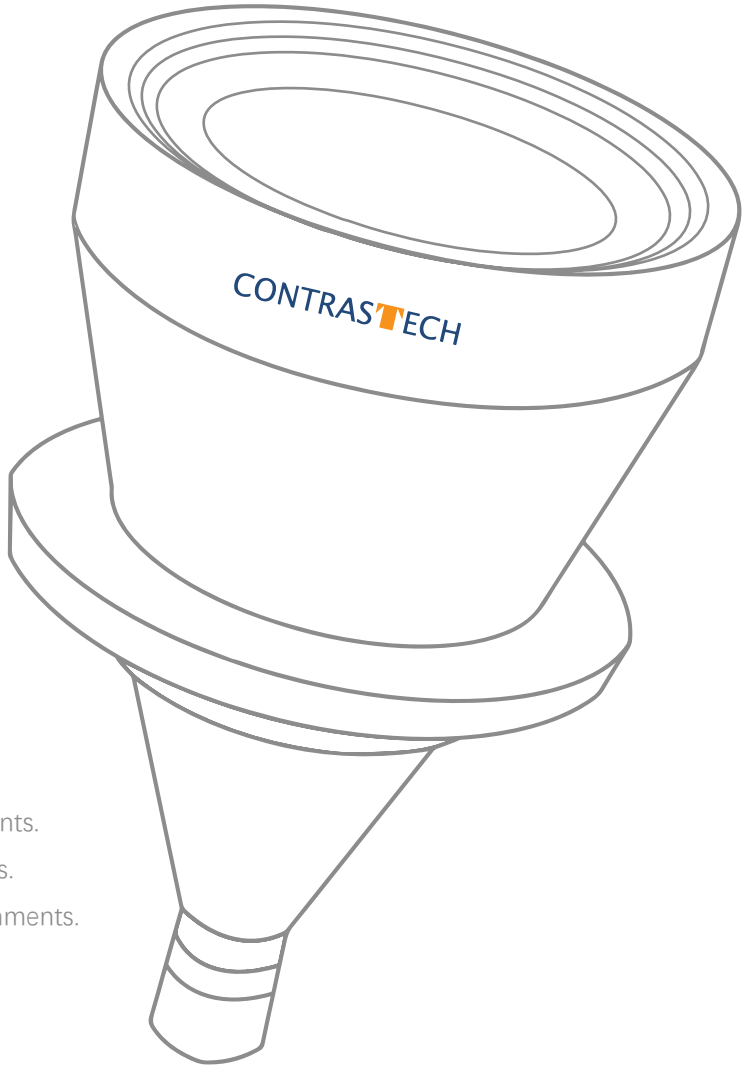
BTL-23 SERIES



MAIN FEATURES

- **High telecentricity** for thick object imaging.
- **Nearly zero distortion** for accurate measurements.
- **Excellent resolution** for high resolution cameras.
- **Simple and robust design** for industrial environments.

ABOUT US

Hangzhou Contrastech Co., Ltd. is a leading imaging technology company with 20+ years of expertise in machine vision, optical imaging, and intelligent data processing.

Our flagship telecentric lenses, together with 360° telecentric lenses and telecentric light sources, deliver distortion-free imaging and precise measurement, with stable illumination for advanced automation and inspection.

Beyond standard products, we provide customized optical solutions—including infrared, ultraviolet, and multispectral designs—to tackle the most demanding applications.

Today, Contrastech telecentric technology powers leading-edge AI vision systems worldwide, enabling high-precision inspection, intelligent recognition, and reliable data acquisition. By combining world-class performance with optimized cost control, we help customers cut costs by 30–50% while achieving top-tier performance and efficiency.

