

## Sinar Shutter Systems



Correct exposure is another essential link in the photographic quality chain. In keeping with its standard of highest quality, Sinar offers several metering systems, all of which are based on selective metering at the film plane, thus assuring accurate exposure measurement.

Shutters supplied by Sinar can be classified in two basic types; behind-the-lens and between-the-lens shutters.

● **Behind-the-lens shutters:** Electronic (Sinar Expolux) or mechanical (Sinar Auto Aperture) shutters that are attached behind the lens between the lens standard and the bellows. Behind-the-lens shutters feature the best reproducibility of exposure times for every photograph, independent of the lens being used. These shutters also provide the photographer with outstanding convenience in operating the camera: he or she can control shutter speeds and aperture accurately and quickly without having to move from the position behind the camera.

● **Between-the-lens shutters:** These are mechanical units that are integrated into the lens mount. Most between-the-lens shutters have to be set from the front of the camera, and they have to be closed before the dark slide is removed from a film

holder. They also have to be cocked before each exposure. The fact that each shutter has certain individual tolerances can lead to differences in exposure times when lenses are changed.

Behind-the-lens-shutters are available in the following three variations:

● The **Sinar Expolux Shutter** is a vibration-free, microprocessor-controlled rotating blade shutter that can be operated from the position of the photographer by means of a 3Com-Palm IIIx or V pocket computer. The coded lens is recognized automatically. The aperture (from f/4 to f/128) and the shutter speed (from  $1/500$  to 2 seconds and T) can easily be set with a stylus directly on the touch screen of the pocket computer. An automatic cable serves to verify whether there is a film holder in the camera, and the shutter will open or close automatically. Exposure metering at the film plane can also be performed with the Sinar Booster 1 and with a Minolta exposure meter.

● **Sinar Auto Aperture Shutter:** A mechanical behind-the-lens shutter with automatic cocking, exposure time scale visible from both sides ( $1/60$  to 8 sec and B), and aperture control (f/4 to f/45). Can be used with lenses in Auto Aperture Mounts (For details see on page 5-4).

All Sinar exposure meters are designed for selective measurement at the film plane, which results in the following practical advantages:

- The photographer performs exposure metering from behind the camera, looking in the direction of the subject. This enables him to concentrate completely on the photograph and its composition.
- It is no longer necessary to calculate exposure compensation to accommodate filter factors or bellows extensions.
- The photographer meters important details of the subject and also takes into account contrast characteristics of the film, or – and this is particularly important – the requirements of the printer.

Sinar offers the following products for perfect exposure metering:

● **Sinar Booster 1:** Is a metering probe for continuous light and for flash that works with Minolta Flashmeters III, IV, V and Autometer IVF. It can be used with all film formats.

● **Bron FCM Metering Probe:** Has the same features as the Sinar Booster 1, but designed to work with Broncolor's flash exposure meter.

## Sinar Expolux Shutter

### EXPOLUX SHUTTER XT

522.21.008

Its microprocessor-controlled rotary blades ensure an even exposure, also in fast shutter speeds. The shutter is operated by means of a Palm IIIx or V pocket computer from 3Com and the Sinar Palm-Expolux Controller 522.21.038. The range of parameters controlled by the software makes it possible to tailor the shutter specifically to the task at hand. The range of shutter speeds extends from  $1/500$  to 2 seconds and T in  $1/3$  aperture stops. The range of apertures that can be controlled automatically ranges from f/4 to f/128, depending on the lens in the Auto Aperture Mount.

- The power supply and the communication link with the Palm Computer take place by means of the Expolux RS-232 Power Supply Unit 522.21.046.
- A behind-the-lens filter holder 100mm (4") 547.41 is included.



### PALM EXPOLUX CONTROLLER

522.21.038

The Sinar Expolux XT shutter 522.21.008 is controlled and operated by means of the PalmExpolux software, which is loaded on a Palm IIIx or V pocket computer from 3Com.

