

sinar®

INFO 36

Fig. 3 Detail, magnification 20 times, more light fall off than fig. 4



Fig. 4 Detail, magnification 20 times, higher resolution than fig. 3

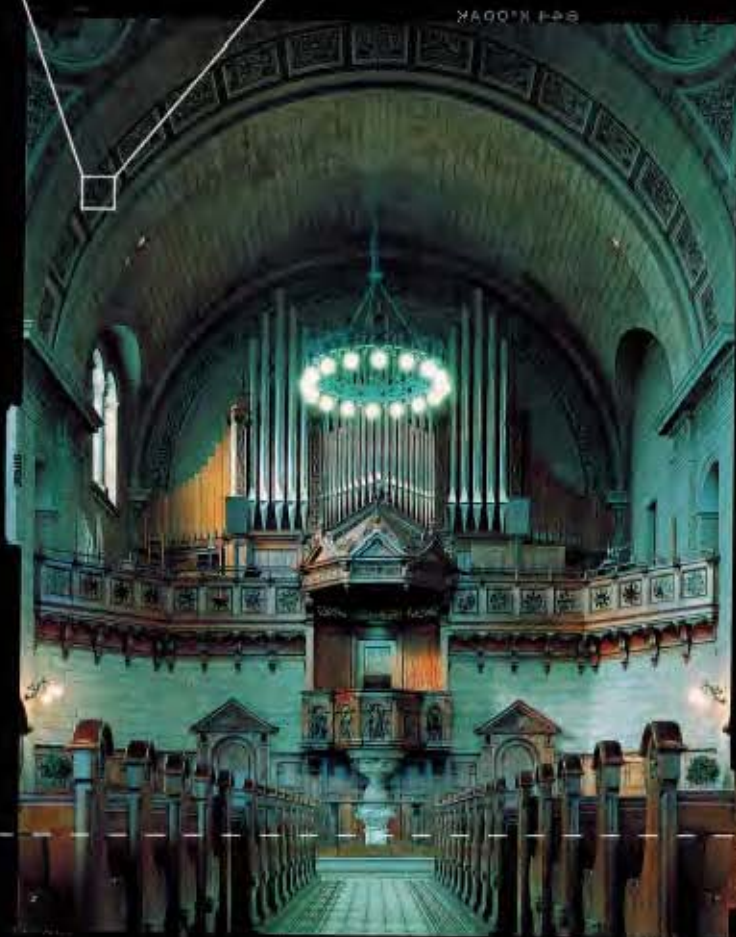


Fig. 2 SINAR p2 4x5", SINARION-S 150 mm DB, displacement 30 mm, f/22, 45 sec, film Ektachrome 64T in SINAR 4x5" Precision Shoot Film Holder

Fig. 1 SINAR p2 4x5", SINARION-S 150 mm DB, displacement 30 mm, f/22, 45 sec, film Ektachrome 64T in SINAR 4x5" Precision Shoot Film Holder

SINAR

FOR THE ULTIMATE IMAGE

Camera and lens form an integral unit

It is self-evident with 35-mm and medium-format camera systems, that lens, camera body, and film magazine form an integral unit. The manufacturers of these systems naturally recommend that, to obtain the best results, their own particular "stable" components be used together. This applies also to large format cameras, and, where highest image quality is required in view camera photography, SINAR offers a complete range of SINARON lenses.

In addition to the performance characteristics of the lens, a number of important factors determine the quality of a large format image.

1. Manufacturing tolerances of the lens.
2. Mechanical tolerances of the diaphragm or between-lens shutter housing (concentricity, mounting flange distances, relative parallelism and angular position of the lens elements).

3. Mounting tolerance of the lens on the lens panel.
4. Tolerance between lens panel and lens standard of camera.
5. Tolerance between ground glass/film holder carrier and image standard of camera.
6. Tolerance between ground surface of focusing screen and film holder.
7. Positional tolerance and flatness of sheet film in film holder.

The comparative photographs in this information sheet show that factors 1, 2, and 3, above, are minimised, as all SINARON lenses are checked and mounted by SINAR. Tolerances 4 and 5 are reduced virtually to zero by using the unique SINAR p2 camera, which is manufactured to the most stringent tolerances possible. Tolerances 6 and 7 are reduced to the minimum practical limits by the use of SINAR's 4x5" Precision Sheet

Film Holder. (The differences which can result from tolerances 3 to 7 are documented in SINAR info 32.) If we disregard the creative ideas of the photographer, and if we assume the correct settings required to give the optimum image on the ground glass, and, furthermore, employ the same film material and processing technique; then the technical/optical image quality depends solely on the performance of the lens, plus the seven criteria listed above. These facts demonstrate the sound logic in following the manufacturer's recommendation to use the lenses and camera as one integrated system.

