



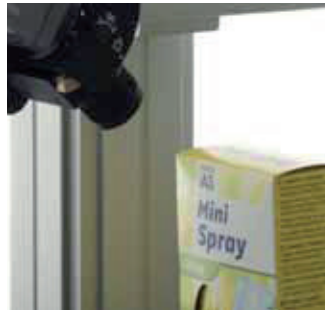
**MCSM1-01X** is a MACRO lens expressly designed for 3D measurement and imaging applications where the object plane is not perpendicular to the optical axis. A precise built-in adjustment mechanism allows to accurately meet the Scheimpflug condition and to image tilted planes in perfect focus.

This lens offers a wide range of magnifications and view angles. It can be interface with any structured light source to build up extremely accurate 3D imaging systems. Image sharpness is maintained even when the lens is tilted by a wide angle, since the Scheimpflug adjustment is pivoted around the detector plane. The tiltable mount is compatible with any C-mount camera.

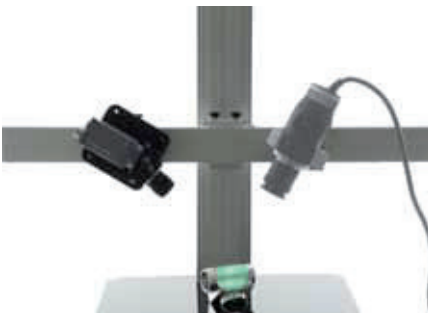
**EXAMPLES OF 3D IMAGING CONFIGURATION**



MCSM1-01X image a sample from an angled point of view.



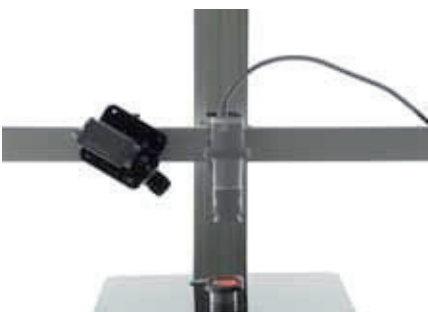
Without tilt adjustment, the object is not homogeneously focused.



MCSM1-01X combined with a Scheimpflug projector at 90°.



At the Scheimpflug angle, the image becomes sharp.



MCSM1-01X working at 45° with a pattern projector for 3D shaping.

