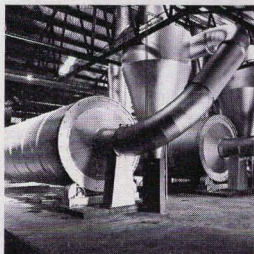


STILL

RAPTARS



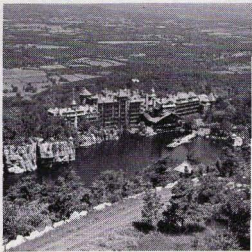
**INDUSTRIAL AND
COMMERCIAL**



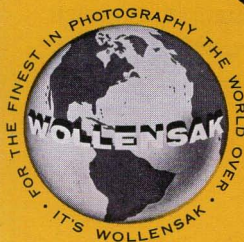
**PORTRAIT AND
GROUP**

NEWS AND GENERAL

ENLARGING



FOR

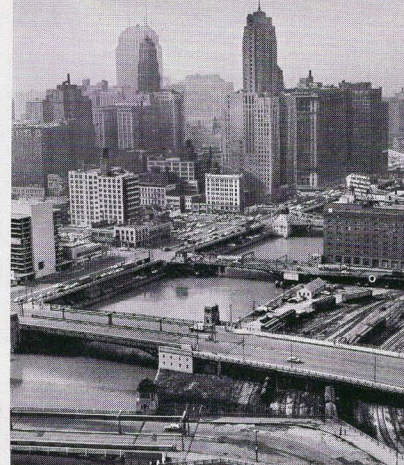


**BY
WOLLENSAK**

Wollensak **RAPTAR** enlarging lenses . . .

Professional and amateur photographers who want the finest in enlarging lenses select Wollensak Enlarging Raptars. These lenses produce crisp, brilliant enlargements over the entire print . . . capture all the tonal qualities and detail of the negative from corner to corner . . . were designed specifically to make enlargements.

Enlarging Raptars are designed for working from a flat field at a short range . . . projecting from a flat surface to a flat surface. They are exceptionally well corrected and *Wocoted* . . . are available in a complete range of focal lengths from 2" to 11 $\frac{7}{8}$ ".



The above photograph has been enlarged four times yet the smallest detail is accurately and faithfully reproduced from the original negative.



SPECIFICATIONS

RAPTAR ENLARGING f/4.5 (WOCOTED)

Catalog No.	Equiv. Focus		Film Size	Mounting
	Inch	mm		
710	*2	50	1 $\frac{1}{4}$ x1 $\frac{5}{8}$	In No. 1 Iris Diaph. Barrel
711	*3	75	2 $\frac{1}{4}$ x2 $\frac{1}{4}$	In No. 1 Iris Diaph. Barrel
712	*3 $\frac{1}{2}$	90	2 $\frac{1}{4}$ x3 $\frac{1}{4}$	In No. 1 Iris Diaph. Barrel
713	*4	101	2 $\frac{1}{4}$ x3 $\frac{1}{4}$	In No. 1 Iris Diaph. Barrel
714	*5	127	3 $\frac{1}{4}$ x4 $\frac{1}{4}$	In No. 2 Iris Diaph. Barrel
715	*5 $\frac{3}{8}$	135	4x5	In No. 3 Iris Diaph. Barrel
716	*6 $\frac{3}{8}$	162	4x5	In No. 4 Iris Diaph. Barrel
717	*7 $\frac{1}{2}$	190	5x7	In No. 5 Iris Diaph. Barrel
718	8 $\frac{1}{4}$	210	5x8	In No. 6 Iris Diaph. Barrel
719	9 $\frac{1}{2}$	241	6 $\frac{1}{2}$ x8 $\frac{1}{2}$	In No. 6 Iris Diaph. Barrel
720	11 $\frac{7}{8}$	302	8x10	In No. 7 Iris Diaph. Barrel

*Supplied with click stops.

WOLLENSAK

RAPAX...the finest precision-made shutter.



