12321

SPOT-MASTER 2

GOSSEN SPOT-MASTER 2

for
ambient light
flash
zone system

Field of view 15° with clearly marked central circle used for measurements with a metering angle of only 1°.

The field of view is surrounded by the display so that the subject and all readings can be seen at a glance.

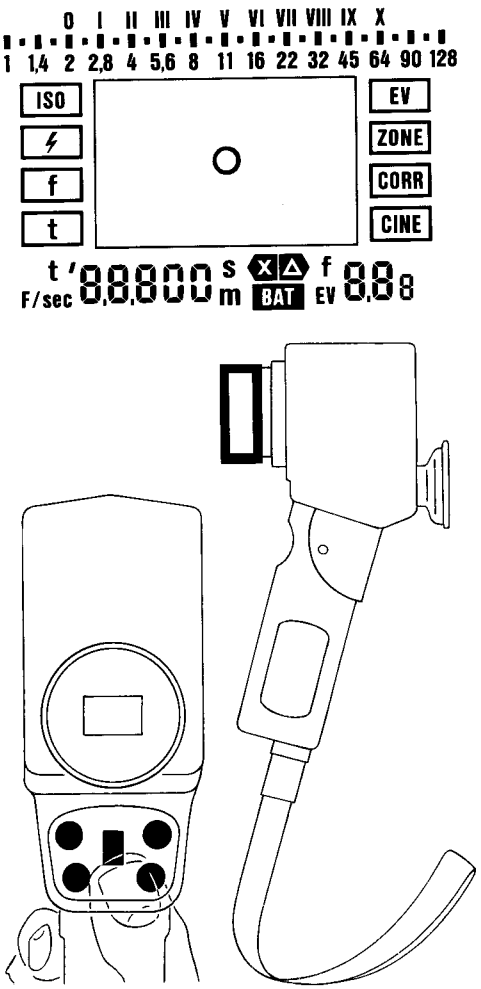
All functions, settings and measurements are controlled by means of four buttons and a sliding switch, all within easy reach of your thumb.

Metering angle of 1°

This extremely narrow angle permits measuring minute details and nuances in the scene brightness range, even if they are close together.

Shutter speeds

The shutter speeds are displayed in steps from 1/8000 sec. to 60 min.; 1/90 sec. is also provided.



Measuring distance: 1 m to ∞

For shorter distances, close-up lenses are available from your photographic dealer. See Technical Data on page 20.

If you wear eye-glasses

The flexible eyecup on the viewfinder can be turned inside out. A variety of corrective lenses and matching adapters are available from your photographic dealer. See Technical Data on page 20.

Do not aim the meter at the sun

You may not only damage your eye, but also ruin the light-sensitive cell.

Adjusting the Spot-Master 2 to a particular camera

The meter has been manufactured to the internationally accepted DIN 19010 ISO 2720 standard; its readings are accurate and it meets all photographic requirements. If a test film should indicate that adjustment to camera and film is necessary, a correction should be made. Refer to page 15.

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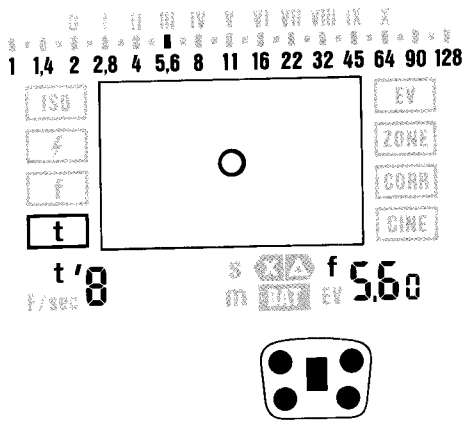
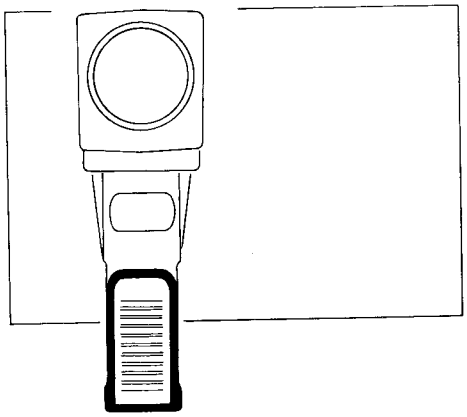
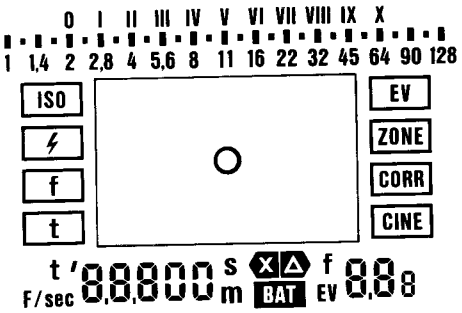






