

WWK - WD 110mm

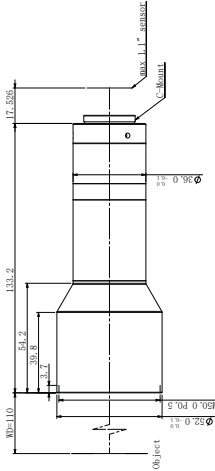
For Sensors up to 1.1"

25 MegaPixels Industrial Camera



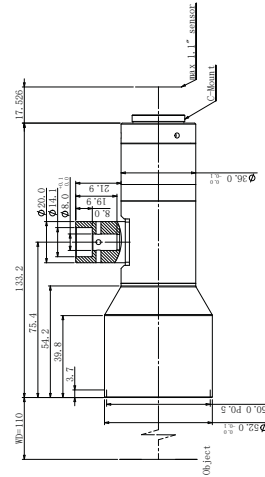
Lens Model	Mag. (x)	WD (mm)	Sensor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm)	Distortion (% max)	Telecentricity (° max)	Length (mm)	Mount	Coaxial Light
WWK03-110-230	0.3	110±2	11.0(2/3")	5.6	>170	±2.5@F5.6	<0.02	<0.04	118.0	C	NO
WWK03-110C-230	0.3	110±2	11.0(2/3")	5.6	>170	±2.5@F5.6	<0.02	<0.04	118.0	C	YES
WWK04-110-230	0.4	110±2	11.0(2/3")	7	>140	±1.8@F7	<0.02	<0.03	140.2	C	NO
WWK04-110C-230	0.4	110±2	11.0(2/3")	7	>140	±1.8@F7	<0.02	<0.03	140.2	C	YES
WWK05-110-230	0.5	110±2	11.0(2/3")	7	>140	±1.1@F7	<0.03	<0.03	127.3	C	NO
WWK05-110C-230	0.5	110±2	11.0(2/3")	7	>140	±1.1@F7	<0.03	<0.03	127.3	C	YES
WWK05-110-111V3	0.5	110±2	18.0(1.1")	7	124	±1.1@F7	0.1	0.08	133.2	C	NO
WWK05-110C-111V3	0.5	110±2	18.0(1.1")	7	124	±1.1@F7	0.1	0.08	133.2	C	YES
WWK063-110-111V3	0.63	110±2	18.0(1.1")	7	124	±0.7@F7	0.1	0.05	133.2	C	NO
WWK063-110C-111V3	0.63	110±2	18.0(1.1")	7	124	±0.7@F7	0.1	0.05	133.2	C	YES
WWK07-108-110	0.7	108±2	16.0(1")	7	>135	±0.6@F7	<0.02	<0.02	133.4	C	NO
WWK07-108C-110	0.7	108±2	16.0(1")	7	>135	±0.6@F7	<0.02	<0.02	133.4	C	YES
WWK08-110-111V3	0.8	110±2	18.0(1.1")	6.6	128	±0.4@F6.6	0.08	0.06	142.5	C	NO
WWK08-110CP-111V3	0.8	110±2	18.0(1.1")	6.6	128	±0.4@F6.6	0.08	0.06	152.6	C	YES
WWK10-110-111V3	1.0	110±2	18.0(1.1")	7	128	±0.3@F7	0.1	0.06	142.5	C	NO
WWK10-110CP-111V3	1.0	110±2	18.0(1.1")	7	128	±0.3@F7	0.1	0.06	152.6	C	YES
WWK15-110-111	1.5	110±2	18.0(1.1")	10	>78	±0.18@F10	<0.1	<0.1	128.8	C	NO
WWK15-110C-111	1.5	110±2	18.0(1.1")	10	>78	±0.18@F10	<0.1	<0.1	128.8	C	YES
WWK20-110-111	2	110±2	18.0(1.1")	13.5	>60	±0.14@F13.5	<0.1	<0.1	133.2	C	NO
WWK20-110C-111	2	110±2	18.0(1.1")	13.5	>60	±0.14@F13.5	<0.1	<0.1	133.2	C	YES
WWK30-110-111	3	110±2	18.0(1.1")	20.1	>40	±0.09@F20.1	<0.1	<0.1	166.1	C	NO
WWK30-110C-111	3	110±2	18.0(1.1")	20.1	>40	±0.09@F20.1	<0.1	<0.1	166.1	C	YES
WWK40-108-111V3	4.0	108±2	18.0(1.1")	20	43	±0.05@F20	0.07	0.05	162.4	C	NO
WWK40-108C-111V3	4.0	108±2	18.0(1.1")	20	43	±0.05@F20	0.07	0.05	165.5	C	YES
WWK60-108-111V3	6.0	108±2	18.0(1.1")	29.7	29	±0.035@F29.7	0.04	0.03	171.4	C	NO
WWK60-108C-111V3	6.0	108±2	18.0(1.1")	29.7	29	±0.035@F29.7	0.04	0.03	175.5	C	YES
WWK80-108-111V3	8.0	108±2	18.0(1.1")	40.4	21	±0.025@F40.4	0.08	0.02	203.9	C	NO
WWK80-108C-111V3	8.0	108±2	18.0(1.1")	40.4	21	±0.025@F40.4	0.08	0.02	207.8	C	YES

WWK05-110-111V3



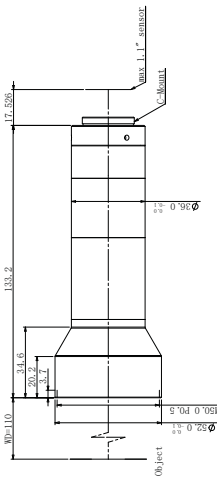
Mag.β(x)	0.5
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	124
DOF(mm)	±1.1@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.08
Length(mm)	133.2
Mount	C
Coaxial Light	NO
Field of View(mm xmm)	
1"IMX183(13.13x8.76)	26.3x17.5
1.1"IMX253(14.19x10.38)	28.4x20.8

