

Microscope Introduction

Objective



Eyepiece

In microscopy, the abbreviation "WF" on an eyepiece stands for "Wide Field." This indicates that the eyepiece offers a wider field of view than standard eyepieces, allowing for a better overview of the specimen being viewed.

Eyepieces are often marked with their magnification and field of view number

(e.g., WF10x / 18 mm).

Field of view refers to the portion of space that an eye can perceive when looking straight ahead, motionless. In other words, it is the extent of space that can be seen without moving the head.

In this example, the "18 mm" represents the field of view number.



Measuring the field of view of an eyepiece:



40X Electronic Eyepiece (Camera)



To use the electronic eyepiece with a PC, use StrangeView software.

To use the electronic eyepiece with a cell phone, connect it with a USB A to USB C adapter and the Camera Viewer software.



Installing an eyepiece	With a 2x Barlow lens
Total Magnification	
Eyepiece x Objective = Overall Magnification $10x + 4x = 40x$ ($10 \times 4 = 40$) $10x + 10x = 100x$ $10x + 40x = 400x$	+ 2x Barlow lens $10x + 2x + 4x = 80x$ ($10 \times 2 \times 4 = 80$) $10x + 2x + 10x = 200x$ $10x + 2x + 40x = 800x$

Barlow lens (extender)

2x	4x (2x + 2x)
	Put the 2x long first 

Focusing

Start by focusing with the 4x objective, then increase to 10x and finish with the 40x objective.

Phone Holder

APEXEL F002X

It works very well and is easy to use.	It has an adapter for 23.2 mm eyepieces
	
	

Using Spacers

With double-sided adhesive tape, you can make spacers to raise the strips as needed. I cut some adhesive tape in half and glued pieces of cardboard on them to make them less slippery.



Oculaire Grossissement X			
5			
Objectif		Barlow lens	
X	1	2	4
1	5	10	20
2	10	20	40
4	20	40	80
10	50	100	200
20	100	200	400
40	200	400	800
50	250	500	1000
60	300	600	1200
100	500	1000	2000

Oculaire Grossissement X			
10			
Objectif		Barlow lens	
X	1	2	4
1	10	20	40
2	20	40	80
4	40	80	160
10	100	200	400
20	200	400	800
40	400	800	1600
50	500	1000	2000
60	600	1200	2400
100	1000	2000	4000

Oculaire Grossissement X			
12,5			
Objectif		Barlow lens	
X	1	2	4
1	12,5	25	50
2	25	50	100
4	50	100	200
10	125	250	500
20	250	500	1000
40	500	1000	2000
50	625	1250	2500
60	750	1500	3000
100	1250	2500	5000

Oculaire Grossissement X			
16			
Objectif		Barlow lens	
X	1	2	4
1	16	32	64
2	32	64	128
4	64	128	256
10	160	320	640
20	320	640	1280
40	640	1280	2560
50	800	1600	3200
60	960	1920	3840
100	1600	3200	6400

Oculaire Grossissement X			
20			
Objectif		Barlow lens	
X	1	2	4
1	20	40	80
2	40	80	160
4	80	160	320
10	200	400	800
20	400	800	1600
40	800	1600	3200
50	1000	2000	4000
60	1200	2400	4800
100	2000	4000	8000

Oculaire Grossissement X			
25			
Objectif		Barlow lens	
X	1	2	4
1	25	50	100
2	50	100	200
4	100	200	400
10	250	500	1000
20	500	1000	2000
40	1000	2000	4000
50	1250	2500	5000
60	1500	3000	6000
100	2500	5000	10000

	Occulaire Grossissement		
	X		
	30		
Objectif		Barlow lens	
X	1	2	4
1	30	60	120
2	60	120	240
4	120	240	480
10	300	600	1200
20	600	1200	2400
40	1200	2400	4800
50	1500	3000	6000
60	1800	3600	7200
100	3000	6000	12000

	Occulaire Grossissement		
	X		
	40		
Objectif		Barlow lens	
X	1	2	4
1	40	80	160
2	80	160	320
4	160	320	640
10	400	800	1600
20	800	1600	3200
40	1600	3200	6400
50	2000	4000	8000
60	2400	4800	9600
100	4000	8000	16000