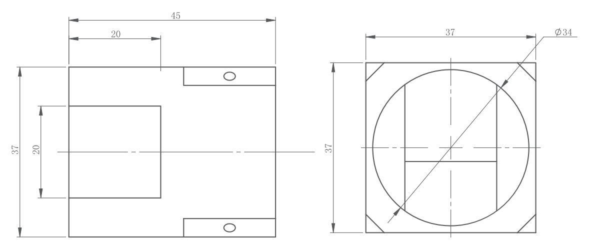


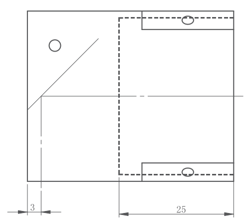


Specifications:

Apply lens aperture	Φ32mm
Optical axis interval	12.2mm
internal optical path	32.4mm

XF-ADL90-34D-3

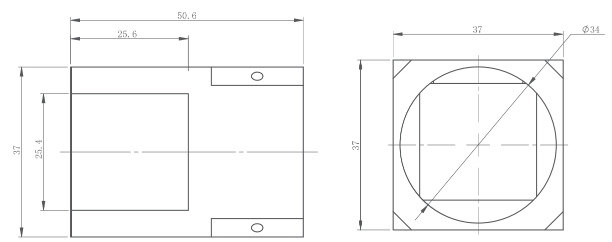


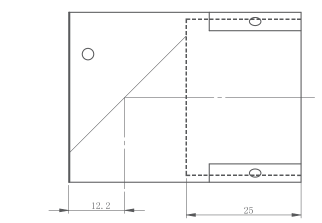


Specifications:

Apply lens aperture	Φ34mm
Optical axis interval	3mm
internal optical path	35.5mm

XF-ADL90-34D-12.2



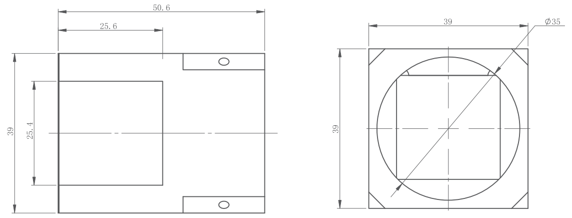


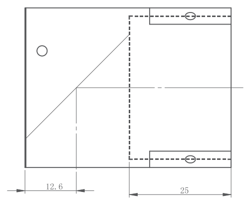
Specifications:

Apply lens aperture	Φ34mm
Optical axis interval	12.2mm
internal optical path	31.9mm

MODEL & SIZE

XF-ADL90-35D-12.6

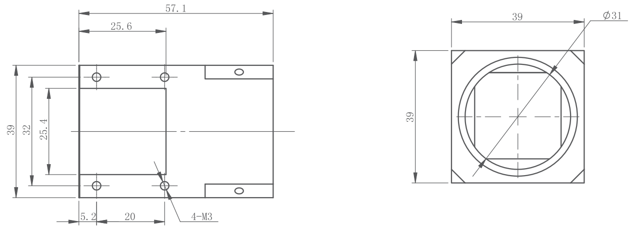


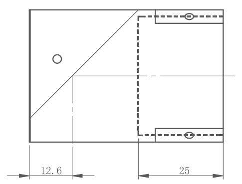


Specifications:

Apply lens aperture	Φ35mm
Optical axis interval	12.6mm
internal optical path	32.5mm

XF-ADL90-35D-12.6B

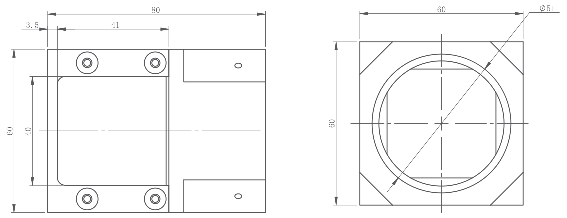


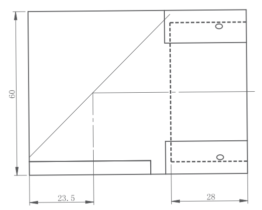


Specifications:

Apply lens aperture	Φ35mm
Optical axis interval	12.6mm
internal optical path	39mm

