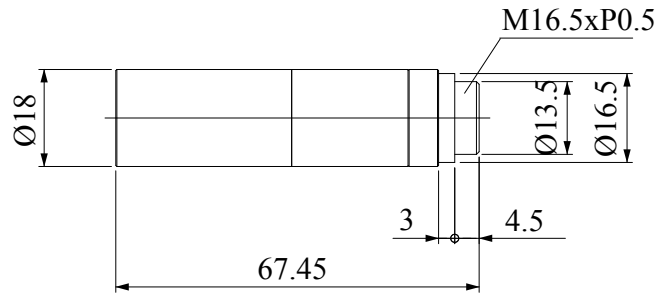


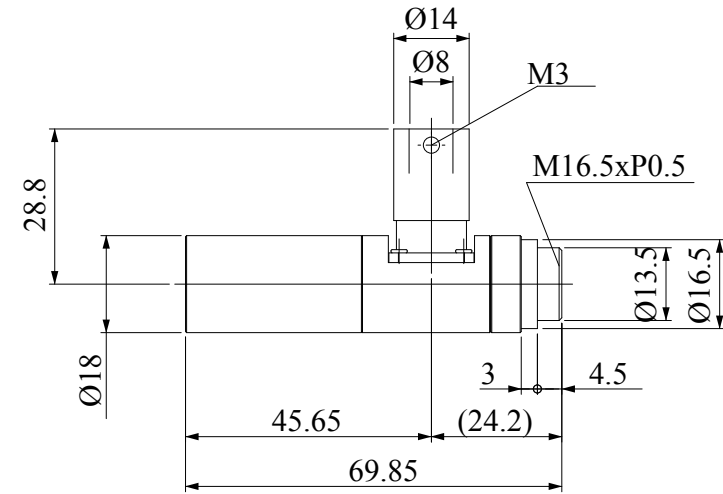
SE-18MS

Third Angle Projection Units: mm

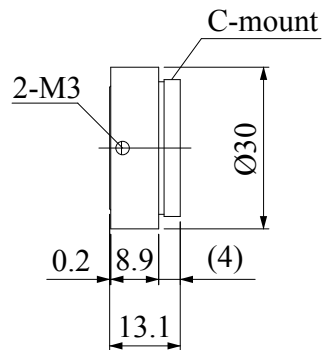
Straight lens unit



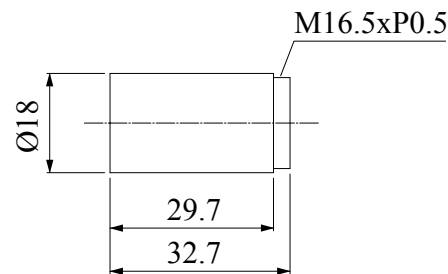
Coaxial lens unit



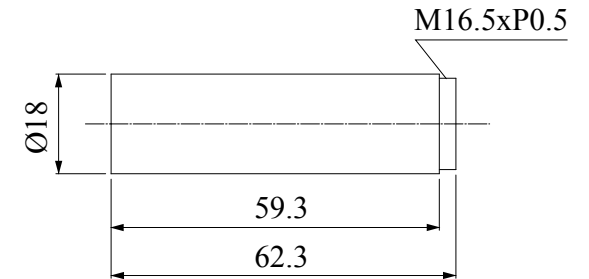
C mount ring



4x ring



6x ring





Macro Lens SE-16/SE-18 Series

CCS Macro Lens provides high magnification and performance at a low cost

Magnification ranging from 0.5x to 6x and option for HLV Series coaxial light port



SE-16 Series with 0.5x, 1x, and 2x magnifications

Straight Tube			Coaxial Port for HLV Series Light		
Type: SE-16SM05 Magnification: 0.5 x	Type: SE-16SM1 Magnification: 1 x	Type: SE-16SM2 Magnification: 2 x	Type: SE-16VM05 Magnification: 0.5 x	Type: SE-16VM1 Magnification: 1 x	Type: SE-16VM2 Magnification: 2 x

Combined use of lens unit, either optional magnification tube, and either mount changes magnification. Interchangeable mount allows for coaxial or external lighting.

Full set

Type: SE-16MS
Full set includes:
Straight mount
Coaxial mount
Lens unit
Lens barrel (short)
Lens barrel (long)

Configuring system for desired magnification

- 0.5x: Lens unit
- 1x: Lens barrel (short) + Lens unit
- 2x: Lens barrel (long) + Lens unit

SE-18 Series with 2x, 4x, and 6x magnifications

Straight Tube			Coaxial Port for HLV Series Light		
Type: SE-18SM2 Magnification: 2x	Type: SE-18SM4 Magnification: 4x	Type: SE-18SM6 Magnification: 6x	Type: SE-18VM2 Magnification: 2x	Type: SE-18VM4 Magnification: 4x	Type: SE-18VM6 Magnification: 6x

Combined use of C-mount ring with either lens unit either optional magnification tube changes magnification. Interchangeable lens unit allows for coaxial or external lighting.