WWK05-110C-111V3



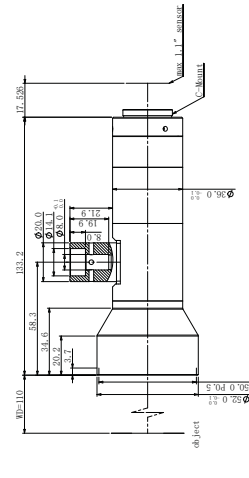
Mag.β(x)	0.5
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	124
DOF(mm)	±1.1@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.08
Length(mm)	133.2
Mount	C
Coaxial Light	YES
Field of View(mm xmm)	
1"IMX183(13.13x8.76)	26.3x17.5
1.1"IMX253(14.19x10.38)	28.4x20.8

WWK063-110-111V3



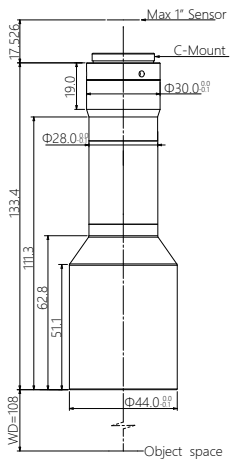
Mag.β(x)	0.63
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	124
DOF(mm)	±0.7@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.05
Length(mm)	133.2
Mount	C
Coaxial Light	NO
Field of View(mm xmm)	
1"IMX183(13.13x8.76)	20.8x13.9
1.1"IMX253(14.19x10.38)	22.5x16.5

WWK063-110C-111V3



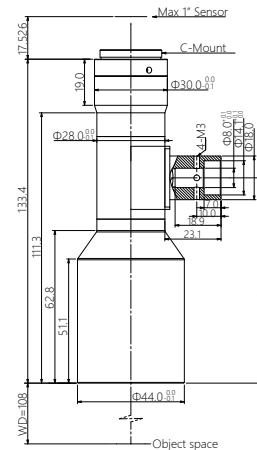
Mag.β(x)	0.63
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	124
DOF(mm)	±0.7@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.05
Length(mm)	133.2
Mount	C
Coaxial Light	YES
Field of View(mm xmm)	
1"IMX183(13.13x8.76)	20.8x13.9
1.1"IMX253(14.19x10.38)	22.5x16.5

WWK07-108-110



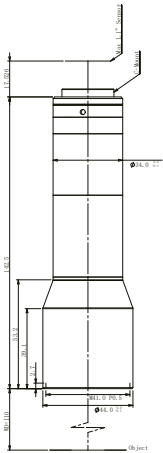
Mag.β(x)	0.7
WD(mm)	108±2
Max Sensor Size(Φmm)	16.0(1")
F/#	7
MTF30 (lp/mm)	>135
DOF(mm)	±0.6@F7
Distortion(% max)	<0.02
Telecentricity(° max)	<0.02
Length(mm)	133.4
Mount	C
Coaxial Light	NO
Field of View(mm xmm)	
1" PYTHON 5000(12.43x9.83)	17.8x14.0
1" IMX255 (14.19x7.51)	20.3x10.7
1" IMX183 (13.13x8.76)	18.8x12.5

WWK07-108C-110



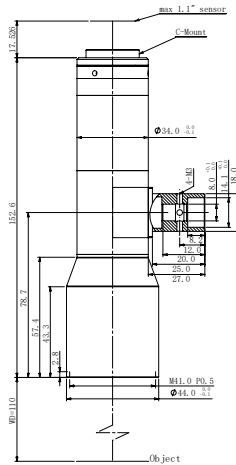
Mag.β(x)	0.7
WD(mm)	108±2
Max Sensor Size(Φmm)	16.0(1")
F/#	7
MTF30 (lp/mm)	>135
DOF(mm)	±0.6@F7
Distortion(% max)	<0.02
Telecentricity(° max)	<0.02
Length(mm)	133.4
Mount	C
Coaxial Light	YES
Field of View(mm xmm)	
1" PYTHON 5000(12.43x9.83)	17.8x14.0
1" IMX255 (14.19x7.51)	20.3x10.7
1" IMX183 (13.13x8.76)	18.8x12.5

WWK08-110-111V3



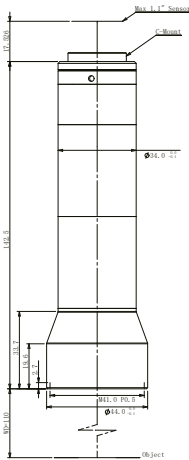
Mag.β(x)	0.8
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	6.6
MTF30 (lp/mm)	128
DOF(mm)	±0.4@F6.6
Distortion(% max)	0.08
Telecentricity(° max)	0.06
Length(mm)	152.6
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	16.4x11.0
1.1" IMX253 (14.19x10.38)	17.7x13.0

WWK08-110CP-111V3



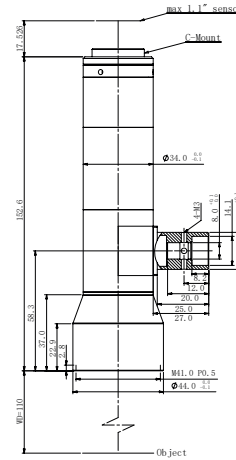
Mag.β(x)	0.8
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	6.6
MTF30 (lp/mm)	128
DOF(mm)	±0.4@F6.6
Distortion(% max)	0.08
Telecentricity(° max)	0.06
Length(mm)	152.6
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	16.4x11.0
1.1" IMX253 (14.19x10.38)	17.7x13.0