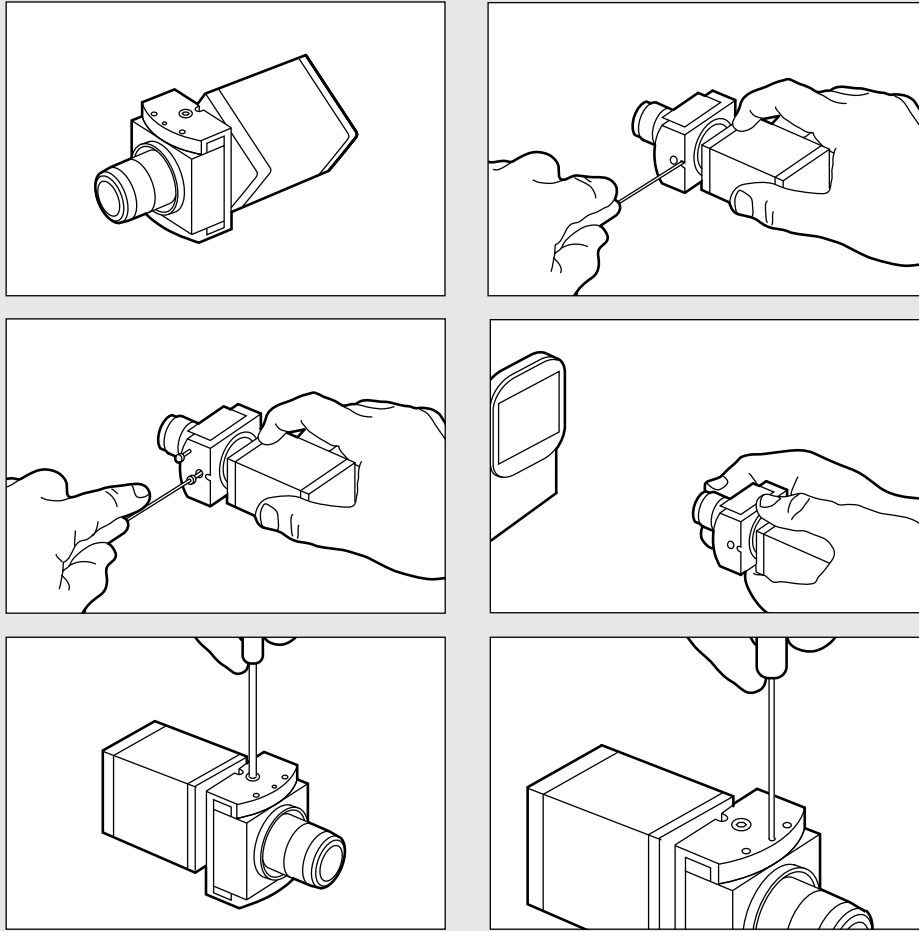


**KEY ADVANTAGES**

**PRECISION SCHEIMPFLUG MOUNT**  
Image focus is maintained across any tilted plane.

**COMPATIBLE WITH ANY C-MOUNT CAMERA**  
The back focal length meets the C-mount standard.

**TILT-MOUNT IS PIVOTED AROUND THE DETECTOR PLANE**  
The image stays centered at any angle.

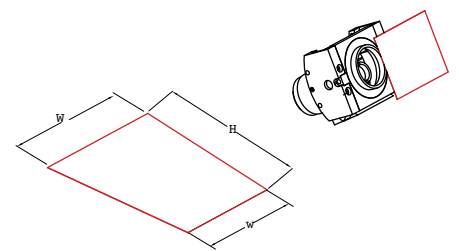


Setting-up the Schempflug mount is easy. First screw the lens into the camera C-mount, just like with any common lens. Loosen the lens C-mount adaptor by unscrewing the set-screws. Tune the lens phase to the right position, then tighten the set-screws.

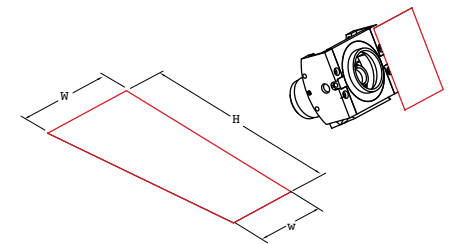
Mount the lens to a secure fixture by means of the threaded holes. Once the lens is mounted, adjust the focus until the image at the center of the detector is sharp; you don't need to tilt the detector yet.

With the lens mounted and well focused, adjust the tilt control on the side of the Schempflug mount by means of a screwdriver. It might be required to perform a second fine focusing of the lens to achieve the perfect setting. Once the Schempflug angle is set, lock the mount in place by tightening the lateral set-screws.