BTL-23 SERIES

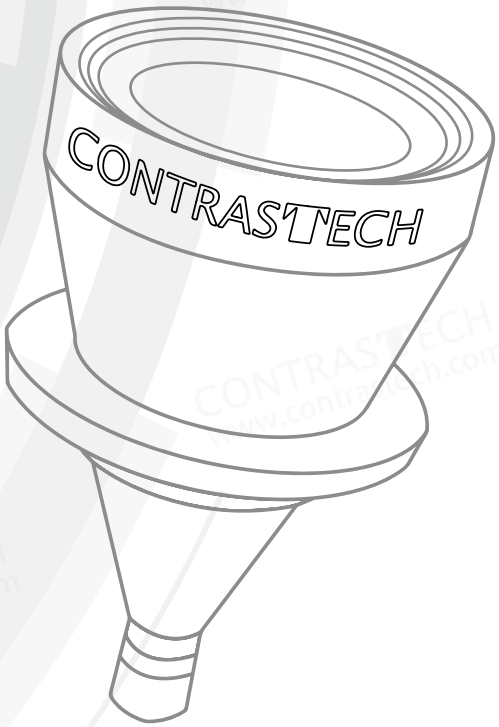
2/3"

Model No.	Click to view details/drawings												
	FOV (Φmm)	Mag. (x)	WD (mm)	Max. Sesnor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm)	Distortion (% max)	Telecentricity (° max)	I/O (mm)	Length (mm)	Mount	Weight (kg)
BTL-0.438X-73-23	26	0.438	73±1	11.4(2/3")	6	>130	±2.3@F11	<0.1	<0.1	208±1	117.9	C Mount	0.3
BTL-0.317X-110-23	36	0.317	110±2	11.4(2/3")	5.4	>145	±4.3@F11	<0.1	<0.1	265±2	137.9	C Mount	0.4
BTL-0.271X-118-23	42	0.271	118±3	11.4(2/3")	4.9	>185	±6.0@F11	<0.1	<0.1	259±3	123.4	C Mount	0.4
BTL-0.238X-128-23	48	0.238	128±3	11.4(2/3")	5.4	>165	±7.7@F11	<0.1	<0.1	282±3	136.9	C Mount	0.5
BTL-0.238X-138-23(LM)	48	0.238	138±3	11.4(2/3")	6.7	>130	±7.7@F11	<0.1	<0.1	278±3	122.0	C Mount	0.5
BTL-0.204X-138-23(LM)	56	0.204	138±3	11.4(2/3")	4.9	>180	±10.5@F11	<0.1	<0.1	315±3	159.5	C Mount	0.7
BTL-0.178X-158-23(LM)	64	0.178	158±3	11.4(2/3")	4.9	>180	±13.9@F11	<0.1	<0.1	348±3	172.0	C Mount	0.8
BTL-0.158X-178-23(LM)	72	0.158	178±3	11.4(2/3")	4.9	>180	±17.6@F11	<0.1	<0.1	388±3	192.0	C Mount	1.1
BTL-0.142XH-228-23(LM)	80	0.142	228±4	11.4(2/3")	4.9	>180	±21.7@F11	<0.1	<0.1	428±4	182.0	C Mount	1.9
BTL-0.127X-208-23(LM)	90	0.127	208±3	11.4(2/3")	4.9	>180	±27.2@F11	<0.1	<0.1	443±3	217.0	C Mount	1.7
BTL-0.114X-238-23(LM)	100	0.114	238±4	11.4(2/3")	4.9	>185	±33.8@F11	<0.1	<0.1	515±4	259.7	C Mount	3.1
BTL-0.104X-263-23(LM)	110	0.104	263±4	11.4(2/3")	4.9	>190	±40.7@F11	<0.1	<0.1	550±4	269.6	C Mount	2.7
BTL-0.095X-273-23(LM)	120	0.095	273±5	11.4(2/3")	4.9	>185	±48.7@F11	<0.1	<0.1	572±5	281.3	C Mount	4.2
BTL-0.084X-288-23(LM)	136	0.084	288±5	11.4(2/3")	4.9	>185	±62.4@F11	<0.1	<0.1	659±5	354.6	C Mount	4.3
BTL-0.076X-300-23(LM)	150	0.076	300±5	11.4(2/3")	4.9	>185	±76.1@F11	<0.1	<0.1	642±5	324.0	C Mount	5.7
BTL-0.067X-318-23(LM)	170	0.067	318±5	11.4(2/3")	4.9	>180	±98@F11	<0.1	<0.1	721±5	385.9	C Mount	6.5
BTL-0.06X-330-23(LM)	190	0.060	330±5	11.4(2/3")	4.9	>180	±122@F11	<0.1	<0.1	761±5	413.2	C Mount	9.7
BTL-0.053X-372-23(LM)	216	0.053	372±5	11.4(2/3")	4.9	>180	±157@F11	<0.1	<0.1	898±5	508.7	C Mount	13.8
BTL-0.048XH-410-23(LM)	240	0.048	410±6	11.4(2/3")	4.9	>180	±195@F11	<0.1	<0.1	982±6	554.5	C Mount	19.1
BTL-0.044X-338-23(LM)	258	0.044	338±5	11.4(2/3")	4.9	>180	±225@F11	<0.1	<0.1	785±5	429.9	C Mount	24.3
BTL-0.038X-465-23(LM)	300	0.038	465±6	11.4(2/3")	4.9	>180	±304@F11	<0.1	<0.1	1116±6	633.0	C Mount	46.6

