

Machine Vision Lenses

Low Magnification Video Lenses



Navitar's Machine Vision, factory automation lenses are the benchmark for which all low magnification machine vision video lenses should be measured.

Quality all metal/glass construction coupled with precision engineering and manufacturing results in optically precise video lenses for your most demanding application. Short M.O.D.'s (minimum object distance) and compact design are ideally suited for your most challenging industrial and robotic image processing application.

Navitar offers a complete selection of machine vision quality video lenses from wide angle to telephoto, all with high resolution, low distortion and even illumination across the image plane of your camera.

Available Formats

- 1.1" Format 12MP C-Mount Lens
- 4/3" Format 8MP C-Mount Lens
- 1" and 2/3" Format Megapixel C-Mount Lens (up to 10MP)
- 1/2" Format High Resolution C-Mount Lens
- SWIR 1" Format C-Mount Lens (800nm to 1900nm)
- Large Format F-Mount Lens (43.3mm diag.)
- Large Format F-Mount NIR Broad Band Coated Lens (400nm to 1200nm)

Manual focus and iris control with locking screws are standard on all lens models.

1.1" 12 MP C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D7512 & PL-D7912		
Resolution (Center - Edge) 160 lp/mm - 100 lp/mm									
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1.1" (mm)	Object Area at M.O.D. 1" (mm)	Object Area at M.O.D. 2/3" (mm)	Lens Dimensions (mm)	Filter Diameter	
NMV-6M1.1	6.5 mm	2.5- 16	0.1 m	256.0 x 190.0	231.0 x 172.0	157.0 x 117.0	84.0 x 79.1	Ø82	P=0.75
NMV-8M1.1	8.5 mm	2.5- 16	0.1 m	184.0 x 138.0	167.0 x 125.0	115.0 x 86.0	64.0 x 73.36	Ø62	P=0.75
NMV-12M1.1	12 mm	1.8- 16	0.1 m	135.0 x 101.0	123.0 x 92.0	84.0 x 63.0	54.0 x 73.8	Ø52	P=0.75
NMV-16M1.1	16 mm	1.8- 16	0.1 m	102.0 x 77.0	93.0 x 70.0	64.0 x 48.0	43.0 x 65.7	Ø35.5	P=0.5
NMV-25M1.1	25 mm	1.8- 16	0.1 m	64.0 x 48.0	58.0 x 44.0	40.0 x 30.0	45.0 x 69.4	Ø35.5	P=0.5
NMV-35M1.1	35 mm	1.8- 16	0.2 m	84.0 x 63.0	76.0 x 57.0	52.0 x 39.0	45.0 x 66.0	Ø40.5	P=0.5
NMV-50M1.1	50 mm	1.8- 16	0.2 m	59.0 x 44.0	54.0 x 40.0	37.0 x 28.0	45.0 x 74.5	Ø40.5	P=0.5

4/3" MP C-Mount Fixed Focal Length Lenses (23mm diag.)									
Resolution (Center - Edge) 160 lp/mm - 80 lp/mm									
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1.1" (mm)	Object Area at M.O.D. 1" (mm)	Object Area at M.O.D. 2/3" (mm)	Lens Dimensions (mm)	Filter Diameter	
1-24719	8 mm	2.8- 22	0.1 m	239.0 x 179.0	179.3 x 134.3	119.5 x 89.5	100 x 74	Ø72	P=0.75
1-19910	12 mm	2.0- 22	0.1 m	182.0 x 136.0	126.6 x 94.6	87.0 x 65.0	57 x 85	Ø55	P=0.75
1-19911	16 mm	2.0- 22	0.1 m	135.0 x 101.0	93.9 x 70.2	64.5 x 48.3	45 x 79.5	Ø40.5	P=0.5
1-19912	25 mm	2.0- 16	0.15 m	125.0 x 93.0	86.9 x 64.7	59.8 x 44.5	45 x 89	Ø40.5	P=0.5
1-19913	35 mm	2.0- 16	0.2 m	100.0 x 75.0	69.6 x 52.2	47.8 x 35.9	45 x 74	Ø37.5	P=0.5
1-19914	50 mm	2.0- 22	0.3 m	100.0 x 75.0	69.6 x 52.2	47.8 x 35.9	45 x 78	Ø37.5	P=0.5