WWK10-110-111V3



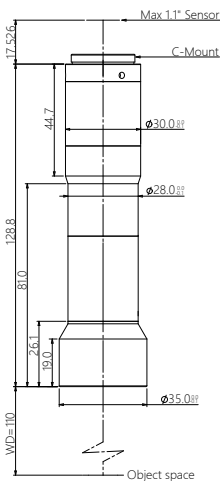
Mag.β(x)	1.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	128
DOF(mm)	±0.3@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.06
Length(mm)	142.5
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	13.1x8.8
1.1" IMX253 (14.19x10.38)	14.2x10.4

WWK10-110CP-111V3



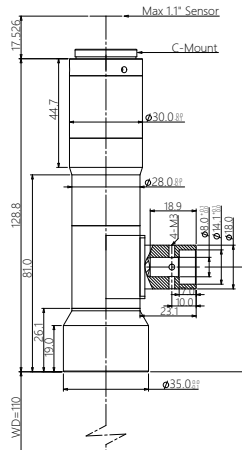
Mag.β(x)	1.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	152.6
DOF(mm)	±0.3@F7
Distortion(% max)	0.1
Telecentricity(° max)	0.06
Length(mm)	142.5
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	13.1x8.8
1.1" IMX253 (14.19x10.38)	14.2x10.4

WWK15-110-111



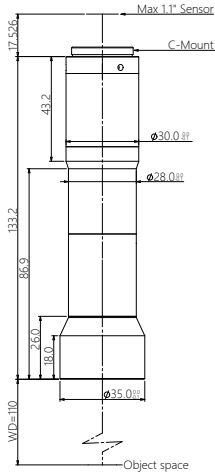
Mag.β(x)	1.5
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	10
MTF30 (lp/mm)	>78
DOF(mm)	±0.18@F10
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	128.8
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	8.8x5.8
1.1" IMX253 (14.19x10.38)	9.5x6.9

WWK15-110C-111



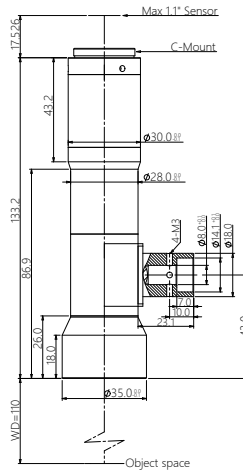
Mag.β(x)	1.5
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	10
MTF30 (lp/mm)	>78
DOF(mm)	±0.18@F10
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	128.8
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	8.8x5.8
1.1" IMX253 (14.19x10.38)	9.5x6.9

WWK20-110-111



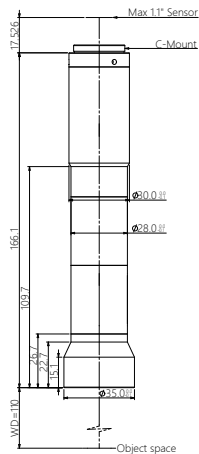
Mag.β(x)	2.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	13.5
MTF30 (lp/mm)	>60
DOF(mm)	±0.14@F13.5
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	133.2
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	6.6x4.4
1.1" IMX253 (14.19x10.38)	7.1x5.2

WWK20-110C-111



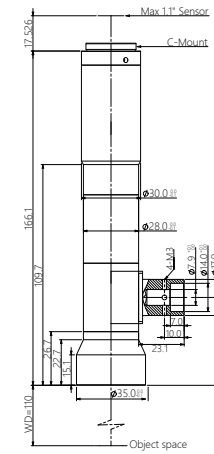
Mag.β(x)	2.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	13.5
MTF30 (lp/mm)	>60
DOF(mm)	±0.14@F13.5
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	133.2
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	6.6x4.4
1.1" IMX253 (14.19x10.38)	7.1x5.2

WWK30-110-111



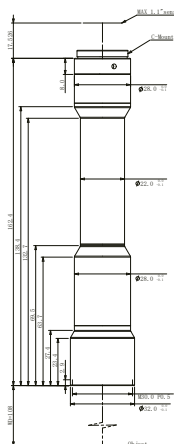
Mag.β(x)	3.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	20.1
MTF30 (lp/mm)	>40
DOF(mm)	±0.09@F20.1
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	166.1
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	4.4x2.9
1.1" IMX253 (14.19x10.38)	4.7x3.5

WWK30-110C-111



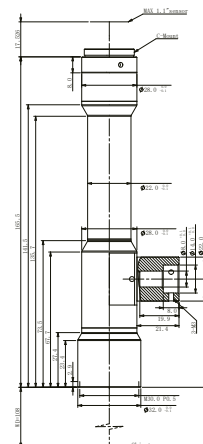
Mag.β(x)	3.0
WD(mm)	110±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	20.1
MTF30 (lp/mm)	>40
DOF(mm)	±0.09@F20.1
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	166.1
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	4.4x2.9
1.1" IMX253 (14.19x10.38)	4.7x3.5

WWK40-108-111V3



Mag.β(x)	4.0
WD(mm)	108±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	20
MTF30 (lp/mm)	43
DOF(mm)	±0.05@F20
Distortion(% max)	0.07
Telecentricity(° max)	0.05
Length(mm)	162.4
Mount	C
Coaxial Light	NO
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	3.3x2.2
1.1" IMX253 (14.19x10.38)	3.5x2.6

WWK40-108C-111V3



Mag.β(x)	4.0
WD(mm)	108±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	20
MTF30 (lp/mm)	43
DOF(mm)	±0.05@F20
Distortion(% max)	0.07
Telecentricity(° max)	0.05
Length(mm)	165.5
Mount	C
Coaxial Light	YES
Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	3.3x2.2
1.1" IMX253 (14.19x10.38)	3.5x2.6

