

Sciencscope International Coporation

5751 Schaefer Ave.
Chino, CA 91710

Micro Zoom Lens Specification Table

CCD Couplers																
Aux Lens W.D.	0.35				0.5				1				2			
	Mag.	FOV (mm)			Mag.	FOV (mm)			Mag.	FOV (mm)			Mag.	FOV (mm)		
0.3x 314 mm	4x - 26x	HI MAG	H: 10.16	V: 7.62	6x - 37x	HI MAG	H: 7.11	V: 5.33	12x - 74x	HI MAG	H: 3.56	V: 2.67	24x - 148x	HI MAG	H: 1.78	V: 1.33
		LO MAG	H: 65.31	V: 48.98		LO MAG	H: 45.71	V: 34.29		LO MAG	H: 22.86	V: 17.14		LO MAG	H: 11.43	V: 8.57
0.5x 189 mm	7x - 43x	HI MAG	H: 6.10	V: 4.57	10x - 62x	HI MAG	H: 4.27	V: 3.20	19x - 124x	HI MAG	H: 2.13	V: 1.60	38x - 248x	HI MAG	H: 1.07	V: 0.80
		LO MAG	H: 39.18	V: 29.39		LO MAG	H: 27.43	V: 20.57		LO MAG	H: 13.71	V: 10.29		LO MAG	H: 6.86	V: 5.14
1x 108 mm	13x - 87x	HI MAG	H: 3.05	V: 2.29	19x - 124x	HI MAG	H: 2.13	V: 1.60	39x - 248x	HI MAG	H: 1.07	V: 0.80	78x - 496x	HI MAG	H: 0.53	V: 0.40
		LO MAG	H: 19.59	V: 14.69		LO MAG	H: 13.71	V: 10.29		LO MAG	H: 6.86	V: 5.14		LO MAG	H: 3.43	V: 2.57
2x 32 mm	26x - 174x	HI MAG	H: 1.52	V: 1.14	39x - 248x	HI MAG	H: 1.07	V: 0.80	78x - 496x	HI MAG	H: 0.53	V: 0.40	156x - 992x	HI MAG	H: 0.27	V: 0.20
		LO MAG	H: 9.80	V: 7.35		LO MAG	H: 6.86	V: 5.14		LO MAG	H: 3.43	V: 2.57		LO MAG	H: 1.71	V: 1.29

* Magnification based on a 14" Monitor (13" viewable)

* FOV based on a 1/3" CCD Color camera

Application Notes

- There are three (3) variables that are of importance to the specifications of the Micro Zoom Lens; they are **1) magnification**, **2) field of view (FOV)** and **3) working distance**.
 - **Magnification**: the number of times a sample is magnified/increased on the monitor.
 - **Field of view (FOV)**: the visible area on the monitor
 - **Working distance (WD)**: the distance from the bottom lens to the sample while in focus
- The micro zoom lens can be configured in a variety of ways. A complete unit is comprised of the following: **1) Micro Zoom Lens**, **2) CCD Coupler** and **3) Auxiliary lens**.
 - **Micro Zoom Lens**: Main body of unit, 0.7x - 4.5x primary objective range with 108 mm of working distance
 - **CCD Coupler**: Available in a variety of magnifications (0.35x, 0.5x, 1x and 2x). Affects the magnification and FOV.
 - **Auxiliary lens**: Available in a variety of magnifications (0.3x, 0.5x, 1x and 2x). Affects the magnification, FOV and WD.

Determining the best set-up for your application

- Determine what is of most importance to you, field of view or working distance
- Based on the size of your sample, find the field of view (FOV) that best suits your needs, according to your previously accepted working distance.
- Once you have found the appropriate FOV and WD on the table, look for the auxiliary lens and CCD coupler associated with your choice

Example:

Let us suppose we have a sample of 1 mm diameter and we need to have from 125 mm - 200 mm of working distance, and we need to have our sample covered. Based on the facts, I will only be able to use the 0.5x auxiliary lens, due to the 125-200 mm range for working distance. Once known that I will need a 0.5x auxiliary lens, we look for the FOV that will match our pre-requisite. From the table above we see that the 1x CCD coupler will give us a horizontal FOV of 2.13 mm at hi magnification, therefore having our 1 mm sample covered.