1" MP C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D759 & PL-D799		
Resolution (Center - Edge) 120 lp/mm - 80 lp/mm									
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1.1" (mm)	Object Area at M.O.D. 1" (mm)	Object Area at M.O.D. 2/3" (mm)	Lens Dimensions (mm)	Filter Diameter	
NMV-6M1	6 mm	1.8- 11	0.1 m	267.4 x 196.3	183.8 x 134.9	133.7 x 98.1	54 x 56.2	none	
NMV-8M1	8 mm	1.4- 16	0.1 m	147.0 x 110.5	101.2 x 75.9	73.6 x 55.2	57 x 58	Ø55	P=0.75
NMV-12M1	12.5 mm	1.4- 16	0.3 m	307.5 x 230.5	211.2 x 158.4	153.6 x 115.2	42 x 52	Ø35.5	P=0.5
NMV-16M1	16 mm	1.4- 16	0.3 m	227.0 x 170.5	156.2 x 117.1	113.6 x 85.2	42 x 52.9	Ø35.5	P=0.5
NMV-25M1	25 mm	1.4- 16	0.3 m	140.8 x 105.6	96.8 x 72.6	70.4 x 52.8	42 x 43	Ø35.5	P=0.5
NMV-35M1	35 mm	1.4- 16	0.3 m	96.9 x 72.7	66.6 x 50.0	48.5 x 36.4	42 x 43	Ø35.5	P=0.5
NMV-50M1	50 mm	1.4- 16	0.5 m	115.2 x 86.4	79.2 x 59.4	57.6 x 43.1	47.5 x 48	Ø40.5	P=0.5
NMV-75M1	75 mm	1.8- 16	1.0 m	157.9 x 118.4	108.6 x 81.4	78.9 x 59.2	48 x 57	Ø46	P=0.75

2/3" 10 MP C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D755 & PL-D795		
Resolution (Center - Edge) 200 lp/mm - 160 lp/mm									
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 2/3" (mm)	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Lens Dimensions (mm)	Filter Diameter	
1-19552	5 mm	1.8- 16	0.1 m	197.0 x 147.0	143.2 x 107.0	107.4 x 80.2	48 x 59.4	Ø46	P=0.75
1-19553	8.5 mm	1.8- 22	0.1 m	133.2 x 99.6	96.9 x 72.4	72.7 x 54.3	36 x 56	Ø34	P=0.5
1-19554	12 mm	1.8- 11	0.1 m	80.7 x 60.2	58.7 x 43.8	44.0 x 32.8	33 x 52.5	Ø25.5	P=0.5
1-19555	16 mm	1.8- 16	0.1 m	61.1 x 45.7	44.4 x 33.2	33.2 x 24.9	33 x 47.5	Ø25.5	P=0.5
1-19556	25 mm	1.8- 16	0.1 m	36.7 x 27.5	26.7 x 20.0	20.0 x 15.0	33 x 45.5	Ø25.5	P=0.5
1-19557	35 mm	2.0- 16	0.1 m	23.4 x 17.6	17.0 x 12.8	12.8 x 9.6	43 x 49	Ø34	P=0.5
1-19558	50 mm	2.8- 16	0.1 m	19.1 x 14.3	13.9 x 10.4	10.4 x 7.8	38 x 77	Ø30.5	P=0.5

2/3" 5 MP C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D755 & PL-D795	
Resolution (Center - Edge) 160lp/mm - 125 lp/mm								
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 2/3" (mm)	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Lens Dimensions (mm)	Filter Diameter
1-24830	12.5 mm	1.4- 16	0.1 m	81.4 x 60.9	59.2 x 44.3	44.4 x 33.2	38.5 x 52.0	Ø30.5 P=0.5
1-24831	16 mm	1.4- 16	0.1 m	64.6 x 48.4	47.0 x 35.2	35.2 x 26.4	38.5 x 52.0	Ø30.5 P=0.5
1-24832	25 mm	1.6- 16	0.1 m	35.1 x 26.3	25.5 x 19.1	19.1 x 14.3	38.5 x 45.5	Ø30.5 P=0.5
1-24833	35 mm	1.6- 16	0.18 m	42.1 x 31.6	30.6 x 23.0	23.0 x 17.2	38.5 x 48.0	Ø30.5 P=0.5

