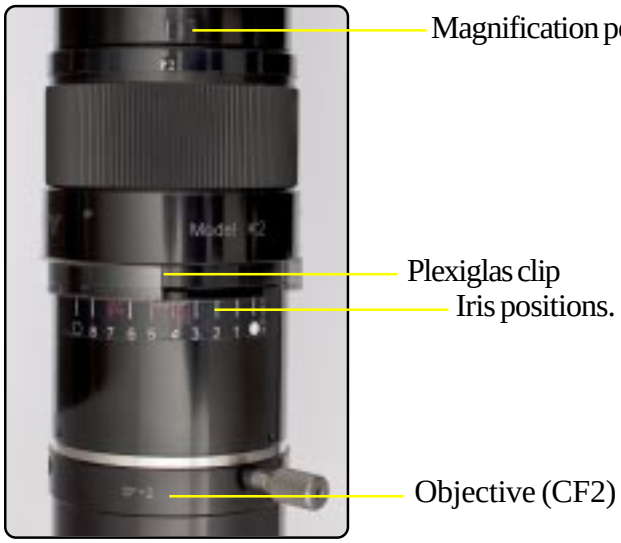


The K2 Long Distance Microscope as a measurement tool.

The K2 has been modified with the following changes:

#1. A magnification position indicator. This indicator has three positions noted as P1 , P2 and P3 P1 is the position on the focusing ring at the furthest working distance and lowest magnification of any given objective being used P3 is the closest working distance and the highest magnification of any given objective being used. P2 is in the middle.

#2 There is a clear Plexiglas clip that slides around the microscope at the iris. This is a registration aid that allows the user to mark a specific iris position and return to it. In this image it is set so the iris lever is centered on Iris position #4

#3 Iris positions. The iris positions have been marked because different iris positions equate different depth of field when imaging. The lower the number the less depth of field. Always focus at the lowest number, this will give you the least depth of field and allow you to focus on a precise focal plane. Note the word “focus” on the far right of the iris scale. Positions 4, 5 and 7 have been marked in red with objective numbers. These are the recommended starting points for noted objectives

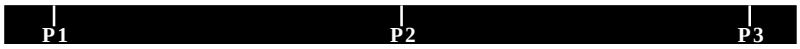
When compositing an image (making slices along the Z axis) you may use the P-51 cam-lift and the factory settings for each objective or you can use the slice chart in this section. The P-51 is defaulted at the lowest depth of field for any given objective ie highest magnification and the iris at full open. This creates a very thin slice in the Z axis.

The Slice Chart will allow you to select a magnification position P1-P3 and an iris position I3 - I7 for any given objective and a resulting slice size in micro steps. By reducing the magnification and or increasing the iris number you can significantly increase your depth of field resulting in far fewer slices per composite image.

Scale Register Placement on The Infinity K2.

The following is a quick guide to scale register sticker placement on the K2.
There are two stickers in a set. The small one we will call the register line and the long one we will call the focus ring scale.


Register Line



Focus Ring Scale

As noted in the first image, orient the K2 so you are looking at it straight on.

#1 Place the *Register Line* on the first main body tube. *(The tube that is marked Infinity Photo Optical Company)* This is the tube directly above the focus ring. Place the line so that when you face the scope you are seeing it straight on.

#2 Rotate the focus ring all the way to the **right.** This would be the lowest magnification position on any given objective also the longest working distance.
Place the Focus Ring scale on the top edge of the focus ring and align the *P1* mark on the scale with the register line you just placed on the main body tube. Adhere the sticker around the focus ring.

DONE.

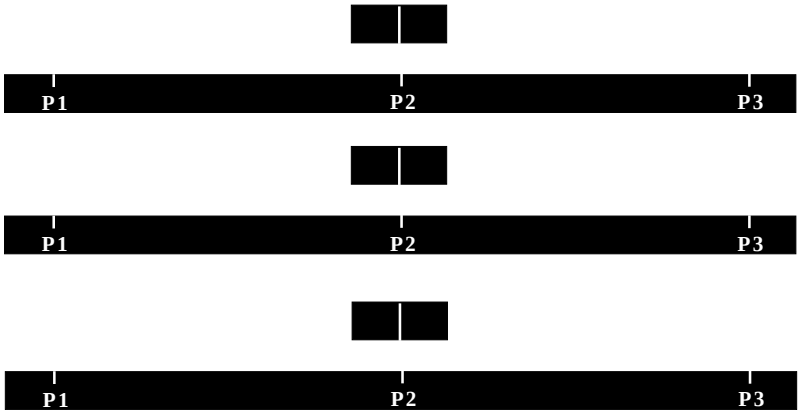
When imaging with any objective CF2, CF3, CF4, there are scale files that are noted P1 P2 and P3 for each objective. Example: CF2-P1
There are also files noted with the addition of a 2X example: CF2-P1-2X. These scales assume the use of the 2X amplifier in the system

