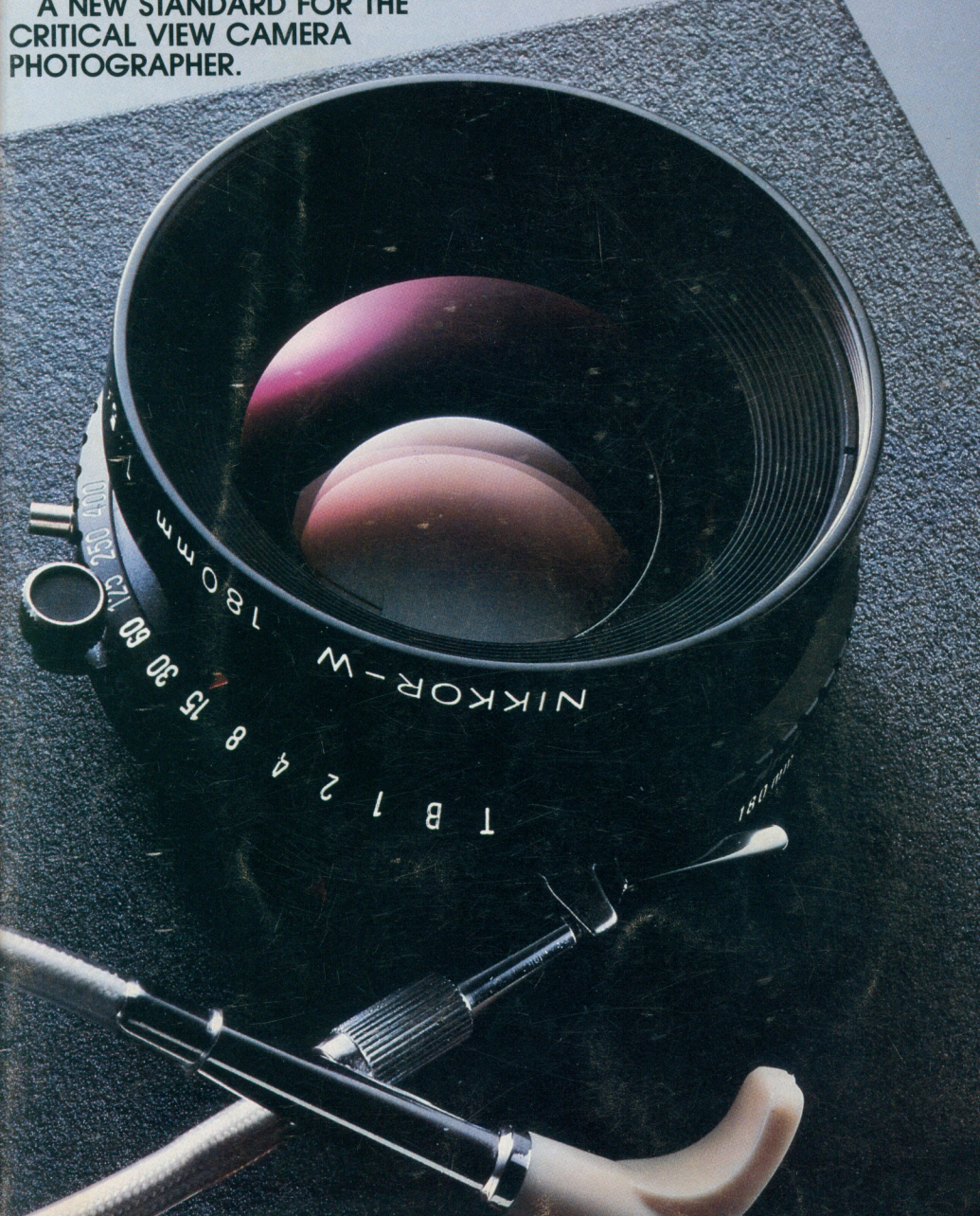
NIKKOR LENSES

FOR LARGE FORMAT CAMERAS

A NEW STANDARD FOR THE CRITICAL VIEW CAMERA PHOTOGRAPHER.



NIKKOR LARGE FORMAT LENSES: FORMULA, PERFORMANCE AND APPLICATIONS

WE MAKE OUR OWN GLASS FOR UNLIMITED DESIGN CAPABILITIES

Most lensmakers buy glass on the open market which limits them to the types and quality control standards that are available. At Nikon, where glassmaking is "our" business, our designers can reach for designs that approach perfection by specifying the precise optical characteristics required. Then, in one of the world's most advanced glass production facilities, we produce glass with exactly the refractive indices required. The result is consistantly superior optics. Nikon makes over 200 different types of glass, giving our designers unlimited horizons.

UNCOMPROMISING OPTICAL ASSEMBLY

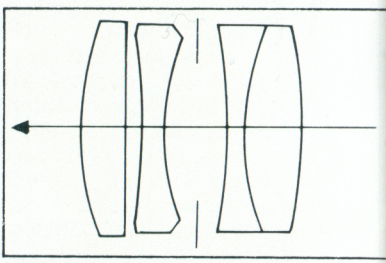
Even the best designs must receive flawless assembly to meet the incredibly high performance goals set for them. At Nikon, element manufacturing is held to incredible tolerances. Centering, the critical alignment of optical axis, is done with a care and precision unsurpassed in the optical world.

NIKON INTEGRATED COATING (NIC)

In a process pioneered by Nikon, lenses are multi-layer coated, each layer suppressing flare and internal reflections in a specific bandwidth of light. In this way, critical points in the entire visible spectrum are controlled. The result is image brilliance and flare approaching zero even under the most challenging conditions.

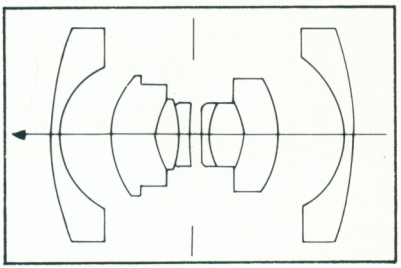
Nikkor Large Format lenses are designed to produce images of the highest quality for specific applications. Choosing the right Nikkor for the right job should be carefully done. The following data will help you in your selections.

