

BTL SERIES

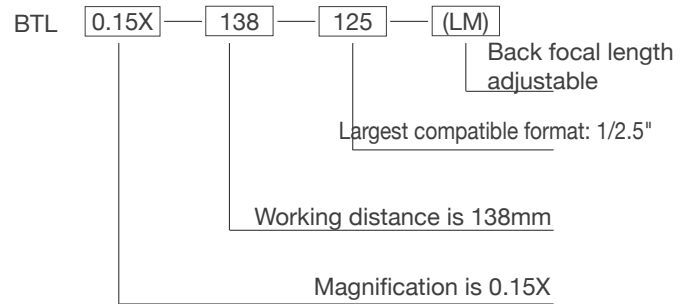
NEW



PRODUCT FEATURES

1. Optimized for 1/2.5"~1.1" C-Mount cameras;
2. Largest FOV from 26mm upto 300mm;
3. Excellent resolution for high pixel cameras;
4. Low distortion, good telecentricity, big aperture and big depth of field for high end application.

NAMING RULES



OVERVIEW

BTL Series Magnification Crosstab

Sensor Size FOV (mm) Mag X	1/2.5" BTL-125	1/2" BTL-12	1/1.8" BTL-118	2/3" BTL-23	1" BTL-H1	1.1" BTL-H1.1	4/3" BTL-H2	1.75" BTL-175	2" BTL-21	39mm BTL-71M	44mm BTL-FF	59mm BTL-16K	WD(mm)
26	0.277	0.308	0.346	0.438	0.638	0.708	0.923	1.115	/	/	/	/	73
36	0.2	0.222	0.25	0.317	0.46	0.511	0.67	0.806	0.917	1.083	/	/	110
42	0.171	0.19	0.214	0.271	0.395	0.438	0.571	0.69	0.786	0.929	1.048	/	118
48	0.15	0.167	0.188	0.238	0.346	0.383	0.5	0.604	0.688	0.813	0.92	/	128
56	0.129	0.143	0.161	0.204	0.296	0.329	0.429	0.518	0.589	0.696	0.785	/	138
64	0.113	0.125	0.14	0.178	0.258	0.287	0.375	0.453	0.516	0.609	0.688	/	189
72	0.1	0.111	0.125	0.158	0.231	0.256	0.333	0.403	0.458	0.542	0.611	/	178
80	0.09	0.1	0.113	0.142	0.206	0.23	0.3	0.363	0.41	0.488	0.55	/	228
90	0.08	0.089	0.1	0.127	0.184	0.204	0.267	0.322	0.367	0.433	0.489	0.656	208
100	0.072	0.08	0.09	0.114	0.166	0.184	0.24	0.29	0.33	0.39	0.44	/	258
120	0.06	0.067	0.075	0.095	0.138	0.153	0.2	0.242	0.275	0.325	0.367	/	280
150	0.048	0.053	0.06	0.076	0.11	0.123	0.16	0.193	0.22	0.26	0.293	0.393	300
190	0.038	0.042	0.047	0.06	0.087	0.097	0.126	0.153	0.174	0.205	0.23	0.311	330
240	0.03	0.033	0.038	0.048	0.069	0.077	0.1	0.121	0.138	0.163	0.183	0.246	410
300	0.024	0.027	0.03	0.038	0.055	0.061	0.08	0.097	0.11	0.13	0.147	0.197	465
Mount	C	C	C	C	C	C	C/F	F	F	F	F	M72	

BTL-12 SERIES

1/2"



