

# CLW2-MP SERIES

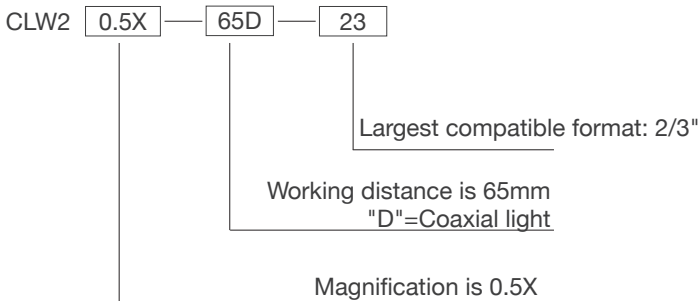
- LARGE FOV
- WD 65mm
- WD 110mm
- WD 130/145mm
- Long WD 330-510mm

## ▪ LARGE FOV

### PRODUCT FEATURES

1. Optimized for AOI application;
2. Large FOV with low magnification;
3. Long working distance easy for illuminations and object allocation design;
4. High accuracy, low distortion, high telecentricity, support up to 1.1" 12M class high-speed camera.

### NAMING RULES



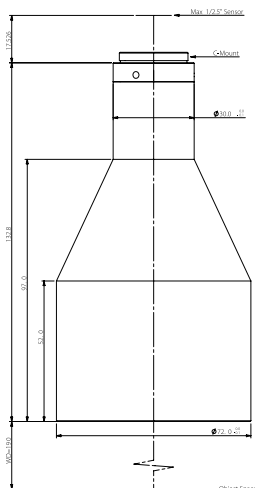
# LARGE FOV

Model No. <sup>1</sup>	Optical specs									Mechanical specs	
	Coaxial	Mag. (x)	WD (mm) <sup>2</sup>	Max. Sensor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm) <sup>3</sup>	Distortion (% max) <sup>4</sup>	Telecentricity (° max) <sup>5</sup>	Length (mm)	Mount
CLW2-0.14X-190-125	No	0.14	190±2	7.2(1/2.5")	8	>100	±32.5@F16	<0.2	<0.1	132.8	C-Mount
CLW2-0.22X-200-118	No	0.22	200±3	9.0(1/1.8")	8	>95	±13@F16	<0.1	<0.1	150	C-Mount
CLW2-0.22X-200-23	No	0.22	200±3	11.0(2/3")	10	>80	±13@F16	<0.1	<0.1	150	C-Mount
CLW2-0.22X-220-23(LM)	No	0.22	220±3	11.0(2/3")	10	>80	±13@F16	<0.1	<0.1	150.3	C-Mount
CLW2-0.22X-220-H1.1	No	0.22	220±3	18.0(1.1")	8	>110	±13@F16	<0.1	<0.15	232.9	C-Mount
CLW2-0.23X-220-H1.1	No	0.23	220±3	18.0(1.1")	8	>110	±12@F16	<0.1	<0.18	233	C-Mount
CLW2-0.246X-220-H1.1	No	0.246	220±3	18.0(1.1")	8	>100	±10@F16	<0.1	<0.13	232.9	C-Mount
CLW2-0.275X-220-H1.1	No	0.275	220±3	18.0(1.1")	8	>105	±8@F16	<0.1	<0.15	242.9	C-Mount
CLW2-0.3X-180-118	No	0.3	180±2	9.0(1/1.8")	8	>100	±7@F16	<0.1	<0.1	166.2	C-Mount
CLW2-0.3X-180-23	No	0.3	180±2	11.0(2/3")	10	>83	±7@F16	<0.1	<0.1	166.3	C-Mount
CLW2-0.3X-180D-23	Yes	0.3	180±2	11.0(2/3")	10	>83	±7@F16	<0.1	<0.1	166.2	C-Mount
CLW2-0.3X-220-23	No	0.3	220±3	11.0(2/3")	13.6	>63	±9.7@F22	<0.1	<0.1	167.7	C-Mount
CLW2-0.3X-220D-23	Yes	0.3	220±3	11.0(2/3")	13.6	>63	±9.7@F22	<0.1	<0.1	167.7	C-Mount
CLW2-0.345X-220-H1	No	0.345	220±3	16.0(1")	8	>115	±5.3@F16	<0.1	<0.1	214.9	C-Mount
CLW2-0.367X-220-H1	No	0.367	220±3	16.0(1")	8	>115	±4.7@F16	<0.1	<0.1	214.9	C-Mount
CLW2-0.5X-220-H1	No	0.5	220±3	16.0(1")	8	>110	±2.5@F16	<0.1	<0.1	205.7	C-Mount
CLW2-0.5X-220D-H1	Yes	0.5	220±3	16.0(1")	8	>110	±2.5@F16	<0.1	<0.1	205.7	C-Mount
CLW2-0.55X-220-H1	No	0.55	220±3	16.0(1")	8	>110	±2.1@F16	<0.1	<0.1	215.4	C-Mount
CLW2-1.0X-110-H1.1	No	1	110±2	18.0(1.1")	7	>105	±0.6@F16	<0.13	<0.18	133.3	C-Mount
CLW2-1.0X-110D-H1.1	Yes	1	110±2	18.0(1.1")	7	>105	±0.6@F16	<0.13	<0.18	133.3	C-Mount
CLW2-1.5X-110-H1.1	No	1.5	110±2	18.0(1.1")	10	>78	±0.35@F20	<0.1	<0.1	128.8	C-Mount
CLW2-1.5X-110D-H1.1	Yes	1.5	110±2	18.0(1.1")	10	>78	±0.35@F20	<0.1	<0.1	128.8	C-Mount
CLW2-2.0X-110-H1.1	No	2	110±2	18.0(1.1")	13.5	>60	±0.2@F20	<0.1	<0.1	133.2	C-Mount
CLW2-2.0X-110D-H1.1	Yes	2	110±2	18.0(1.1")	13.5	>60	±0.2@F20	<0.1	<0.1	133.2	C-Mount
CLW2-3.0X-110-H1.1	No	3	110±2	18.0(1.1")	20.1	>40	±0.09@F20	<0.1	<0.1	161.8	C-Mount
CLW2-3.0X-110D-H1.1	Yes	3	110±2	18.0(1.1")	20.1	>40	±0.09@F20	<0.1	<0.1	166.1	C-Mount