Switching on the display

Press any of the five buttons once. The display appears with the most recently measured values. Approximately 15 seconds after a reading has been taken, the display is switched off automatically.

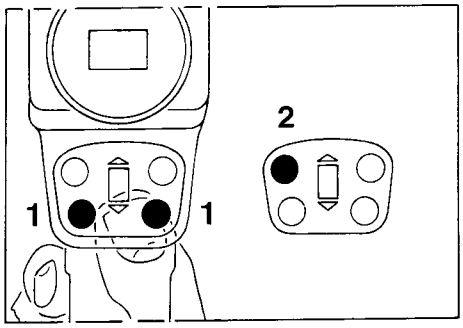
Inserting or replacing the battery

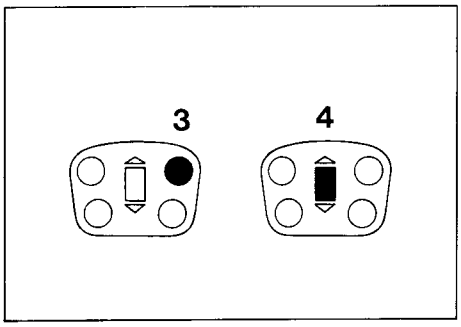
Use a 9 V alkaline or NiCd battery. Open the compartment in the pistol grip, disconnect the old battery and press the connector on the new battery. Insert the battery and close the compartment.

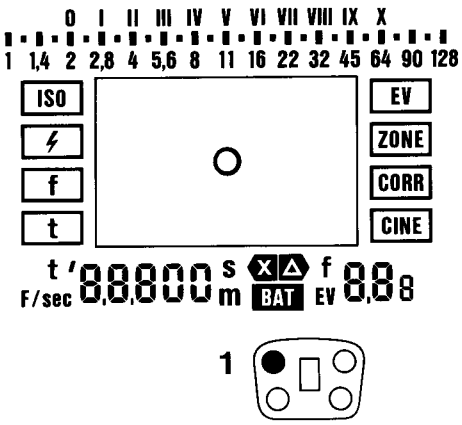
One battery permits some 1,000 readings. If the warning sign (BAT) lights up, there is sufficient energy left for approx. 50 readings. Replace the battery as soon as possible; the stored values will then be lost.

When the battery has been replaced, the microcomputer runs a self-checking routine, during which all segments of the display are shown. On completion of the test routine, the following initial settings are displayed:

ISO	100/21°	EV (LW)	12o
⚡	'60	ZONE	–
f	5.6	CORR	1.0 0o
t	'125	CINE	18 F/sec







Four push buttons and one slide switch

1 Two function buttons

The two lower buttons serve to select the required function; the left one in descending sequence, the right one in ascending sequence. A trial will make this clear. The selected functions are indicated in the display by a frame.