When you take an image note the position and the objective used and an accurate scale may be used.

IMPORTANT NOTE. These scales files are all saved at 300ppi the image used with these scales must also be at 300ppi

In Photoshop CS3 Extended you may use the measurement tool and reference these scales as presets in the program. This will allow you to take full advantage of all of the measurements capability in Photoshop.

Focus scale markings



Iris markings

Print on high quality photo paper at 300DPI

Cover with clear laminate and adhere covered double stick tape to the back. Trim neatly to the edges, remove the cover on the double stick tape and place on the K2 as shown.

Slice Chart

CF2

	P1		P2		P3
I-3	450	I-3	450	I-3	375
I-4	600	I-4	525	I-4	450
I-5	750	I-5	675	I-5	525
I-6	900	I-6	825	I-6	675

CF3

	P1		P2		P3
I-3	225	I-3	188	I-3	150
I-4	300	I-4	225	I-4	225
I-5	375	I-5	262	I-5	262
I-6	450	I-6	375	I-6	300

CF4

	P1		P2		P3
I-4	75	I-4	75	I-4	57
I-5	94	I-5	86	I-5	75
I-6	113	I-6	113	I-6	94
I-7	150	I-7	150	I-7	134

5X

	P2
I-5	55
I-6	65
I-7	80

10X

	P2
I-5	12
I-6	22
I-7	28

Canon 40D K2 with stock K2 configuration and NO Mirror diverter

All measurements equal 1 mm @ 300 ppi

Lenses	pixels	FOV	WD
CF2-P1	181	19.0mm	224.mm
CF2-P2	244	14.0mm	176.mm
CF2-P3	310	11.0mm	146.mm
CF3-P1	289	12.0mm	134.mm
CF3-P2	352	10.0mm	114.mm
CF3-P3	419	8.0mm	97.mm
CF4-P1	596	5.75mm	63.mm
CF4-P2	679	5.0mm	58.mm
CF4-P3	765	4.5mm	52.mm
5X-P1	1142	3.0mm	24.mm
5X-P2	1165	2.9mm	22.2mm
5X-P3	1190	2.87mm	21.5mm
10X-P1	2264	1.550mm	18.0mm
10X-P2	2319	1.50mm	17.62mm
10X-P3	2368	1.40mm	17.30mm

pixels@ 1.4X (Canon 1.4X Teleconverter)

CF2-P1	253	13.5mm	222.mm
CF2-P2	339	10.0mm	176.mm
CF2-P3	432	8.0mm	147.mm
CF3-P1	402	8.6mm	133.mm
CF3-P2	490	7.0mm	112mm
CF3-P3	583	6.0mm	97.mm
CF4-P1	828	4.20mm	62.5mm
CF4-P2	943	3.70mm	57.mm
CF4-P3	1063	3.25mm	52.7mm
5X-P1	1586	2.2mm	25.1mm
5X-P2	1622	2.15mm	23.0mm
5X-P3	1656	2.1mm	22.0mm
10X-P1	3141	1.1mm	18.1mm
10X-P2	3213	1.05mm	17.65mm
10X-P3	3285	1.0mm	17.33mm

Canon 40D K2 with mirror diverter and quick release mount.

All measurements equal 1 mm @ 300 ppi

Lenses	pixels
CF2-P1	207
CF2-P2	277
CF2-P3	350
CF3-P1	320
CF3-P2	392
CF3-P3	466
CF4-P1	646
CF4-P2	742
CF4-P3	839
5X-P1	1197
5X-P2	1236
5X-P3	1275
10X-P1	2388
10X-P2	2466
10X-P3	2544