NIKKOR M: APOCHROMATS TO INFINITY



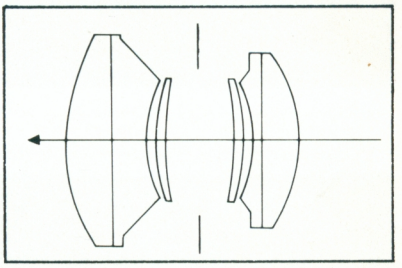
The new Nikkor-M Series provides high resoultion with standard covering power. The two lenses in this group, the 300mm f9 and the 450mm f9 are designed around the renowned Apo-Nikkor lenses and meet the same stringent specifications required for the most demanding reproduction and photo engraving work. Chromatic aberrations are highly corrected across the entire usable spectrum for superior performance. The Nikkor-M series, unlike photomechanical lenses which are corrected for 1:1, are corrected for infinity. Now for the first time photographers can achieve "Apo" performance at normal working distances. The Nikkor-M Series is an asymmetrical four-element design of unusually high brilliance.

NIKKOR SW: HIGH SPEED WIDE ANGLES



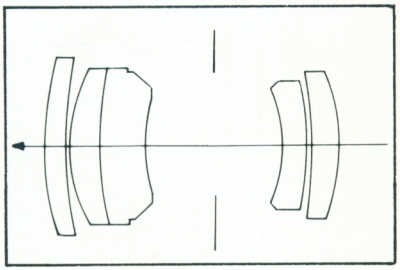
Nikkor SW Series lenses are extreme wide angles ranging from 65mm to 150mm. Coverage is 105 degrees at f16 (f22 with 90mm, 120mm and 150mm f8 lenses) with maximum apertures as wide as f4. This combination of wide angle coverage and high speed means that focusing and composing on the groundglass is now fast, easy and accurate as compared to slower conventional wide angle designs. The Nikkor SW series utilizes 7 elements in 4 groups (8 elements in 8 groups for the 90mm, 120mm and 150mm f8 lenses) producing high resolution and brilliance. Virtual elimination of flare is a result of Nikon's critically acclaimed NIKON Integrated Coating (NIC). Center-to-edge illumination is remarkably even, resulting in images that are sharp and brilliant to the corners.

NIKKOR-W: THE FINEST ALL PURPOSE LARGE FORMAT LENS WE'VE EVER PRODUCED.

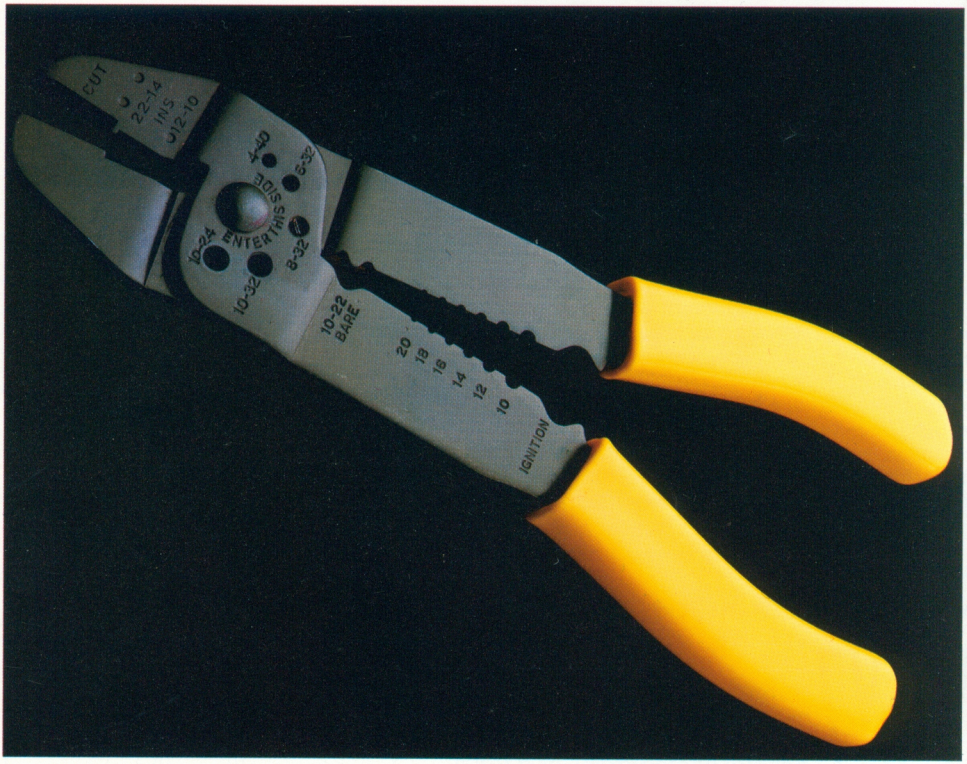


Nikkor-W Series lenses provide maximum resolution and brilliance over a range from 100mm to 300mm for general photography. As a result, the Nikkor-W Series performs exceptionally from relatively close working distances to infinity. The fast f5.6 aperture means easy focusing and viewing even under less than ideal lighting conditions. Distortion, curvature-of-field and chromatic aberration are corrected to the high standards you'd expect from Nikon. Both contrast and color reproduction are enhanced through the use of Nikon Integrated Coating. Nikkor-W lenses incorporate six elements in four groups and cover a field of 70 degrees at f22 (74 degrees and 73 degrees with the 100mm f5.6 and 135mm f5.6 respectively).