1. Models with letter "D" support coaxial lights. 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.

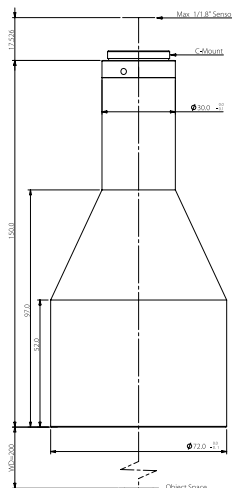
### CLW2-0.22X-200-118



Mag.(x)	0.22
WD(mm)	200±3
Max Sensor Size(Φmm)	9.0(1/1.8")
F/#	8
MTF30(lp/mm)	>95
DoF(mm)	±13@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	150.0
Mount	C-Mount
Coaxial Light	No

Field of View(mm xmm)	
1/1.8" ICX274/687(7.16x5.44)	32.6x24.7
1/1.8" EV76C570(7.2x5.4)	32.7x24.6

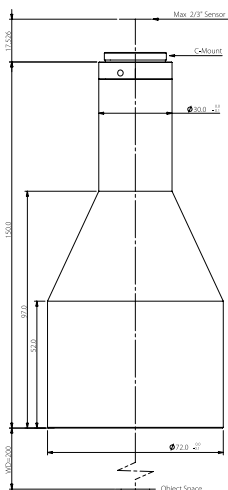
### CLW2-0.14X-190-125



Mag.(x)	0.14
WD(mm)	190±2
Max Sensor Size(Φmm)	7.2(1/2.5")
F/#	8
MTF30(lp/mm)	>100
DoF(mm)	±32.5@F16
Distortion(% max)	<0.2
Telecentricity(° max)	<0.1
Length(mm)	132.8
Mount	C-Mount
Coaxial Light	No

Field of View(mm xmm)	
2/3" ICX625/655(8.47x7.1)	40.7x30.6

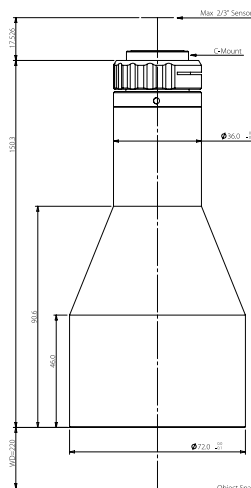
### CLW2-0.22X-200-23



Mag.(x)	0.22
WD(mm)	200±3
Max Sensor Size(Φmm)	11.0(2/3")
F/#	10
MTF30(lp/mm)	>80
DoF(mm)	±13@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	150.0
Mount	C-Mount
Coaxial Light	No

