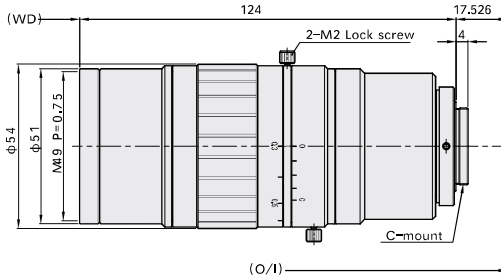


# TET Series 2/3" 1/1.8"



## TET0304

光学倍率	X0.3	X0.35	X0.4
WD	212.1 ± 6.5	175.1 ± 5	147.8 ± 4.5
O/I	353.6	316.6	289.3



规格		TET0304		
可变倍率范围		0.3x ~ 0.4x		
光学倍率		0.3x	0.35x	0.4x
视野 (VxH)	2/3"	23.7 x 28.0 mm	20.3 x 24.0 mm	17.8 x 21.0 mm
	1/2"	16.0 x 21.3 mm	13.7 x 18.3 mm	12.0 x 16.0 mm
	1/3"	12.0 x 16.0 mm	10.3 x 13.7 mm	9.0 x 12.0 mm
WD		212.1 mm	175.1 mm	147.8 mm
物像间距离O/I		353.6 mm	316.6 mm	289.3 mm
实效F *光圈全开		4.3	4.7	5.0
NA		0.035	0.038	0.040
景深 *1		3.8 mm	3.0 mm	2.5 mm
TV失真 (2/3")		0.02 %	-0.01 %	-0.03 %
适合芯片		2/3"		
滤镜口径		M 49 P = 0.75		
重量		360 g		

\*1: 允许偏差±0.04mm

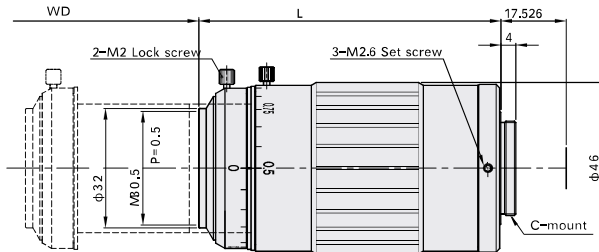
### 模拟同轴组合



通过安装 HM-305, 可以用同轴落射式照明来取得图像。

## TET0513

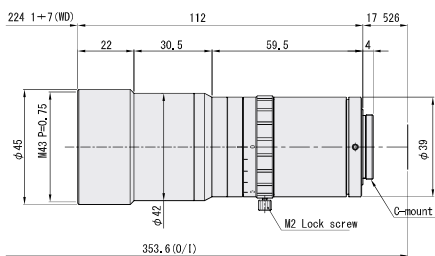
光学倍率	X0.5	X0.6	X0.7	X0.8	X0.9	X1.0	X1.1	X1.2	X1.3
WD	171.7	151.3	136.7	125.6	117.1	110.3	104.6	100	95.9
L长	81	86.8	92.9	99.2	105.3	111.4	117.6	123.8	130.1



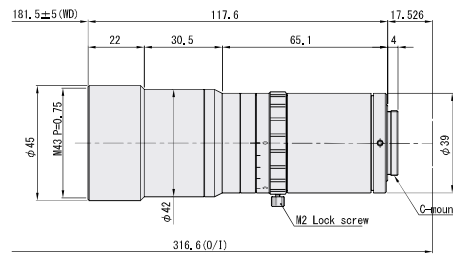
规格		TET0513		
可变倍率范围		0.5x ~ 1.3x		
光学倍率		0.5x	1.0x	1.3x
视野 (VxH)	2/3"	14.2 x 16.8 mm	7.1 x 8.4 mm	5.5 x 6.5 mm
	1/2"	9.6 x 12.8 mm	4.8 x 6.4 mm	3.7 x 4.9 mm
	1/3"	7.2 x 9.6 mm	3.6 x 4.8 mm	2.8 x 3.7 mm
WD		171.7 mm	110.3 mm	95.9 mm
物像间距离O/I		270.2 mm	239.2 mm	243.5 mm
实效F *光圈全开		5.3	8.3	10.2
NA		0.047	0.060	0.064
景深 *1		1.7 mm	0.7 mm	0.5 mm
TV失真 (2/3")		0.03 %	0.01 %	0.01 %
适合芯片		2/3"		
滤镜口径		M 30.5 P = 0.5		
重量		255 g		