NIKKOR-T: LARGE FORMAT TELEPHOTOS WITHOUT COMPROMISE



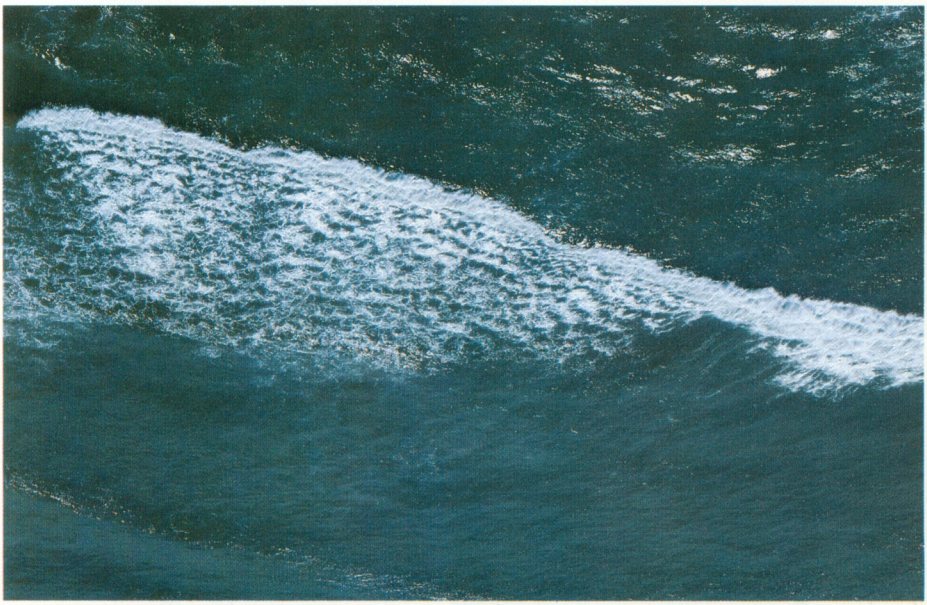
Nikkor-T Series lenses represent a breakthrough in telephoto optical design. Telephotos, valued because they use bellows extensions of approximately half their focal length, have traditionally sacrificed sharpness due to excessive chromatic aberration. The new Nikkor-T Series lenses use Nikon's famous ED (Extra-Low-Dispersion) glass which greatly reduces chromatic aberrations found in traditional telephoto designs. The five-element, four-group design available in 270mm and 360mm focal lengths provide crisp, brilliant images even at full aperture. The 270mm f6.3 Nikkor-T covers 4x5 at f22 while the 360mm f8 Nikkor-T covers 5x7 or may be used on 4x5 with greater covering power and larger image sizes.



Nikkor-SW 150mm f8 plus electronic flash was used a f32 to provide high resolution plus excellent corner-to-corner illumination. Photographed on 8 x 10 color transparency material, the reproduction was directly from the chrome.

Nikkor-M Series lenses are outstanding for general photography where the resolution is critical. This photograph made with a Nikkor-M 300mm f9 on an 8 x 10 transparency film, producing extremely high resolution across the field. Exposure was 5 seconds at f32 and reproduction was directly from the transparency.

Nikkor-W lenses are fast, general purpose lenses suitable for every aspect of photography. The above photograph was made on 8x10 color negative material at an exposure of f32 for 50 seconds. Reproduction was from a color print.



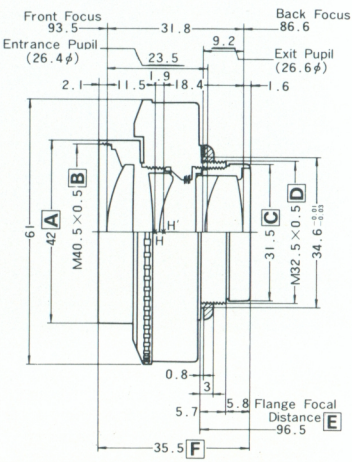
Nikkor-T lenses offers unsurpassed sharpness combined with relatively short lens-to-film distance. Landscape was made on a 4x5 press camera with a Nikkor-T 270mm. Exposure was 1/60 second at f22 on color transparency material. Note overall crispness and high color saturation typical of images produced by lenses made with Nikon's exclusive ED glass.

M SERIES:

APOCHROMATS TO INFINITY

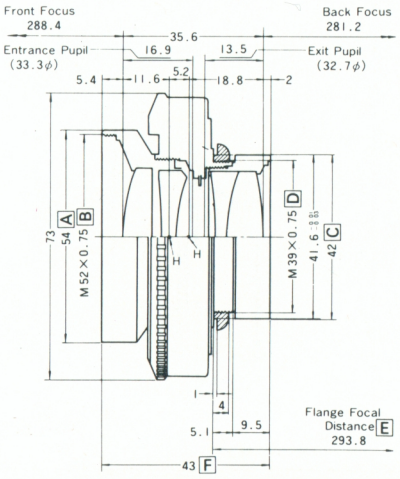
105mmF3.5

Focal length	105mm
Maximum aperture ratio	1:3.5
Minimum aperture	f/45
Lens construction	4 elements in 3 groups
Covering power (f/3.5)	51°
Covering power (f/22)	55°
Image circle (f/3.5)	100mmø
Image circle (f/22)	2¼" x 3¼"mm (110mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	42mmø
Attachment size [B]	40.5mmøx0.5mm(P)
Rear mount size [C]	31.5mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	96.5mm
Overall length [F]	1.4" (35.5mm)
Weight	6 oz. (170g)



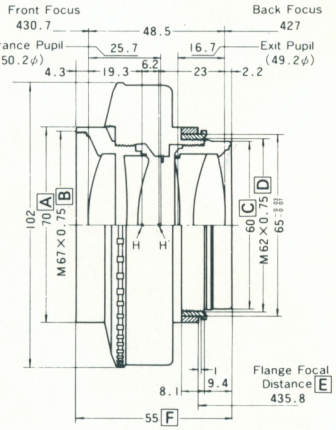
300mmF9

Focal length	300mm
Maximum aperture ratio	1:9
Minimum aperture	f/128
Lens construction	4 elements in 3 groups
Covering power (f/9)	55°
Covering power (f/22)	57°
Image circle (f/9)	312mmø
Image circle (f/22)	8" x 10" (325mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	1—1/400 sec., T, B
Sync socket	X-contact
Front mount size [A]	54mmø
Attachment size [B]	52mmøx0.75mm(P)
Rear mount size [C]	42mmø
Flange attachment size [D]	39mmøx0.75mm(P)
Flange focal distance [E]	293.8mm
Overall length [F]	1.7" (43mm)
Weight	10.2 oz. (290g)



