

Setting Up A New Information Channel

Camera Lens News (CLN) is a new product of the Carl Zeiss camera lens division. Of course it is not another Carl Zeiss camera lens – but it will surely be related to camera optics. It will cover a broad variety of topics that should be of interest to all those who use, buy, sell, report about, are interested in, and are enthusiastic about Carl Zeiss lenses for still photography and motion picture (that includes digital photography and video as well). Not so much from a scientific point of view and not directed towards readers with a degree in science (other publications have been handling this quite well), but from a hands-on application standpoint, with the insight of a backstage position.

There is, however, something special about this particular publication: CLN is produced and written entirely by the very people who design, develop, produce, test, service and ship the Carl Zeiss camera lenses. This should give CLN a level of authenticity that could hardly be matched by those company newsletters subcontracted to outside advertising agencies.

For the same reason CLN will not become a whistles & bells print extravaganza published in twentyfive languages and stuffed in everybody's mailbox. CLN should not and will not detract too much of our attention away from lens making. And we are, on the other hand, no publishing pros, but camera lens pros – and we will proudly continue to be.

Anyway – we will try to present you with CLN four times a year. We chose a simple format that enables CLN to be quickly and easily distributed via mail, e-mail, fax, internet, conveying information to you in a speedy, efficient and cost-effective fashion. You may use all the information presented by CLN in your own publications freely if you send a specimen copy to us. And although CLN does not contain photos itself and is written in English, we may be able to provide you with images in

many cases and German versions of the articles, should you need those for your publication purposes.

Publisher's Imprint

Camera Lens News

A quarterly newsletter for all who use, buy, sell, like, report about and are interested in Carl Zeiss lenses

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All information contained in Camera Lens News is given to the best of our knowledge at the time of going to press. Technical specifications of Carl Zeiss products are subject to change.

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New People And New Activities at Carl Zeiss's Camera Lens Division

1996 has seen remarkable change and new people in the Carl Zeiss camera lens division, some of which are:

Ralf Coenen, vice president camera lens division, former consultant with McKinsey, joined Carl Zeiss in spring 96 and has led the camera lens division since October, 1st. Meanwhile his programs to share responsibilities, enhance efficiency of working methods in camera lens making, logistics, quality assurance and improvements of internal communication have begun to yield dividends. The changes most obvious to the public are brought about by his activities to enhance knowledge about CZ lenses and open direct communication (e.g. this publication).

Product Development is in the hands of **Dr. Winfried Scherle**, product development manager, a physicist with Carl Zeiss' photogrammetric department before, who joined the camera lens team in early summer of 1996 and succeeded the

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late Dr. Hohberg as head of product development and Ralf Coenen's deputy. Dr. Scherle is also coordinating Carl-Zeiss-wide R & D efforts to the best use of the camera lens division. You will see first public results of his efforts soon.

Marketing activities are being greatly intensified and Carl Zeiss camera lens specialists have been showing presence at major industry events in Europe, the United States, and Far East. Strategic marketing was installed as a new key position and **Kornelius J. Fleischer**, manager strategic marketing, former product specialist and product manager with companies in the photo and motion picture/tv industry was appointed this position as of photokina '96. His responsibilities are to research and analyze information from the markets and users, contribute to defining the needs for new products and priorities, evaluate prototypes and existing designs and make sure that all who use, buy, sell, like, report about, and are interested in Carl Zeiss lenses for still and motion picture photography are well informed.

Service Time Cut in Half The Carl Zeiss Camera Lens Division Aiming at World Class Performance in Service

In the past, users of Carl Zeiss camera lenses who needed their optics serviced, felt that it took Carl Zeiss quite some time to do the job. With 24 days average turnaround there was something left to be desired. In the meantime Carl Zeiss has enhanced efficiency to speed up service considerably and is closely monitoring the results. Although we have not yet reached our goal, the results achieved so far clearly indicate, that we are on the right track: Service time came down from 24 working days to 11.8 days for Arri-flex cine lenses, 11.0 days for Contax lenses and 9.5 days for Hasselblad lenses – on average. Whenever possible, Carl Zeiss has always been serving those customers who bring their lenses to the Oberkochen plant personally, in just a few hours and

will continue to do so. In other words: Many customers have started to realize that something is changing for the better. We'd like to keep you informed about further progress.