2 Button for single readings

3 Button for averaging

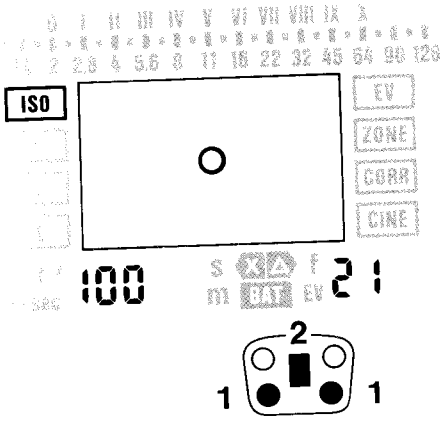
4 Slide switch

To change values.

In the following text, the buttons that need to be pressed for specific settings and metering are highlighted and numbered. In the example above,

1 = button for single readings.

The values in the display are examples only, and not necessarily the values that are actually shown in the display of the Spot-Master 2.



Setting the film speed

1 Press one of the function buttons until the ISO function is highlighted by a frame. Use the

2 sliding switch to set the film speed; it is displayed in digital form in ASA (left) and in DIN (right).

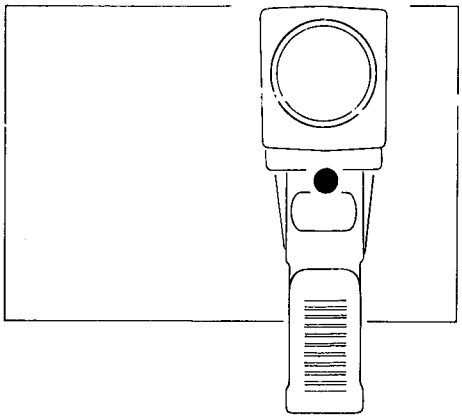
When switching to another function, the value is stored. A previously determined aperture/shutter speed combination is corrected accordingly.

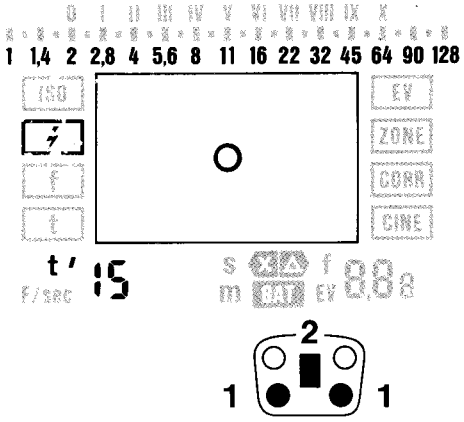
Metering with grey card

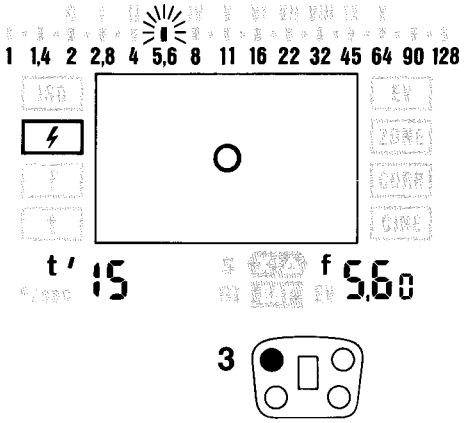
Use a grey card that reflects 18 per cent of the light and place it in a prominent spot of the subject. Measure the light from the appropriate distance.

The self-adhesive grey cards supplied with the Spot-Master 2 can be easily attached to any subject. They are suitable for measuring distances of up to 3.5 m.
If the distance is larger, use four cards arranged in a square and look through the viewfinder to ensure that the 1° circle captures the grey cards only.

Additional grey cards may be ordered in quantities of 30 from the Gossen representative in your country.







Measuring flash light

When measuring flash light, the Spot-Master 2 also measures the ambient light in accordance with the flash sync speed.

- Connect the flashgun with the Spot-Master 2. If this is not done, metering is impossible.

  The flash unit and the Spot-Master 2 may be connected by means of a sync cord,

  or

  a small flashgun or infrared trigger may be mounted on the hot shoe for flash triggering without a sync cord,

  or

  The flashgun may be mounted on the hot shoe.

  The hot shoe and the sync socket must never be used simultaneously!