450mmF9

Focal length	450mm
Maximum aperture ratio	1:9
Minimum aperture	f/128
Lens construction	4 elements in 3 groups
Covering power (f/9)	50°
Covering power (f/22)	52°
Image circle (f/9)	420mmø
Image circle (f/22)	10" x 12" (440mmø)
Shutter	No. 3 (Copal®*)
Shutter speed	1—1/125 sec., T, B
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	60mmø
Flange attachment size [D]	62mmøx0.75mm(P)
Flange focal distance [E]	435.8mm
Overall length [F]	2.2" (55mm)
Weight	22.6 oz. (640g)



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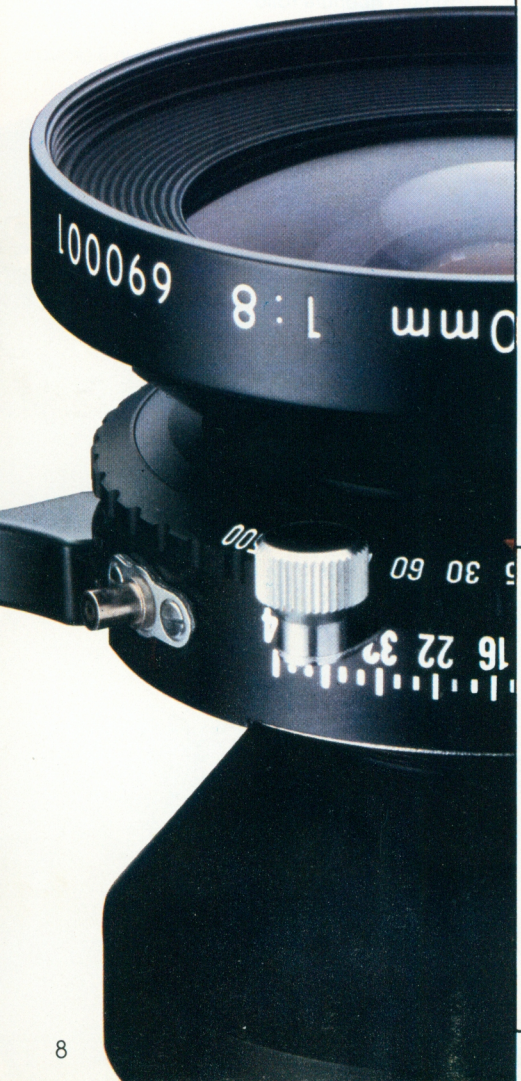
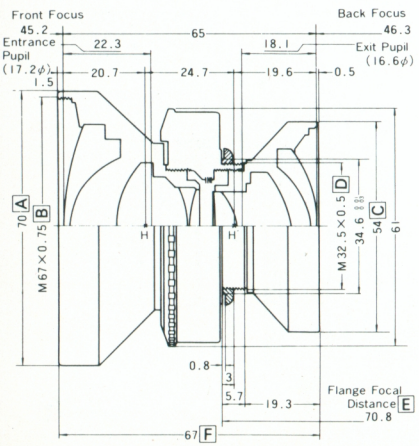
SW SERIES:

HIGH SPEED WIDE ANGLES

65mmF4

Focal length	65mm
Maximum aperture ratio	1:4
Minimum aperture	f/45
Lens construction	7 elements in 4 groups
Covering power (f/4)	80°
Covering power (f/16)	105°
Image circle (f/4)	110mmø
Image circle (f/16)	4" x 5" (170mmø)
Shutter	No. 0 (Copal*•*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	54mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	70.8mm
Overall length [F]	2.6" (67mm)
Weight	13.1 oz. (370g)



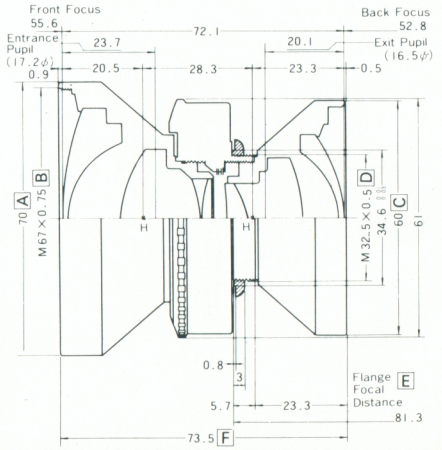


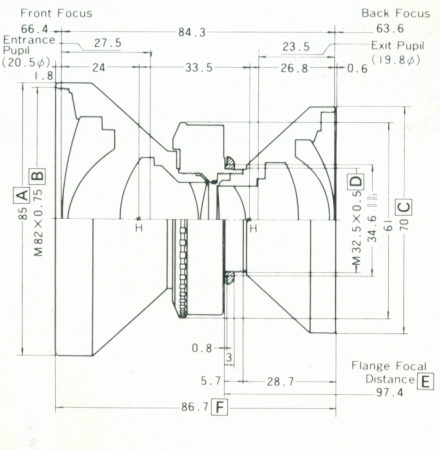
75mmF4.5

Focal length	75mm
Maximum aperture ratio	1:4.5
Minimum aperture	f/45
Lens construction	7 elements in 4 groups
Covering power (f/4.5)	80°
Covering power (f/16)	106°
Image circle (f/4.5)	126mmø
Image circle (f/16)	5" x 6" (200mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	60mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	81.3mm
Overall length [F]	2.9" (73.5mm)
Weight	14.8 oz. (420g)