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

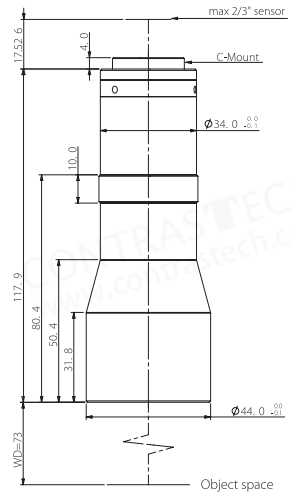
2. Warm tips: The above DOF is just theoretical value at the ideal aperture (eg. ±763@F11). Actual DOF or the DOF what you need, please check with our sales engineer before order cfm.

LENS PARAMETER DIAGRAM



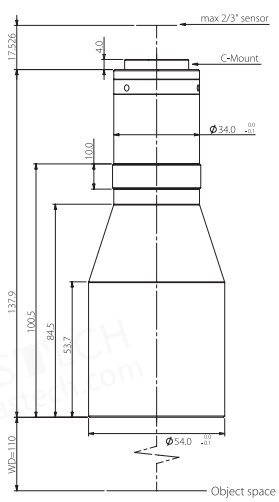
BTL-23 Series

BTL-0.438X-73-23



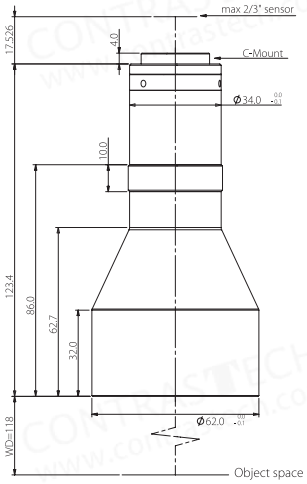
FOV(Φmm)	26
Mag.(x)	0.438
WD(mm)	73±1
Max Sensor Size(Φmm)	11.4(2/3")
F/#	6.0
MTF30(lp/mm)	>130
DoF(mm)	±2.3@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	208±1
Length(mm)	117.9
Mount	C-Mount
Weight(kg)	0.3
Field of View(mmxmm)	
1/1.8" EV76C570 (7.2x5.4)	16.4x12.3
1/1.7" IMX226 (7.5x5.6)	17.1x12.8
2/3" IMX250/264 (8.45x7.1)	19.3x16.2

BTL-0.317X-110-23



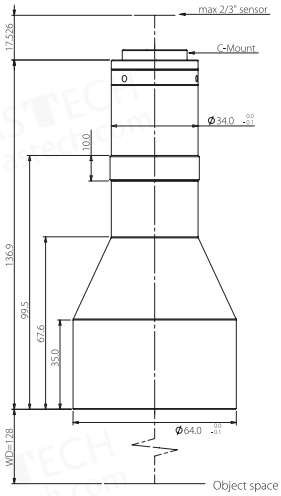
FOV(Φmm)	36
Mag.(x)	0.317
WD(mm)	110±2
Max Sensor Size(Φmm)	11.4(2/3")
F/#	5.4
MTF30(lp/mm)	>145
DoF(mm)	±4.3@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	265±2
Length(mm)	137.9
Mount	C-Mount
Weight(kg)	0.4
Field of View(mmxmm)	
1/1.8" EV76C570 (7.2x5.4)	22.7x17.0
1/1.7" IMX226 (7.5x5.6)	23.7x17.7
2/3" IMX250/264 (8.45x7.1)	26.7x22.4