- Lenses equipped with Expolux coding tablets are recognized automatically, so that the shutter always "knows" exactly which lens is being used.
- Apertures (from f/4 to f/128) and shutter speeds (from  $1/500$  to 2 seconds and T) can easily be set directly on the touch screen of the pocket computer by means of a stylus. For better evaluation of the depth of field, the aperture can also be stopped down to the working aperture.
- An automatic cable serves to detect whether there is a film holder in the camera. The shutter closes automatically when a film holder is inserted into the camera and it remains closed until the film holder is removed.
- Exposure metering at the film plane can also be performed with the Sinar Booster 1 and with a Minolta exposure meter
- In order to keep the photographer's hands free for making the settings on the camera, the Pocket computer can be placed in a special holder that comes with the PalmExpolux Controller Kit and that can be attached to the Basic Rail.



# sinar Shutters/Exposure Metering

In order to operate the Sinar Expolux Shutter, the following items are required in addition to the PalmExpolux Controller, and they are to be ordered separately:

- 522.21.008 Expolux XT Shutter
- 522.21.046 Expolux RS-232 Power Supply
- 522.21.021 Expolux Control Cable, long
- 522.21.032 Expolux Release/Automatic Cable
- 551.32.034 Expolux Release Cable, long
  - 3Com Palm IIIx or Palm V
  - 3Com Data Cable(see the operating instructions for the PalmExpolux)
  - Windows Computer for the initial installation

The product package includes the following items:

- PalmExpolux Software (diskette)
- PalmExpolux Holder
- Operating instructions

## **EXPOLUX BOOSTER**

525.21

Metering probe with a silicon photo diode for selective exposure measurement at the film plane for electronic flash, continuous illumination or mixed light. The power supply and the interpretation of measured values take place exclusively by means of the Expolux Monitor 522.21.003, which has been discontinued in the meantime.

Can be used with 4x5"/10x12.5 cm to 8x10"/20x25 cm Metering Backs 462.16/.17/.58 or 4x5"/10x12.5 cm Light Meter Cassette 525.16 and 5x7"/13x18 cm Light Meter Cassette 525.17. Length of cable: 1.15 m (46").



## **EXPOLUX POWER SUPPLY RS 232**

522.21.046

Power supply with an RS-232 Interface for operating the Expolux XT Shutter 522.21.008. The long Expolux Control Cable 522.21.021 is required for establishing the connection with the Expolux shutter. Mains voltage range 100–240 V AC, 50–60 Hz, self-adjusting. Mains power cable is included.



## Sinar Auto Aperture Shutter

### **SINAR AUTO APERTURE SHUTTER**

521.31

Mechanical behind-the-lens shutter with spring-loaded aperture control. The Sinar Auto Aperture Shutter enables you to concentrate more on the photograph and less on camera operating technique.

- You operate the shutter from behind the camera, where you belong. No longer do you have to kneel before your camera in order to check whether the aperture is stopped down, the shutter closed or even cocked.
- The shutter is always fully open until just before the exposure is made, for maximum brightness of the focusing screen.
- When you insert the film holder into the camera, the shutter automatically closes. That makes the time lost because of accidentally exposed films a thing of the past.
- When the shutter is released, the unique Sinar spring-loaded aperture control (DB) automatically closes the aperture down to the preselected value and the shutter is automatically re-cocked.
- Shutter speed range:  $\frac{1}{60}$  to 8 seconds and B.
- Aperture stop settings range from f/4 to f/45 (smaller apertures can be set with lenses in DBM aperture mounts. Also see chapter 4 about this feature).
- A filter holder that can take up to three 100 mm filters is supplied with the shutter.
- In order for lenses to be used with the Sinar Auto Aperture Shutter, they have to be mounted in DB aperture mounts. Photographers can easily update existing lenses with between-the-lens-shutters themselves by using Sinar DB Conversion Kits.
- The Sinar Auto Aperture Shutter is supplied with an appropriate filter holder, release cable 521.61, automatic cable 521.51, bayonet piece 521.91 and synchro cable adapter with standard plug 522.11.005.



Sinaron lenses with Copal between-the-lens shutters equipped with a tube on the lens plane can also be used with a Sinar Auto Aperture behind-the-lens shutter. However, the aperture has to be set manually on the shutter (see Order No.441.83. ... on page 4-4).

