


Lenses / Auto Extension Rings for Objective Lenses

Macro Lens – Low Magnification / Macro Lens – High Magnification / Objective Lenses

About Selection, Refer to P.2136.

Macro Lens – Low Magnification Type

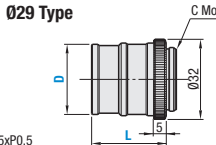


RoHS10

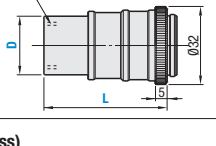
LFSL

Ø29 Type

Magnification 0.3



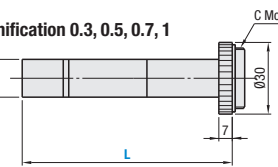
Magnification 0.5, 1.0



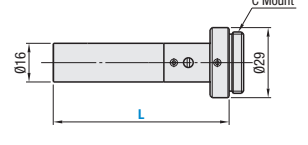
M22.5xP0.5

Ø16 Type

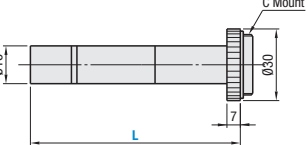
Magnification 0.3, 0.5, 0.7, 1



LFSHA (Precision Class)



LFSHB (General Purpose)



Material: Aluminum (Body) Surface Treatment: Black Anodize (Body)

Low Magnification Type

Type	Magnification	Part Number		WD	Resolution μ m	Depth of Field mm	Weight g
		D	L				
LFSL	0.3	16	50	242	14.5	4.38	23
			35	105	6.4	1.19	20
			42	118	7.2	1.35	21.5
	0.5	16	50	139	8.6	1.55	23
			60	162	9.8	1.82	25
			29	50.5	90	8	2.4
	0.7	16	41	84	5.2	0.67	21.5
			69	129	7.9	1.03	26
	1	16	50	68	4.2	0.4	23
			57.5	77	4.7	0.45	25
			68.5	90	5.5	0.52	26
			99	128	7.4	1.2	35
29			92.6	90	5	0.8	68


High Magnification Type

Type	Magnification	Part Number		WD	Resolution μ m	Depth of Field mm	Weight g
		L	D				
LFSHA	2	72.8	75	3.3	0.4	35	
	4	103.8	75	0.28	0.2	40	
LFSHB	2	90	56	3.4	0.28	33	
	4	113	63	3.9	0.32	40	
	6	125	77	4.7	0.38	43	
	4	158	45	2.8	0.12	53	
	6	198	52	3.2	0.14	60	

Part Number Example

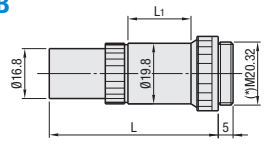
Type	Magnification	D	L
LFSL	0.5	29	50.5
LFSHB	4	-	158

Objective Lenses




RoHS10

LTAB



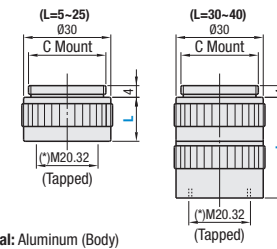
Material: Aluminum (Body)
Surface Treatment: Black Anodize (Body)

Extension Attachment for Objective Lenses



RoHS10

LTABA



Material: Aluminum (Body)
Surface Treatment: Black Anodize (Body)

(*) Thread size specific to microscope-related products
The combination of LTAB and LTABA can be used as the C Mount FA lens. (Refer to P.2138-2141)

Objective Lenses

Type	Magnification	Resolution μ m	Depth of Field mm	L	L ₁	Weight g
LTAB	3	4.8	0.124	42	7	24
	4	3.7	0.074	56	21	28
	6	2.4	0.031	71.5	34	37
	8	2.2	0.024	79	41	43

Data in the above table is the values for lens only and it will be changed depending on the combination of auto extension ring. Refer to P.2140.

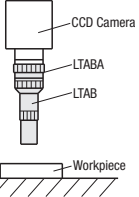
Auto Extension Rings for Objective Lenses

Type	L	Weight g
LTABA	5	7
	10	12
	15	17
	20	22
	25	27
	30	28
	35	32.5
	40	37

Part Number Example

Type	L
LTAB3	30
LTABA10	10

Application Example



Most suitable for cost sensitive applications not requiring high quality imaging.