Field of View(mm xmm)	
2/3" ICX625/655(8.47x7.1)	38.5x32.3

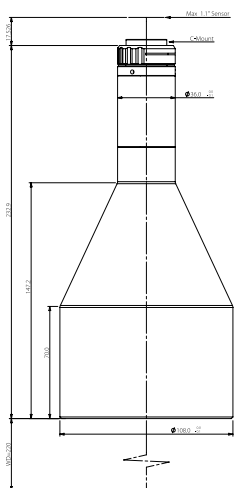
### CLW2-0.22X-200-23(LM)



Mag.(x)	0.22
WD(mm)	200±3
Max Sensor Size(Φmm)	11.0(2/3")
F/#	10
MTF30(lp/mm)	>80
DoF(mm)	±13@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	150.0
Mount	C-Mount
Coaxial Light	No

Field of View(mm xmm)	
2/3" ICX625/655(8.47x7.1)	38.5x32.3

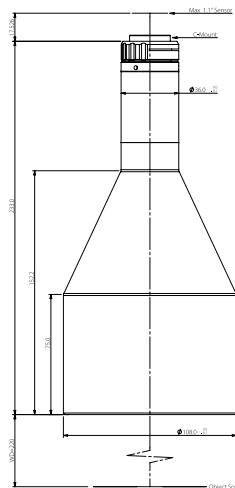
### CLW2-0.22X-220-H1.1



Mag.(x)	0.22
WD(mm)	220±3
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30(lp/mm)	>110
DoF(mm)	±13@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.15
Length(mm)	232.9
Mount	C-Mount
Coaxial Light	No

Field of View(mm xmm)	
1.1" IMX253(14.19x10.38)	64.5x47.2

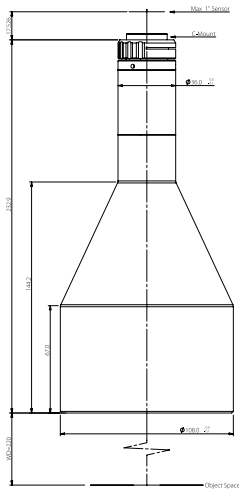
### CLW2-0.23X-220-H1.1



Mag.(x)	0.23
WD(mm)	220±3
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30(lp/mm)	>110
DoF(mm)	±12@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.18
Length(mm)	233.0
Mount	C-Mount
Coaxial Light	No

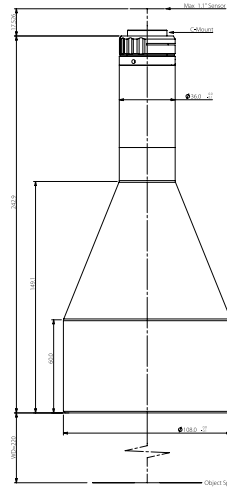
Field of View(mm xmm)	
1.1" IMX253(14.19x10.38)	61.7x45.1

### CLW2-0.246X-220-H1.1



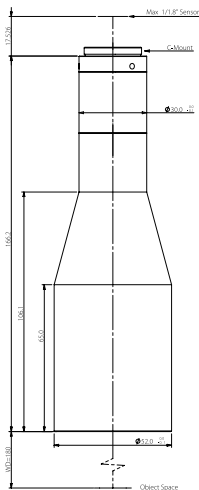
<b>Mag.(x)</b>	0.246
<b>WD(mm)</b>	220±3
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	8
<b>MTF30(lp/mm)</b>	>100
<b>DoF(mm)</b>	±10@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.13
<b>Length(mm)</b>	232.9
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
1.1" IMX253(14.19x10.38)	57.7x42.2

### CLW2-0.275X-220-H1.1



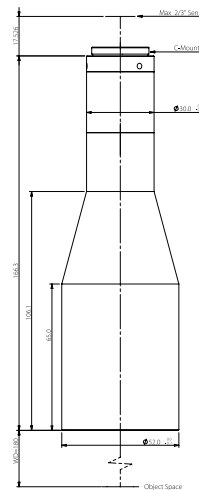
<b>Mag.(x)</b>	0.275
<b>WD(mm)</b>	220±3
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	8
<b>MTF30(lp/mm)</b>	>105
<b>DoF(mm)</b>	±8@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.15
<b>Length(mm)</b>	242.9
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
1.1" IMX253(14.19x10.38)	51.6x37.8