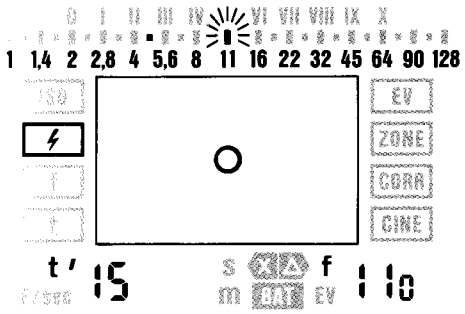
  The connector that is not used must be covered!

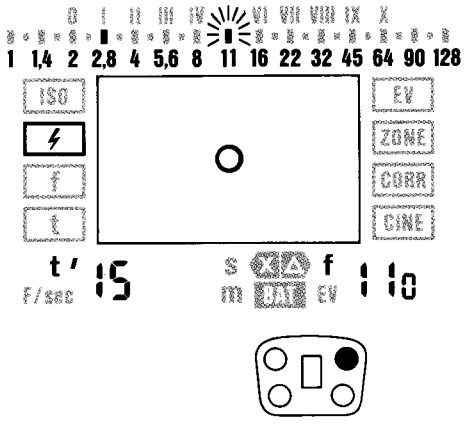
1 Use one of the function buttons to select the function.

2 Use the slide switch to select the shutter speed (synch speed) between 1/1000 and 1/8 sec. including 1/90 sec. (the sync speed must be at least as long as the duration of the flash). The longer the exposure time, the greater the effect of ambient light. The shutter speed is displayed in digital form on the left: t...

- Aim the Spot-Master 2 at the subject or grey card that is illuminated by the flash.

3 Press the button for single readings: the flash is triggered automatically.





The correct "f" number resulting from the combination of flash light and ambient light is displayed:
both as a digital value on the right and a flashing dot on the analogue aperture scale; the "f" number for the amount of ambient light is displayed as a constant dot on the aperture scale and does not flash. This reading indicates the difference in f-stops between the ambient light and the flash light (contrast ratio).

When this reading has been taken, the contrast can be measured

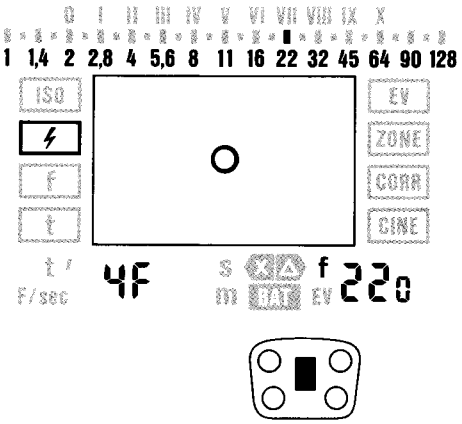
between

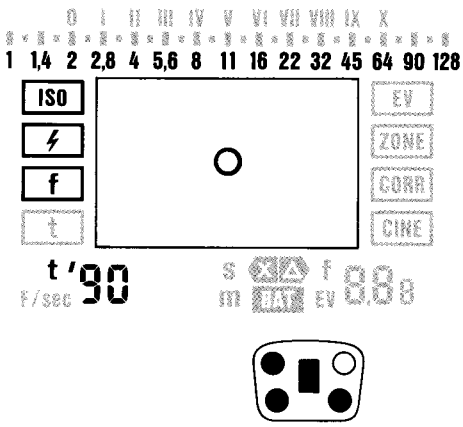
- parts of the subject illuminated by the flash light and
- parts of the subject illuminated by the ambient light only.

Measuring the contrast between flash light and ambient light

The combined flash and ambient light reading has already been taken and the measured value has been stored.

- Aim the Spot-Master 2 at a section of the subject illuminated by the ambient light only, not be the flash light.
- Press the button on the right. The flash unit is not triggered but the contrast is displayed as a non-flashing analogue





value on the aperture scale, instead of the amount of ambient light.

- Further contrast measurements are possible in areas of the subject illuminated by ambient light only: again, press the button on the right.