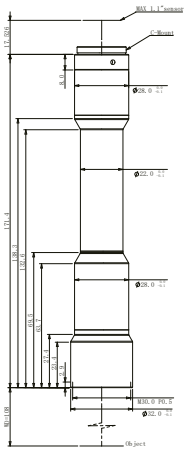
WD 110

WD180

WD220

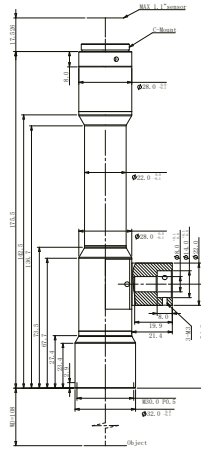
Long WD

WWK60-108-111V3



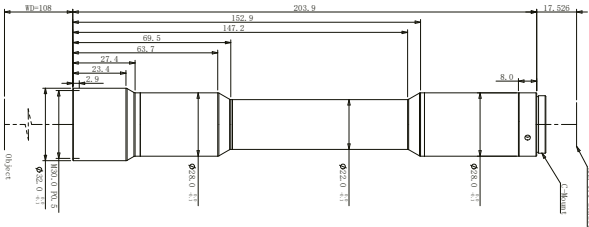
Mag.β(x)	6.0
WD(mm)	108±2
Max Sensor Size(φmm)	18.0(1.1")
F/#	29.7
MTF30 (lp/mm)	29
DOF(mm)	±0.035@F29.7
Distortion(% max)	0.04
Telecentricity(° max)	0.03
Length(mm)	171.4
Mount	C
Coaxial Light	NO
Field of View(mm xmm)	
1" IMX183 (13.13x8.76)	2.2x1.5
1.1" IMX253 (14.19x10.38)	2.4x1.7

WWK60-108C-111V3



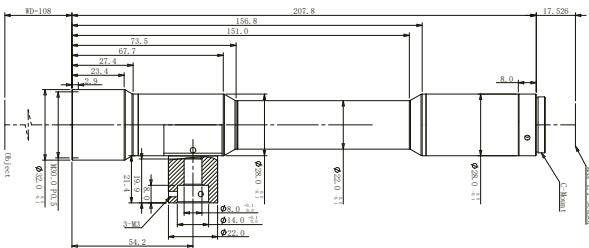
Mag.β(x)	6.0
WD(mm)	108±2
Max Sensor Size(φmm)	18.0(1.1")
F/#	29.7
MTF30 (lp/mm)	29
DOF(mm)	±0.035@F29.7
Distortion(% max)	0.04
Telecentricity(° max)	0.03
Length(mm)	175.5
Mount	C
Coaxial Light	YES
Field of View(mm xmm)	
1" IMX183 (13.13x8.76)	2.2x1.5
1.1" IMX253 (14.19x10.38)	2.4x1.7

WWK80-108-111V3



Mag.β(x)	8.0
WD(mm)	108±2
Max Sensor Size(φmm)	18.0(1.1")
F/#	40.4
MTF30 (lp/mm)	21
DOF(mm)	±0.025@F40.4
Distortion(% max)	0.08
Telecentricity(° max)	0.02
Length(mm)	203.9
Mount	C
Coaxial Light	NO
Field of View(mm xmm)	
1" IMX183 (13.13x8.76)	1.6x1.1
1.1" IMX253 (14.19x10.38)	1.8x1.3

WWK80-108C-111V3



Mag.β(x)	8.0
WD(mm)	108±2
Max Sensor Size(φmm)	18.0(1.1")
F/#	40.4
MTF30 (lp/mm)	21
DOF(mm)	±0.025@F40.4
Distortion(% max)	0.08
Telecentricity(° max)	0.02
Length(mm)	207.8
Mount	C
Coaxial Light	YES
Field of View(mm xmm)	
1" IMX183 (13.13x8.76)	1.6x1.1
1.1" IMX253 (14.19x10.38)	1.8x1.3

WWK-WD 180mm

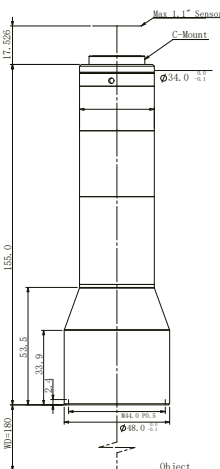
For Sensors up to 1.1"

25 MegaPixels Industrial Camera



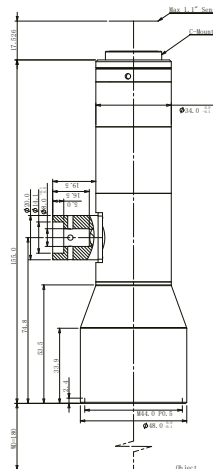
Lens Model	Mag. (x)	WD (mm)	Sensor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm)	Distortion (% max)	Telecentricity (° max)	Length (mm)	Mount	Coaxial Light
WWK08-180-111V3	0.8	180±2	18.0(1.1")	8	>108	±0.5@F8	0.04	0.08	155.0	C	NO
WWK08-180C-111V3	0.8	180±2	18.0(1.1")	8	>108	±0.5@F8	0.04	0.08	155.0	C	YES
WWK10-180-111V3	1.0	180±2	18.0(1.1")	8	>107	±0.3@F8	0.01	0.08	179.1	C	NO
WWK10-180C-111V3	1.0	180±2	18.0(1.1")	8	>107	±0.3@F8	0.01	0.08	179.1	C	YES
WWK40-178-111V3	4.0	178±2	18.0(1.1")	22.2	>38	±0.06@F22.2	0.08	0.08	342.2	C	NO
WWK40-178C-111V3	4.0	178±2	18.0(1.1")	22.2	>38	±0.06@F22.2	0.08	0.08	347.2	C	YES
WWK60-178-111V3	6.0	178±2	18.0(1.1")	33.2	>27	±0.04@F33.2	0.07	0.08	345.2	C	NO
WWK60-178C-111V3	6.0	178±2	18.0(1.1")	33.2	>27	±0.04@F33.2	0.07	0.08	347.3	C	YES
WWK80-178-111V3	8.0	178±2	18.0(1.1")	43.8	>21	±0.03@F43.8	0.08	0.04	337.0	C	NO
WWK80-178C-111V3	8.0	178±2	18.0(1.1")	43.8	>21	±0.03@F43.8	0.08	0.04	347.2	C	YES