BTL-0.271X-118-23



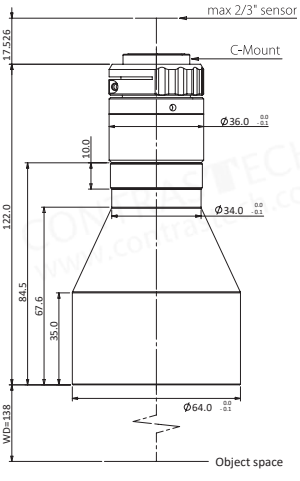
FOV(Φmm)	42
Mag.(x)	0.271
WD(mm)	118±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>185
DoF(mm)	±6.0@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	259±3
Length(mm)	123.4
Mount	C-Mount
Weight(kg)	0.4
Field of View(mmxmm)	
1/1.8" EV76C570 (7.2x5.4)	26.6x19.9
1/1.7" IMX226 (7.5x5.6)	27.7x20.7
2/3" IMX250/264 (8.45x7.1)	31.2x26.2

BTL-0.238X-128-23



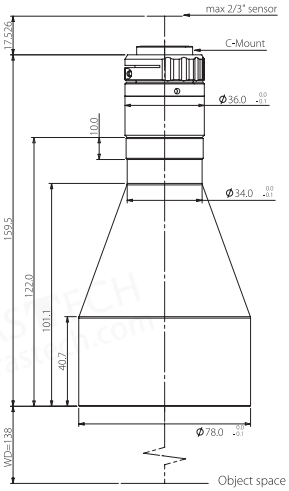
FOV(Φmm)	48
Mag.(x)	0.238
WD(mm)	128±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	5.4
MTF30(lp/mm)	>165
DoF(mm)	±7.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	282±3
Length(mm)	136.9
Mount	C-Mount
Weight(kg)	0.5
Field of View(mmxmm)	
1/1.8" EV76C570 (7.2x5.4)	30.3x22.7
1/1.7" IMX226 (7.5x5.6)	31.5x23.5
2/3" IMX250/264 (8.45x7.1)	35.5x29.8

BTL-0.238X-138-23(LM)



FOV(Φmm)	48
Mag.(x)	0.238
WD(mm)	138±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	6.7
MTF30(lp/mm)	>130
DoF(mm)	±7.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	278±3
Length(mm)	122.0
Mount	C-Mount
Weight(kg)	0.5
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	35.6x29.8

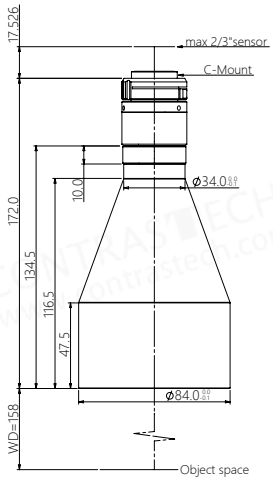
BTL-0.204X-138-23(LM)



FOV(Φmm)	56
Mag.(x)	0.204
WD(mm)	138±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±10.5@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	315±3
Length(mm)	159.5
Mount	C-Mount
Weight(kg)	0.7
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	41.4x34.8
1/1.8" EV76C570 (7.2x5.4)	35.3x26.5
1/1.7" IMX226 (7.5x5.6)	36.8x27.5

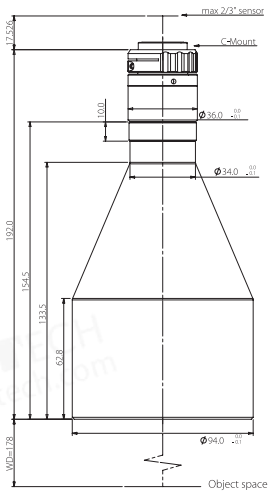
BTL-23 Series

BTL-0.178X-158-23(LM)



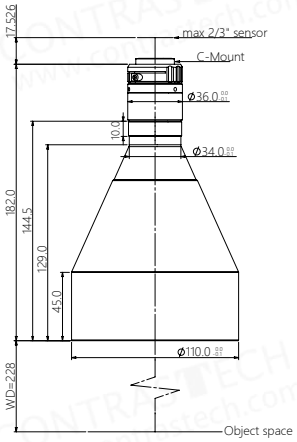
FOV(Φmm)	64
Mag.(x)	0.178
WD(mm)	158±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±13.9@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	348±3
Length(mm)	172.0
Mount	C-Mount
Weight(kg)	0.8
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	47.5x39.9
1/1.8" EV76C570 (7.2x5.4)	40.4x30.3
1/1.7" IMX226 (7.5x5.6)	42.1x31.5