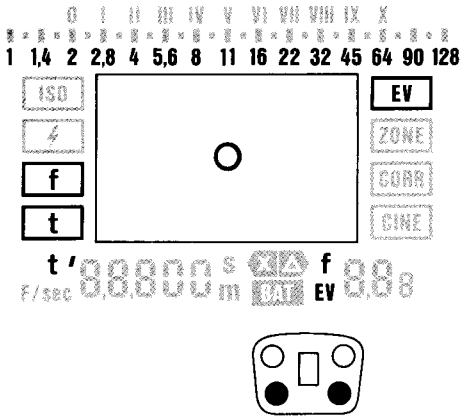
Multiple flash – determining the number of flashes required

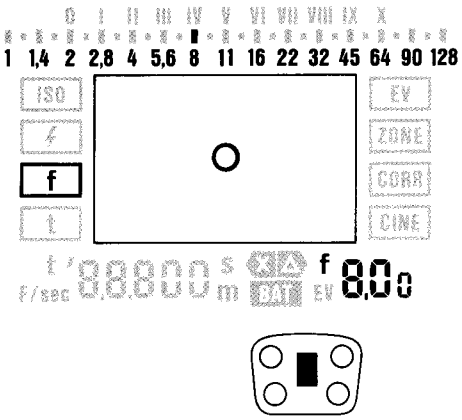
If the desired "f" number has not been obtained by the first flash measurement.

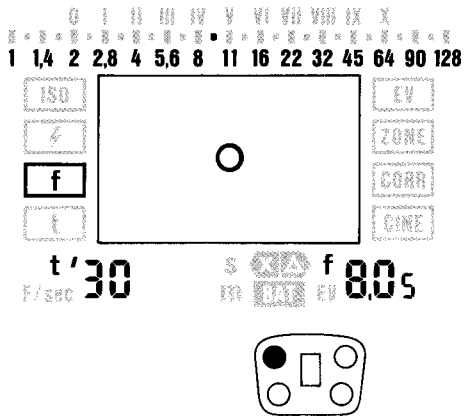
- Use the slide switch to set the desired "f" number. It is displayed as a digital value on the right (f...) and as an analogue value on the aperture scale. The digital shutter speed on the left disappears and the number of required flashes is displayed in this spot.
  Example: 4F = 4 flashes.
  The maximum number of flashes that can be computed is 15.
  If a specific number of flashes is required:
- Use the slide switch to set the number of flashes.

If a different shutter speed is to be set after metering:

- Change the function to ISO for f.
- Reset the function to ⚡.
- Set the new shutter speed (sync speed), using the slide switch.
- Press the button for single readings.







Measuring ambient light

- Use the function button to select:

f = Aperture priority mode. You select the aperture and the Spot-Master 2 determines the correct shutter speed.

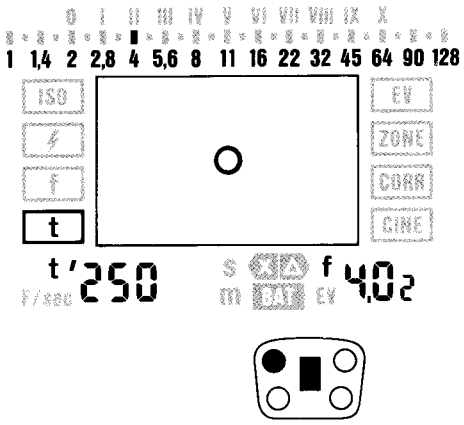
t = Shutter priority mode. You set the shutter speed and the Spot-Master 2 determines the correct aperture.

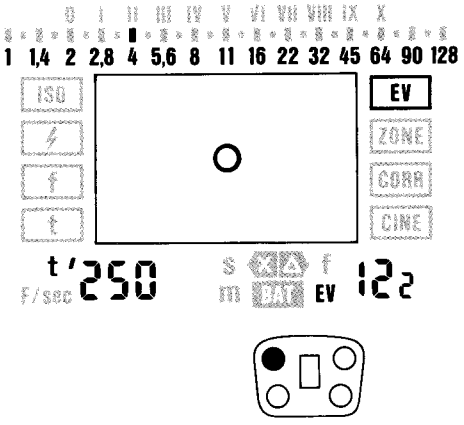
EV= Exposure value.
Currently stored values are displayed.