RAPAX SHUTTERS

Size	Maximum Diaphragm Opening		Lens Mount Thread Diam.		Speeds	Flange Diameter	
	Inch	mm	Front Inches	Rear Inches		Inside Inches	Outside Inches
1	25/32	20	31/32	1 1/32	1 to 1/400 plus T & B	1 3/16	1 11/16
2	1	25.4	1 1/4	1 1/4	1 to 1/400 plus T & B	1 21/64	1 7/8
3	1 13/64	31	1 35/64	1 37/64	1 to 1/200 plus T & B	1 43/64	2 19/64

WHY RAPAX? You will want three things in a shutter: 1) accuracy, 2) dependability and 3) ease of operation, for the best lens cannot compensate for an unreliable shutter. A camera shutter must not only be extremely accurate but very rugged to stand the terrifically rapid release of energy in its fine mechanism.

Thousands of Wollensak Rapax shutters have given years of dependable service . . . proof of their top quality, precision manufacture and inspection.

Clearly marked rim settings make for quick, easy diaphragming and exposure settings. Speeds range from 1 second up to 1/400 second, with Bulb and Time settings.

Two operating levers simplify use. Setting lever "cocks" shutter, putting springs under proper tension for desired speed. Depress release lever to make exposure. Cable release socket is also provided.

Press-Focus Lever for fast ground glass focusing. Shutter blades can be opened for focusing without setting to *Time* position. Simply depress press-focus lever to open blades at any speed setting. After focusing lift press-focus lever to close blades. Shutter is still cocked and ready for exposure.

Advantages of Rapax Internal Synchronization over Solenoid Synchronization—1. Maximum efficiency over entire shutter range is made possible by use of two synchronizer delay settings. Black "M" setting covers shutters speeds

of 1/100 and faster; Red "M" setting covers 1/50 and slower. Maximum synchronization efficiency is possible at 1/50 second when synchronizing delay indicator is set at Red "M." Synchronization delay can not be changed with solenoid synchronization.

2. Action is consistent and reliable—mechanical synchronizer delay system is independent of condition of batteries in gun, whereas external synchronization varies with condition of batteries, solenoids, associate circuit of cords and sockets, and temperature changes.

3. Internal synchronization conserves batteries—battery current is used only to flash lamps and is not drained by solenoid coil.

4. Permits "off-the-camera" flash shots—shutter is tripped from gun held away from camera for better lighting effects. With some flash guns, such as the new Graflite, solenoid can act as remote tripper only, letting internal shutter synchronizer provide synchronization.

5. Commercial BC flash circuits can be used with internal synchronization without harm to contacts.

RAPAX Non-Synchromatic

Your present flash equipment for solenoid synchronization can be used with this shutter with excellent results. Shutter is identical to Rapax Synchromatic shutter except it has no internal synchronizer.

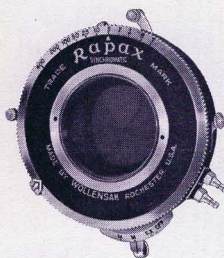
...fully Synchronomatic!

RAPAX Full Synchronomatic

Here is completely automatic synchronization for X-type electronic high-speed lamps, plus automatic synchronization of Class M (20 millisecond) and Class F (5 millisecond) lamps.

Easy-to-read, easy-to-set scale at bottom of shutter provides selection for proper delay for each class of lamp.

Cocking shutter automatically cocks synchronizer as well. This automatic action greatly simplifies flash photography and avoids fatal neglect to cock synchronizer.

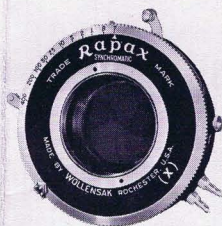


RAPAX "X" Synchronomatic

This Shutter offers built-in electrical contacts for flashing "X" type electronic high speed lamps, "O" type thyatron trigger-type, at any shutter speed.

The electronic flash unit is operated by connecting the cord to the bi-post of the Synchronomatic "X" shutter.

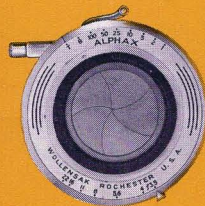
To synchronize ordinary flash lamps, 20 millisecond type, it is necessary to use a solenoid.



Wollensak **ALPHAX** Shutters for longer focus lenses

Professional photographers welcome the reliability, convenience, and compactness of internal synchronization offered by Nos. 2, 3, 4 and 5 Alphax Synchronomatics. Built-in mechanism assures positive automatic synchronization of any popular type flash lamp.

