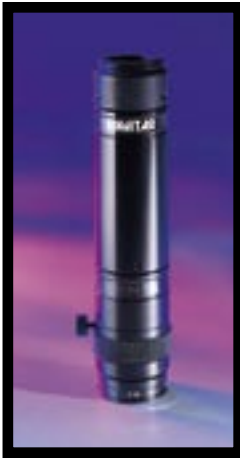


- High resolution, diffraction-limited f/4.5 optical quality for high precision measurement and inspection.
- Long working distance makes lighting and handling easier.
- Compact size.
- Coaxial lighting available for shadow free illumination.
- Compatible with high-magnification infinity corrected objectives (5X, 10X, 20X, 50X).
- Mechanically stable for the most demanding vibration environments.
- Modular design for flexibility.
- Optics attach to any C-mount camera.
- Short tube length (approx. 4 inches) and small diameter (1.25 inches).
- Allows for co-axial illumination and/or 3 mm fine focus.
- High transmission (>70%) over the visible to near IR spectrum.
- Covers magnification factors of between 0.30X and 91X.
- Working distance ranges from 35 mm to 370 mm.



Precise Eye



Precise Eye system dimensions can be found on our website at [navitar.com](http://navitar.com)

# Precise Eye .....

**Precise Eye Field of View Matrix (in mm at nominal working distance)**

Lens Attachment	W.D. (mm)	Camera Format & Parameters	0.67X Adapter 1-61453	1.0X Adapter 1-61445	1.33X Adapter 1-61448	2.0X Adapter 1-61450
0.25X 0.018 N.A. DOF 3.16 mm 1-6044	356 (nominal)	Mag.	0.30X	0.45X	0.60X	0.9X
		Field 1/4"	10.7(h) 8.0(v)	7.1(h) 5.3(v)	5.3(h) 4.0(v)	3.6(h) 2.7(v)
	300-370 (1) W.D. Range	Field 1/3"	15.9(h) 11.9(v)	10.7(h) 8.0(v)	8.0(h) 6.0(v)	5.3(h) 4.0(v)
		Field 1/2"	21.2(h) 15.9(v)	14.2(h) 10.7(v)	10.6(h) 8.0(v)	7.1(h) 5.3(v)
		Field 2/3"	29.2(h) 21.9(v)	19.6(h) 14.7(v)	14.7(h) 11.0(v)	9.8(h) 7.3(v)
0.5X 0.035 N.A. DOF 0.78 mm 1-60110	175 (nominal)	Mag.	0.60X	0.90X	1.2X	1.8X
		Field 1/4"	5.3(h) 4.0(v)	3.6(h) 2.6(v)	2.7(h) 2.0(v)	1.8(h) 1.3(v)
	170-190 (1) W.D. Range	Field 1/3"	8.0(h) 6.0(v)	5.3(h) 4.0(v)	4.0(h) 3.0(v)	2.7(h) 2.0(v)
		Field 1/2"	10.6(h) 8.0(v)	7.1(h) 5.3(v)	5.3(h) 4.0(v)	3.6(h) 2.7(v)
		Field 2/3"	14.7(h) 11.0(v)	9.8(h) 7.3(v)	7.3(h) 5.5(v)	4.9(h) 3.7(v)
0.75X 0.054 N.A. DOF 0.35 mm 1-60111	113 (nominal)	Mag.	0.90X	1.4X	1.8X	2.7X
		Field 1/4"	3.6(h) 2.7(v)	2.3(h) 1.8(v)	1.8(h) 1.3(v)	1.2(h) 0.9(v)
	110-120 (1) W.D. Range	Field 1/3"	5.3(h) 4.0(v)	3.6(h) 2.7(v)	2.7(h) 2.0(v)	1.8(h) 1.3(v)
		Field 1/2"	7.1(h) 5.3(v)	4.7(h) 3.6(v)	3.6(h) 2.7(v)	2.4(h) 1.8(v)
		Field 2/3"	9.8(h) 7.3(v)	6.5(h) 4.9(v)	4.9(h) 3.7(v)	3.3(h) 2.4(v)
None 0.070 N.A. DOF 0.20 mm	92 (nominal)	Mag.	1.2X	1.8X	2.4X	3.6X
		Field 1/4"	2.7(h) 2.0(v)	1.8(h) 1.3(v)	1.3(h) 1.0(v)	0.9(h) 0.7(v)
	90-93 (1) W.D. Range	Field 1/3"	4.0(h) 3.0(v)	2.7(h) 2.0(v)	2.0(h) 1.5(v)	1.3(h) 1.0(v)
		Field 1/2"	5.3(h) 4.0(v)	3.6(h) 2.7(v)	2.7(h) 2.0(v)	1.8(h) 1.3(v)
		Field 2/3"	7.3(h) 5.5(v)	4.9(h) 3.7(v)	3.7(h) 2.8(v)	2.4(h) 1.8(v)
1.5X 0.104 N.A. DOF 0.1 mm 1-60112	51 (nominal)	Mag.	1.8X	2.7X	3.6X	5.4X
		Field 1/4"	1.8(h) 1.3(v)	1.2(h) 0.9(v)	0.9(h) 0.7(v)	0.6(h) 0.4(v)
	49-51 (1) W.D. Range	Field 1/3"	2.7(h) 2.0(v)	1.8(h) 1.3(v)	1.3(h) 1.0(v)	0.9(h) 0.7(v)
		Field 1/2"	3.6(h) 2.7(v)	2.4(h) 1.8(v)	1.8(h) 1.3(v)	1.2(h) 0.9(v)
		Field 2/3"	4.9(h) 3.7(v)	3.3(h) 2.4(v)	2.4(h) 1.8(v)	1.6(h) 1.2(v)
2.0X 0.141 N.A. DOF 0.05 mm 1-60113	36 (nominal)	Mag.	2.4X	3.6X	4.8X	7.2X
		Field 1/4"	1.3(h) 1.0(v)	0.9(h) 0.7(v)	0.7(h) 0.5(v)	0.5(h) 0.3(v)
	35-36 (1) W.D. Range	Field 1/3"	2.0(h) 1.5(v)	1.3(h) 1.0(v)	1.0(h) 0.8(v)	0.7(h) 0.5(v)
		Field 1/2"	2.7(h) 2.0(v)	1.8(h) 1.3(v)	1.3(h) 1.0(v)	0.9(h) 0.7(v)
		Field 2/3"	3.7(h) 2.78(v)	2.4(h) 1.8(v)	1.8(h) 1.4(v)	1.2(h) 0.9(v)