2/3" MP C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D753, PL-D755 & PL-D795	
Resolution (Center - Edge) 120lp/mm - 100 lp/mm								
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 2/3" (mm)	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Lens Dimensions (mm)	Filter Diameter
NMV-5M23	5 mm	2.8- 16	0.05 m	196.8 x 147.6	110.0 x 105.0	82.0 x 78.0	42.0 x 38.7	Ø40.5 P=0.5
NMV-8M23	8 mm	1.4- close	0.12 m	117.3 x 88.0	84.0 x 63.0	63.0 x 47.0	34.0 x 41.6	Ø27 P=0.5
NMV-12M23	12 mm	1.4- close	0.15 m	110.0 x 82.5	79.0 x 59.0	59.0 x 44.0	34.0 x 37.0	Ø27 P=0.5
NMV-16M23	16 mm	1.4- 16	0.2 m	112.8 x 84.4	81.5 x 61.0	60.0 x 45.0	33.0 x 36.5	Ø27 P=0.5
NMV-25M23	25 mm	1.4- 16	0.2 m	71.1 x 53.3	51.0 x 38.0	38.0 x 28.0	33.0 x 39.5	Ø27 P=0.5
NMV-35M23	35 mm	2.0- 16	0.2 m	47.9 x 35.8	33.0 x 26.0	25.0 x 19.0	34.0 x 36.5	Ø27 P=0.5
NMV-50M23	50 mm	2.8- 22	0.2 m	29.3 x 21.9	21.0 x 16.0	16.0 x 12.0	34.0 x 55.0	Ø27 P=0.5
NMV-75M23	75 mm	2.5- 22	1.2 m	132 x 99	96.6 x 72.5		36.0 x 56.4	Ø34 P=0.5
NMV-100M23	100 mm	2.8- close	2.0 m	168.8 x 126.6	122.7 x 92.0		42.0 x 75.0	Ø40.5 P=0.5

2/3" High Resolution C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D753 & PL-D752	
Resolution (Center - Edge) 100lp/mm - 60 lp/mm								
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 2/3" (mm)	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Lens Dimensions (mm)	Filter Diameter
NMV-6	6 mm	1.4- 16	0.1 m	367 x 251	264 x 181	198 x 136	30 x 32.8	none
NMV-8	8 mm	1.4- 16	0.1 m	260 x 184	187 x 132	140 x 99	30 x 30	Ø27 P=0.5
NMV-12	12 mm	1.4- 16	0.1 m	237 x 173	170 x 125	127 x 93	30 x 31.5	Ø27 P=0.5
NMV-16	16 mm	1.4- 16	0.2 m	112 x 83	80 x 60	60 x 45	30 x 28	Ø27 P=0.5
NMV-25	25 mm	1.6- 16	0.2 m	119 x 89	86 x 64	64 x 48	30 x 28.5	Ø27 P=0.5
NMV-35	35 mm	1.6- 16	0.35 m	127 x 95	91 x 68	68 x 51	32 x 36.5	Ø30.5 P=0.5
NMV-50	50 mm	2.0- 22	0.5 m	85 x 64	61 x 46	46 x 34	32 x 39.5	Ø30.5 P=0.5

1/2" High Resolution C-Mount Wide-Angle Fixed Focal Length Lenses							Compatible Pixelink Cameras PL-D721 & PL-D721P	
Resolution (Center - Edge) 100 lp/mm - 60 lp/mm								
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Object Area at M.O.D. 1/4" (mm)	Lens Dimensions (mm)	Filter Diameter
NMV-4WA	3.5	1.4- 16	0.2 m	396.0 x 247.0	297.0 x 185.0	198.0 x 123.0	31 x 30.5	none
NMV-5WA	4.5	1.4- 16	0.2 m	260.0 x 180.0	195.0 x 135.0	130.0 x 90.0	31 x 29.5	none
NMV-6WA	6	1.4- 16	0.2 m	174.0 x 128.0	130.0 x 96.0	87.0 x 64.0	31 x 34	Ø25.5 P=0.5
NMV-12WA	12	2.8- 32	0.3 m	167.0 x 123.0	125.0 x 92.0	83.0 x 61.0	31 x 29.5	Ø30.5 P=0.5

Ruggedized Lenses

1" C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras	
Resolution (Center - Edge) 120 lp/mm - 80 lp/mm							PL-D759 & PL-D799	
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1" (mm)	Object Area at M.O.D. 2/3" (mm)	Lens Dimensions (mm)	Filter Diameter	
1-26382	8 mm	F1.4 / F2.8 / F4 / F8	0.1 m	196 x 143	130 x 96	58 x 58	Ø55 P=0.75	
1-26383	12.5 mm	F1.4 / F2.8 / F4 / F8	0.3 m	330.6 x 243.5	222.4 x 165.2	44 x 51.5	Ø35.5 P=0.5	
1-26384	16 mm	F1.4 / F2.8 / F4 / F8	0.3 m	251.5 x 186.2	30.8 x 23.2	43 x 53	Ø35.5 P=0.5	
1-26385	25 mm	F1.4 / F2.8 / F4 / F8	0.3 m	160.7 x 119.2	20.2 x 15.1	43 x 43	Ø35.5 P=0.5	
1-26386	35 mm	F1.4 / F2.8 / F4 / F8	0.3 m	110.1 x 82	75.2 x 56.2	46 x 44	Ø35.5 P=0.5	
1-26387	50 mm	F1.4 / F2.8 / F4 / F8	0.5 m	121.8 x 91.3	83.8 x 62.9	50 x 48	Ø40.5 P=0.5	