Model No. ¹	Optical specs										Mechanical specs		
	FOV (Φmm)	Mag. (x)	WD (mm) ²	Max. Sensor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm) ³	Distortion (% max) ⁴	Telecentricity (° max) ⁵	I/O (mm) ⁶	Length (mm)	Mount	Weight (kg)
BTL-0.308X-73-12(LM)	26	0.308	73±1	8.0(1/2")	4.2	>175	±4.6@F11	<0.1	<0.1	198±1	107.2	C-Mount	0.3
BTL-0.222X-110-12(LM)	36	0.222	110±2	8.0(1/2")	4.2	>190	±8.9@F11	<0.1	<0.1	255±2	127.2	C-Mount	0.4
BTL-0.19X-118-12(LM)	42	0.190	118±3	8.0(1/2")	4.2	>210	±12.1@F11	<0.1	<0.1	248±3	112.7	C-Mount	0.4
BTL-0.167X-128-12(LM)	48	0.167	128±3	8.0(1/2")	4.2	>200	±15.7@F11	<0.1	<0.1	272±3	126.2	C-Mount	0.4
BTL-0.167X-138-12(LM)	48	0.167	138±3	8.0(1/2")	4.7	>190	±15.7@F11	<0.1	<0.1	267±3	111.2	C-Mount	0.4
BTL-0.143X-138-12(LM)	56	0.143	138±3	8.0(1/2")	4.2	>210	±21.5@F11	<0.1	<0.1	304±3	148.7	C-Mount	0.6
BTL-0.125X-189-12(LM)	64	0.125	189±3	8.0(1/2")	4.2	>195	±28.1@F11	<0.1	<0.1	344±3	137.2	C-Mount	0.8
BTL-0.111X-178-12(LM)	72	0.111	178±3	8.0(1/2")	4.2	>215	±35.7@F11	<0.1	<0.1	377±3	181.2	C-Mount	1
BTL-0.1X-228-12(LM)	80	0.100	228±4	8.0(1/2")	4.7	>195	±44@F11	<0.1	<0.1	417±4	171.1	C-Mount	1.5
BTL-0.089X-208-12(LM)	90	0.089	208±3	8.0(1/2")	4.2	>210	±55.5@F11	<0.1	<0.1	432±3	206.2	C-Mount	1.6
BTL-0.08X-258-12(LM)	100	0.080	258±4	8.0(1/2")	4.2	>210	±68.7@F11	<0.1	<0.1	505±4	229.6	C-Mount	3
BTL-0.067X-280-12(LM)	120	0.067	280±5	8.0(1/2")	4.2	>210	±98@F11	<0.1	<0.1	569±5	271.1	C-Mount	4.1
BTL-0.053X-300-12(LM)	150	0.053	300±5	8.0(1/2")	4.2	>210	±156@F11	<0.1	<0.1	631±5	313.2	C-Mount	5.6
BTL-0.042X-330-12(LM)	190	0.042	330±5	8.0(1/2")	4.2	>210	±249@F11	<0.1	<0.1	750±5	402.5	C-Mount	11
BTL-0.033X-410-12(LM)	240	0.033	410±6	8.0(1/2")	4.2	>200	±404@F11	<0.1	<0.1	981±6	553.5	C-Mount	25.5
BTL-0.027X-465-12(LM)	300	0.027	465±6	8.0(1/2")	4.2	>205	±603@F11	<0.1	<0.1	1105±6	622.2	C-Mount	46.5

1. The back focal length of model with (LM) is adjustable.

2. Working distance: distance between the front end of the mechanics and the object. Set this distance within the nominal value for maximum resolution and minimum distortion.

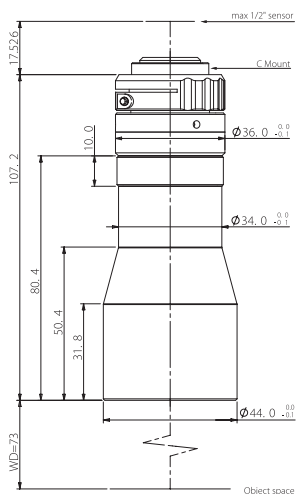
3. At the borders of the field depth the image can be still used for measurement.

4. Percent deviation of the real image compared to an ideal, undistorted image: maximum (guaranteed) values are listed.

5. Maximum slope of chief rays inside the lens: when converted to milliradians, it gives the maximum measurement error for any millimeter of object displacement. Maximum (guaranteed) values are listed.