\*1: 允许偏差±0.04mm

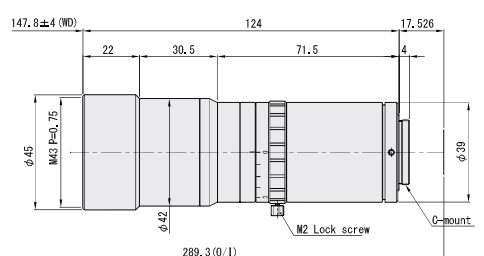
## TET03-220



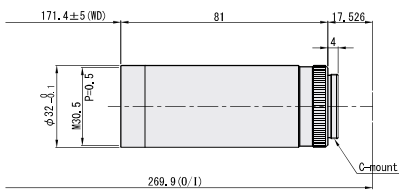
## TET035-180



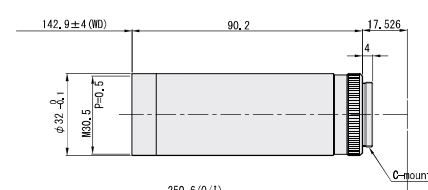
## TET04-150



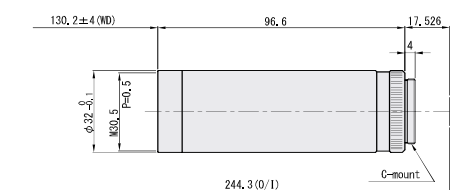
## TET05-170



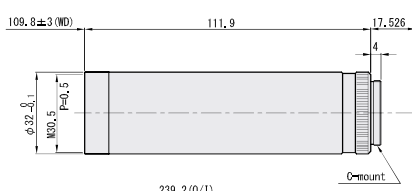
## TET065-140



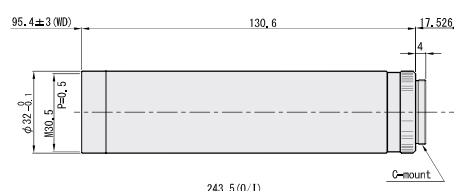
## TET075-130



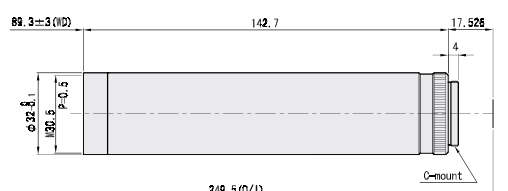
## TET1-110



## TET1.3-10



## TET1.5-90



规格	TET03-220	TET035-180	TET04-150	TET05-170	TET065-140	TET075-130	TET1-110	TET1.3-100	TET1.5-90
光学倍率	0.3x ± 5 %	0.35x ± 5 %	0.4x ± 5 %	0.5x ± 5 %	0.65x ± 5 %	0.75x ± 5 %	1.0x ± 5 %	1.3x ± 5 %	1.5x ± 5 %
视野 (VxH)	2/3"	23.7 x 28.0 mm	20.3 x 24.0 mm	17.8 x 21.0 mm	14.2 x 16.8 mm	10.9 x 12.9 mm	7.1 x 8.4 mm	5.5 x 6.5 mm	4.7 x 5.6 mm
	1/2"	16.0 x 21.3 mm	13.7 x 18.3 mm	12.0 x 16.0 mm	9.6 x 12.8 mm	6.4 x 8.5 mm	4.8 x 6.4 mm	3.7 x 4.9 mm	3.2 x 4.3 mm
	1/3"	12.0 x 16.0 mm	10.3 x 13.7 mm	9.0 x 12.0 mm	7.2 x 9.6 mm	5.5 x 7.4 mm	3.6 x 4.8 mm	2.8 x 3.7 mm	2.4 x 3.2 mm
WD	224.1 mm ± 7	181.5 mm ± 5	147.8 mm ± 4	171.4 mm ± 5	142.9 mm ± 4	130.2 mm ± 4	109.8 mm ± 3	95.4 mm ± 3	89.3 mm ± 3
物像间距离O/I	353.6 mm	316.6 mm	289.3 mm	269.9 mm	250.6 mm	244.3 mm	239.2 mm	243.5 mm	249.5 mm
实效F	4.3	4.7	5.0	5.3	6.2	6.8	8.3	10.2	11.4
NA	0.035	0.038	0.040	0.047	0.053	0.055	0.060	0.064	0.066
景深 *1	3.8 mm	3.0 mm	2.5 mm	1.7 mm	1.2 mm	1.0 mm	0.7 mm	0.5 mm	0.4 mm
TV失真 (2/3")	0.02 %	-0.01 %	-0.03 %	0.03 %	0.02 %	0.02 %	0.01 %	0.01 %	0.02 %
适合芯片	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"
滤镜口径	M 43 P = 0.75	M 43 P = 0.75	M 43 P = 0.75	M 30.5 P = 0.5	M 30.5 P = 0.5	M 30.5 P = 0.5	M 30.5 P = 0.5	M 30.5 P = 0.5	M 30.5 P = 0.5
重量	245 g	250 g	255 g	80 g	86 g	90 g	96 g	104 g	116 g