WWK08-180-111V3



Mag.β(x)	0.8
WD(mm)	180±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>108
DOF(mm)	±0.5@F8
Distortion(% max)	0.04
Telecentricity(° max)	0.08
Length(mm)	155.0
Mount	C
Coaxial Light	NO
Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	16.4x11.0
1.1" IMX253 (14.19x10.38)	17.7x13.0

WWK08-180C-111V3



Mag.β(x)	0.8
WD(mm)	180±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>108
DOF(mm)	±0.5@F8
Distortion(% max)	0.04
Telecentricity(° max)	0.08
Length(mm)	155.0
Mount	C
Coaxial Light	YES
Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	16.4x11.0
1.1" IMX253 (14.19x10.38)	17.7x13.0

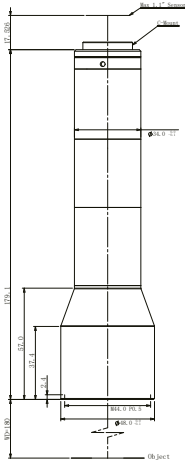
WD 110

WD 180

WD 220

Long WD

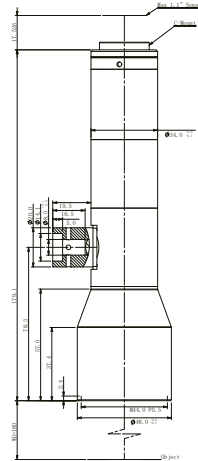
WWK10-180-111V3



Mag.β(x)	1.0
WD(mm)	180±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>107
DOF(mm)	±0.3@F8
Distortion(% max)	0.01
Telecentricity(° max)	0.08
Length(mm)	179.1
Mount	C
Coaxial Light	NO

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	13.1x8.8
1.1" IMX253 (14.19x10.38)	14.2x10.4

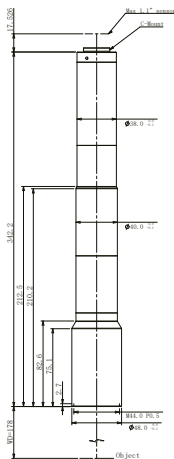
WWK10-180C-111V3



Mag.β(x)	1.0
WD(mm)	180±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>107
DOF(mm)	±0.3@F8
Distortion(% max)	0.01
Telecentricity(° max)	0.08
Length(mm)	179.1
Mount	C
Coaxial Light	YES

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	13.1x8.8
1.1" IMX253 (14.19x10.38)	14.2x10.4

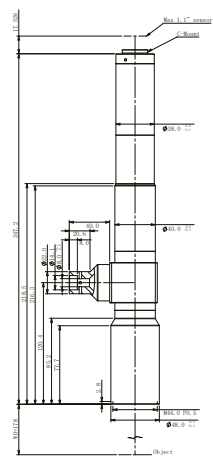
WWK40-178-111V3



Mag.β(x)	4.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	22.2
MTF30 (lp/mm)	>38
DOF(mm)	±0.06@F22.2
Distortion(% max)	0.08
Telecentricity(° max)	0.08
Length(mm)	342.2
Mount	C
Coaxial Light	NO

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	3.3x2.2
1.1" IMX253 (14.19x10.38)	3.5x2.6

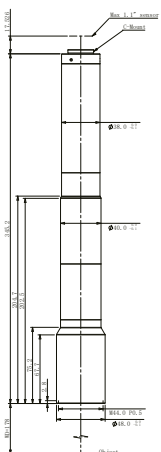
WWK40-178C-111V3



Mag.β(x)	4.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	22.2
MTF30 (lp/mm)	>38
DOF(mm)	±0.06@F22.2
Distortion(% max)	0.08
Telecentricity(° max)	0.08
Length(mm)	347.2
Mount	C
Coaxial Light	YES

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	3.3x2.2
1.1" IMX253 (14.19x10.38)	3.5x2.6

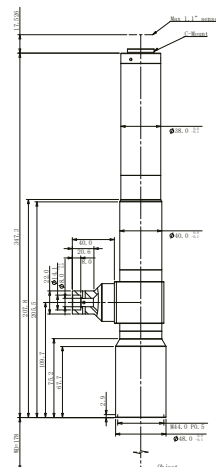
WWK60-178-111V3



Mag.β(x)	6.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	33.2
MTF30 (lp/mm)	>27
DOF(mm)	±0.04@F33.2
Distortion(% max)	0.07
Telecentricity(° max)	0.08
Length(mm)	345.2
Mount	C
Coaxial Light	NO

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	2.2x1.5
1.1" IMX253 (14.19x10.38)	2.4x1.7

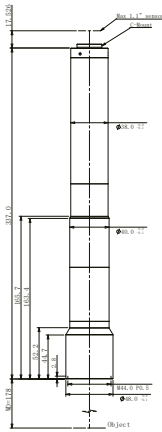
WWK60-178C-111V3



Mag.β(x)	6.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	33.2
MTF30 (lp/mm)	>27
DOF(mm)	±0.04@F33.2
Distortion(% max)	0.07
Telecentricity(° max)	0.08
Length(mm)	347.3
Mount	C
Coaxial Light	YES

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	2.2x1.5
1.1" IMX253 (14.19x10.38)	2.4x1.7