2/3" C-Mount Fixed Focal Length Lenses							Compatible Pixelink Cameras	
Resolution (Center - Edge) 120 lp/mm - 100 lp/mm							PL-D755 & PL-D795	
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 2/3" (mm)	Object Area at M.O.D. 1/2" (mm)	Lens Dimensions (mm)	Filter Diameter	
1-25551	8 mm	F1.4 / F4 / F8 / F16	0.1 m	56.5 x 43.9	42.6 x 32.5	33.0 x 41.6	Ø27 P=0.5	
1-25552	12 mm	F1.4 / F4 / F8 / F16	0.15 m	38.3 x 29.1	28.3 x 21.4	33.0 x 37.0	Ø27 P=0.5	
1-25553	16 mm	F1.4 / F4 / F8 / F16	0.2 m	30.0 x 22.7	21.8 x 16.4	33.0 x 36.5	Ø27 P=0.5	
1-25554	25 mm	F1.4 / F4 / F8 / F16	0.2 m	19.6 x 14.8	14.0 x 10.5	33.0 x 39.5	Ø27 P=0.5	
1-25555	35 mm	F1.6 / F4 / F8 / F16	0.2 m	14.4 x 10.8	10.5 x 7.9	33.0 x 37.8	Ø27 P=0.5	
1-25556	50 mm	F1.6 / F4 / F8 / F16	0.2 m	9.6 x 7.2	7.0 x 5.2	33.0 x 56.2	Ø27 P=0.5	

SWIR Lenses

SWIR 1" MP C-Mount Fixed Focal Length Lenses 800nm to 1900nm Transmission								
Resolution (Center - Edge) 100 lp/mm - 60 lp/mm								
Part Number	Focal Length	F-Stop	M.O.D.	Object Area at M.O.D. 1/2" (mm)	Object Area at M.O.D. 1/3" (mm)	Object Area at M.O.D. 1/4" (mm)	Lens Dimensions (mm)	Filter Diameter
SWIR-8	8 mm	1.4- 16	0.1 m	147.0 x 110.5	101.2 x 75.9	73.6 x 55.2	57 x 58	Ø55 P=0.75
SWIR-12	12.5 mm	1.4- 16	0.3 m	307.5 x 230.5	211.2 x 158.4	153.6 x 115.2	43 x 51.5	Ø35.5 P=0.5
SWIR-16	16 mm	1.4- 16	0.3 m	227.0 x 170.5	156.2 x 117.1	113.6 x 85.2	43 x 52.9	Ø35.5 P=0.5
SWIR-25	25 mm	1.4- 16	0.4 m	192.0 x 144.0	132.0 x 99.0	96.0 x 72.0	43 x 43	Ø35.5 P=0.5
SWIR-35	35 mm	1.4- 16	0.4 m	133.5 x 100.1	91.8 x 68.8	66.7 x 50.0	43 x 43	Ø35.5 P=0.5
SWIR-50	50 mm	1.4- 16	0.6 m	140.8 x 105.6	96.8 x 72.6	70.4 x 52.8	49 x 48	Ø40.5 P=0.5

Large Format 43.3mm Diagonal Sensor Coverage

F-Mount Fixed Focal Length Lenses					
Resolution (Center - Edge) 200 lp/mm - 63 lp/mm (M48 x 0.75 Mount – Call for More Info)					
Part #	Focal Length (mm)	F-Stop	M.O.D.	Lens Dimensions (mm)	Filter Diameter
1-19711	28	2.8 - 16	0.30 m	75 x 98	Ø72 P=0.75
1-19712	35	2.8 - 16	0.26 m	57.5 x 71	Ø52 P=0.75
1-19713	50	2.8 - 16	0.26 m	57.5 x 77	Ø52 P=0.75

F-Mount Fixed Focal Length Lens - NIR Broad Band Coated (400-1200nm)					
Resolution (Center - Edge) 160 lp/mm - 64 lp/mm (M42 x 1 P-Mount – Call for More Info)					
Part #	Focal Length (mm)	F-Stop	M.O.D.	Lens Dimensions (mm)	Filter Diameter
1-19909	50	1.9 - 16	0.5 m	58.5 x 105.2	Ø52 P=0.75

Visit navitar.com for additional lens solutions available from Fujinon, Kowa and Zeiss.