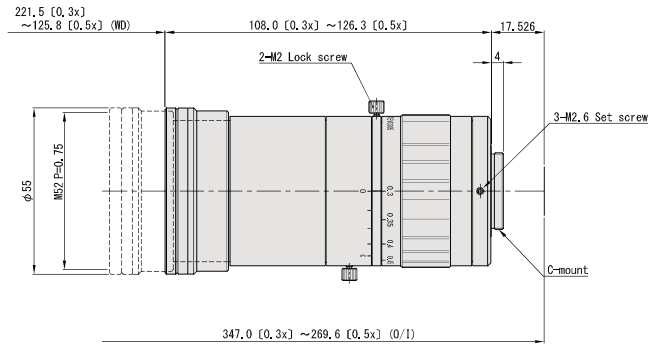
1.1"Variable Magnification Telecentric Macro Lens / 对应1"芯片的变倍远心镜头

**TEF Series** 1.1" 1" 1/1.2"

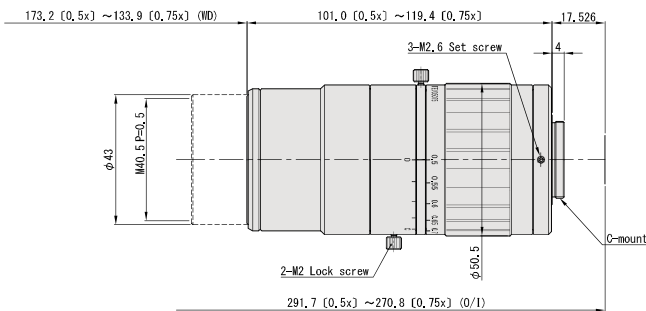
可对应1.1"芯片，3.45um像素。画质均匀度高，光圈可调。



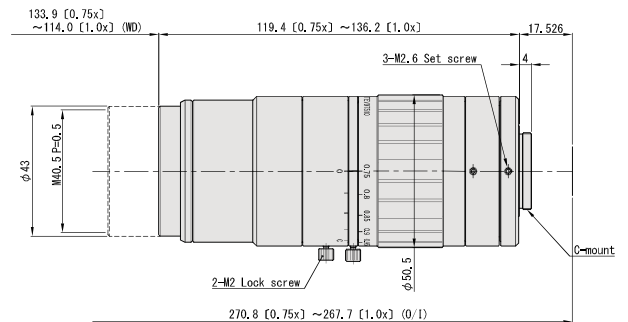
**TEF0305**



**TEF05075**



**TEF07510**

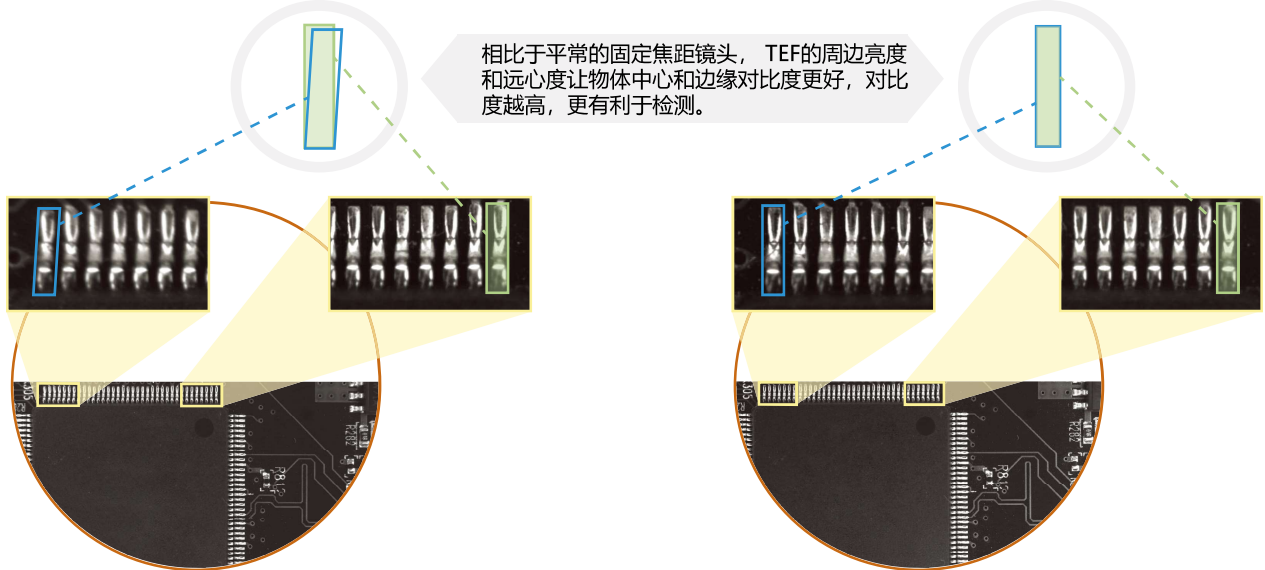


■ 图像对比

平常的固定焦距镜头

TEF 系列

相比于平常的固定焦距镜头，TEF的周边亮度和远心度让物体中心和边缘对比度更好，对比度越高，更有利于检测。



规格	TEF0305			TEF05075		TEF07510		
可变倍率范围	0.3x ~ 0.5x			0.5x ~ 0.75x		0.75x ~ 1.0x		
光学倍率	0.3x	0.4x	0.5x	0.5x	0.75x	0.75x	1.0x	
视野 (VxH)	1.1"	34.7 x 47.0 mm	26.0 x 35.3 mm	20.8 x 28.2 mm	20.8 x 28.2 mm	13.9 x 18.8 mm	13.9 x 18.8 mm	10.4 x 14.1 mm