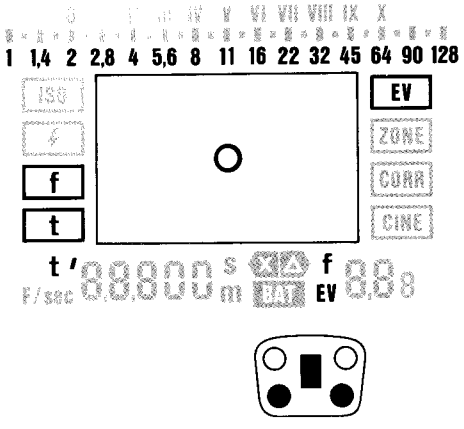
Aperture priority (f):

- Use the slide switch to set the desired aperture; it is displayed as a digital value on the right (f...). Intermediate aperture values (t...) (tenths of stops) result from the most recent reading and should be disregarded. The aperture is also displayed as an analogue value (rounded for clarity) on the aperture scale.
- Aim the Spot-Master 2 at the subject.
- Press the button for single readings.

The shutter speed is displayed as a digital value on the left (t...)
As there are no intermediate settings for shutter speeds, intermediate values are shown as tenths of stops at the digital aperture value. In the above example this means: close down by 5 tenths.







Shutter priority mode (t):

- Use the slide switch to set the desired shutter speed; it is displayed as a digital value on the left (t...).
- Aim the Spot-Master 2 at the subject.
- Press the button for single readings. The correct aperture is displayed as a digital value on the right (f...) and as an analogue value (rounded) on the aperture scale.

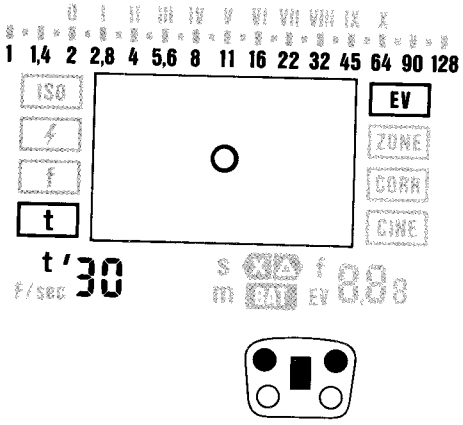
EV Mode:

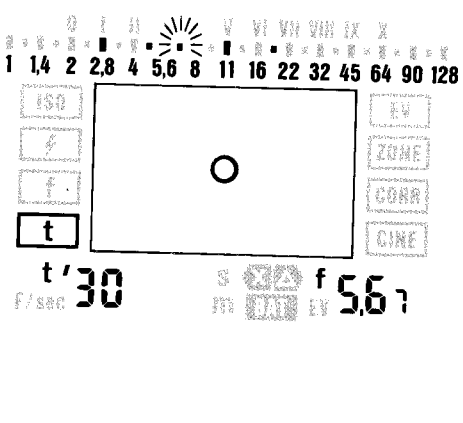
- Aim the Spot-Master 2 at the subject.
- Press the button for single readings. The exposure value (EV) is displayed as a digital value on the right (EV...). At the same time, a shutter speed/aperture combination is displayed the shutter speed as a digital value on the left (t...) and an aperture value (rounded) is displayed on the analogue aperture scale.