BTL-0.158X-178-23(LM)



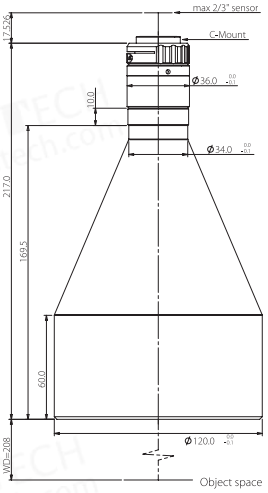
FOV(Φmm)	72
Mag.(x)	0.158
WD(mm)	178±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±17.6@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	388±3
Length(mm)	192.0
Mount	C-Mount
Weight(kg)	1.1
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	53.5x44.9
1/1.8" EV76C570 (7.2x5.4)	45.6x34.2
1/1.7" IMX226 (7.5x5.6)	47.5x35.4

BTL-0.142XH-228-23(LM)



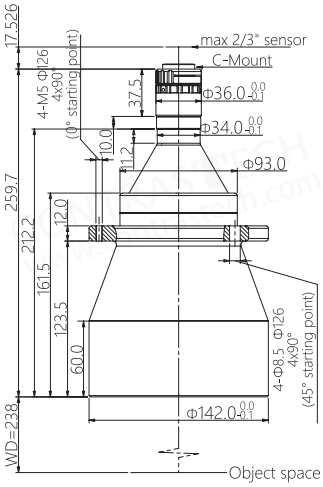
FOV(Φmm)	80
Mag.(x)	0.142
WD(mm)	228±4
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±21.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	427±4
Length(mm)	182
Mount	C-Mount
Weight(kg)	1.9
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	59.7x50.0
1/1.8" EV76C570 (7.2x5.4)	50.7x38.0
1/1.7" IMX226 (7.5x5.6)	52.8x39.4

BTL-0.127X-208-23(LM)



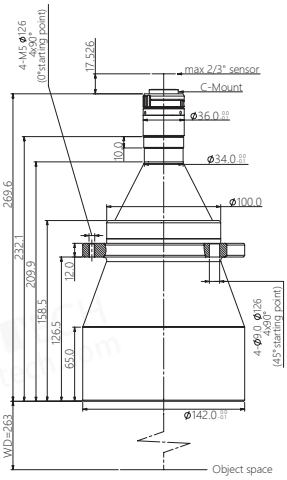
FOV(Φmm)	90
Mag.(x)	0.127
WD(mm)	208±3
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±27.2@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	443±3
Length(mm)	217.0
Mount	C-Mount
Weight(kg)	1.7
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	66.7x55.9
1/1.8" EV76C570 (7.2x5.4)	56.7x42.5
1/1.7" IMX226 (7.5x5.6)	59.1x44.1

BTL-0.114X-238-23(LM)



FOV(Φmm)	100
Mag.(x)	0.114
WD(mm)	238±4
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>185
DoF(mm)	±33.8@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	515±4
Length(mm)	259.7
Mount	C-Mount
Weight(kg)	3.1
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	74.1x62.3
1/1.8" EV76C570 (7.2x5.4)	63.2x47.4
1/1.7" IMX226 (7.5x5.6)	65.8x49.1

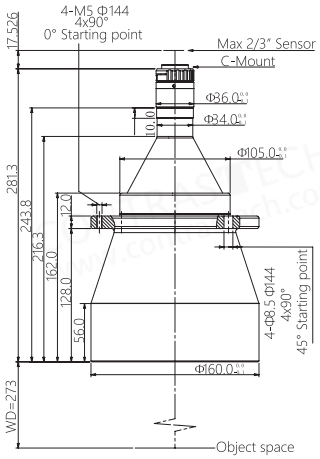
BTL-0.104X-263-23(LM)



FOV(Φmm)	110
Mag.(x)	0.104
WD(mm)	263±4
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>190
DoF(mm)	±40.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	550±4
Length(mm)	269.6
Mount	C-Mount
Weight(kg)	2.7
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	81.3x68.3
1/1.8" EV76C570 (7.2x5.4)	69.2x51.9
1/1.7" IMX226 (7.5x5.6)	72.1x53.8