Objective Lenses / Auto Extension Rings Mounting Conversion Chart

Field of View & Monitor Magnification with Auto Extension Ring Mounted to the Objective Lens

Auto Extension Ring No.	Objective Lenses No.	CCD Camera Size & Field of View (Length x Width mm)			CCD Camera Size & Monitor Magnification (9 inch Monitor)			Shooting Distance WD
		2/3 Inch	1/2 Inch	1/3 Inch	2/3 Inch	1/2 Inch	1/3 Inch	
5	3	32 x 41	24 x 31	18 x 24	4	6	7	330
	4	8.2 x 10.8	6 x 8	4.8 x 6.2	16	21	28	100
	6	3.3 x 4.5	2.6 x 3.4	2 x 2.6	38	50	67	47
	8	2.2 x 2.9	1.6 x 2.2	1.3 x 1.7	59	78	104	33
10	3	20.5 x 27	15.5 x 20.5	12 x 15.5	6	8	11	230
	4	7 x 9.3	5.3 x 7	4 x 5.3	18	24	32	93
	6	3.1 x 4	2.4 x 3.2	1.8 x 2.4	41	54	73	45
	8	2 x 2.7	1.6 x 2	1.2 x 1.6	63	83	110	32
15	3	15.4 x 20	11 x 15	9 x 11.5	9	12	15	181
	4	6.2 x 8	4.7 x 6.1	3.5 x 4.8	21	28	37	86
	6	2.9 x 3.8	2.2 x 2.9	1.6 x 2.2	45	59	77	43
	8	1.9 x 2.5	1.4 x 1.9	1.1 x 1.5	68	89	117	32
20	3	12 x 16	9 x 12	7 x 9	11	14	19	153
	4	5.5 x 7.1	4.1 x 5.4	3.1 x 4.1	24	31	42	81
	6	2.7 x 3.4	2 x 2.7	1.5 x 2	48	65	83	42
	8	1.8 x 2.4	1.4 x 1.8	1 x 1.4	74	96	127	31
25	3	10 x 13	7.5 x 10	5.7 x 7.5	13	17	23	135
	4	5 x 6.3	3.8 x 5	2.9 x 3.8	26	34	46	77
	6	2.5 x 3.2	1.9 x 2.5	1.4 x 1.9	51	69	89	41
	8	1.7 x 2.2	1.3 x 1.7	1.0 x 1.3	77	100	134	31
30	3	8.5 x 11	6.5 x 8.5	5 x 6.5	16	20	27	122
	4	4.5 x 5.9	3.3 x 4.4	2.6 x 3.4	29	38	51	73
	6	2.3 x 3	1.8 x 2.3	1.3 x 1.8	54	73	96	40
	8	1.6 x 2.1	1.2 x 1.6	0.9 x 1.2	81	107	138	30
35	3	7.4 x 9.8	5.7 x 7.3	4.2 x 5.7	18	23	30	112
	4	4 x 5.3	3 x 4	2.3 x 3.1	31	42	55	70
	6	2.2 x 2.9	1.7 x 2.2	1.3 x 1.7	58	77	103	39
	8	1.5 x 2	1.2 x 1.5	0.9 x 1.2	86	113	148	30
40	3	6.6 x 8.5	5 x 6.5	3.9 x 5	20	26	34	105
	4	3.8 x 5	2.8 x 3.8	2.2 x 2.9	35	45	59	68
	6	2.1 x 2.8	1.6 x 2.1	1.2 x 1.6	61	81	109	39
	8	1.5 x 1.9	1.1 x 1.5	0.8 x 1.1	89	118	154	30

Monitor Magnification: Magnification of each lens and expansion of magnification on the monitor with the actual size of CCD camera.
Data in the above table are only for reference, which are obtained through our actual measurements using 9 inches monitor.
Note that when the monitor size is different, the value will be different because the size of monitor and monitor magnification are proportional.
CCD Camera Used: 400,000 Pixels, Resolution: 570 Pairs in TV (Horizontal Resolution)