### CLW2-0.3X-180-118



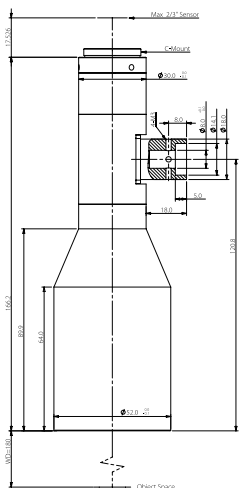
<b>Mag.(x)</b>	0.3
<b>WD(mm)</b>	180±2
<b>Max Sensor Size(Φmm)</b>	9.0(1/1.8")
<b>F/#</b>	8
<b>MTF30(lp/mm)</b>	>100
<b>DoF(mm)</b>	±7@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	166.2
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
1/1.8" ICX274/687(7.16x5.44)	23.9x18.1
1/1.8" EV76C570(7.2x5.4)	24.0x18.0

### CLW2-0.3X-180-23



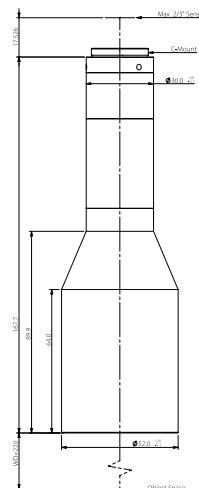
<b>Mag.(x)</b>	0.3
<b>WD(mm)</b>	180±2
<b>Max Sensor Size(Φmm)</b>	11.0(2/3")
<b>F/#</b>	10
<b>MTF30(lp/mm)</b>	>83
<b>DoF(mm)</b>	±7@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	166.3
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
2/3" ICX625/655(8.47x7.1)	28.2x23.7

### CLW2-0.3X-180-23



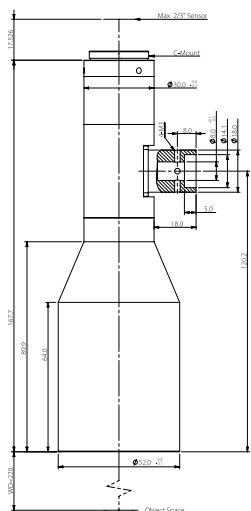
<b>Mag.(x)</b>	0.3
<b>WD(mm)</b>	180±2
<b>Max Sensor Size(Φmm)</b>	11.0(2/3")
<b>F/#</b>	10
<b>MTF30(lp/mm)</b>	>83
<b>DoF(mm)</b>	±7@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	166.3
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	Yes
<b>Field of View(mmxmm)</b>	
2/3" ICX625/655(8.47x7.1)	28.2x23.7

### CLW2-0.3X-220-23



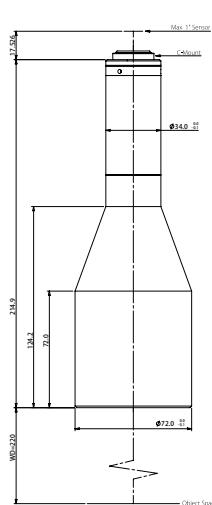
<b>Mag.(x)</b>	0.3
<b>WD(mm)</b>	220±3
<b>Max Sensor Size(Φmm)</b>	11.0(2/3")
<b>F/#</b>	13.6
<b>MTF30(lp/mm)</b>	>63
<b>DoF(mm)</b>	±9.7@F22
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	167.7
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
2/3" ICX625/655(8.47x7.1)	28.2x23.7

### CLW2-0.3X-220D-23



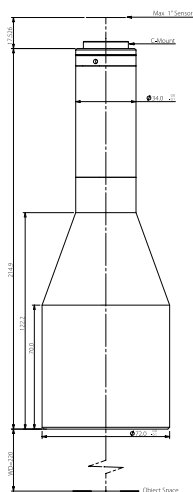
Mag.(x)	0.3
WD(mm)	220±3
Max Sensor Size(Φmm)	11.0(2/3")
F/#	13.6
MTF30(lp/mm)	>63
DoF(mm)	±9.7@F22
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	167.7
Mount	C-Mount
Coaxial Light	Yes
<b>Field of View(mm x mm)</b>	
2/3" ICX625/655(8.47x7.1)	28.2x23.7