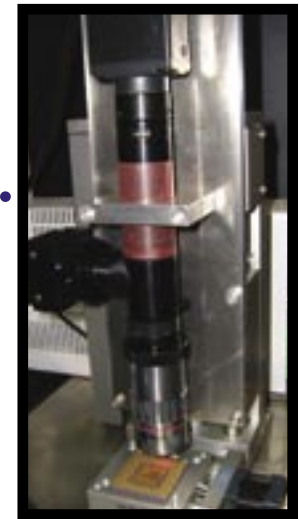
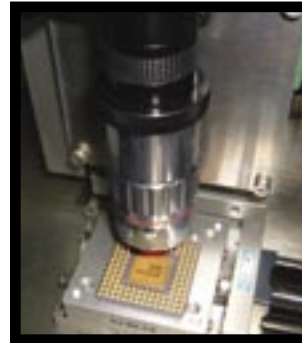
(1) Working distance range when using 3 mm fine focus. Field of view will change with shorter or longer working distances.



# Ultra Precise Eye . . . . .



Navitar also offers a variety of Ultra Precise Eye systems ideal for high magnification applications. The advanced design produces outstanding contrast and precision, while providing higher resolution and magnification than the standard Precise Eye. These systems incorporate infinity corrected objectives to provide long working distances and excellent edge flatness and clarity. The Ultra Precise Eye is also available with fine focus (1-61521) or with fine focus and co-axial illumination (1-61522).