6. I/O: distance between the sensor(image) and the object.

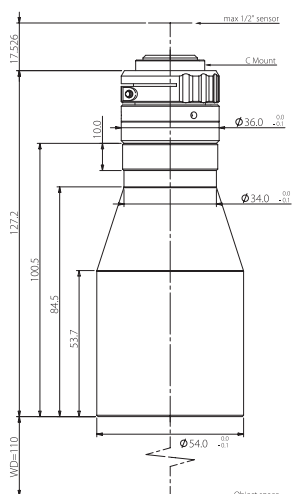
BTL-0.308X-73-12(LM)



FOV(Φmm)	26
Mag.(x)	0.308
WD(mm)	73±1
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>175
DoF(mm)	±4.6@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	198±1
Length(mm)	107.2
Mount	C-Mount
Weight(kg)	0.3

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	20.9x15.0

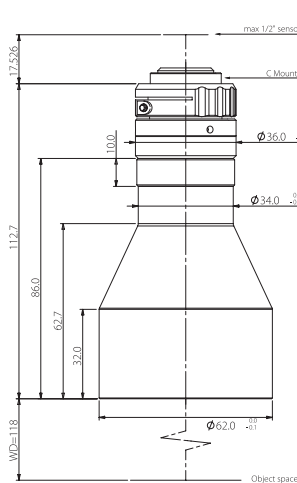
BTL-0.222X-110-12(LM)



FOV(Φmm)	36
Mag.(x)	0.200
WD(mm)	110±2
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>190
DoF(mm)	±8.9@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	255±2
Length(mm)	127.2
Mount	C-Mount
Weight(kg)	0.4

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	29.0x20.8

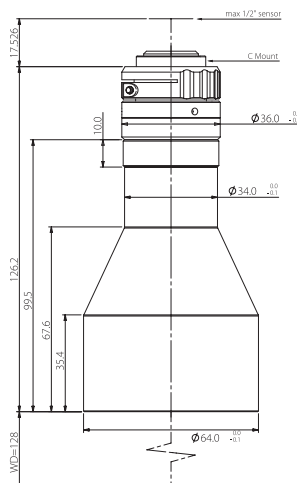
BTL-0.19X-118-12(LM)



FOV(Φmm)	42
Mag.(x)	0.190
WD(mm)	118±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±12.1@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	248±3
Length(mm)	112.7
Mount	C-Mount
Weight(kg)	0.4

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	33.9x24.3

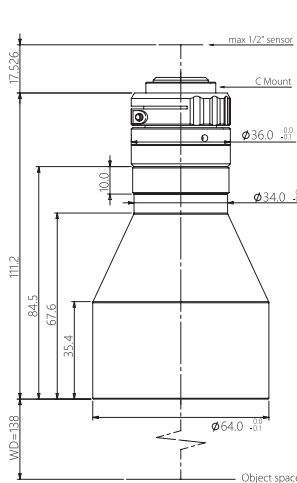
BTL-0.167X-128-12(LM)



FOV(Φmm)	48
Mag.(x)	0.167
WD(mm)	128±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>200
DoF(mm)	±15.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	272±3
Length(mm)	126.2
Mount	C-Mount
Weight(kg)	0.4

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	38.6x27.7

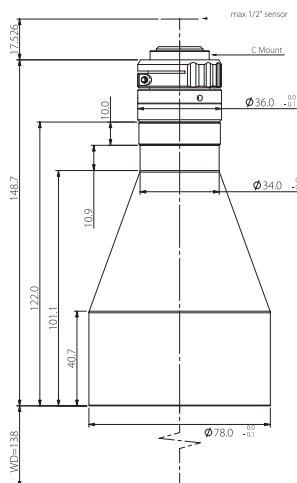
BTL-0.167X-138-12(LM)



FOV(Φmm)	48
Mag.(x)	0.167
WD(mm)	138±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.7
MTF30(lp/mm)	>190
DoF(mm)	±15.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	267±3
Length(mm)	111.2
Mount	C-Mount
Weight(kg)	0.4