90mmF4.5

Focal length	90mm
Maximum aperture ratio	1:4.5
Minimum aperture	f/64
Lens construction	7 elements in 4 groups
Covering power (f/4.5)	80°
Covering power (f/16)	105°
Image circle (f/4.5)	154mmø
Image circle (f/16)	5" x 7" (235mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	85mmø
Attachment size [B]	82mmøx0.75mm(P)
Rear mount size [C]	70mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	97.4mm
Overall length [F]	3.4" (86.7mm)
Weight	21.2 oz. (600g)





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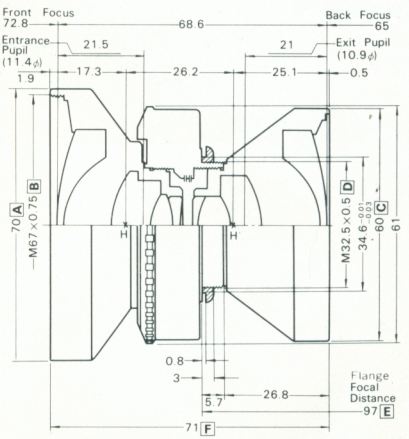
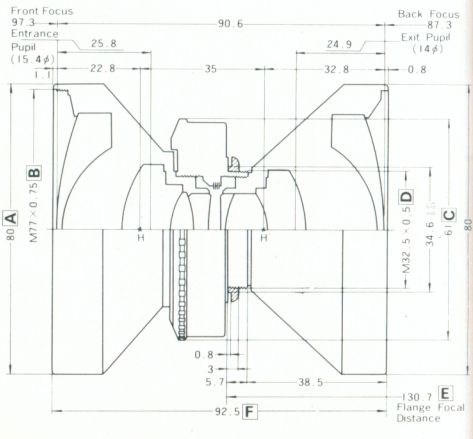
90mmF8

Focal length	90mm
Maximum aperture ratio	1:8
Minimum aperture	f/64
Lens construction	8 elements in 4 groups
Covering power (f/8)	80°
Covering power (f/22)	105°
Image circle (f/8)	154mmø
Image circle (f/22)	5" x 7" (235mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	60mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	97.0mm
Overall length [F]	2.8" (71mm)
Weight	12.7 oz. (360g)

120mmF8

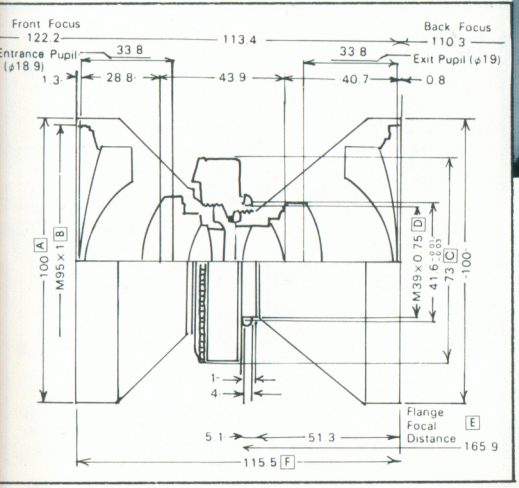
Focal length	120mm
Maximum aperture ratio	1:8
Minimum aperture	f/64
Lens construction	8 elements in 4 groups
Covering power (f/8)	80°
Covering power (f/22)	105°
Image circle (f/8)	200mmø
Image circle (f/22)	8" x 10" (312mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	80mmø
Attachment size [B]	77mmøx0.75mm(P)
Rear mount size [C]	80mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	130.7mm
Overall length [F]	3.6" (92.5mm)
Weight	21.5 oz. (610g)





150mmF8

Focal length	150mm
Maximum aperture ratio	1:8
Minimum aperture	f/64
Lens construction	8 elements in 4 groups
Covering power (f/8)	80°
Covering power (f/22)	106°
Image circle (f/8)	253mmø
Image circle (f/22)	10" x 12" (400mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	T, B, I—1/400 sec.
Sync socket	X-contact
Front mount size [A]	100mmø
Attachment size [B]	95mmøx1mm(P)
Rear mount size [C]	100mmø
Flange attachment size [D]	39mmøx0.75mm(P)
Flange focal distance [E]	165.9mm
Overall length [F]	4.5" (115.5mm)
Weight	35.9 oz. (1,020g)



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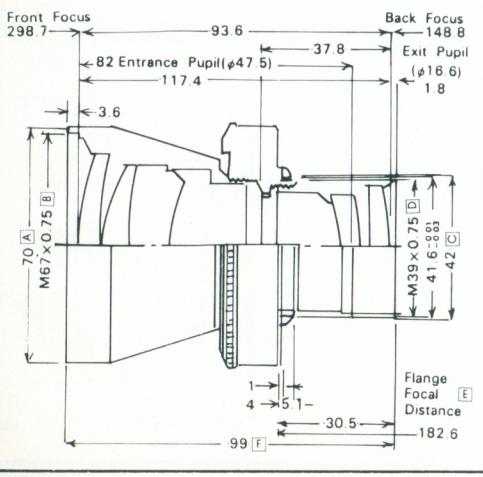
T SERIES:

LARGE FORMAT TELEPHOTOS WITHOUT COMPROMISE

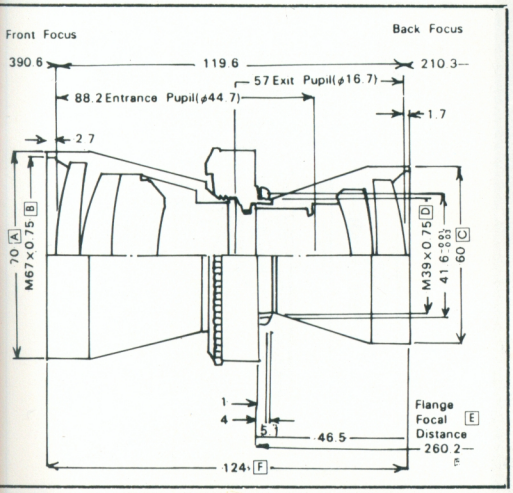
270mmF6.3

Focal length	270mm
Maximum aperture ratio	1:6.3
Minimum aperture	f/64
Lens construction	5 elements in 4 groups
Covering power (f/6.3)	24°
Covering power (f/22)	33°
Image circle (f/6.3)	114mmø
Image circle (f/22)	4" x 5" (160mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	T, B, I—1/400 sec.
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	54mmø
Flange attachment size [D]	39mmøx0.75mm(P)
Flange focal distance [E]	187.6mm
Overall length [F]	3.9" (99mm)
Weight	28.6 oz. (810.8g)