	1"	37.5 x 37.5 mm	28.2 x 28.2 mm	22.5 x 22.5 mm	22.5 x 22.5 mm	15.0 x 15.0 mm	15.0 x 15.0 mm	11.3 x 11.3 mm
	2/3"	23.7 x 28.0 mm	17.8 x 21.0 mm	14.2 x 16.8 mm	14.2 x 16.8 mm	9.5 x 11.2 mm	9.5 x 11.2 mm	7.1 x 8.4 mm
WD	221.5 mm	162.0 mm	125.8 mm	173.2 mm	133.9 mm	133.9 mm	114.0 mm	
物像间距离O/I	347.0 mm	296.7 mm	269.6 mm	291.7 mm	270.8 mm	270.8 mm	267.7 mm	
实效F *光圈全开	4.3	5.3	6.2	5.0	6.8	6.8	8.5	
NA	0.035	0.038	0.040	0.050	0.055	0.055	0.059	
景深 允许轴乱值@0.04mm	3.8 mm	2.6 mm	2.0 mm	1.6 mm	1.0 mm	1.0 mm	0.7 mm	
TV失真 (2/3")	0.03 %	-0.04 %	-0.04 %	0.06 %	0.04 %	0.04 %	0.02 %	
适合芯片	1.1"			1.1"		1.1"		
滤镜口径	M 52 P = 0.75			M 40.5 P = 0.5		M 40.5 P = 0.5		
重量	390 g			350 g		370 g		

