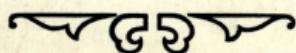


*Instructions*  
for using the  
**Velostigmat**  
Series II *f:4.5*



**WOLLENSAK OPTICAL CO.**  
**ROCHESTER, NEW YORK**

# INSTRUCTIONS

*for using the*

## Series II Velostigmat f:4.5

**I**N using the Series II, we strongly urge that the suggestions in the following article as regards depth of focus be strictly adhered to especially in any commercial or view work where sharpness near to far is a desirable feature.

In the three largest sizes of Series II, a diffusion device is furnished which adds materially to its usefulness in the studio. When the device is set at zero, no diffusion is rendered. When set at 5, maximum softness is the result, the other indications between these two extremes each rendering a proportionate amount of diffusion.

There are two ways in which this device may be operated; the first, giving the less diffusion of the two methods, is to set the diffusing device at the desired point and then to focus as sharply as possible; the second method is to first focus and then turn the diffusing device to the point that renders the most pleasing softness. This latter method renders a greater diffusion.

This is an anastigmat of the highest type and because of this, is an ideal objective for enlarging. However, because of its formula, it is necessary to reverse the lens when using for enlarging, which is easily done by putting frontboard and lens into camera backwards. For portrait enlarging, however, the lens will give a very pleasing effect when used in the regular way as it will render a slight diffusion. Because of its anastigmatic qualities, this lens is ideal not only for studio work in the larger sizes, but for Graflex use in the smaller, as its speed, flat field, and sharp definition make it ideal for the reflecting type of camera.

GENERAL SUGGESTIONS  
Concerning the Use of  
**Wollensak Lenses**

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**A**S speed is an essential quality in a high priced lens, the derivation of the F System of marking the diaphragm openings will no doubt be of interest. The F value indicates the ratio existing between the effective diameter of the lens and the focal length. So an F:4 lens has an effective lens aperture of  $\frac{1}{4}$ th the focal length and, when stopped to F:16, the effective opening is  $\frac{1}{16}$ th of the focal length. However, it is not practical to use the actual diameter of the diaphragm opening as a basis for estimating the speed, as the refraction, formula and other details must also be taken into consideration.

The U. S. or Uniform System was formerly popularly used as a method of marking but is now almost obsolete. As there are many lenses with this system still in use, however, and as some are still furnished with this marking, the relation of one system to the other will no doubt be of interest. This is shown on the opposite page:

F . . .	4	5.6	8	11	16	22	32	45
US . .	1	2	4	8	16	32	64	128

It is hard to give instructions for exposure without full data as to the time of day, month, value of light, latitude, brightness of subject, focal length, speed, make of negative and other details, but the following table will be of assistance in determining the relative light values of the different diaphragm openings:

F:3.8 is 1.402 times faster than F: 4.5

F:3.8 is 1.731 times faster than F: 5

F:3.8 is 2.748 times faster than F: 6.3

F:3.8 is 3.895 times faster than F: 7.5

F:4.5 is 1.234 times faster than F: 5

F:4.5 is 1.548 times faster than F: 5.6

F:4.5 is 1.960 times faster than F: 6.3

F:4.5 is 2.777 times faster than F: 7.5

F:5 is 1.587 times faster than F: 6.3

F:5 is 2.250 times faster than F: 7.5

F:6.3 is 1.417 times faster than F: 7.5

F:6.3 is 1.613 times faster than F: 8

F:7.5 is 2.230 times faster than F:11.2

Depth of focus is a principle of photography that is often misunderstood. It is an invariable rule of optics that all lenses of the same focal length and of the same speed

have the same depth of focus. In a cheaper lens where there is no very sharp plane of focus, the lens apparently has a greater depth because there is less difference in sharpness between the part in focus and the objects out of focus. The greater the focal length or the greater the speed the less the depth of focus, so lenses of a very short focal length such as  $3\frac{1}{2}$ " can be used on hand cameras and operated at a speed of F:4.5 and yet have almost a universal sharpness because of the fact that the focal planes lie so nearly together. The depth of a lens can always be increased by stopping down and where a camera is equipped with a fast lens, it is always advisable to use it at as small diaphragm opening as the light conditions will permit, so, for example, in photographing a view where there are no rapidly moving objects and where the light is good, using an F:16 stop at 1/25th second time. The fast apertures of F:4.5 and F:6.3 are always a distinct advantage, however, when photographing under poor lighting conditions or in picturing a rapidly moving object.



## Quality Lenses at Reasonable Prices

**W**OLLENSAK products are sold on a basis of quality, not of price. While their cost is exceptionally reasonable, we consider this an incidental factor, which may be attributed to efficient and economical methods of manufacture. Lens quality and lens performance are the chief considerations, and we guarantee Wollensak lenses and shutters to be equal in quality to any similar products, regardless of price or make.

The Wollensak line includes lenses and shutters for every photographic requirement, and the most popular types are briefly described below:

**VELOSTIGMAT SERIES Ia F:6.3-7.7** — The triple-convertible anastigmat with highly corrected single combinations.

**VELOSTIGMAT SERIES II F:4.5** — The allround high-speed anastigmat for Graflex, studio use and home portraiture.

**VELOSTIGMAT SERIES III F:9.5** — The speedy 90 degree wide angle anastigmat.

**VELOSTIGMAT SERIES IV F:6.3** — The fast general-purpose anastigmat of moderate price.

**VELOSTIGMAT PROCESS LENS** — The photo-engraving lens of precise correction, ideal for the most exacting requirements.

**SERIES IIIa EX. W. A. F:12.5** — The wide angle lens of excellent covering power, good speed and moderate price.

**VERITO DIFFUSED FOCUS F:4** — Deservedly the most popular soft focus lens on the market—speedy, convertible, versatile.

**BETAX SHUTTER** — One of the line of "Xact Exposure"—gearless, pumpless, reliable and uniformly accurate.

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