New Products:

Mirotar T* 1 : 8/500 mm A New And Very Compact Catadioptric Telephoto Lens For Contax SLR Cameras

The Mirotar T* 1:8/500 mm is a new, very compact telephoto lens for Contax SLR cameras. It is being introduced to the market as you read this. Compared with the Contax SLR standard lenses Planar T* 1:1,4/50 mm and Planar T* 1:1,7/50 mm this new lens will give you an image 10 times magnified. The Mirotar T* 1:8/500 mm is suitable for many areas of applied photography and is a virtually ideal tool for capturing hard to reach visual details of interest at construction sites, at buildings, at natural or man-made monuments, memorials, statues etc. in a fast, easy, cost-efficient way.

The Mirotar 1:8/500 mm T* is an all new design capable of delivering very high image quality over the entire field and exceptionally even illumination, as you would expect from a Carl Zeiss lens. It utilizes the reflective surfaces of curved mirrors (Mangin type) for image generation in addition to the refractive ones of glass lens elements. This has a distinct advantage, especially with lenses of long focal lengths: reflective surfaces do not induce chromatic errors. The path of the rays is folded twice, as usual with reflex telephoto lenses, thus allowing for a very short barrel of only 125 mm in spite of the focal length of 500 mm. This compactness also keeps the weight down: mere 780 g, less than 2 lbs.

Considering these features the Mirotar T* 1:8/500 mm is very interesting for photographers who need to use a telephoto lens of considerable magnification but do not want to attract attention while doing so. Or for those with a need for tele

power far beyond 200 mm who can afford only very limited space and weight for their equipment, so a larger Mirotar T* 1:4,5/500 mm or a Tele-Apotessar T* 1:2,8/300 with Mutar cannot be considered.

Close focusing distance is 3,5 m (11,5 feet); rotatable tripod collar with standard thread W 1/4", can be locked at any angle; telescoping lens hood with special light absorbing surface treatment is built in, stray light blocking mask in rear, conical stray light blocker attached to primary mirror. Filter size: 82 mm; Weight: 780 g

Mutar III T* – A 1,4x Converter For Contax SLR Cameras

The most important piece of photo equipment for sports- and wildlife photographers – next to a fast high performance telephoto lens like the Carl Zeiss Aposonnar T* 1:2/200 mm or the Carl Zeiss Tele-Apotessar T* 1:2,8/300 mm – is a high quality 1,4x converter. The 1,4x converter provides the photographer with additional focal length, considerably longer than the prime lens at the optical expense of one f-stop only. There are more benefits, especially valuable to wildlife photographers: the close-up capabilities of the prime lens will be fully maintained! And so will the auto-exposure and autofocus capabilities of a camera like the new Contax AX. Also the Carl Zeiss Mutar III T* doesn't add the 5 to 10 pounds to the photographer's carrying load that another telephoto lens would. Half a pound is all it adds. Those sports-, news-, wildlife photographers who depend mainly on their own feet for mobility will love it.

The Carl Zeiss Mutar III T* is a high quality converter, which consists of 6 lens elements in 4 groups. It weighs 227 grams. It is optimized to be used with Carl Zeiss telephoto lenses and zoom lenses of medium and long focal lengths. During tests with Aposonnar T* 1:2/200 mm, Tele-Apotessar T* 1:2,8/300 mm, and Mirotar 1:4,5/500 mm the new Carl Zeiss Mutar III T* delivered convincing results. It converted the



telephoto lenses mentioned above into remarkably compact 1:2.8/280 mm, 1:4/420 mm and 1:6.3/700 mm, respectively.

Carl Zeiss Camera Lenses for Canon, Minolta, Nikon, Pentax?