Object Tilt (deg)	Mount Tilt (deg)	Working Distance (mm)	LONG DETECTOR SIDE HORIZONTAL						LONG DETECTOR SIDE VERTICAL						
			1/3"		1/2"		2/3"		1/3"		1/2"		2/3"		
			b (mm)	H (mm)	b (mm)	H (mm)	b (mm)	H (mm)	b (mm)	H (mm)	b (mm)	H (mm)	b (mm)	H (mm)	
			4,8 x 3,6	6,4 x 4,8	8,8 x 6,6	3,6 x 4,8	4,8 x 6,4	6,6 x 8,8							
			FIELD OF VIEW - w (W) X H - (mm x mm)												
			b (B)	H	b (B)	H	b (B)	H	b (B)	H	b (B)	H	b (B)	H	
1 x	0,0°	0,0°	46,0	4,8 (4,8) x 3,6	6,4 (6,4) x 4,8	8,8 (8,8) x 6,6	3,6 (3,6) x 4,8	4,8 (4,8) x 6,4	6,6 (6,6) x 8,8						
	5,0°	5,0°	46,0	4,8 (4,8) x 3,6	6,3 (6,5) x 4,8	8,7 (8,9) x 6,6	3,6 (3,6) x 4,8	4,7 (4,9) x 6,4	6,5 (6,7) x 8,8						
	10,0°	10,0°	46,0	4,7 (4,9) x 3,6	6,3 (6,5) x 4,8	8,6 (9,0) x 6,6	3,5 (3,7) x 4,8	4,7 (4,9) x 6,4	6,4 (6,8) x 8,8						
	15,0°	15,0°	46,0	4,6 (5,0) x 3,6	6,2 (6,6) x 4,8	8,5 (9,1) x 6,6	3,5 (3,8) x 4,8	4,6 (5,0) x 6,4	6,3 (6,9) x 8,8						
0,75 x	0,0°	0,0°	47,8	6,4 (6,4) x 4,8	8,6 (8,6) x 6,4	11,8 (11,8) x 8,8	4,8 (4,8) x 6,4	6,4 (6,4) x 8,6	8,8 (8,8) x 11,8						
	7,5°	5,7°	47,8	6,3 (6,5) x 4,8	8,4 (8,7) x 6,5	11,6 (12,0) x 8,9	4,7 (4,9) x 6,4	6,3 (6,6) x 8,6	8,7 (9,0) x 11,8						
	15,0°	11,4°	47,8	6,2 (6,6) x 4,9	8,3 (8,8) x 6,5	11,4 (12,2) x 9,0	4,6 (5,0) x 6,5	6,2 (6,7) x 8,7	8,5 (9,2) x 12,0						
	20,0°	15,3°	47,8	6,2 (6,7) x 5,0	8,2 (8,9) x 6,6	11,3 (12,3) x 9,1	4,6 (5,0) x 6,6	6,1 (2,4) x 8,8	8,4 (3,4) x 12,1						
0,5 x	0,0°	0,0°	59,6	9,6 (9,6) x 7,2	12,8 (12,8) x 9,6	17,7 (17,7) x 13,3	7,2 (7,2) x 9,6	9,6 (9,6) x 12,8	13,3 (13,3) x 17,7						
	10,0°	5,0°	59,6	9,4 (9,8) x 7,3	12,6 (13,1) x 9,7	17,3 (18,0) x 13,4	7,0 (7,4) x 9,7	9,4 (9,9) x 13,0	12,9 (13,6) x 17,9						
	20,0°	10,4°	59,6	9,2 (10,1) x 7,6	12,3 (13,4) x 10,1	17,0 (18,4) x 13,9	6,8 (7,7) x 10,1	9,1 (10,2) x 13,5	12,5 (14,0) x 18,6						
	30,0°	16,1°	59,6	9,0 (10,3) x 8,0	12,1 (13,7) x 10,7	16,6 (18,9) x 14,8	6,6 (7,9) x 10,8	8,9 (10,5) x 14,3	12,2 (14,5) x 19,7						
0,33 x	0,0°	0,0°	83,8	14,6 (14,6) x 10,9	19,4 (19,4) x 14,6	26,7 (26,7) x 20,1	10,9 (10,9) x 14,5	14,6 (14,6) x 19,4	20,1 (20,1) x 26,6						
	15,0°	5,1°	83,8	14,1 (14,9) x 11,3	18,9 (19,9) x 15,1	25,9 (27,4) x 20,7	10,5 (11,4) x 15,1	14,0 (15,2) x 20,1	19,3 (20,9) x 27,6						
	30,0°	10,8°	83,8	13,7 (15,6) x 12,5	18,2 (20,8) x 16,6	25,1 (28,6) x 22,8	10,0 (12,0) x 16,7	13,4 (16,0) x 22,2	18,4 (22,0) x 30,6						
	45,0°	18,3°	83,8	13,1 (16,4) x 14,9	17,5 (21,9) x 19,8	24,1 (30,1) x 27,3	9,5 (12,9) x 20,0	12,7 (17,1) x 26,7	17,5 (23,6) x 36,7						
0,2 x	0,0°	0,0°	135,3	24,0 (24,0) x 18,0	32,0 (32,0) x 24,0	44,0 (44,0) x 33,0	18,0 (18,0) x 24,0	24,0 (24,0) x 32,0	33,0 (33,0) x 44,0						
	15,0°	3,1°	135,3	23,3 (24,8) x 18,6	31,0 (33,0) x 24,8	42,7 (45,4) x 34,2	17,3 (18,8) x 24,9	23,0 (25,1) x 33,1	31,7 (34,5) x 45,6						
	30,0°	6,6°	135,3	22,5 (25,7) x 20,7	30,0 (34,3) x 27,7	41,2 (47,2) x 38,0	16,5 (19,8) x 27,8	22,0 (26,4) x 37,0	30,3 (36,3) x 50,9						
	45,0°	11,4°	135,3	21,5 (27,1) x 25,3	28,7 (36,2) x 33,7	39,5 (49,7) x 46,4	15,6 (21,3) x 34,1	20,8 (28,4) x 45,4	28,6 (39,0) x 62,5						
0,1 x	0,0°	0,0°	271,0	47,6 (47,6) x 35,7	63,5 (63,5) x 47,6	87,3 (87,3) x 65,5	35,7 (35,7) x 47,7	47,6 (47,6) x 63,6	65,5 (65,5) x 87,4						
	15,0°	1,6°	271,0	46,2 (49,2) x 37,0	61,6 (65,6) x 49,4	84,7 (90,2) x 67,9	34,3 (37,3) x 49,4	45,7 (49,7) x 65,9	62,9 (68,4) x 90,6						
	30,0°	3,4°	271,0	44,6 (51,1) x 41,4	59,5 (68,1) x 55,2	81,8 (93,7) x 75,8	32,8 (39,3) x 55,4	43,7 (52,4) x 73,8	60,1 (72,0) x 101,5						
	45,0°	5,8°	271,0	42,7 (53,9) x 51,0	56,9 (71,9) x 68,0	78,2 (98,9) x 93,4	30,9 (42,3) x 68,7	41,2 (56,4) x 91,6	56,7 (77,6) x 125,9						



Field of View with detector's long side set horizontal.



Field of View with detector's long side set vertical.