XF-ADL90-51D-23.5

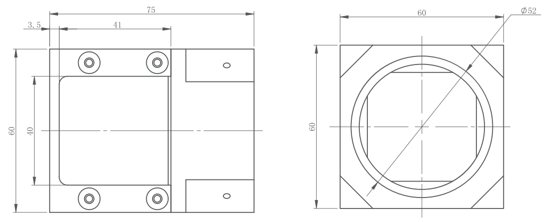


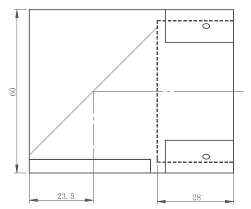


Specifications:

Apply lens aperture	Φ51mm
Optical axis interval	23.5mm
internal optical path	58.5mm

XF-ADL90-52D-23.5

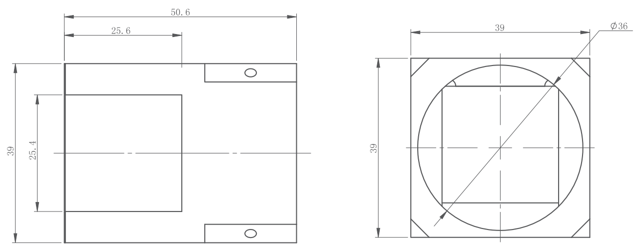


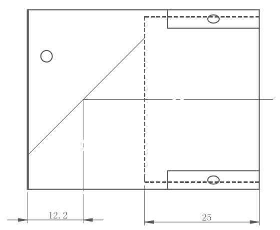


Specifications:

Apply lens aperture	Φ52mm
Optical axis interval	23.5mm
internal optical path	53.5mm

XF-ADL90-36D-12.2

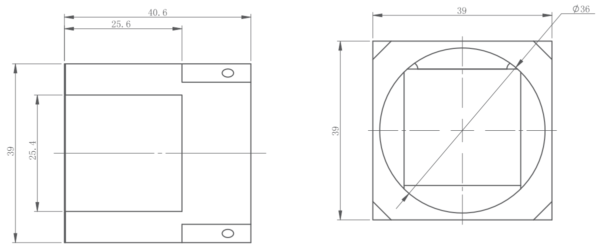


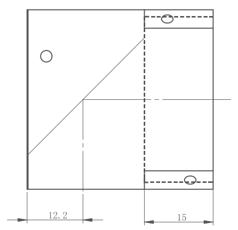


Specifications:

Apply lens aperture	Φ36mm
Optical axis interval	12.2mm
internal optical path	32.9mm

XF-ADL90-36D-12.2B

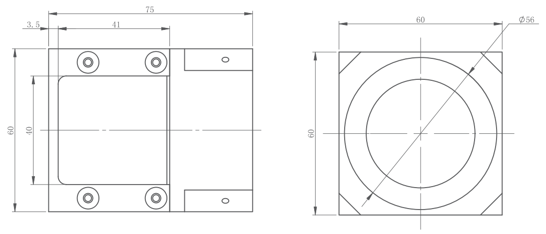


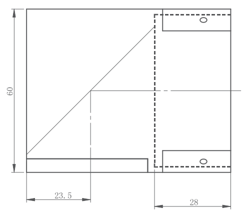


Specifications:

Apply lens aperture	Φ36mm
Optical axis interval	12.2mm
internal optical path	32.9mm

XF-ADL90-56D-23.5

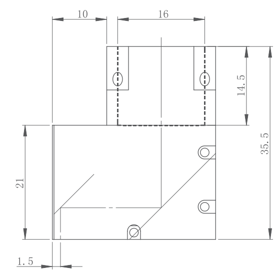


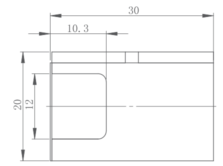


Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	23.5mm
internal optical path	53.5mm

XF-ADZ-16D-1.5

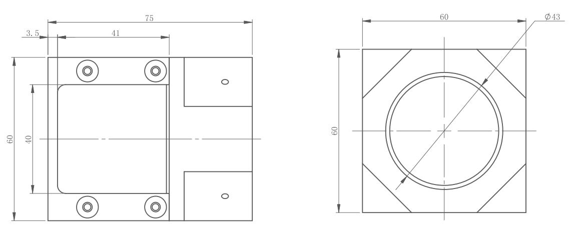


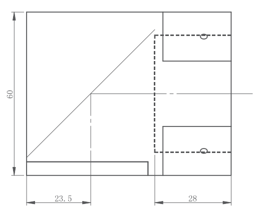


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1.5mm
internal optical path	39.5mm