Carl Zeiss keeps receiving inquiries for high quality Carl Zeiss lenses to be used with cameras from Canon, Minolta, mainly Nikon. Yes, it is possible, in a way: Novoflex, the well known manufacturer of versatile accessories, located in Memmingen at the northern Rim of the Alps, produces an adapter system to accommodate Carl Zeiss high quality lenses made for Hasselblad medium format cameras to almost any important 35 mm SLR camera. With the Novoflex adapter the imaging performance of the respective Carl Zeiss lens can be utilized to the fullest in manual mode, while automatic features like diaphragm actuator, f-stop-simulator, and autofocus won't work. Our tests with Hasselblad lenses and Contax cameras gave perfect results. With the Contax AX even autofocus worked properly.

Depth of Field – An Insider's Look Behind The Scenes

Maybe the same thing happened to you recently: Upon receiving some rolls of film back from processing, you briefly check the color rendition, and then examine the new images with an 8x magnifying loupe for fine detail, for sharpness.

Every once in a while you may encounter an image with double contours and you know immediately that some bad vibration tricked you. But you may also find images that show stunning sharpness in some areas, whereas detail resolution in other areas does not meet your expectations. When you took those photos you knew exactly what depth of field you were after and with the help of the depth of field scale on your lens or the table supplied with it you set the aperture and the correct focus accordingly. However, the result is disappointing.

If images like this accumulate, you suspect your lens to be at fault and turn it in. You mail it to Contax or Hasselblad or Carl Zeiss. Be assured it will be in good company: „Depth of field is insufficient“ is the most common complaint to meet the Carl Zeiss service department today. And there is an upward trend. Why? To find the answer, let's take a short look at the basics:

- In your image the one plane will be perfectly sharp that you set the focus for.
- Everything on either side of that plane will come out blurred, more or less.
- How much a subject detail is blurred, depends mainly on its distance to this plane of perfect sharpness, and on the aperture setting, and the focus setting.
- A certain amount of blur is supposed to be tolerable. According to international standards the degree of blur tolerable is defined as 1/1000th of the camera format diagonal, as the normally satisfactory value. With 35 mm format and its 43 mm diagonal only 1/1500th is deemed tolerable, resulting in $43 \text{ mm}/1500 \approx 0.030 \text{ mm} = 30 \text{ }\mu\text{m}$ of blur.

Imagine the very tip of a pin with a size of exactly zero, located precisely in the plane of perfect sharpness, that means, it is imaged to the film with a size of exactly zero, not widened by any blur. Now, move this pin towards the camera and watch the diameter of its tip increase by blurring. When it has reached 30 μm , halt the pin! It is now right at the inner border of the depth of field. Now, do the same in the opposite direction. Beyond the plane of perfect sharpness you will reach the outer border of the depth of field.

All the photo school books in the world explain that same principle and tell a similar story, although with different words and sketches and images. And all the camera lens manufacturers in the world including Carl Zeiss have to adhere to the same principle and the international standard that is based upon it, when

producing their depth of field scales and tables. But here's what the school books don't tell:

A blur tolerable of 30 μm equals a resolution of 30 line pairs per millimeter (lp/mm). The normally satisfactory value was standardized with the film's imaging quality in mind – at the time the standard was defined which was long before World War II. Meanwhile some decades have passed, today's color films easily resolve 120 lp/mm and more, with Kodak Ektar 25 and Royal Gold 25 leading the field at 200. Four-color printing processes have also improved vastly and so have our expectations about sharpness. The depth of field standard, however, has remained unchanged...

This is still absolutely okay as far as the large majority of photo amateurs is concerned, that take their photos without tripods and have them printed no larger than 4 x 6. Be aware that these amateurs represent 90% of all picture takers, so don't expect the depth of field standard to change fundamentally before long, creating a reason for the camera lens manufacturers to introduce new depth of field scales. If you are not satisfied with the results you achieve using the existing scales, tables, and formulas, keep tuned to CLN. We will provide you with information on how to achieve utmost sharpness in photographic images.

Let's sum it up for today:

- The international depth of field standard, the basis for all camera lens manufacturers to calculate their depth of field scales and tables, dates back from a time, when image quality was severely limited by the films available.
- Those who use depth of field scales, tables, and formulas (e. g. for hyperfocal settings), restrict themselves – most probably without knowing why – to the image quality potential of an average pre-World-War-II emulsion