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	38.6x27.7

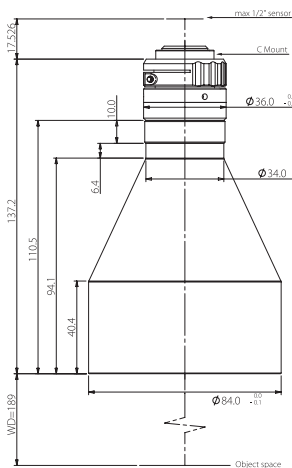
BTL-0.143X-138-12(LM)



FOV(Φmm)	56
Mag.(x)	0.143
WD(mm)	138±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±21.5@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	304±3
Length(mm)	148.7
Mount	C-Mount
Weight(kg)	0.6

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	45.0x32.3

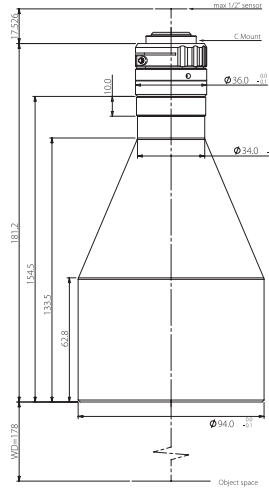
BTL-0.125X-189-12(LM)



FOV(Φmm)	64
Mag.(x)	0.125
WD(mm)	189±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>195
DoF(mm)	±28.1@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	344±3
Length(mm)	137.2
Mount	C-Mount
Weight(kg)	0.8

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	51.5x37.0

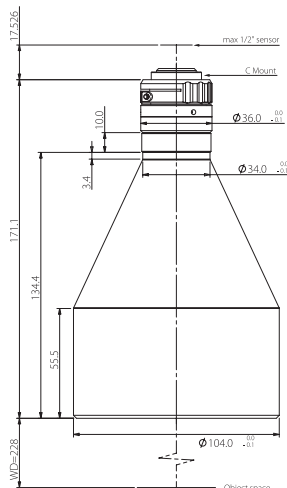
BTL-0.111X-178-12(LM)



FOV(Φmm)	72
Mag.(x)	0.111
WD(mm)	178±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>215
DoF(mm)	±35.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	377±3
Length(mm)	181.2
Mount	C-Mount
Weight(kg)	1.0

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	58.0x41.6

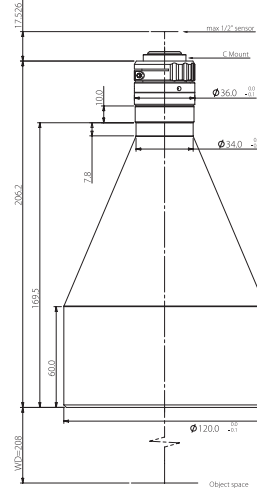
BTL-0.1X-228-12(LM)



FOV(Φmm)	80
Mag.(x)	0.100
WD(mm)	228±4
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.7
MTF30(lp/mm)	>195
DoF(mm)	±44@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	417±4
Length(mm)	171.1
Mount	C-Mount
Weight(kg)	1.5

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	64.4x46.2

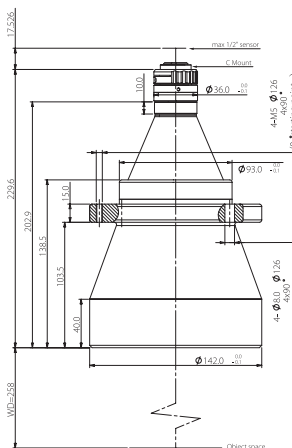
BTL-0.089X-208-12(LM)



FOV(Φmm)	90
Mag.(x)	0.089
WD(mm)	208±3
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±55.5@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	432±3
Length(mm)	206.2
Mount	C-Mount
Weight(kg)	1.6

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	72.4x51.9

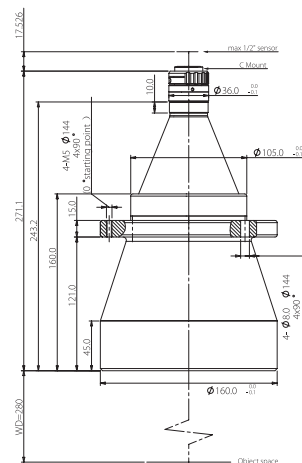
BTL-0.08X-258-12(LM)