360mmF8

Focal length	360mm
Maximum aperture ratio	1:8
Minimum aperture	f/64
Lens construction	5 elements in 4 groups
Covering power (f/8)	24°
Covering power (f/22)	33°
Image circle (f/8)	154mmø
Image circle (f/22)	5" x 7" (210mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	T, B, I—1/400 sec.
Sync socket	X-contact
Front mount size [A]	70mmø
Attachment size [B]	67mmøx0.75mm(P)
Rear mount size [C]	60mmø
Flange attachment size [D]	39mmøx0.75mm(P)
Flange focal distance [E]	261mm
Overall length [F]	4.9" (124mm)
Weight	28.2 oz. (799.5g)



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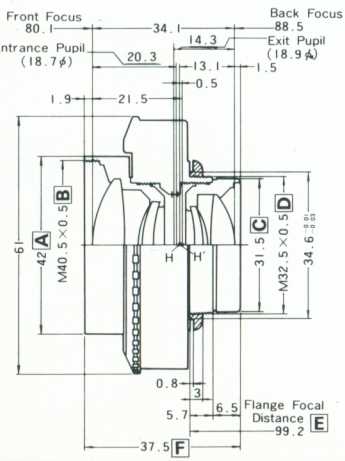
W SERIES:

THE FINEST ALL PURPOSE LARGE FORMAT LENSES WE'VE EVER PRODUCED

100mmF5.6

Focal length	100mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/45
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	74°
Image circle (f/5.6)	117mmø
Image circle (f/22)	4" x 5" (153mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	42mmø
Attachment size [B]	40.5mmøx0.5mm(P)
Rear mount size [C]	31.5mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	99.2mm
Overall length [F]	1.5" (37.5mm)
Weight	6 oz. (170g)

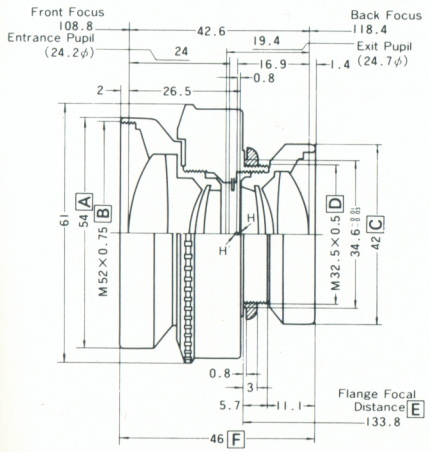


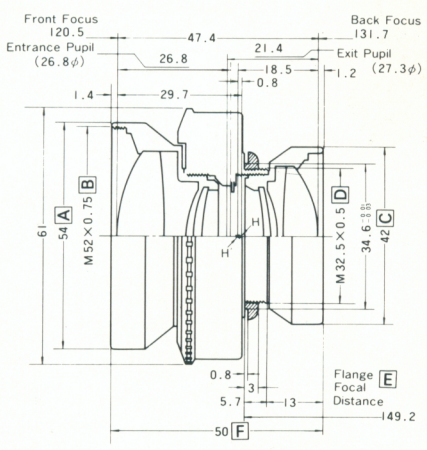
135mmF5.6

Focal length	135mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	73°
Image circle (f/5.6)	156mmø
Image circle (f/22)	120mmx165mm (200mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	54mmø
Attachment size [B]	52mmøx0.75mm(P)
Rear mount size [c]	42mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	133.8mm
Overall length [F]	1.8" (46mm)
Weight	7.1 oz. (200g)

150mmF5.6

Focal length	150mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	70°
Image circle (f/5.6)	174mmø
Image circle (f/22)	5" x 7" (210mmø)
Shutter	No. 0 (Copal®*)
Shutter speed	1—1/500 sec., T, B
Sync socket	X-contact
Front mount size [A]	54mmø
Attachment size [B]	52mmøx0.75mm(P)
Rear mount size [C]	42mmø
Flange attachment size [D]	32.5mmøx0.5mm(P)
Flange focal distance [E]	149.2mm
Overall length [F]	2" (50mm)
Weight	8.1 oz. (230g.)





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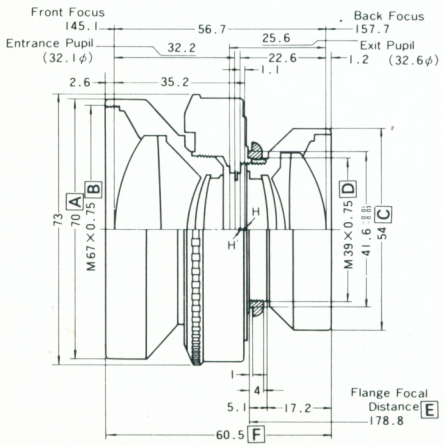
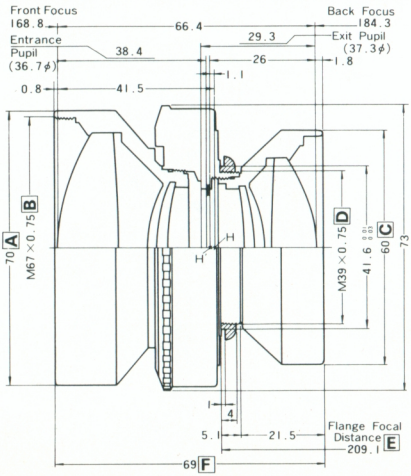
180mmF5.6