### CLW2-0.345X-220-H1



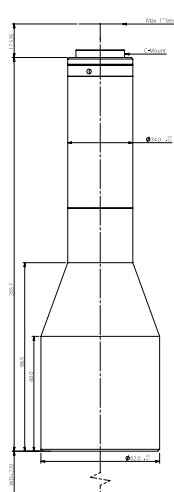
Mag.(x)	0.345
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30(lp/mm)	>115
DoF(mm)	±5.3@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	214.9
Mount	C-Mount
Coaxial Light	No
<b>Field of View(mm x mm)</b>	
1"KAI-04050(12.85x9.64)	37.3x27.9
1"CMV4000(11.26x11.26)	32.6x32.6
1"ICX674/694/814(12.5x10.0)	36.2x29.0

### CLW2-0.367X-220-H1



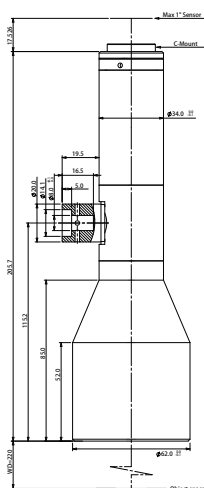
Mag.(x)	0.367
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30(lp/mm)	>115
DoF(mm)	±4.7@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	214.9
Mount	C-Mount
Coaxial Light	No
<b>Field of View(mm x mm)</b>	
1"KAI-04050(12.85x9.64)	35.0x26.3
1"CMV4000(11.26x11.26)	30.7x30.7
1"ICX674/694/814(12.5x10.0)	34.1x27.3

### CLW2-0.5X-220-H1



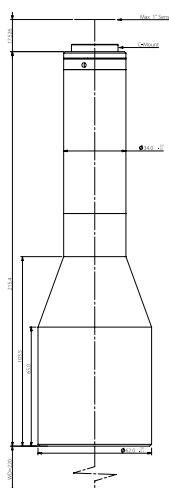
Mag.(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30(lp/mm)	>110
DoF(mm)	±2.5@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	205.7
Mount	C-Mount
Coaxial Light	No
<b>Field of View(mm x mm)</b>	
1"KAI-04050(12.85x9.64)	25.7x19.3
1"CMV4000(11.26x11.26)	22.5x22.5
1"ICX674/694/814(12.5x10.0)	25.0x20.0

### CLW2-0.5X-220D-H1



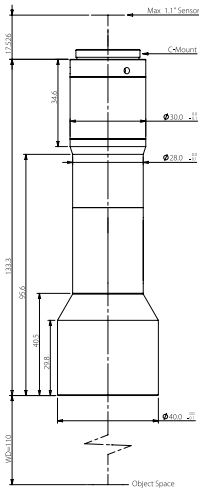
Mag.(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30(lp/mm)	>110
DoF(mm)	±2.5@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	205.7
Mount	C-Mount
Coaxial Light	Yes
<b>Field of View(mm x mm)</b>	
1"KAI-04050(12.85x9.64)	25.7x19.3
1"CMV4000(11.26x11.26)	22.5x22.5
1"ICX674/694/814(12.5x10.0)	25.0x20.0

### CLW2-0.55X-220-H1



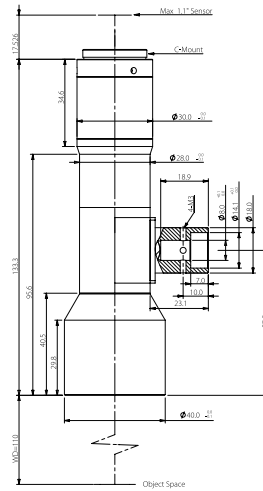
Mag.(x)	0.55
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30(lp/mm)	>110
DoF(mm)	±2.1@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	215.4
Mount	C-Mount
Coaxial Light	No
<b>Field of View(mm x mm)</b>	
1"KAI-04050(12.85x9.64)	23.4x17.5
1"CMV4000(11.26x11.26)	20.5x20.5
1"ICX674/694/814(12.5x10.0)	22.7x18.2

### CLW2-1.0X-110-H1.1



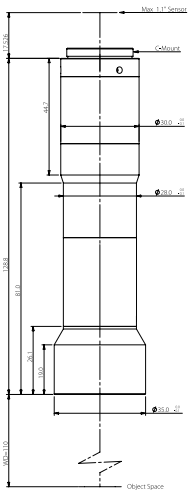
<b>Mag.(x)</b>	1.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	7
<b>MTF30(lp/mm)</b>	>105
<b>DoF(mm)</b>	±0.6@F16
<b>Distortion(% max)</b>	<0.13
<b>Telecentricity(° max)</b>	<0.18
<b>Length(mm)</b>	133.3
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	14.2x10.4