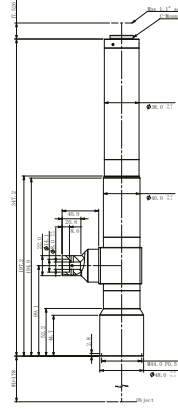
WWK80-178-111V3



Mag.β(x)	8.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	43.8
MTF30 (lp/mm)	>21
DOF(mm)	±0.03@F43.8
Distortion(% max)	0.08
Telecentricity(° max)	0.04
Length(mm)	337.0
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	1.6x1.1
1.1" IMX253 (14.19x10.38)	1.8x1.3

WWK80-178C-111V3



Mag.β(x)	8.0
WD(mm)	178±2
Max Sensor Size(Φmm)	18.0(1.1")
F/#	43.8
MTF30 (lp/mm)	>21
DOF(mm)	±0.03@F43.8
Distortion(% max)	0.08
Telecentricity(° max)	0.04
Length(mm)	347.2
Mount	C
Coaxial Light	YES

Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	1.6x1.1
1.1" IMX253 (14.19x10.38)	1.8x1.3

Hole Inspection Lenses for 360° Inside View



- 1.Specialized lens developed specifically for hole inspection.
- 2.Capable of achieving a wide FOV for hole inspection.
- 3.Capable of inspecting holes with diameters ranging from 5mm to 120mm and depths ranging from 4mm to 120mm.
- 4.Up to 2/3" Φ6mm camera.
- 5.Customizable aperture size to adjust brightness and depth of field.
- 6.Compared with traditional lenses that rely on depth of field for hole inspection, this lens has higher clarity.
- 7.Non-contact inspection, lens can be positioned outside of the hole.
- 8.Small size of the lens saves installation space.

PRHI230-82

Max Sensor Size	2/3"
Image Circle	6.6mm
Wavelength	Visible light
WD	5mm-65mm
Mount	C-mount

Inspection Diameter (mm)	Inspection Height(mm)	WD(mm)
5	4	5
10	6	7
20	20	13
30	30	17
40	40	24
50	50	27.7
60	60	33.2
80	80	44
100	100	55
120	120	65

WWK-WD 220mm

For Sensors up to 1.1"

25 MegaPixels Industrial Camera



WD 110

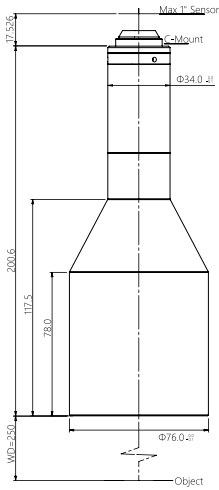
WD 180

WD 220

Long WD

Lens Model	Mag. (x)	WD (mm)	Sensor Size (Φmm)	F/#	MTF30 (lp/mm)	DOF (mm)	Distortion (% max)	Telecentricity (° max)	Length (mm)	Mount	Coaxial Light
WWK022-220-230-ALV2	0.22	220±3	11.0(2/3")	6.9	>130	±5.7@F6.9	<0.05	<0.05	190	C	NO
WWK022-220-111	0.22	220±3	18.0(1.1")	8	>110	±6.6@F8	<0.1	<0.15	232.9	C	NO
WWK023-220-111	0.23	220±3	18.0(1.1")	8	>110	±6.0@F8	<0.1	<0.18	233.0	C	NO
WWK0246-220-111	0.246	220±3	18.0(1.1")	8	>100	±5.3@F8	<0.1	<0.13	232.9	C	NO
WWK0275-220-110	0.275	220±3	16.0(1")	8	>113	±8.5@F8	<0.03	<0.1	242.6	C	NO
WWK0275-220-111	0.275	220±3	18.0(1.1")	8	>105	±4.2@F8	<0.1	<0.15	242.9	C	NO
WWK03-250-110	0.3	250±3	16.0(1")	8	>102	±3.6@F8	<0.2	<0.2	200.6	C	NO
WWK032-220-110	0.32	220±3	16.0(1")	12.1	>75	±4.7@F12.1	<0.15	<0.07	210.0	C	NO
WWK0345-220-111	0.345	220±3	18.0(1.1")	8	>115	±2.7@F8	<0.1	<0.1	212.2	C	NO
WWK0367-220-110	0.367	220±3	16.0(1")	8	>115	±4.7@F16	<0.1	<0.1	214.9	C	NO
WWK0367-220-111	0.367	220±3	18.0(1.1")	8	>115	±2.4@F8	<0.1	<0.1	213.1	C	NO
WWK046-220-110	0.46	220±3	16.0(1")	11.6	>80	±2.2@F11.6	<0.25	<0.1	205.2	C	NO
WWK046-220C-110	0.46	220±3	16.0(1")	11.6	>80	±2.2@F11.6	<0.25	<0.1	205.2	C	YES
WWK05-220-110	0.5	220±3	16.0(1")	8	>110	±1.3@F8	<0.1	<0.1	205.7	C	NO
WWK05-220C-110	0.5	220±3	16.0(1")	8	>110	±1.3@F8	<0.1	<0.1	205.7	C	YES
WWK05-220-111	0.5	220±3	18.0(1.1")	7	>140	±1.1@F7	<0.05	<0.02	205.4	C	NO
WWK05-220C-111	0.5	220±3	18.0(1.1")	7	>140	±1.1@F7	<0.05	<0.02	205.4	C	YES
WWK055-220-110	0.55	220±3	16.0(1")	8	>110	±1.1@F8	<0.1	<0.1	215.4	C	NO
WWK055-220-111	0.55	220±3	18.0(1.1")	10.1	>90	±1.3@F10.1	<0.1	<0.1	215.6	C	NO
WWK055-220C-111	0.55	220±3	18.0(1.1")	10.1	>90	±1.3@F10.1	<0.1	<0.1	215.6	C	YES