Focal length	180mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	70°
Image circle (f/5.6)	208mmø
Image circle (f/22)	5" x 7" (253mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	1—1/400 sec., T, B
Sync socket	X-contact
Front mount size [a]	70mmø
Attachment size [b]	67mmøx0.75mm(P)
Rear mount size [c]	54mmø
Flange attachment size [d]	39mmøx0.75mm(P)
Flange focal distance [e]	178.8mm
Overall length [f]	2.4" (60.5mm)
Weight	13.4 oz. (380g)

210mmF5.6

Focal length	210mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	70°
Image circle (f/5.6)	243mmø
Image circle (f/22)	6½" x 8½" (295mmø)
Shutter	No. 1 (Copal®*)
Shutter speed	1—1/400 sec., T, B
Sync socket	X-contact
Front mount size [a]	70mmø
Attachment size [b]	67mmøx0.75mm(P)
Rear mount size [c]	60mmø
Flange attachment size [d]	39mmøx0.75mm(P)
Flange focal distance [e]	209.1mm
Overall length [f]	2.7" (69mm)
Weight	16.2 oz. (460g)



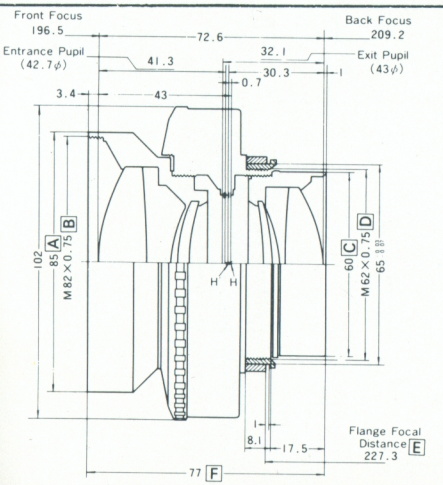


240mmF5.6

Focal length	240mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	70°
Image circle (f/5.6)	278mmø
Image circle (f/22)	8" x 10" (336mmø)
Shutter	No. 3 (Copal®*)
Shutter speed	1—1/125 sec., T, B
Sync socket	X-contact
Front mount size [a]	85mmø
Attachment size [b]	82mmøx0.75mm(P)
Rear mount size [c]	60mmø
Flange attachment size [d]	62mmøx0.75mm(P)
Flange focal distance [e]	227.3mm
Overall length [f]	3" (77mm)
Weight	28.9 oz. (820g)

300mmF5.6

Focal length	300mm
Maximum aperture ratio	1:5.6
Minimum aperture	f/64
Lens construction	6 elements in 4 groups
Covering power (f/5.6)	60°
Covering power (f/22)	70°
Image circle (f/5.6)	346mmø
Image circle (f/22)	420mmø (10" x 12")
Shutter	No. 3 (Copal®*)
Shutter speed	1—1/125 sec., T, B
Sync socket	X-contact
Front mount size [a]	100mmø
Attachment size [b]	95mmøx.1mm(P)
Rear mount size [c]	80mmø
Flange attachment size [d]	62.5mmøx0.75mm(P)
Flange focal distance [e]	287.1mm
Overall length [f]	3.7" (94.5mm)
Weight	44.1 oz. (1250g)



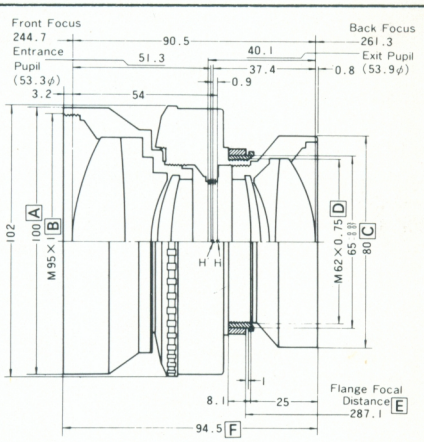
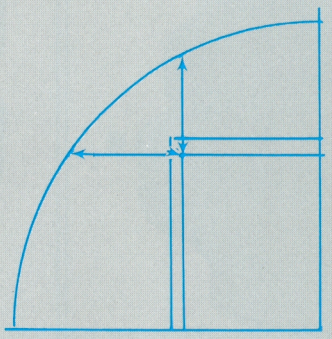
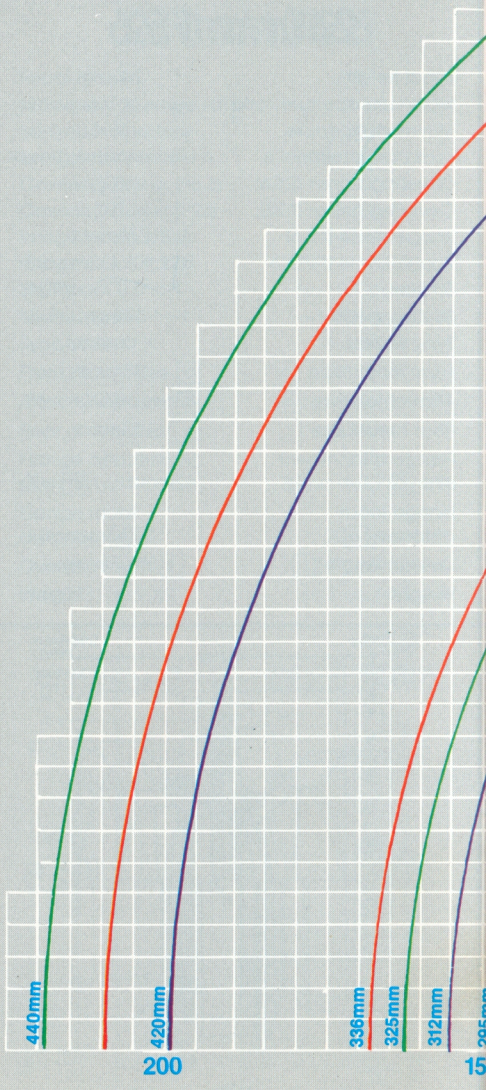