FOV(Φmm)	100
Mag.(x)	0.080
WD(mm)	258±4
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±68.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	505±4
Length(mm)	229.6
Mount	C-Mount
Weight(kg)	3.0

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	80.5x57.8

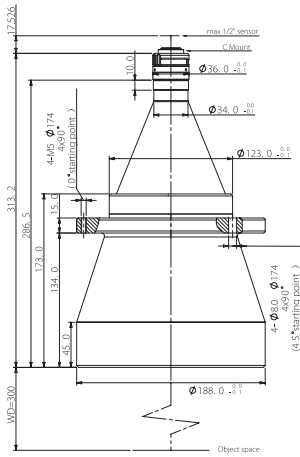
BTL-0.067X-280-12(LM)



FOV(Φmm)	120
Mag.(x)	0.067
WD(mm)	280±5
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±98@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	569.5
Length(mm)	271.1
Mount	C-Mount
Weight(kg)	4.1

Field of View(mmxmm)	
1/2.3" 9J003 (6.44x4.62)	96.1x69.0

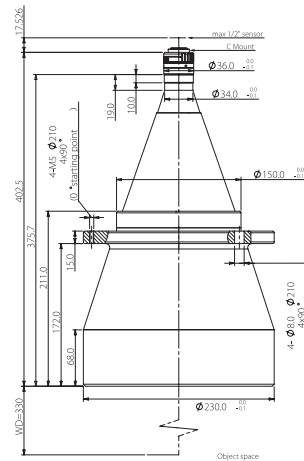
BTL-0.053X-300-12(LM)



FOV(Φmm)	150
Mag.(x)	0.053
WD(mm)	300±5
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±156@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	631±5
Length(mm)	313.2
Mount	C-Mount
Weight(kg)	5.6

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	121.5x87.2

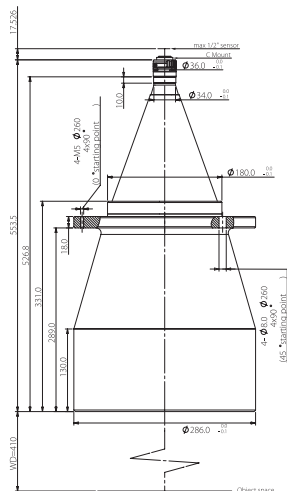
BTL-0.042X-330-12(LM)



FOV(Φmm)	190
Mag.(x)	0.042
WD(mm)	330±5
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>210
DoF(mm)	±249@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	750±5
Length(mm)	402.5
Mount	C-Mount
Weight(kg)	11.0

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	153.3x110.0

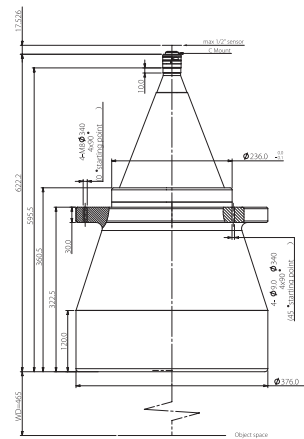
BTL-0.033X-410-12(LM)



FOV(Φmm)	240
Mag.(x)	0.033
WD(mm)	410±6
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>200
DoF(mm)	±404@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	981±6
Length(mm)	553.5
Mount	C-Mount
Weight(kg)	25.5

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	195.2x140.0

BTL-0.027X-465-12(LM)



FOV(Φmm)	300
Mag.(x)	0.027
WD(mm)	465±6
Max Sensor Size(Φmm)	8.0(1/2")
F/#	4.2
MTF30(lp/mm)	>205
DoF(mm)	±603@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	1105±6
Length(mm)	622.2
Mount	C-Mount
Weight(kg)	46.5

Field of View(mm xmm)	
1/2.3" 9J003 (6.44x4.62)	238.5x171.1