Simple to operate . . . there's no cocking lever to bother with. Depress operating lever by hand or cable release; lamp flashes in automatic synchronization with shutter to take the picture. Alphax non-synchronomatic also available.



ALPHAX SHUTTERS

Size	Flange Diameters		Type of Shutter	Speeds	Synchronized Speeds With		
	Inside Inches	Outside Inches			Class M	Class F	Class X
2	1 21/64	1 55/64	Alphax Non-Sync.	1 to 1/100 plus T&B	----	----	----
2	1 21/64	1 55/64	Alphax Sync.	1 to 1/100 plus T&B	1/50 and slower	All speeds	All speeds
3	2	2 21/32	†Alphax Non-Sync.	1 to 1/100 plus T&B	----	----	----
3	2	2 21/32	Alphax Sync.	1 to 1/100 plus T&B	1/50 and slower	All speeds	All speeds
4	2 5/8	3 17/32	†Alphax Non-Sync.	1 to 1/50 plus T&B	----	----	----
4	2 5/8	3 17/32	†Alphax Sync.	1 to 1/50 plus T&B	All speeds	All speeds	All speeds
5	3 1/8	4 5/64	†Alphax Non-Sync.	1/2 to 1/50 plus T&B	----	----	----
5	3 1/8	4 5/64	†Alphax Sync.	1/2 to 1/50 plus T&B	All speeds	All speeds	All speeds

†Available upon request with press-focus lever at additional cost.

WOLLENSAK

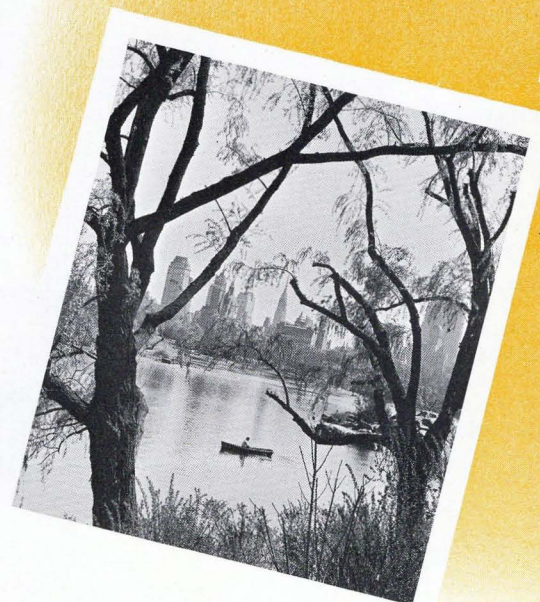
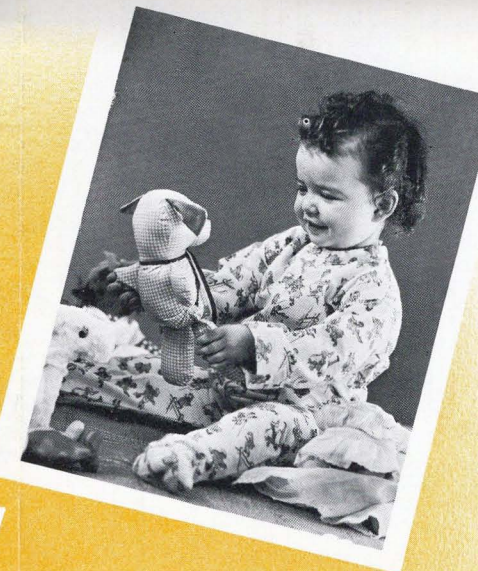
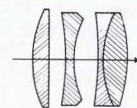
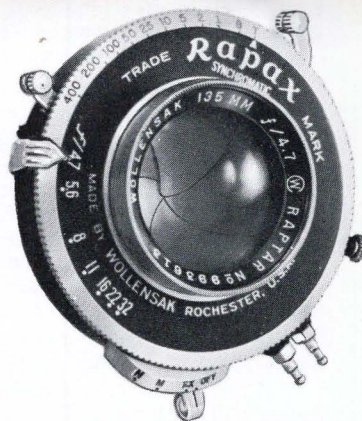
Series II, f/4.5 Raptar Lenses

This series of lenses, four element construction, were designed for discriminating photographers, both professional and amateur.