# TLL Series

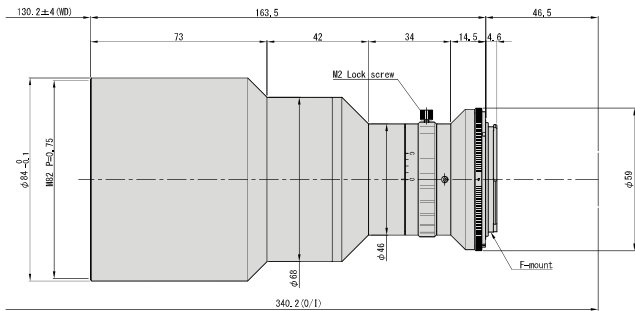


像圈21~43φ。高解像度、高对比度、高远心度。  
 全机型为F口型。  
 通过可变光圈的机构，可根据平衡来调整景深与对比度。

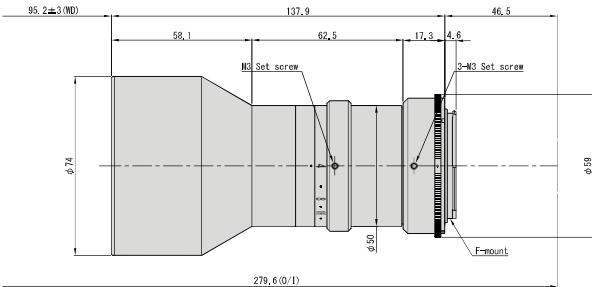
## 像圈对应表

比特		2048	2048	4096	7450	4096	6144
像素大小 (μm)		10	14	7	4.7	10	7
像圈 φ(mm)		20.5	28.7	28.7	35	41	43
TLL03-130F	22	●					
TLL04-100F	20,24	●					
TLL05-130F	22	●					
TLL07-150F	21	●					
TLL1-130F	22	●					
TLL075-70F	35	●	●	●	●		
TLL075-70FCO	35	●	●	●	●		
TLL1-70F	35	●	●	●	●		
TLL1-70FCO	35	●	●	●	●		
TLL2-70F	35	●	●	●	●		
TLL2-70FCO	35	●	●	●	●		
TLL2-60F	35	●	●	●	●		
TLL3.3-45F	35	●	●	●	●		
TLL1-130F45	45	●	●	●	●	●	●
TLL1-130FCO45	45	●	●	●	●	●	●
TLL2-130F	45	●	●	●	●	●	●
TLL2-130FCO	45	●	●	●	●	●	●
TLL4-50FCO	25	●	●	●	●	●	●
TLL5-50FCO	28,6	●	●	●			
TLL6-50FCO	28,6	●	●	●			
TLL7-50FCO	28,6	●	●	●			