XF-ADL90-43D-23.5

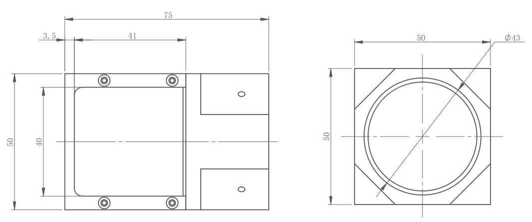


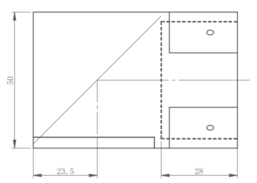


Specifications:

Apply lens aperture	Φ43mm
Optical axis interval	23.5mm
internal optical path	43.5mm

XF-ADL90-43D-23.5B

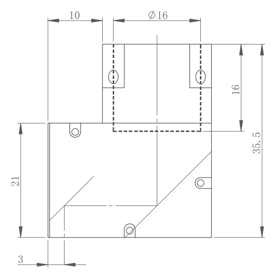


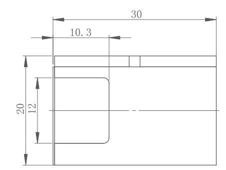


Specifications:

Apply lens aperture	Φ43mm
Optical axis interval	23.5mm
internal optical path	48.5mm

XF-ADZ-16D-3

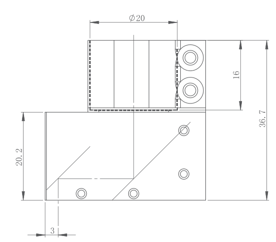


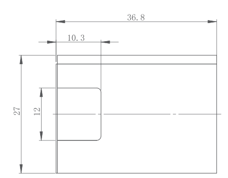


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	3mm
internal optical path	36.4mm

XF-ADZ-20D-3



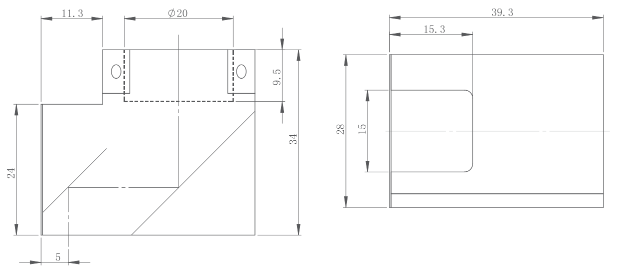


Specifications:

Apply lens aperture	Φ20mm
Optical axis interval	3mm
internal optical path	38mm

MODEL & SIZE

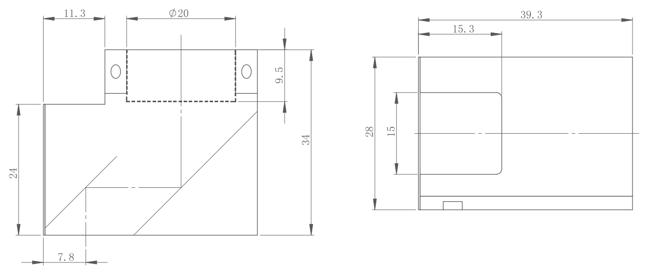
XF-ADZ-20D-5



Specifications:

Apply lens aperture	Φ20mm
Optical axis interval	5mm
internal optical path	44.8mm

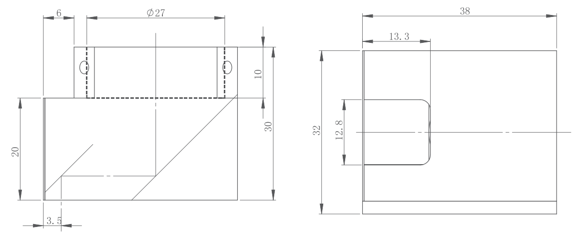
XF-ADZ-20D-7.8



Specifications:

Apply lens aperture	Φ20mm
Optical axis interval	7.8mm
internal optical path	42mm

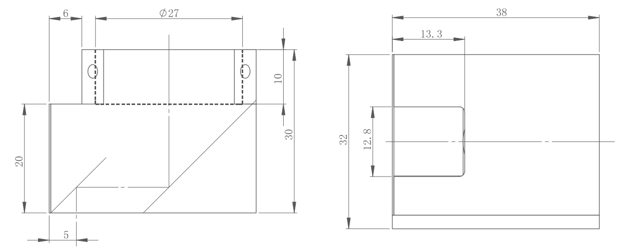
XF-ADZ-27D-3.5



Specifications:

Apply lens aperture	Φ27mm
Optical axis interval	3.5mm
internal optical path	38.5mm

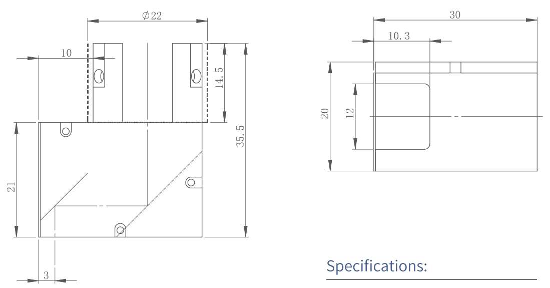
XF-ADZ-27D-5



Specifications:

Apply lens aperture	Φ27mm
Optical axis interval	5mm
internal optical path	35mm

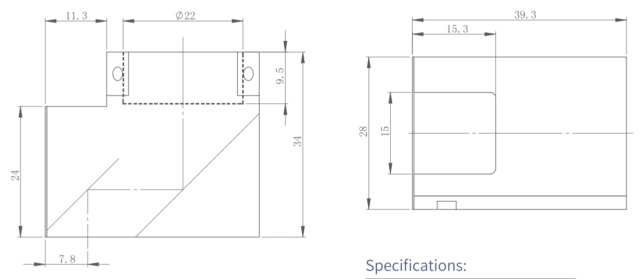
XF-ADZ-22D-3



Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	3mm
internal optical path	38mm

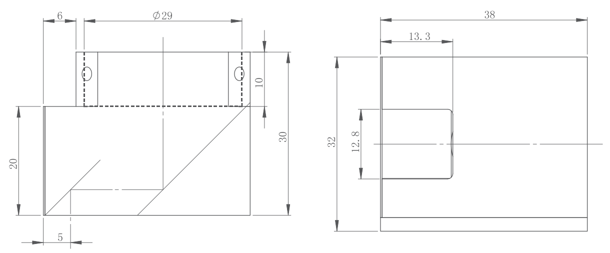
XF-ADZ-22D-7.8



Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	7.8mm
internal optical path	42mm

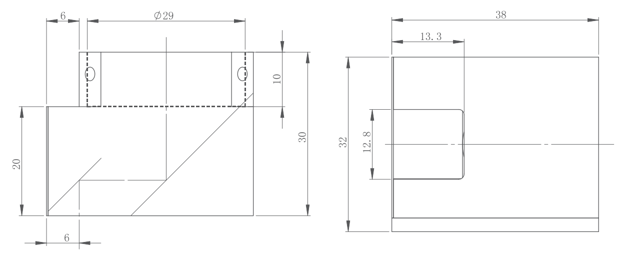
XF-ADZ-29D-5



Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	5mm
internal optical path	37mm

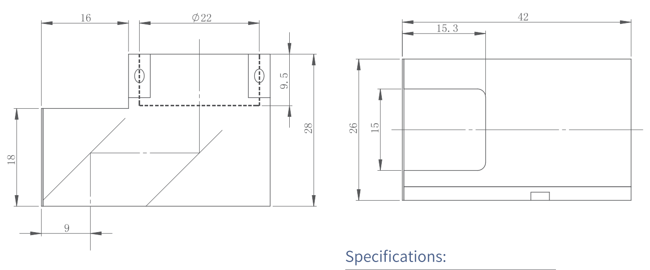
XF-ADZ-29D-6



Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	6mm
internal optical path	36mm

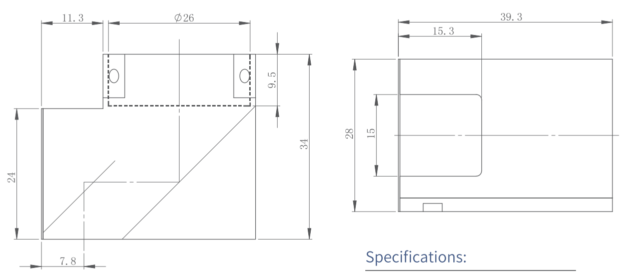
XF-ADZ-22D-9



Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	9mm
internal optical path	38.5mm

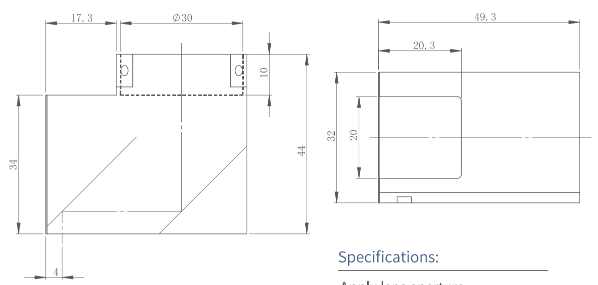
XF-ADZ-26D-7.8



Specifications:

Apply lens aperture	Φ26mm
Optical axis interval	7.8mm
internal optical path	42mm

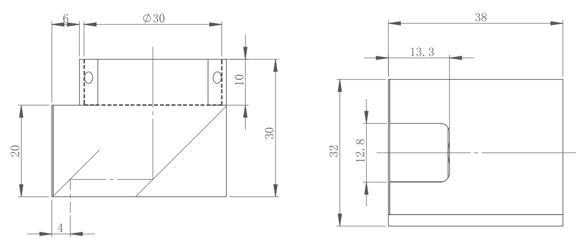
XF-ADZ-30D-4



Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	4mm
internal optical path	63.3mm

XF-ADZ-30D-4-1i3寸

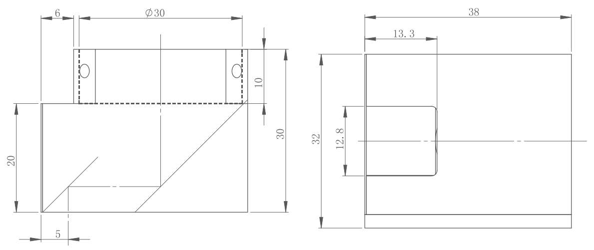


Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	4mm
internal optical path	38mm

MODEL & SIZE

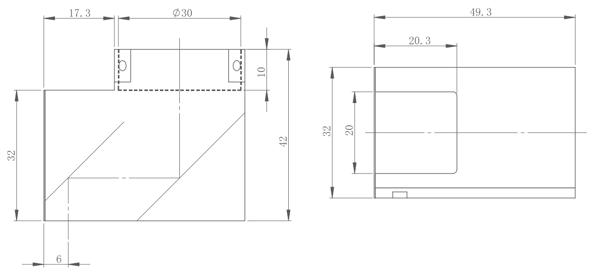
XF-ADZ-30D-5



Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	5mm
internal optical path	37mm

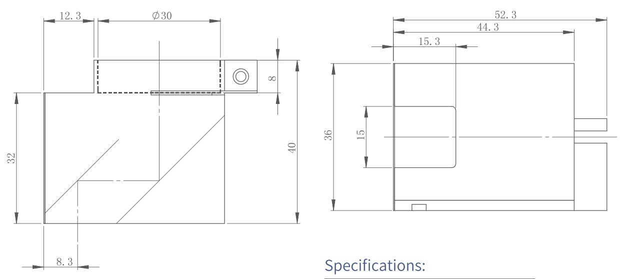
XF-ADZ-30D-6



Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	6mm
internal optical path	59.3mm

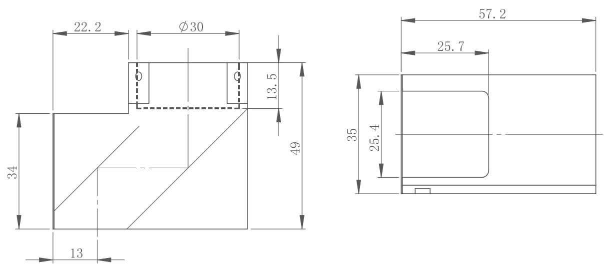
XF-ADZ-30D-8.3



Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	8.3mm
internal optical path	52mm

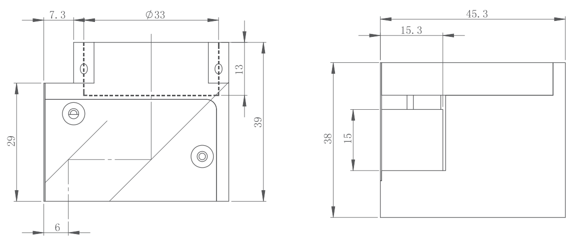
XF-ADZ-30D-13



Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	13mm
internal optical path	62.2mm

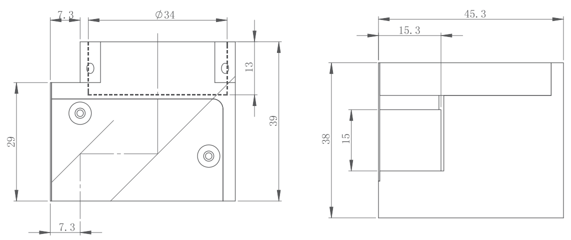
XF-ADZ-33D-6



Specifications:

Apply lens aperture	Φ33mm
Optical axis interval	6mm
internal optical path	46.3mm

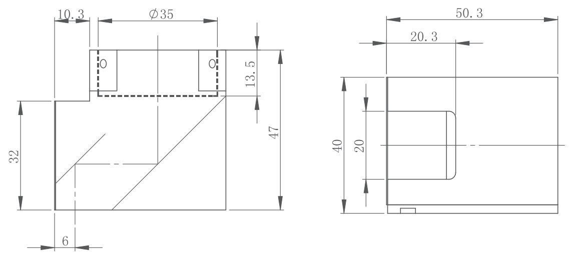
XF-ADZ-34D-7.3



Specifications:

Apply lens aperture	Φ34mm
Optical axis interval	7.3mm
internal optical path	45mm

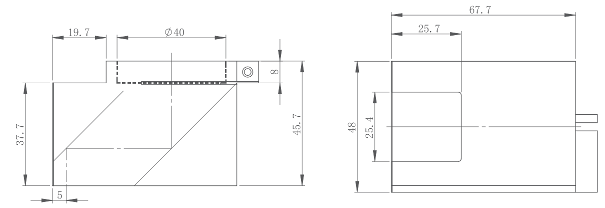
XF-ADZ-35D-6



Specifications:

Apply lens aperture	Φ35mm
Optical axis interval	6mm
internal optical path	57.8mm

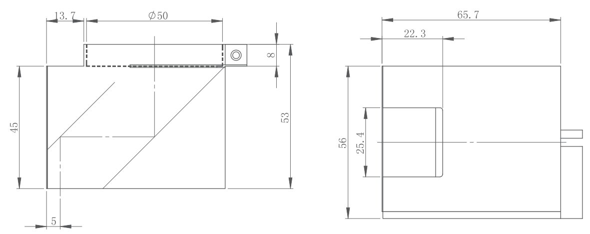
XF-ADZ-40D-5



Specifications:

Apply lens aperture	Φ27mm
Optical axis interval	5mm
internal optical path	35mm

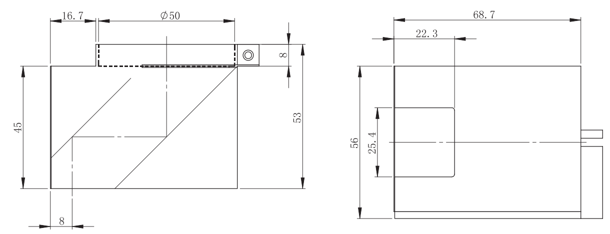
XF-ADZ-50D-5



Specifications:

Apply lens aperture	Φ50mm
Optical axis interval	5mm
internal optical path	79.7mm

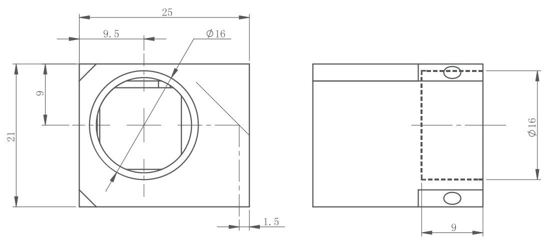
XF-ADZ-50D-8

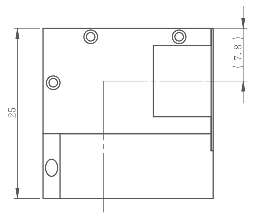


Specifications:

Apply lens aperture	Φ50mm
Optical axis interval	5mm
internal optical path	79.7mm

XF-ADZL-16D-1.5L

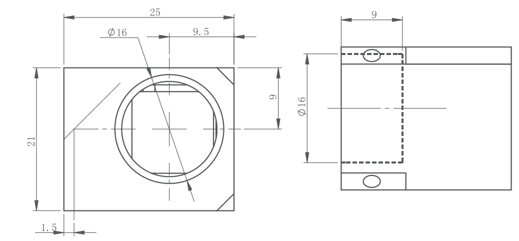


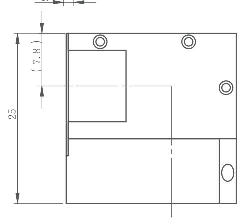


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1.5mm
internal optical path	31mm