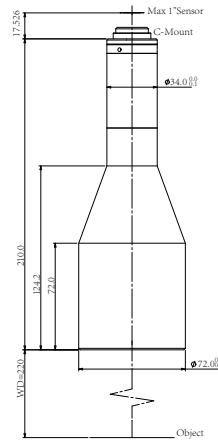
WWK03-250-110



Mag.β(x)	0.3
WD(mm)	250±3
Max Sensor Size(φmm)	16(1")
F/#	8
MTF30 (lp/mm)	>102
DOF(mm)	±3.6@F8
Distortion(% max)	<0.2
Telecentricity(° max)	<0.2
Length(mm)	200.6
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" PYTHON 5000(12.43x9.83)	41.4x32.8
1" IMX255 (14.19x7.51)	47.3x25.0
1" IMX183 (13.13x8.76)	43.8x29.2

WWK032-220-110

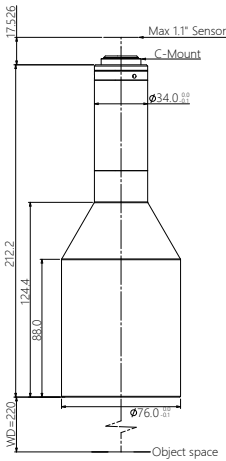


Mag.β(x)	0.32
WD(mm)	220±3
Max Sensor Size(φmm)	16(1")
F/#	12.1
MTF30 (lp/mm)	>75
DOF(mm)	±4.7@F12.1
Distortion(% max)	<0.15
Telecentricity(° max)	<0.07
Length(mm)	210.0
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" PYTHON 5000(12.43x9.83)	38.8x30.7
1" IMX255 (14.19x7.51)	44.3x23.5
1" IMX183 (13.13x8.76)	41.0x27.4

WD 110

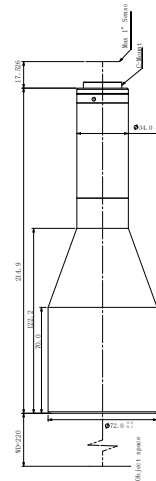
WWK0345-220-111



Mag.β(x)	0.345
WD(mm)	220±3
Max Sensor Size(φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>115
DOF(mm)	±2.7@F8
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	212.2
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	38.1x25.4
1.1" IMX253 (14.19x10.38)	41.1x30.1

WWK0367-220-110



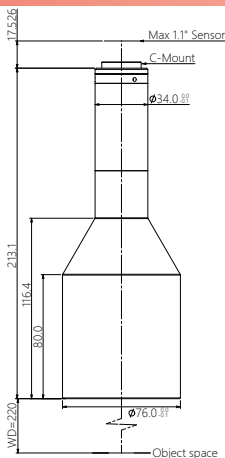
Mag.β(x)	0.367
WD(mm)	220±3
Max Sensor Size(φmm)	16.0(1")
F/#	8
MTF30 (lp/mm)	>115
DOF(mm)	±4.7@F16
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	214.9
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" PYTHON 5000(12.43x9.83)	33.9x26.8
1" IMX255 (14.19x7.51)	38.7x20.5
1" IMX183 (13.13x8.76)	35.8x23.9

WD 180

WD 220

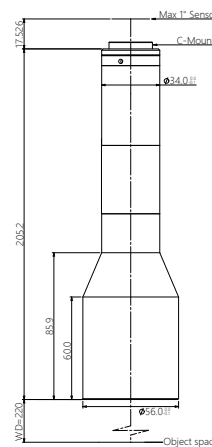
WWK0367-220-111



Mag.β(x)	0.367
WD(mm)	220±3
Max Sensor Size(φmm)	18.0(1.1")
F/#	8
MTF30 (lp/mm)	>115
DOF(mm)	±2.4@F8
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	213.1
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" IMX183 (13.13x8.76)	35.8x23.9
1.1" IMX253 (14.19x10.38)	38.7x28.3

WWK046-220-110

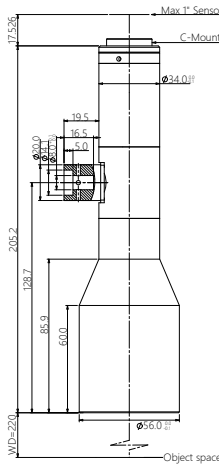


Mag.β(x)	0.46
WD(mm)	220±3
Max Sensor Size(φmm)	16.0(1")
F/#	11.6
MTF30 (lp/mm)	>80
DOF(mm)	±2.2@F11.6
Distortion(% max)	<0.25
Telecentricity(° max)	<0.1
Length(mm)	205.2
Mount	C
Coaxial Light	NO

Field of View(mm x mm)	
1" PYTHON 5000(12.43x9.83)	27.0x21.4
1" IMX255 (14.19x7.51)	30.8x16.3
1" IMX183 (13.13x8.76)	28.5x19.0

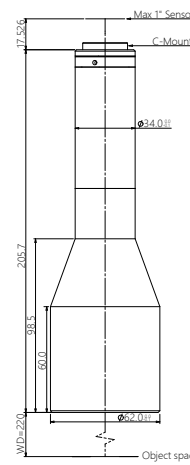
Long WD

WWK046-220C-110



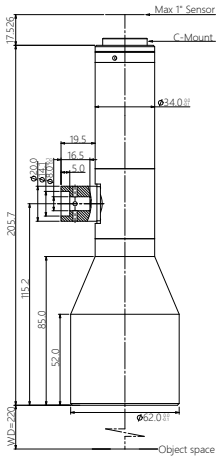
Mag.β(x)	0.46
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	11.6
MTF30 (lp/mm)	>80
DOF(mm)	±2.2@F11.6
Distortion(% max)	<0.25
Telecentricity(° max)	<0.1
Length(mm)	205.2
Mount	C
Coaxial Light	YES
Field of View(mmxmm)	
1" PYTHON 5000(12.43x9.83)	27.0x21.4
1" IMX255 (14.19x7.51)	30.8x16.3
1" IMX183 (13.13x8.76)	28.5x19.0