The combination of SINAR cameras and SINARON lenses provides a performance package dedicated to the prerequisites of the highest demands of image quality.

SINARON-S and SINARON-W: general purpose lenses

For general use, the standard SINARON-S lenses, and the wide-angle SINARON-W lenses yield high-quality images. When photographic assignments make special demands, the qualities of the standard lenses can be surpassed by those specially designed for particular applications. We can show the differences in performance between standard and special lenses in practical cases:

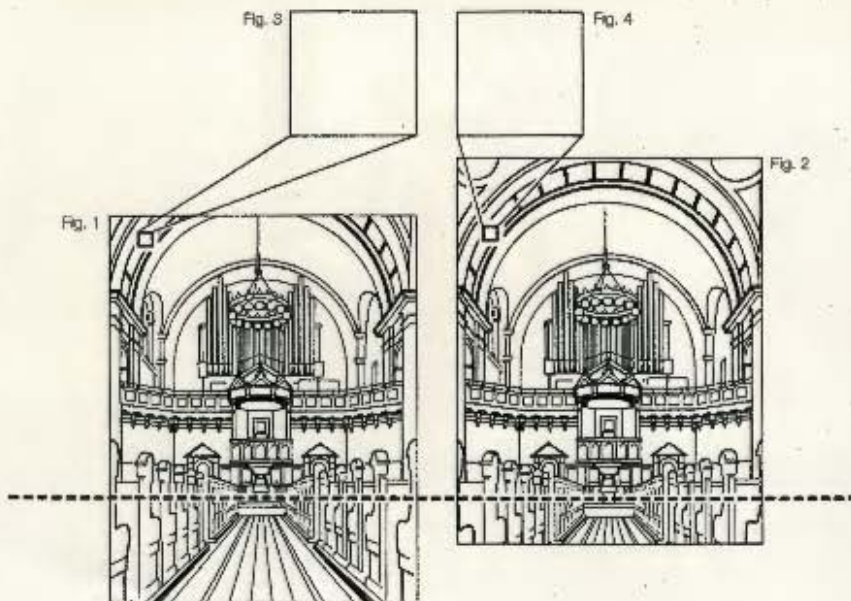
SINARON-WS: standard lenses with larger angle of view

There are situations where a normal or longer focal length is required, but the coverage of the standard lens is insufficient due to the demands of swings and tilts, or displacements. The interior shown is a typical example. With the standard lens for 4x5", the SINARON-S 150 mm, the perspective is shown as natural (with the wide-angle lens, the vanishing lines would be too strong), but the image angle is not sufficient to show the full height of the interior (fig. 1). The benefit of the additional angle of view needed is provided by the SINARON-WS 150-mm lens, which features an angle of 80° compared to the 72° of the standard lens (fig. 2). The comparison of the identical

image details, enlarged 20 times in fig. 3 and 4, shows clearly that the SINARON-WS lens has approximately 15% better resolution in the outer image area!

Wherever a larger image circle with critical resolution is important, the SINARON-WS 150, 210, or 300 mm is the optimum choice. The 150-mm SINARON-WS is a universal standard focal length for 4x5" and, in

addition, a wide-angle for 13x18 cm. The 210-mm SINARON-WS with its large angle of view serves not only as a long focal length for 4x5" but also as a normal focal length for 13x18 cm or a short focal length for 8x10". The 300-mm SINARON-WS completes the range of these lenses and is particularly suited to the additional camera movements demanded by the 8x10" format.



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FOR THE ULTIMATE IMAGE

MACRO-SINARON: a superb lens for close-up photography

Whenever small objects must be rendered in great detail we are obliged to enter the domain of close-up photography. This represents a vast field of operations for the professional, and the MACRO-SINARON is the lens designed specifically to exploit it to the full. Typically, reproduction ratios from 1:3 to 3:1 are to be expected, and for such shots the most stringent requirements for resolution of fine detail and image contrast are the

norm. In these conditions, the MACRO-SINARON will provide results superior to those obtainable with the SINARON-S. The same object, shot at 1:2 and 2:1, is shown in fig. 5 and 6. The 10 times enlarged detail shows the supreme resolution of detail (fig. 7 and 8). The MACRO-SINARON represents the ultimate in freedom from lens aberrations of all kinds. The photograph at a scale of 1:2 was taken with the front and

rear lens components in their normal position, whereas in the 2:1 reproduction the components marked have been reversed. In this way the image quality is maintained over the whole range of reproduction ratios. MACRO-SINARON lenses are available in focal lengths of 210 and 300 mm. Due to the large diameter of the lens, the 300 mm is only available in a Copal No. 3 shutter.