### **Y-SYNCHRO CABLE**

521.51.010

Connects the exposure meter with the shutter and with the electronic flash unit. Permits flash synchronization during exposure metering and during exposure without having to change connections. Length: 1 m (40").



### **COUPLING PIECE FOR 521.51**

521.81

Two Automatic Cables 521.51 can be joined with this Coupling Piece for use with long camera bellows extensions.



### **SYNCHRO LEAD ADAPTER**

522.11.005

For connecting conventional flash synchronization cables or remote releases to Sinar Auto Aperture Shutter 521.31 or to Sinar Digital Shutter 522.11.



# Exposure Metering

## a brief introduction

### 1. Know the process!

Have you ever wondered why your transparencies look great on a lightbox, but you are disappointed when you see them reproduced in print?

- A simple reason is the contrast range. A transparency can reproduce details from the brightest highlights to the darkest shadows, a range of more than six aperture stops.
- As soon as the very same picture is reproduced with printing inks on paper, this range is reduced to only four aperture stops.
- Somewhere between the original exposure and the printed image there is a lithographer who decides what part of this visual information must be sacrificed. This is really so – there is somebody else who passes judgment on your work!

We would like to describe a few simple steps that will help you to understand the production process so that you can anticipate what your pictures will look like in print.

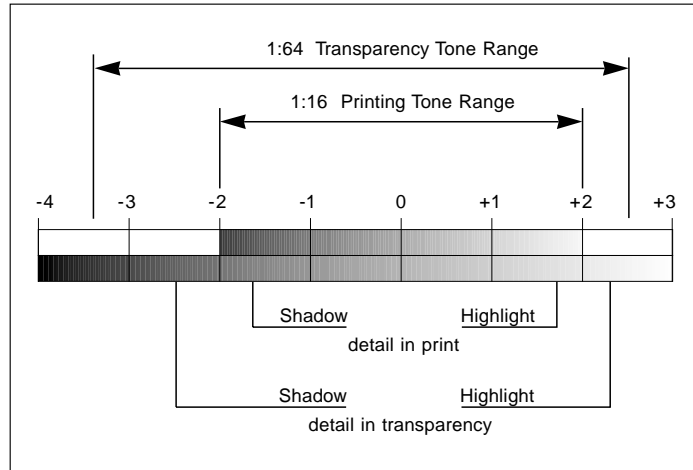
### 2. Exposure Metering

To control the reproduction process means to measure the contrast range of your pictures.

- In order to reproduce a subject as accurately as possible, all the important information, from shadow detail to the brightest highlight with detail, should be contained within a contrast range of four measured aperture stops.
- For the most accurate exposure measurements with large format cameras, an exposure meter should be used that measures the light at the film plane.

The most important elements in exposure measurement are the following:

- The midtone (e.g. with the Kodak Q-18 Neutral Gray Card).
- The darkest area in which you want to hold detail.
- The brightest area in which you want to hold detail.



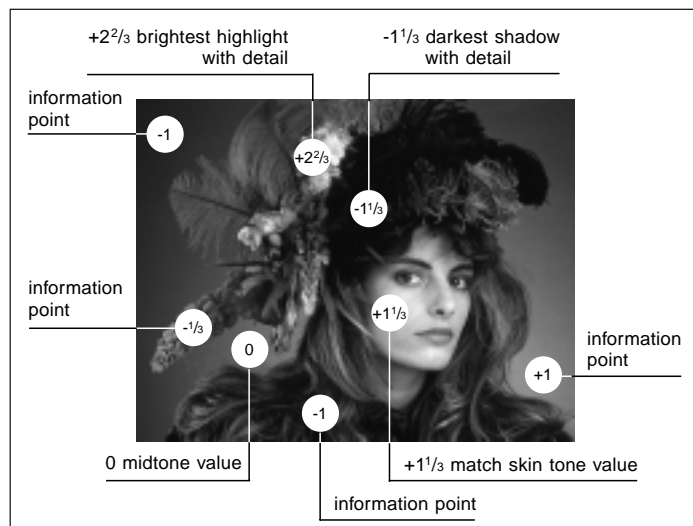
**Examine the contrast range of your transparencies. Now look at the “window”:** all this visual information has to be compressed, so that it can be reproduced in a printed reproduction. If you do not have control over this process, you will never be able to tell exactly how your work will look when it is finally reproduced in print.