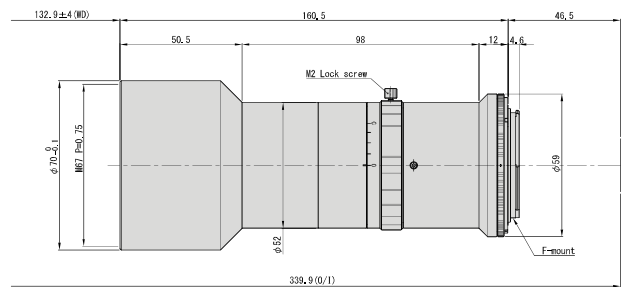
### TLL03-130F



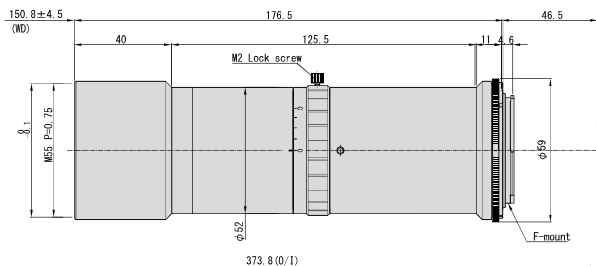
### TLL04-100F



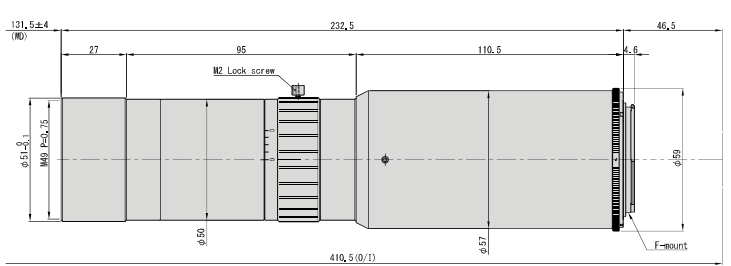
### TLL05-130F



### TLL07-150F

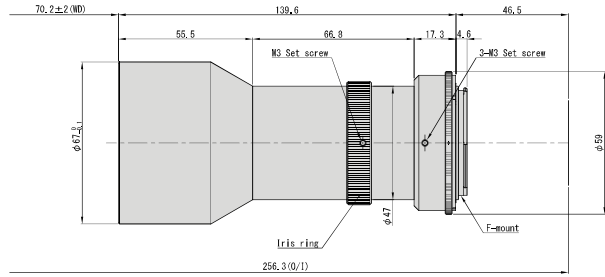


### TLL1-130F

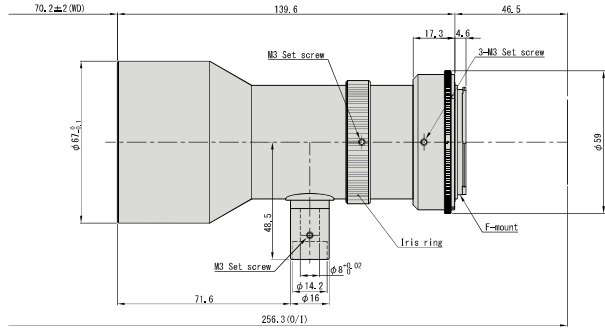


规格	TLL03-130F	TLL04-100F	TLL05-130F	TLL07-150F	TLL1-130F
光学倍率	0.3x ±5%	0.4x ±5%	0.5x ±5%	0.7x ±5%	1.0x ±5%
视野	73.3 mm	51.2 mm	44.0 mm	30.0 mm	22.0 mm
WD	130.2 mm ±4	95.2 mm ±3	132.9 mm ±4	150.8 mm ±4.5	131.5 mm ±4
物像间距离O/I	340.2 mm	279.6 mm	339.9 mm	373.8 mm	410.5 mm
实效F *光圈全开	5.8	4.0	4.6	5.3	6.3
NA	0.026	0.050	0.055	0.066	0.080
景深 允许轴乱值±0.04mm	5.2 mm	2.0 mm	1.5 mm	0.9 mm	0.5 mm
TV失真	0.01%	0.02%	-0.04%	0.01%	0.00%
像圈	φ22 mm	φ20.48 mm	φ22 mm	φ21 mm	φ22 mm
滤镜口径	M 82 P = 0.75		M 67 P = 0.75	M 55 P = 0.75	M 49 P = 0.75
重量	960 g	660 g	730 g	580 g	610 g