XF-ADZL-16D-1.5R



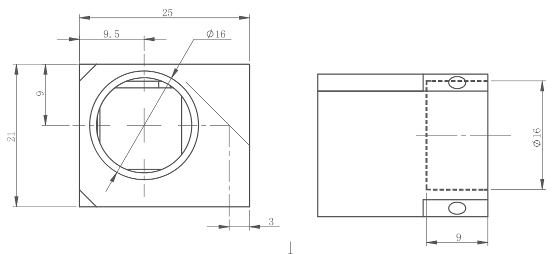
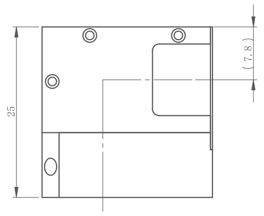


Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	1.5mm
internal optical path	31mm

MODEL & SIZE

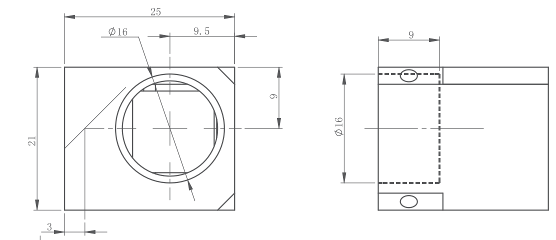
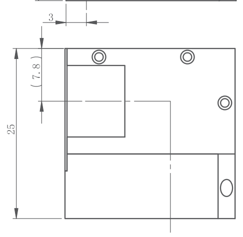
XF-ADZL-16D-3L

Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	3mm
internal optical path	29.5mm

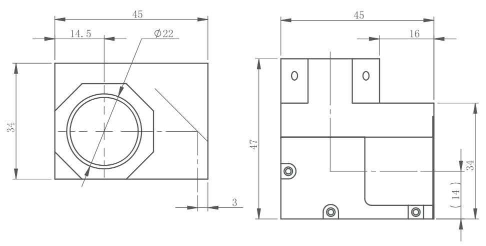
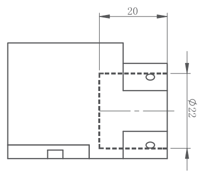
XF-ADZL-16D-3R

Specifications:

Apply lens aperture	Φ16mm
Optical axis interval	3mm
internal optical path	29.5mm

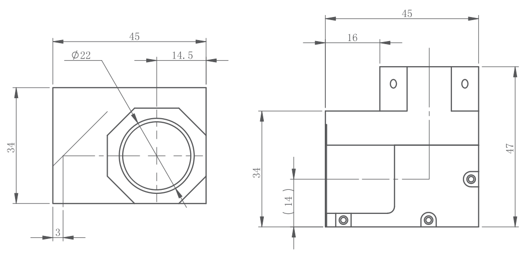
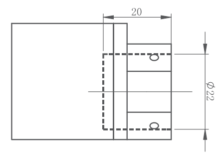
XF-ADZL-22D-3L

Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	3mm
internal optical path	54.5mm

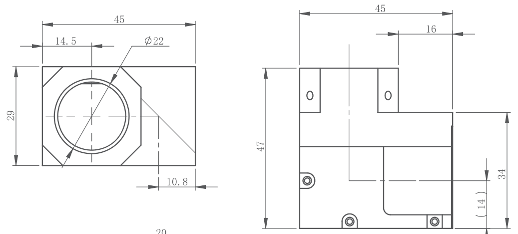
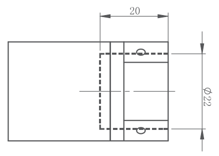
XF-ADZL-22D-3R

Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	3mm
internal optical path	54.5mm

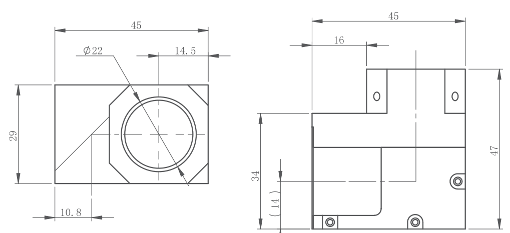
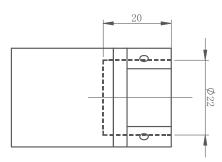
XF-ADZL-22D-10.8L

Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	10.8mm
internal optical path	47.7mm