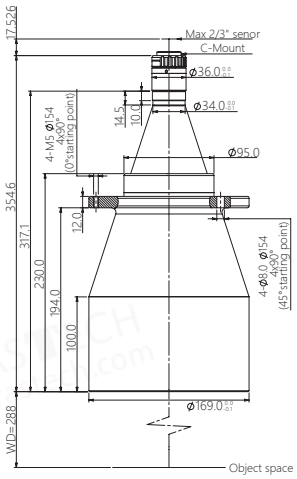
BTL-23 Series

BTL-0.095X-273-23(LM)



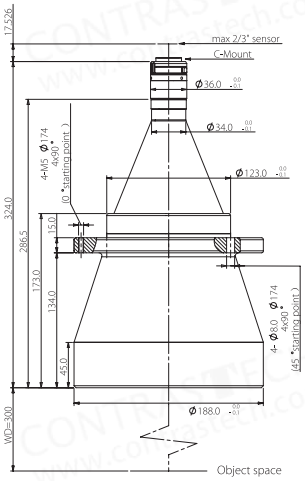
FOV(Φmm)	120
Mag.(x)	0.095
WD(mm)	273±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>185
DoF(mm)	±48.7@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	572±5
Length(mm)	281.3
Mount	C-Mount
Weight(kg)	4.2
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	88.9x74.7
1/1.8" EV76C570 (7.2x5.4)	75.8x56.8
1/1.7" IMX226 (7.5x5.6)	78.9x58.9

BTL-0.084X-288-23(LM)



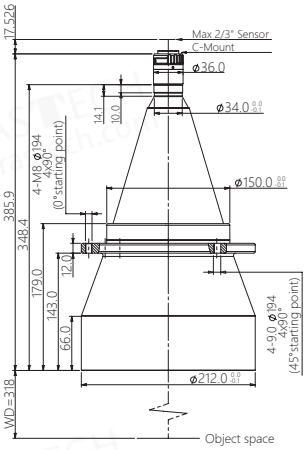
FOV(Φmm)	136
Mag.(x)	0.084
WD(mm)	288±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>185
DoF(mm)	±62.4@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	659±5
Length(mm)	354.6
Mount	C-Mount
Weight(kg)	4.3
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	100.6x84.5
1/1.8" EV76C570 (7.2x5.4)	85.7x64.3
1/1.7" IMX226 (7.5x5.6)	89.3x66.7

BTL-0.076X-300-23(LM)



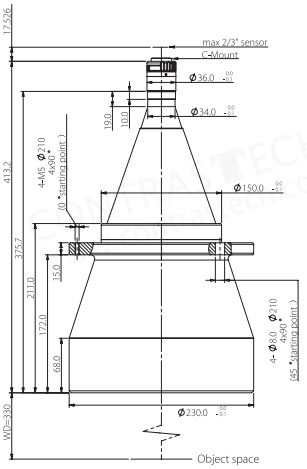
FOV(Φmm)	150
Mag.(x)	0.076
WD(mm)	300±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>185
DoF(mm)	±76.1@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	642.5±5
Length(mm)	324.0
Mount	C-Mount
Weight(kg)	5.7
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	111.5x93.4
1/1.8" EV76C570 (7.2x5.4)	94.7x71.1
1/1.7" IMX226 (7.5x5.6)	98.7x73.7

BTL-0.067X-318-23(LM)



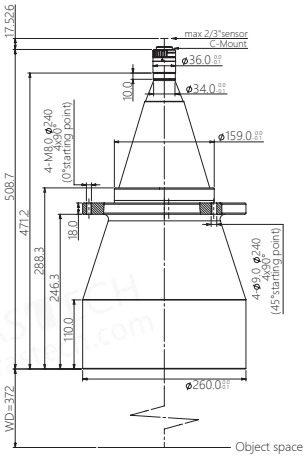
FOV(Φmm)	170
Mag.(x)	0.067
WD(mm)	318±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±98@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	721±5
Length(mm)	385.9
Mount	C-Mount
Weight(kg)	6.5
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	126.1x106
1/1.8" EV76C570 (7.2x5.4)	107.5x80.6
1/1.7" IMX226 (7.5x5.6)	111.9x83.6

BTL-0.06X-330-23(LM)