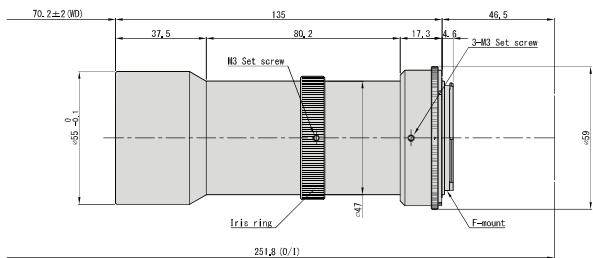
TLL075-70F



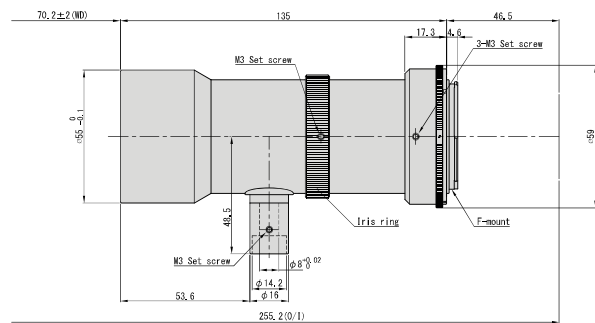
TLL075-70FCO



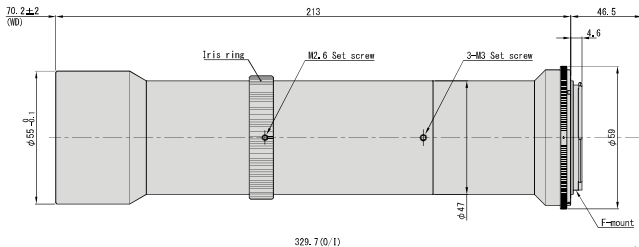
TLL1-70F



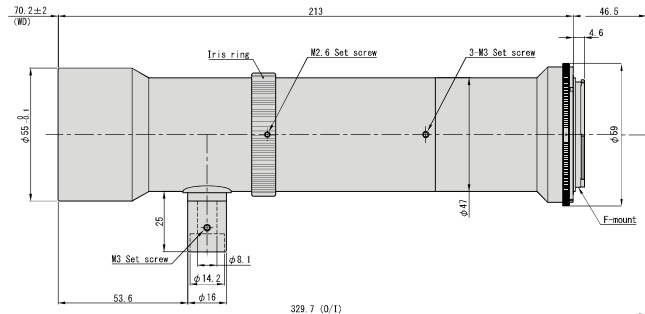
TLL1-70FCO



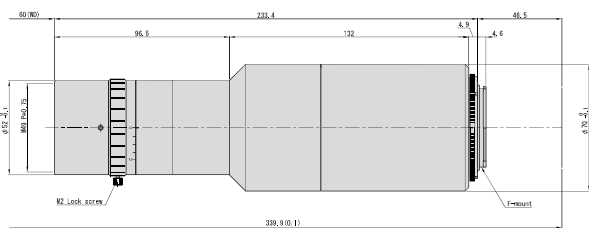
TLL2-70F



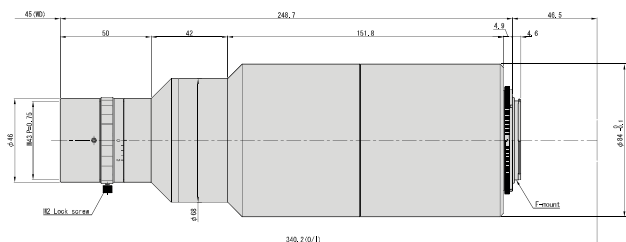
TLL2-70FCO



TLL2-60F

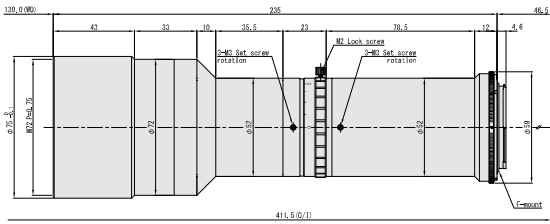


TLL3.3-45F

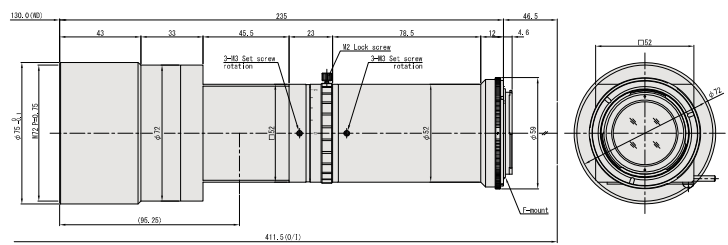


规格	TLL075-70F	TLL075-70FCO	TLL1-70F	TLL1-70FCO	TLL2-70F	TLL2-70FCO	TLL2-60F	TLL3.3-45F
光学倍率	0.75x ±5 %	0.75x ±5 %	1.0x ±5 %	1.0x ±5 %	2.0x ±5 %	2.0x ±5 %	2.0x ±5 %	3.3x ±5 %
视野	46.7 mm	46.7 mm	35 mm	35 mm	17.5 mm	17.5 mm	17.5 mm	10.6 mm
WD	70.2 mm ±2	70.2 mm ±2	70.2 mm ±2	70.2 mm ±2	70.2 mm ±2	70.2 mm ±2	60.0 mm	45.0 mm
物像间距离O/I	256.3 mm	259.7 mm	251.8 mm	255.2 mm	326.3 mm	329.7 mm	339.9 mm	340.2 mm
实效F *光圈全开	5.4	5.4	6.3	6.3	12.5	12.5	9.1	19.2
NA	0.070	0.070	0.080	0.080	0.080	0.080	0.110	0.086
景深 允许错乱度±0.04mm	0.8 mm	0.8 mm	0.5 mm	0.5 mm	0.3 mm	0.3 mm	0.2 mm	0.1 mm
TV失真	0.10 %	0.10 %	0.03 %	0.03 %	0.05 %	0.05 %	0.02 %	-0.05 %
像圈	φ35 mm	φ35 mm	φ35 mm	φ35 mm	φ35 mm	φ35 mm	φ35 mm	φ35 mm
照明方式	—	Built-in	—	Built-in	—	Built-in	—	—
滤镜口径	—	—	—	—	—	—	M 49 P = 0.75	M 43 P = 0.75
重量	740 g	770 g	550 g	570 g	670 g	690 g	880 g	1100 g