Fig. 5 SINAR p2 4x5",
MACRO-SINARON 210 mm DB,
scale 1:2, f 16, 1/30 sec,
flash exposure, SINAR 4x5"
Precision Sheet Film Holder



Fig. 7 Detail, magnification
10 times from fig. 5

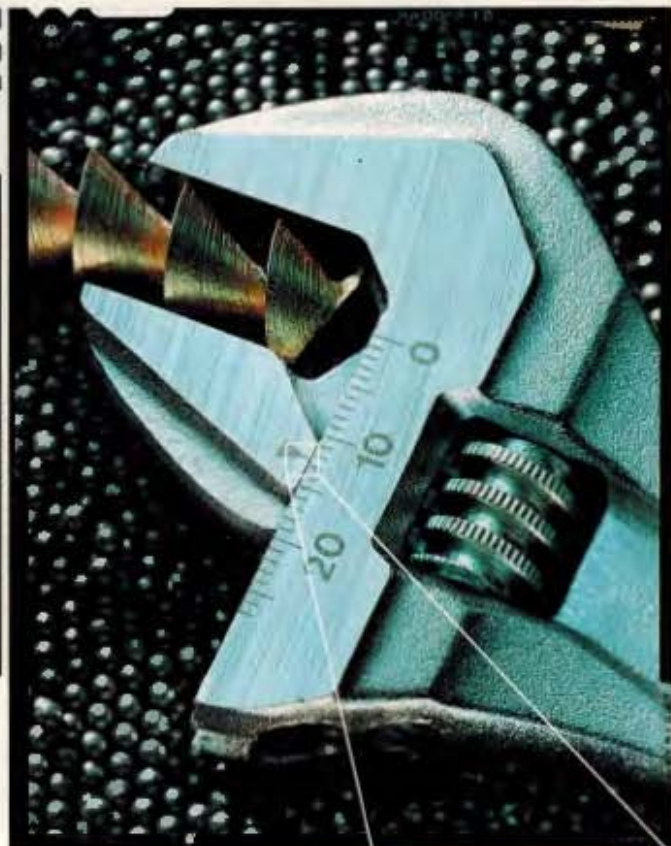


Fig. 6 As fig. 5, scale 2:1

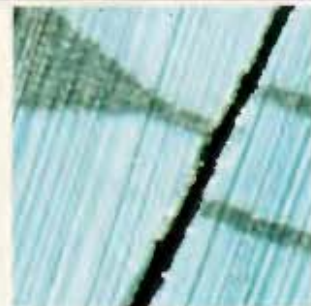


Fig. 8 Detail, magnification
10 times from fig. 6

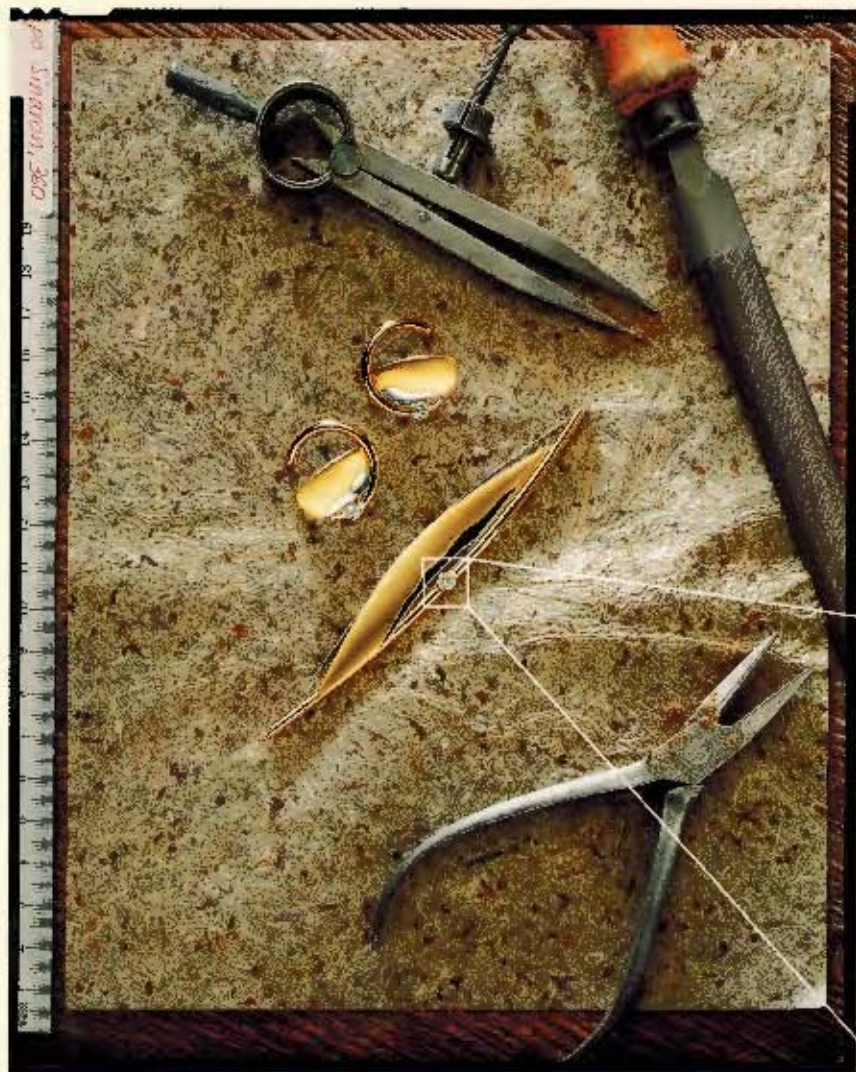


Fig. 9 SINAR p2 8x10", APO-SINARON 360 mm DB, scale 1:1, f 16, 1/30 sec, flash exposure

The APO-SINARON: unexcelled for repro shots at 1:1

The standard lenses offer good performance for all ratios of reproduction, but, if the ultimate performance at 1:1 is required the APO-SINARON is designed to meet that requirement to the ultimate. The difference in the 8x10" shot (fig. 9) which had to be reduced for printing is not as significant as

shown in the 10 times enlarged diamond in fig. 10 with a SINARON-S compared to fig. 11. Note the unsurpassable sharpness and clear-cut definition of the cut diamond facets, and also the excellent colour performance of the APO-SINARON over the whole spectrum. In order to give the impression of depth to this jewellery still-life a considerable degree of camera displacement has been employed. Note that at the edges of the image there is no observable linear distortion despite the fact



Fig. 10 Detail, magnification 10 times with SINARON-S 360 mm, results in lower edge definition than fig. 9



Fig. 11 Detail, magnification 10 times from fig. 9 with APO-SINARON, results in perfect edge definition