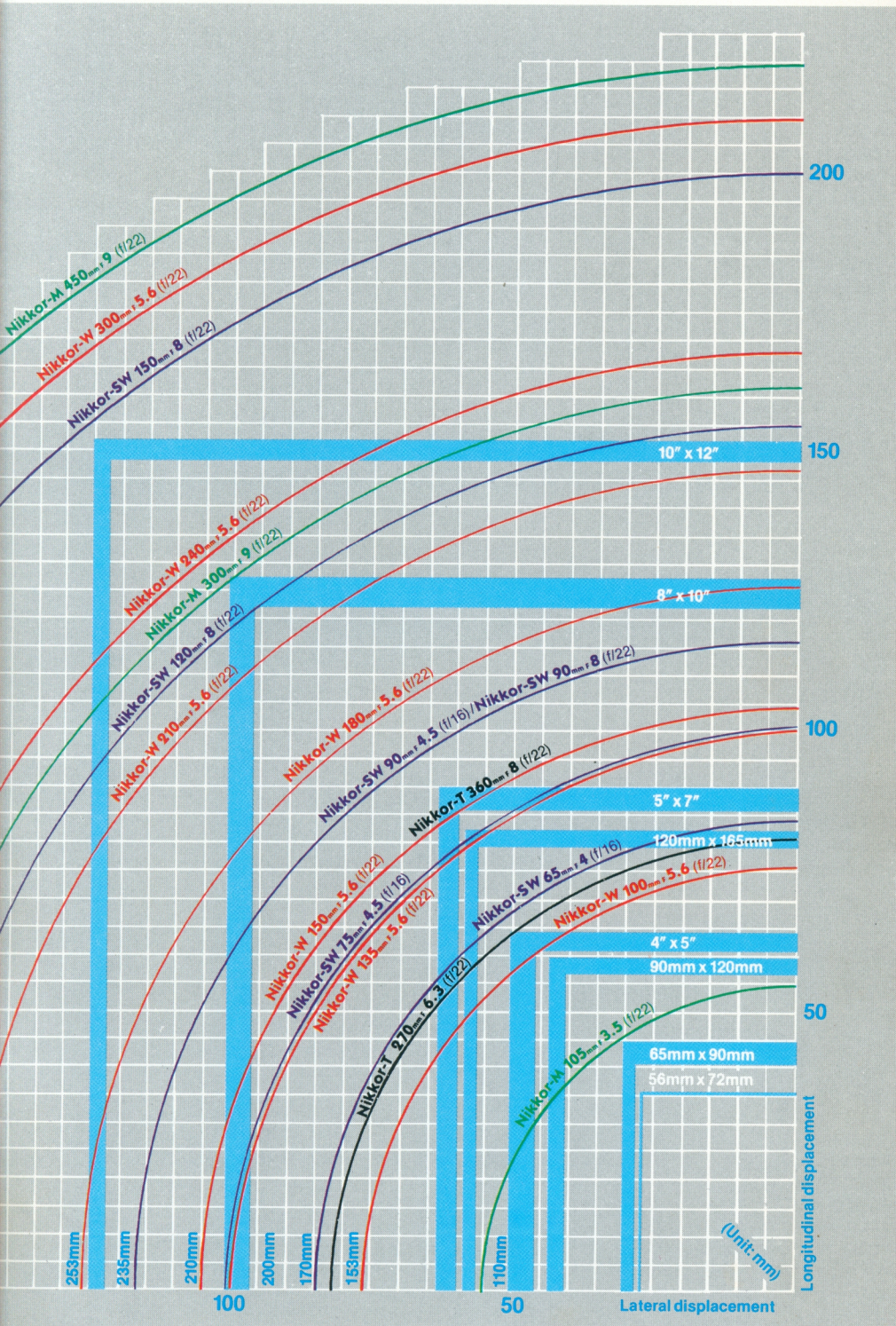
IMAGE CIRCLE CHART.



Note: The usable image size may vary slightly depending upon the film holder in use, so use this chart only as a rough guide.

The chart to the right shows an arc of the image circle projected by each Nikkor lens when it is stopped down to the specified f-stop. The rectangular boxes indicate the film formats: the outer frame representing the designated format size, and the inner frame a usable image size for that format. By comparing the image size rectangles with the image circles of the lenses it is possible to see whether a given lens will fully cover a given film format and how much displacement is possible (longitudinal or lateral in one direction).
This life-size chart represents one quarter portion of the complete projection. Find the amount of displacement by reading the scale on the chart or by actually measuring the distance using a ruler.




Nikkor-M 450mm f 9 (f/22)
Nikkor-W 300mm f 5.6 (f/22)
Nikkor-SW 150mm f 8 (f/22)
Nikkor-W 240mm f 5.6 (f/22)
Nikkor-M 300mm f 9 (f/22)
Nikkor-SW 190mm f 8 (f/22)
Nikkor-W 210mm f 5.6 (f/22)
Nikkor-W 180mm f 5.6 (f/22)
Nikkor-SW 90mm f 4.5 (f/16) / Nikkor-SW 90mm f 8 (f/22)
Nikkor-T 360mm f 8 (f/22)
Nikkor-W 150mm f 5.6 (f/22)
Nikkor-SW 75mm f 4.5 (f/16)
Nikkor-W 135mm f 5.6 (f/22)
Nikkor-SW 65mm f 4 (f/16)
Nikkor-W 100mm f 5.6 (f/22)
Nikkor-T 270mm f 6.3 (f/22)
Nikkor-M 105mm f 3.5 (f/22)
10" x 12"
8" x 10"
5" x 7"
120mm x 165mm
4" x 5"
90mm x 120mm
65mm x 90mm
56mm x 72mm
253mm
235mm
210mm
200mm
170mm
153mm
110mm
200
150
100
50
100
50
Lateral displacement
Longitudinal displacement
(Unit: mm)

Nikon

Garden City, New York 11530

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