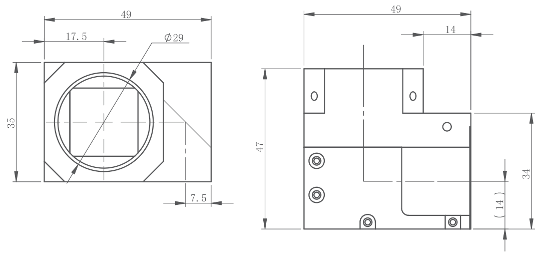
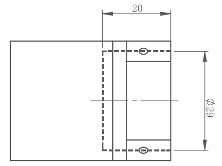
XF-ADZL-22D-10.8R

Specifications:

Apply lens aperture	Φ22mm
Optical axis interval	10.8mm
internal optical path	47.7mm

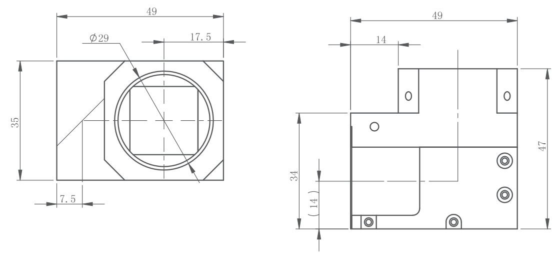
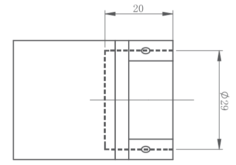
XF-ADZL-29D-7.5L

Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	7.5mm
internal optical path	54.7mm

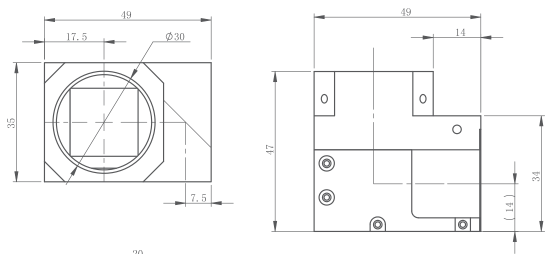
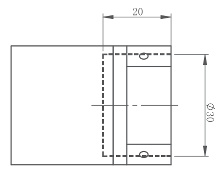
XF-ADZL-29D-7.5R

Specifications:

Apply lens aperture	Φ29mm
Optical axis interval	7.5mm
internal optical path	54.7mm

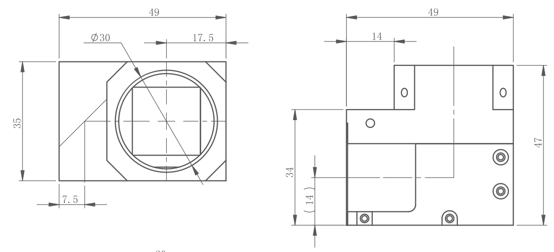
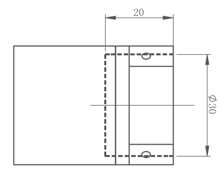
XF-ADZL-30D-7.5L

Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	7.5mm
internal optical path	54.7mm

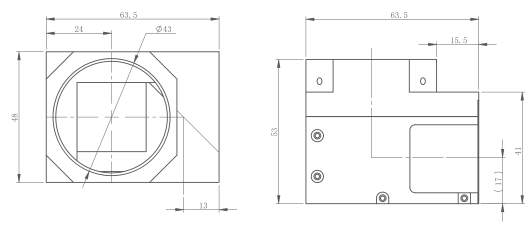
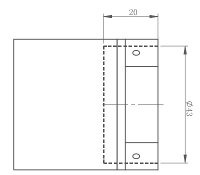
XF-ADZL-30D-7.5R

Specifications:

Apply lens aperture	Φ30mm
Optical axis interval	7.5mm
internal optical path	54.7mm

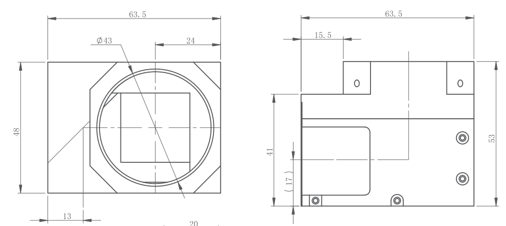
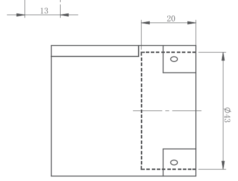
XF-ADZL-43D-13L

Specifications:

Apply lens aperture	Φ43mm
Optical axis interval	13mm
internal optical path	67.1mm

XF-ADZL-43D-13R

Specifications:

Apply lens aperture	Φ43mm
Optical axis interval	13mm
internal optical path	67.1mm