Full set

Type: SE-18MS
Full set includes:
Straight lens unit
Coaxial lens unit
C mount ring
4x ring
6x ring

Configuring system for desired magnification

- 2x: C mount ring
- 4x: 4x ring + C mount ring
- 6x: 6x ring + C mount ring

SE-16 Series Specifications

RoHS Directive Compatible

Type	Straight			Coaxial		
	SE-16SM05	SE-16SM1	SE-16SM2	SE-16VM05	SE-16VM1	SE-16VM2
Model	SE-16SM05	SE-16SM1	SE-16SM2	SE-16VM05	SE-16VM1	SE-16VM2
Magnification	0.5x	1x	2x	0.5x	1x	2x
WD	107mm□	67mm□	47mm□	107mm□	67mm□	47mm□
Effective F-number (Image side)	5.93	7.74	11.5	5.92	7.88	11.7□
O/I	179.9mm	160mm	180.6mm	179.9mm	160mm	180.6mm
Depth of field *1	1900μm	620μm□	230μm□	1900μm	620μm□	230μm□
Resolving power *2	8μm	5.2μm	3.9μm	8μm	5.2μm	3.9μm
Distortion	-0.001335%	-0.000957%	-0.000232%	-0.026569%	-0.014059%	-0.005588%
NA (Object side)	0.042	0.065	0.087	0.042	0.065	0.087
Field of view (W x H x Diagonal)	1/3-inch CCD	9.6x7.2x12mm	4.8x3.6x6mm	2.4x1.8x3mm	9.6x7.2x12mm	4.8x3.6x6mm
	1/2-inch CCD	12.8x9.6x16mm	6.4x4.8x8mm	3.2x2.4x4mm	12.8x9.6x16mm	6.4x4.8x8mm
Lens outer diameter (lens barrel)	ø16					
Lens barrel length A	55.4mm□	75.5mm	116.1mm□	55.4mm□	75.5mm□	116.1mm□
Weight	29.6g	34g	43.5g	41.9g	46.3g	55.8g
Max. suitable CCD size	1/2 inch					
Camera mount	C mount					

*1 The depth of field is obtained with 40μm permissible circle of confusion.
*2 The resolving power was obtained at a wavelength of 550nm. These specifications are numeric values based on optical design. Actual values will vary with physical factors such as the assembly accuracy.

Dimensions of SE-16 Series (Unit: mm)

SE-16 (Straight mount)

SE-16 (Coaxial mount)

SE-EX2 (2x rear converter)

*Insert between the lens and the camera mount to double the magnification. Note that luminosity and resolution are reduced.

SE-18 Series Dimensions

RoHS Directive Compatible

Type	Straight			Coaxial		
	SE-18SM2	SE-18SM4	SE-18SM6	SE-18VM2	SE-18VM4	SE-18VM6
Model	SE-18SM2	SE-18SM4	SE-18SM6	SE-18VM2	SE-18VM4	SE-18VM6
Magnification	2x	4x	6x	2x	4x	6x
WD	114±1mm	110±1mm□	109±1mm	114±1mm□	110±1mm□	109±1mm□
Effective F-number (Image side)	18.9	37.7	56.6	18.9	37.7	56.6
O/I	199.1mm□	224.8mm	254.4mm□	201.4mm	227.1mm□	256.7mm□
Depth of field *1	380μm					
Resolving power *2	6.3μm					
Distortion	-0.058268%	-0.073489%	-0.031328%	-0.058268%	-0.073489%	-0.031328%
NA (Object side)	0.053					
Field of view (W x H x Diagonal)	1/3-inch CCD	2.4x1.8x3mm	1.2x0.9x1.5mm	0.8x0.6x1mm	2.4x1.8x3mm	1.2x0.9x1.5mm
	1/2-inch CCD	3.2x2.4x4mm	1.6x1.2x2mm	1.07x0.8x1.33mm	3.2x2.4x4mm	1.6x1.2x2mm
	2/3-inch CCD	4.4x3.3x5.5mm	2.2x1.65x2.75mm	1.47x1.1x1.83mm	4.4x3.3x5.5mm	2.2x1.65x2.75mm
Lens outer diameter (lens barrel)	ø18					
Lens barrel length A	69.1mm	98.8mm□	128.4mm	-	-	-
Weight	40g	50g	55g	50g	60g	65g
Max. suitable CCD size	2/3 inch					
Camera mount	C mount					

*1 The depth of field is obtained with 40μm permissible circle of confusion.
*2 The resolving power was obtained at a wavelength of 550nm. These specifications are numeric values based on optical design. Actual values will vary with physical factors such as the assembly accuracy.

Dimensions of SE-18 Series (Unit: mm)

SE-18 (Straight mount)

SE-18VM2 (Coaxial mount)

SE-18VM4 (Coaxial mount)

SE-18VM6 (Coaxial mount)