that virtually the whole of the available image circle has been used. The APO-SINARON is unsurpassed for photography at a scale of 1:1, but its superlative quality of image is maintained right through to infinity. The APO-SINARON is the right choice also if very long focal lengths are needed, and where the relatively small angle of view is not a disadvantage. However, it is necessary to take into account the associated widest aperture of f9, although this does result in an advantageous volume/weight/price ratio.

Summary

By critical comparison of image performance, it is evident that a precision large format camera, such as the SINAR, should be coupled with the SINARON range of lenses. For general all round use, for wide-angle applications with short focal lengths, the SINARON-W lenses represent an ideal choice, as they come in a range of focal lengths, viz. 65, 75, 90, 115, and 155 mm.

For normal and long focal lengths, the standard lenses of the SINARON-S series are recommended. In this case the focal

length range is: 135, 150, 210, 240, 300, 360, and 480 mm.

When the highest image quality is demanded in particular fields, such as close-up, or where a large range of camera movements is required, the specialised SINARON lenses are the optimum choice:

- for large angle of view with normal lenses, the SINARON-Ws in focal lengths of 150, 210, and 300 mm,
- for a reproduction ratio of around 1:1 and if long focal lengths are required, the APO-SINARONs in focal lengths of 150, 210, 300, 360, 480, and 600 mm,

- for reproduction ratios from 3:1 to 1:3, the MACRO-SINARON lenses of 210, and 300 mm,
- for detailed specifications, please refer to the SINAR leaflet "Lenses and Shutters".

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