FOV(Φmm)	190
Mag.(x)	0.060
WD(mm)	330±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±122@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	761±5
Length(mm)	413.2
Mount	C-Mount
Weight(kg)	9.7
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	141.2x118.3
1/1.8" EV76C570 (7.2x5.4)	120.0x90.0
1/1.7" IMX226 (7.5x5.6)	125.0x93.3

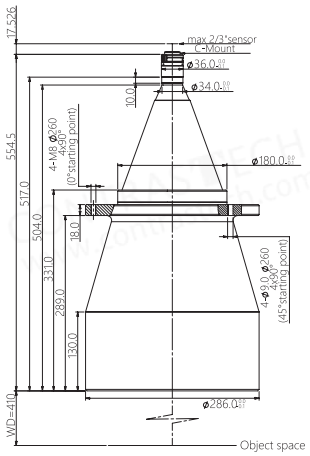
BTL-0.053X-372-23(LM)



FOV(Φmm)	216
Mag.(x)	0.053
WD(mm)	372±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±157@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	898±5
Length(mm)	508.7
Mount	C-Mount
Weight(kg)	13.8
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	159.4x134.0
1/1.8" EV76C570 (7.2x5.4)	135.8x101.9
1/1.7" IMX226 (7.5x5.6)	141.5x105.7

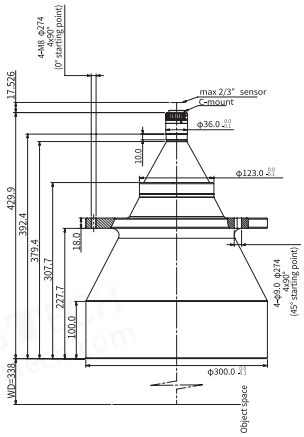
BTL-23 Series

BTL-0.048XH-410-23(LM)



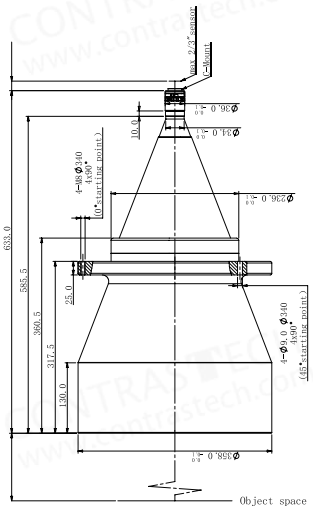
FOV(Φmm)	240
Mag.(x)	0.048
WD(mm)	410±6
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±195@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	982±6
Length(mm)	554.5
Mount	C-Mount
Weight(kg)	19.1
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	176.0x147.9
1/1.8" EV76C570 (7.2x5.4)	150.0x112.5
1/1.7" IMX226 (7.5x5.6)	156.3x116.7

BTL-0.044X-338-23(LM)



FOV(Φmm)	258
Mag.(x)	0.044
WD(mm)	338±5
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±225@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	785±5
Length(mm)	429.9
Mount	C-Mount
Weight(kg)	24.3
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	192.0x161.4
1/1.8" EV76C570 (7.2x5.4)	163.6x122.7
1/1.7" IMX226 (7.5x5.6)	170.5x127.3

BTL-0.038X-465-23(LM)



FOV(Φmm)	300
Mag.(x)	0.038
WD(mm)	465±6
Max Sensor Size(Φmm)	11.4(2/3")
F/#	4.9
MTF30(lp/mm)	>180
DoF(mm)	±304@F11
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
I/O(mm)	1116±6
Length(mm)	633.0
Mount	C-Mount
Weight(kg)	46.6
Field of View(mmxmm)	
2/3" IMX250/264 (8.45x7.1)	222.4x186.8
1/1.8" EV76C570 (7.2x5.4)	189.5x142.1
1/1.7" IMX226 (7.5x5.6)	197.4x147.4

CONTRASTECH

Machine Vision Expert

1 Million
FPS Camera

Imaging Solutions
OEM/ODM

Infrared Camera
0.3-14μm
NIR/SWIR/MWIR/LWIR

Kepler Pro
Software
No Need Programming

CONTRASTECH
Hangzhou Contrastech Technology Co., Ltd.
No. 8 Xiyuan 9th Road, West Lake District
Hangzhou Zhejiang 310030 China
Tel: 86-571-86888309
www.contrastech.com

Ver.26.04