Ideal for news, feature, sport, outdoor and commercial photography, the Raptar Series II lenses have adequate speed and excellent covering power. They deliver crisp, brilliant images, edge to edge sharpness and fine shadow detail. Like all Wol-

lensak lenses they are coated and fully color corrected . . . excellent for full color photography.

These lenses can be fitted to popular press-type cameras. Longer focal length lenses of this series are ideally suited for portraiture and commercial photography . . . are for cameras having interchangeable lens boards.



SPECIFICATIONS

Film Size Inch	Equiv. Focus Inch	Focus mm	Barrel	Rapax*	Alphax*
2 1/4 x 3 1/4	3 1/2	90	x	x	
2 1/4 x 3 1/4	4 1/2	114	x	x	x
3 1/4 x 4 1/4	5	127	x	x	x
4x5	5 3/8	135	x	x	x
4x5	6 3/8	162	x	x	x
5x7	7 1/2	190	x		x
5x8	8 1/4	210	x		x
6 1/2 x 8 1/2	9 1/2	241	x		x
8x10	11 7/8	302	x		x

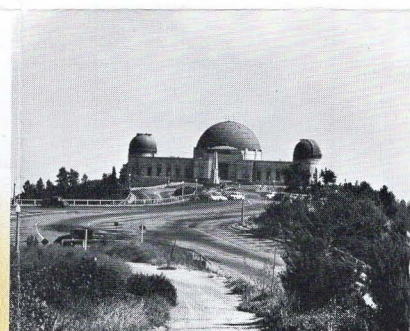
*Available in synchromatic and non-synchromatic shutters



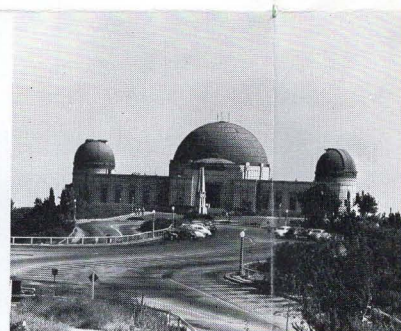
8" f/5.6



Taken with a 135mm Raptar Lens



Taken with a 10" Raptar Telephoto Lens



Taken with a 15" Raptar Telephoto Lens

WOLLENSAK Raptar Telephoto f/5.6 Lenses for Cameras with Interchangeable Lens Boards

Telephoto lenses are indispensable when shooting news and sports events, travel photos, architectural and nature studies. Like a telescope, these lenses bring distant images up close, enlarged in sharpest detail.

Because of their long focus Raptar Telephotos are ideal for portrait photography . . . also excellent for bringing distant shots in true perspective. Magnification is in proportion to the focal length of a normal lens. For example the 8" telephoto magnifies 2X over a 4" focus lens.

SPECIFICATIONS

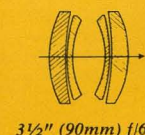
RAPTAR TELEPHOTO f/5.6 (WOCOTED)						
Film Size	Equiv. Focus		Bellows Draw (flange focus) Required at Infinity	Barrel Size	Rapax* Size	Alphax* Size
	Inch	mm				
2 1/4 x 3 1/4 3 1/4 x 4 1/4	8	202	5	3	2	2
3 1/4 x 4 1/4 4x5	10	254	6 1/8	4	3	3
4x5 5x7	15	380	9 5/16	6		4

*Available in synchromatic and non-synchromatic shutters

Wollensak **RAPTAR** Wide Angle Lenses f/6.8 - f/9.5

for Cameras with Interchangeable Lens Boards

For group pictures, industrial photography, architectural shots indoors or out wherever wide coverage is required a Wollensak Wide Angle Raptar should be used. They cover up to 3.6 times more subject matter than a normal lens. Accurate focus can be made at f/6.8; as with all wide angle lenses, exposure should be at a smaller stop.



3 1/2" (90mm) f/6.8



6 1/4" f/9.5

Excellent corner definition and ample depth of field are obtainable from f/11 to f/32. Fully color corrected and Wocoted.