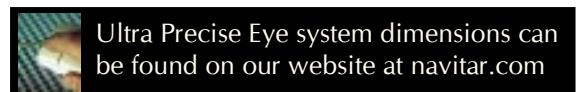
Navitar Ultra Precise Eye inspecting PCB components.

Precise Eye

## Ultra Precise Eye Magnification Matrix (in mm)

Infinity Corrected Objective (Mitutoyo)	W.D. (mm)	Camera Format & Parameters	0.67X Adapter 1-61453	1.0X Adapter 1-61445	1.33X Adapter 1-61448	2.0X Adapter 1-61450
<b>5X</b> 0.14 N.A. 1-60226	—	Mag.	3.05X	4.55X	6.10X	9.10X
	34	Field 1/4"	1.05(h) 0.79(v)	0.70(h) 0.53(v)	0.52(h) 0.39(v)	0.35(h) 0.26(v)
	34	Field 1/3"	1.57(h) 1.18(v)	1.06(h) 0.79(v)	0.79(h) 0.59(v)	0.53(h) 0.40(v)
	34	Field 1/2"	2.10(h) 1.58(v)	1.41(h) 1.06(v)	1.05(h) 0.79(v)	0.70(h) 0.53(v)
	34	Field 2/3"	2.89(h) 2.16(v)	1.93(h) 1.46(v)	1.44(h) 1.08(v)	0.97(h) 0.73(v)
<b>10X</b> 0.28 N.A. 1-60227	—	Mag.	6.1X	9.10X	12.2X	18.2X
	33	Field 1/4"	0.52(h) 0.39(v)	0.35(h) 0.26(v)	0.26(h) 0.20(v)	0.18(h) 0.13(v)
	33	Field 1/3"	0.79(h) 0.59(v)	0.53(h) 0.40(v)	0.39(h) 0.30(v)	0.26(h) 0.20(v)
	33	Field 1/2"	1.05(h) 0.79(v)	0.70(h) 0.53(v)	0.52(h) 0.39(v)	0.35(h) 0.26(v)
	33	Field 2/3"	1.44(h) 1.08(v)	0.97(h) 0.73(v)	0.72(h) 0.54(v)	0.48(h) 0.36(v)
<b>20X</b> 0.42 N.A. 1-60228	—	Mag.	12.2X	18.2X	24.4X	36.4X
	20	Field 1/4"	0.26(h) 0.20(v)	0.18(h) 0.13(v)	0.13(h) 0.10(v)	0.09(h) 0.07(v)
	20	Field 1/3"	0.39(h) 0.30(v)	0.26(h) 0.20(v)	0.20(h) 0.15(v)	0.13(h) 0.10(v)
	20	Field 1/2"	0.52(h) 0.39(v)	0.35(h) 0.26(v)	0.26(h) 0.20(v)	0.18(h) 0.14(v)
	20	Field 2/3"	0.72(h) 0.54(v)	0.48(h) 0.36(v)	0.36(h) 0.27(v)	0.24(h) 0.18(v)
<b>50X</b> 0.55 N.A. 1-60229	—	Mag.	30.5X	45.5X	61.0X	91.0X
	13	Field 1/4"	0.10(h) 0.08(v)	0.07(h) 0.05(v)	0.05(h) 0.04(v)	0.04(h) 0.03(v)
	13	Field 1/3"	0.16(h) 0.12(v)	0.11(h) 0.08(v)	0.08(h) 0.06(v)	0.06(h) 0.04(v)
	13	Field 1/2"	0.21(h) 0.16(v)	0.14(h) 0.11(v)	0.11(h) 0.08(v)	0.07(h) 0.05(v)
	13	Field 2/3"	0.29(h) 0.22(v)	0.19(h) 0.15(v)	0.14(h) 0.11(v)	0.10(h) 0.07(v)

NOTE: The O-I remains constant for each body tube (main assembly) regardless of which infinity corrected objective and adapter are selected: 1-61517 I-O = 219 mm, 1-61521 I-O = 243 mm, 1-61522 I-O = 263 mm



Ultra Precise Eye system dimensions can be found on our website at [navitar.com](http://navitar.com)