WWK05-220-110



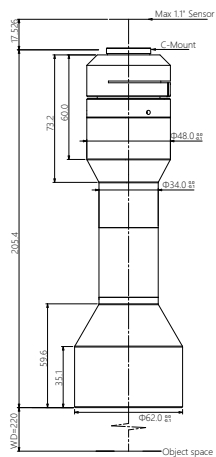
Mag.β(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30 (lp/mm)	>110
DOF(mm)	±1.3@F8
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	205.7
Mount	C
Coaxial Light	NO
Field of View(mmxmm)	
1" PYTHON 5000(12.43x9.83)	24.9x19.7
1" IMX255 (14.19x7.51)	28.4x15.0
1" IMX183 (13.13x8.76)	26.3x17.5

WWK05-220C-110



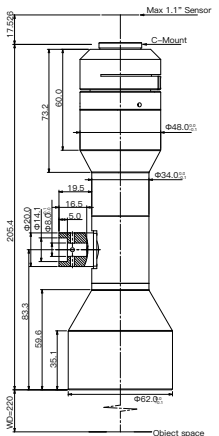
Mag.β(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30 (lp/mm)	>110
DOF(mm)	±1.3@F8
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	205.7
Mount	C
Coaxial Light	YES
Field of View(mmxmm)	
1" PYTHON 5000(12.43x9.83)	24.9x19.7
1" IMX255 (14.19x7.51)	28.4x15.0
1" IMX183 (13.13x8.76)	26.3x17.5

WWK05-220-111



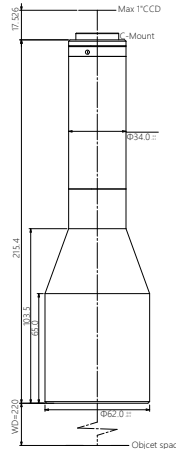
Mag.β(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	>140
DOF(mm)	±1.1@F7
Distortion(% max)	<0.05
Telecentricity(° max)	<0.02
Length(mm)	205.4
Mount	C
Coaxial Light	NO
Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	26.3x17.5
1.1" IMX253 (14.19x10.38)	28.4x20.8

WWK05-220C-111



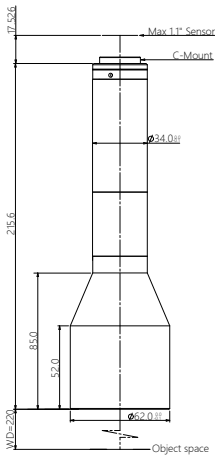
Mag.β(x)	0.5
WD(mm)	220±3
Max Sensor Size(Φmm)	18.0(1.1")
F/#	7
MTF30 (lp/mm)	>140
DOF(mm)	±1.1@F7
Distortion(% max)	<0.05
Telecentricity(° max)	<0.02
Length(mm)	205.4
Mount	C
Coaxial Light	YES
Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	26.3x17.5
1.1" IMX253 (14.19x10.38)	28.4x20.8

WWK055-220-110



Mag.β(x)	0.55
WD(mm)	220±3
Max Sensor Size(Φmm)	16.0(1")
F/#	8
MTF30 (lp/mm)	>110
DOF(mm)	±1.1@F8
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	215.4
Mount	C
Coaxial Light	NO
Field of View(mmxmm)	
1" PYTHON 5000(12.43x9.83)	22.6x17.9
1" IMX255 (14.19x7.51)	25.8x13.7
1" IMX183 (13.13x8.76)	23.9x15.9

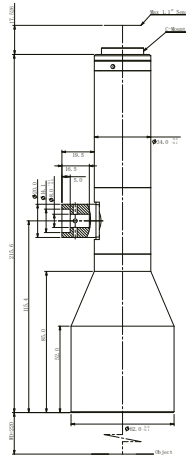
WWK055-220-111



Mag.β(x)	0.55
WD(mm)	220±3
Max Sensor Size(φmm)	18.0(1.1")
F/#	10.1
MTF30 (lp/mm)	>90
DOF(mm)	±1.3@F10.1
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	215.6
Mount	C
Coaxial Light	NO

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	23.9x15.9
1.1" IMX253 (14.19x10.38)	25.8x18.9

WWK055-220C-111



Mag.β(x)	0.55
WD(mm)	220±3
Max Sensor Size(φmm)	18.0(1.1")
F/#	10.1
MTF30 (lp/mm)	>90
DOF(mm)	±1.3@F10.1
Distortion(% max)	<0.1
Telecentricity(° max)	<0.1
Length(mm)	215.6
Mount	C
Coaxial Light	NO

Field of View(mmxmm)	
1" IMX183 (13.13x8.76)	23.9x15.9
1.1" IMX253 (14.19x10.38)	25.8x18.9

WD 110

WD 180

WD 220

Long WD

360° Catadioptric Lenses



Max Sensor Size	Image Circle	Imaging	Matching	Lens	Working Wavelength	Inspection Diameter
			FA lens focal length	Mount	(nm)	
2/3"	7.07	Simultaneous Imaging of Outer Wall	16mm	C-mount	450~650	5~30

Object Diameter(mm)	Object Height(mm)	WD (mm)	Top and Side Walls
			Can the top and outer wall be imaged simultaneously?
5	3	41	Outer Wall Imaging
7	5	39	Outer wall and Top Imaging Simultaneously
10	6	36	Outer wall and Top Imaging Simultaneously
15	11	30	Outer wall and Top Imaging Simultaneously
20	13	24	Outer wall and Top Imaging Simultaneously
25	18	15	Outer wall and Top Imaging Simultaneously
30	18	10	Outer Wall Imaging