### CLW2-1.0X-110D-H1.1



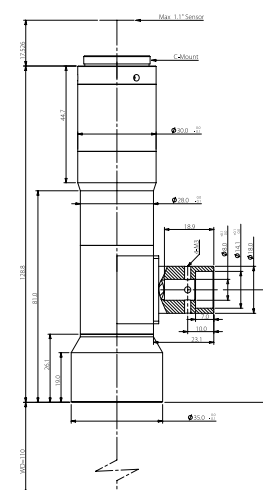
<b>Mag.(x)</b>	1.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	7
<b>MTF30(lp/mm)</b>	>105
<b>DoF(mm)</b>	±0.6@F16
<b>Distortion(% max)</b>	<0.13
<b>Telecentricity(° max)</b>	<0.18
<b>Length(mm)</b>	133.3
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	Yes
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	14.2x10.4

### CLW2-1.5X-110-H1.1



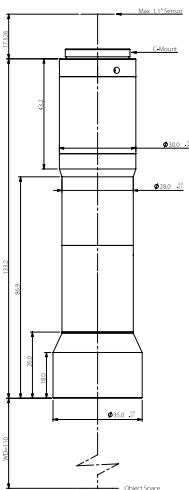
<b>Mag.(x)</b>	1.5
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	10
<b>MTF30(lp/mm)</b>	>78
<b>DoF(mm)</b>	±0.35@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	128.8
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	9.5x6.9

### CLW2-1.5X-110D-H1.1



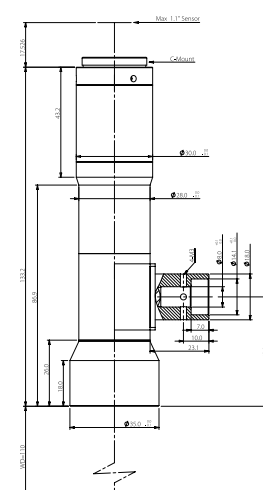
<b>Mag.(x)</b>	1.5
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	10
<b>MTF30(lp/mm)</b>	>78
<b>DoF(mm)</b>	±0.35@F16
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	128.8
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	Yes
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	9.5x6.9

### CLW2-2.0X-110-H1.1



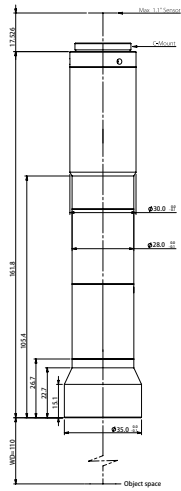
<b>Mag.(x)</b>	2.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	13.5
<b>MTF30(lp/mm)</b>	>60
<b>DoF(mm)</b>	±0.2@F20
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	133.2
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	7.1x5.2

### CLW2-2.0X-110D-H1.1



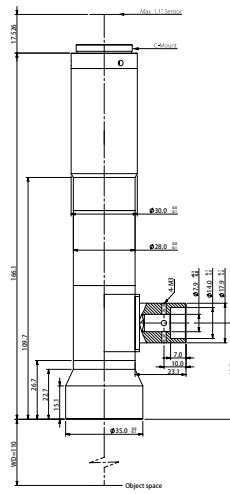
<b>Mag.(x)</b>	2.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	13.5
<b>MTF30(lp/mm)</b>	>60
<b>DoF(mm)</b>	±0.2@F20
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	133.2
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	Yes
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	7.1x5.2

### CLW2-3.0X-110-H1.1



<b>Mag.(x)</b>	3.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	20.1
<b>MTF30(lp/mm)</b>	>40
<b>DoF(mm)</b>	±0.09@F20.1
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	161.8
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	No
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	4.7x3.5

### CLW2-3.0X-110D-H1.1



<b>Mag.(x)</b>	3.0
<b>WD(mm)</b>	110±2
<b>Max Sensor Size(Φmm)</b>	18.0(1.1")
<b>F/#</b>	20.1
<b>MTF30(lp/mm)</b>	>40
<b>DoF(mm)</b>	±0.09@F20.1
<b>Distortion(% max)</b>	<0.1
<b>Telecentricity(° max)</b>	<0.1
<b>Length(mm)</b>	161.8
<b>Mount</b>	C-Mount
<b>Coaxial Light</b>	Yes
<b>Field of View(mmxmm)</b>	
<b>1.1" IMX253(14.19x10.38)</b>	4.7x3.5