SPECIFICATIONS

RAPTAR WIDE ANGLE f/6.8 (WOCOTED)						
Film Size	Equiv. Focus Inch	Focus mm	Angle of View	Barrel Size	Rapax* Size	Alphax* Size
3 1/4 x 4 1/4 4x5 5x7	2 9/16 3 1/2 4 1/4	65 90 108	92.6° 84° 99.6°	1 1 2	1 1 2	
SERIES III RAPTAR WIDE ANGLE f/9.5 (WOCOTED)						
8x10	6 1/4	159	91.2°	4	3	3

*Available in synchromatic and non-synchromatic shutters

ANGLE OF VIEW CHART NORMAL LENS COVERAGE vs. WIDE ANGLE LENS COVERAGE FOR A GIVEN FILM SIZE

Normal Lens	Film Size	With Normal Lens Total Angle of View	Wide Angle Lens*	Film Size	With Wide Angle Lens—Total Angle of View	Increased Subject Area Covered with Wide Angle Lens
50mm f/4.5	1x1 1/2	48.4°	---	---	---	---
75mm f/4.5	2 1/4 x 2 1/4	55.4°	---	---	---	---
90mm f/4.5	2 1/4 x 3 1/4	58.6°	65mm f/6.8	2 1/4 x 3 1/4	75.6°	2.0 times
101mm f/4.5	2 1/4 x 3 1/4	52.8°	65mm f/6.8	2 1/4 x 3 1/4	75.6°	2.4 times
114mm f/4.5	2 1/4 x 3 1/4	47.8°	65mm f/6.8	2 1/4 x 3 1/4	75.6°	3.1 times
127mm f/4.5	3 1/4 x 4 1/4	56.4°	65mm f/6.8	3 1/4 x 4 1/4	92.6°	3.8 times
127mm f/4.5	3 1/4 x 4 1/4	56.4°	90mm f/6.8	3 1/4 x 4 1/4	74.2°	2.0 times
135mm f/4.5	4x5	62°	90mm f/6.8	4x5	84°	2.2 times
162mm f/4.5	4x5	53.2°	90mm f/6.8	4x5	84°	3.2 times
190mm f/4.5	5x7	60°	108mm f/6.8	5x7	90.6°	3.1 times
210mm f/4.5	5x8	59.4°	159mm f/9.5	5x8	74°	1.7 times
241mm f/4.5	6 1/2 x 8 1/2	58.8°	159mm f/9.5	6 1/2 x 8 1/2	81°	2.3 times
302mm f/4.5	8x10	56.6°	159mm f/9.5	8x10	91.2°	3.6 times

WOLLENSAK

Sunshade and Filter Adapter

Here is the finest and handiest sunshade made . . . ideal for use on Graphic-type cameras. Lens diaphragm stops—plainly marked, easy-to see, always on top of Sunshade—may be set without removing hood. Filters drop in and are held securely in place. Easily changed.



SPECIFICATIONS

Cat. No.	Wollensak Sunshade and Filter Adapter for:
S101	101mm Raptar in Rapax Full-Sync., "X" or Non-Synchromatic Shutter 101mm Optar in Graphex Full-Sync., "X" or Non-Synchromatic Shutter
S101K	101mm f/4.5 Ektar in Kodak "800"
S127A	127mm Raptar in Rapax Full-Sync. Shutter 127mm Optar in Graphex Full-Sync. Shutter
S127B	127mm Raptar in Rapax "X" or Non-Sync. Shutter 127mm Optar in Graphex "X" or Non-Sync. Shutter
S127K	127mm f/4.7 Ektar in Flash Supermatic 127mm f/4.7 Ektar in Supermatic "X"
S127KC	127mm f/4.7 Ektar in Compur Rapid MX Sync. Shutter
S135A	135mm Raptar in Rapax Full Sync. Shutter 135mm Optar in Graphex Full Sync. Shutter
S135B	135mm Raptar in Rapax Non-Sync. Shutter 135mm Optar in Graphex Non-Sync. Shutter
S135C	135mm Raptar in Rapax "X" Sync. Shutter 135mm Optar in Graphex "X" Sync. Shutter

WOLLENSAK
OPTICAL CO., ROCHESTER 21, N. Y.