Remember that the contrast range between these two areas must not exceed four aperture stops!

The most precise method of exposure measurement is through the lens exposure metering using a metering probe at the film plane. That means that any point can be measured and that the contrast range can be controlled.

The practical advantages of exposure measurement at the film plane are the following:

- The photographer performs the metering behind the camera, while he or she has the subject in view, so that he or she can devote full attention to the camera and to picture composition.



- Extension factors for the exposure time that normally arise from the use of filters, bellows extensions, etc. are taken into account automatically.
- Important parts of the image can be measured precisely.
- The photographer determines the tonal values, unaffected by the often varying sizes of the image areas with different brightness values.
- Staying within acceptable tolerances of tonal values in the contrast ranges is a basic prerequisite for good picture reproduction;

### 3. Communication

Without good communication between you the photographer and the lithographer, the latter has no reference points for the

interpretation of your pictures:

- Which details must be preserved and which can be left out?
- What areas must be considered with special care for color rendition?
- Where is the midtone value?

Simply by identifying the measured points on a Polaroid print or on a transparency, this information can easily be passed along to the lithographer. Some of the pertinent information that can be communicated in this manner is the following:

- Midtone value, darkest shadow area with detail and brightest highlight with detail;
- Areas that can be saturated black or totally white (i.e. which do not have to have detail rendition).
- Areas that require special attention for color rendition (such as skin tones or important saturated color areas).
- Determination of the effective light value of specific points, for reference. Single out a point, for instance, that has 1 stop above the midtone value (+1), or that is a 1/3 stop below that value (-1/3).

Communication has to be nurtured by all those who are involved in the reproduction process: the photographer, the client, the lithographer and the printer.

## Accessories

### **SINAR BOOSTER 1**

525.11

Equipped with a silicon photo diode, the Sinar Booster 1 light metering probe is designed for use with Minolta Flashmeter III, IV and V, as well as the Autometer IV F exposure metering devices. Selective exposure metering at the film plane is universally possible with flash-, continuous- and mixed lighting. Thanks to its long metering probe, the Sinar Booster 1 can be used with metering backs 4x5"/10x12.5 cm 462.16, 5x7"/13x18 cm 462.17, and 8x10"/20x25 cm 462.58 or with Light Meter Cassettes 4x5"/10x12.5 cm 525.16 and 5x7"/13x18 cm 525.17.



### **SINAR PROBE FCM**

525.12

Same features as Sinar Booster 1, but compatible with the technology of Broncolor's exposure meter FCM.



The metering backs in which these exposure metering probes can be used are listed in Section 3, "System Components", page 3-5.

### **LIGHT METER CASSETTE 4x5"/10x12.5 cm**

525.16

Accepts the metering probes of all exposure meters equipped with such probes. Fits all professional cameras with internationally standardized 4x5"/10x12.5 cm backs.

### **LIGHT METER CASSETTE 5x7"/13x18 cm**

525.17

Accepts the metering probes of all exposure meters equipped with such probes. Fits all professional cameras with internationally standardized 5x7"/13x18 cm backs.



### **HOLDER PLATE FOR MINOLTA FLASHMETERS**

525.16.005

Holder Plate for attaching Minolta Flashmeters III, IV or V (when Sinar Booster 1 is being used) on Light Meter Cassettes 4x5"/10x12.5 cm 525.16 and 5x7"/13x18 cm 525.17.



### **HOLDER PLATE FOR LIGHTMETER**

462.96.006

Holder Plate for attaching exposure meters such as Minolta Flashmeters III, IV, V or Autometer IV F (when Sinar Booster 1 is being used) to a carrier frame, to a metering back, or to a holder frame.