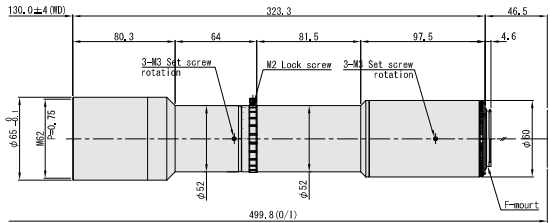
TLL1-130F45



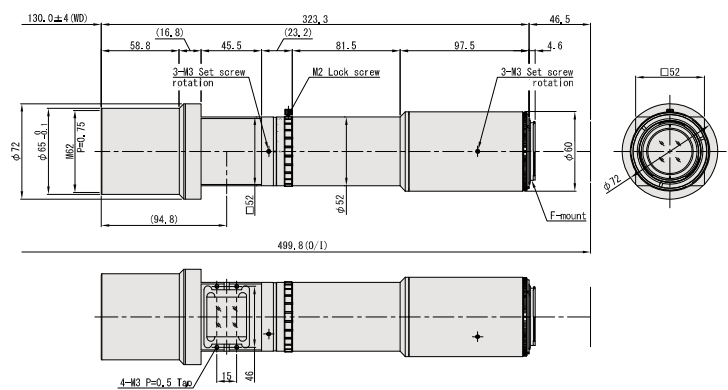
TLL1-130FCO45



TLL2-130F

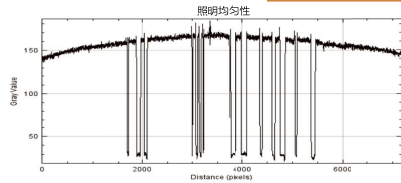


TLL2-130FCO

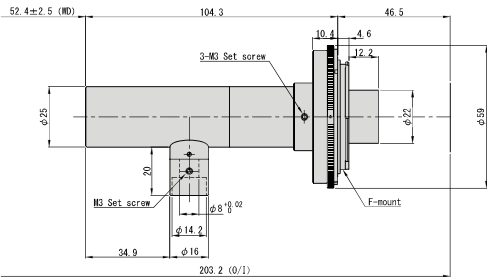


内置同轴采用面积型LED照明，均匀度高

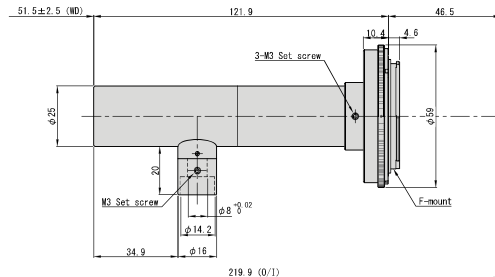
TLL1-130CO-45/FS  
TLL2-130CO-45/FS



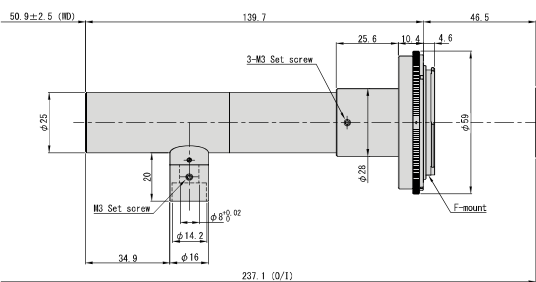
TLL4-50FCO



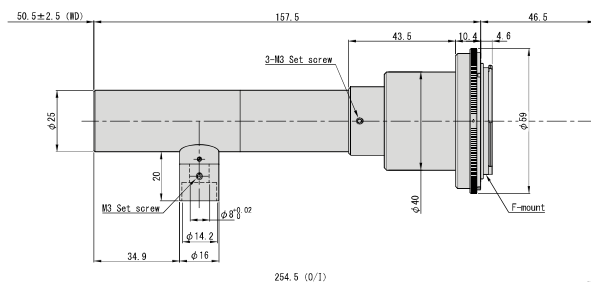
TLL5-50FCO



TLL6-50FCO



TLL7-50FCO



规格	TLL1-130F45	TLL1-130FCO45	TLL2-130F	TLL2-130FCO	TLL4-50FCO	TLL5-50FCO	TLL6-50FCO	TLL7-50FCO
光学倍率	1.0x ±5 %	1.0x ±5 %	2.0x ±5 %	2.0x ±5 %	4.0x ±5 %	5.0x ±5 %	6.0x ±5 %	7.0x ±5 %
视野	45.0 mm	45.0 mm	∅22.5 mm	∅22.5 mm	6.3 mm	5.7 mm	4.8 mm	4.1 mm
WD	130.0 mm	130.0 mm	130.0 mm ±4	130.0 mm ±4	52.4 mm ±2.5	51.5 mm ±2.5	50.9 mm ±2.5	50.5 mm ±2.5
物像间距离O/I	411.5 mm	411.5 mm	499.8 mm	499.8 mm	203.2 mm	219.9 mm	237.1 mm	254.5 mm
实效F *光圈全开	6.4	6.4	8.3	8.3	20.0	25.0	30.0	35.0
NA	0.078	0.078	0.120	0.120	0.100	0.100	0.100	0.100
景深 允许误差±0.04mm	0.5 mm	0.5 mm	0.2 mm	0.2 mm	0.1 mm	0.08 mm	0.07 mm	0.06 mm
TV失真	0.04 %	0.04 %	0.06 %	0.06 %	—	—	—	—
周边光量(Y=22.5)	97 %	97 %	99 %	99 %	0.27 %	0.08 %	0.01 %	0.02 %
像圈	∅45 mm	∅45 mm	∅45 mm	∅45 mm	∅25 mm	∅28.6 mm	∅28.6 mm	∅28.6 mm
照明方式	—	Built-in	—	Built-in	Built-in	Built-in	Built-in	Built-in
滤镜口径	M 72 P = 0.75	M 72 P = 0.75	M 62 P = 0.75	M 62 P = 0.75	—	—	—	—
重量	1180 g	1240 g	1500 g	1580 g	180 g	185 g	195 g	210 g