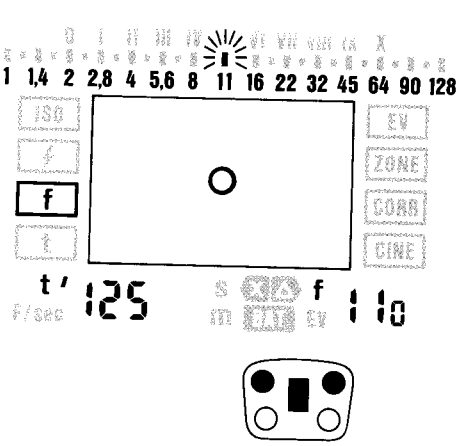
Scanning shutter speed/aperture combinations:

- Slide the switch up or down, or
- change to either function t or f.

Contrast can be measured in the following modes: t, EV and CINE. The pertaining aperture values are displayed on the analogue scale. Proceed as described in "Ambient light – measuring contrast" with shutter priority.







Ambient light
Measuring contrast – averaging

In "t" and "EV" mode:

- Set the shutter speed with the slide switch.
- Take a single reading as described on page 10.
- Use the button for averaging to measure up to 9 further contrast areas. The contrast values are shown on the analogue aperture scale. (identical values are shown only once, but taken into account when averaging).
  The average is displayed as a digital value on the right (f or EV) and as a rounded flashing number on the analogue scale.

In "f" mode:

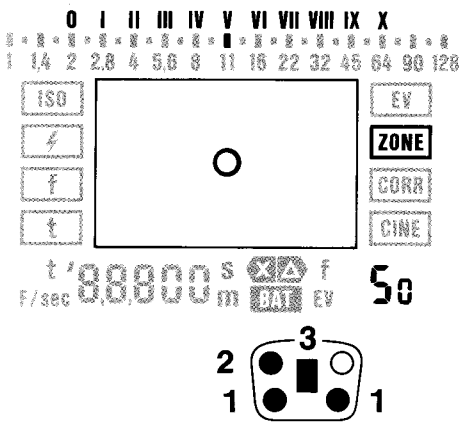
- Set the aperture.
- Take a single reading, a shutter speed will be indicated.
- Use the button for averaging to measure up to 9 further contrast areas. The various shutter speeds measured cannot be shown on the analogue aperture scale. The averaged shutter speed is displayed as a digital value on the left, subdivisions in tenths of stops at the digital aperture value on the right. The preselected aperture value (rounded flashes on the analogue aperture scale.

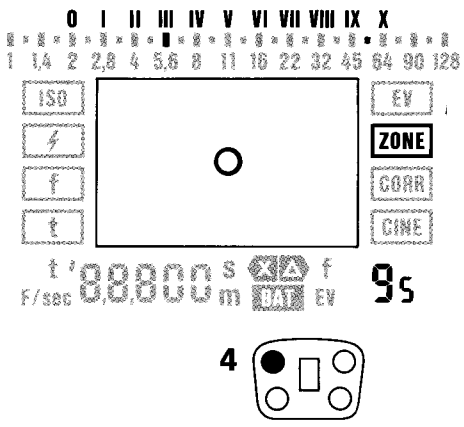
If the aperture scale and/or the digital display flash, refer to page 19.

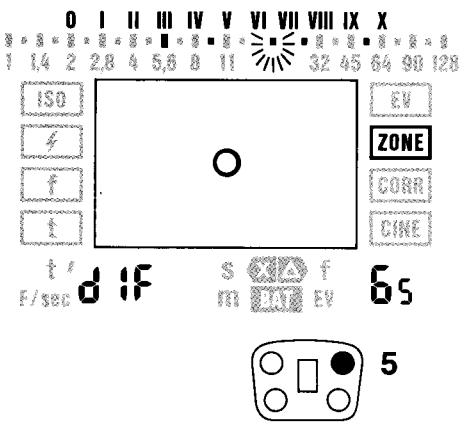
The Zone System

mainly for contrast control

Making full use of this mode of operation requires knowledge of the Zone System. The following books are available on this subject:
Ansel Adams: "The Negative",
Phil Davis: "Beyond the zone system",
Curtin & London, Inc. Somerville, Massachusetts and Van Nostrand Reinhold Co, New York, Cincinnati, Toronto, Melbourne.
In combination with individual development of b/w negatives, the Zone System leads to superb results.







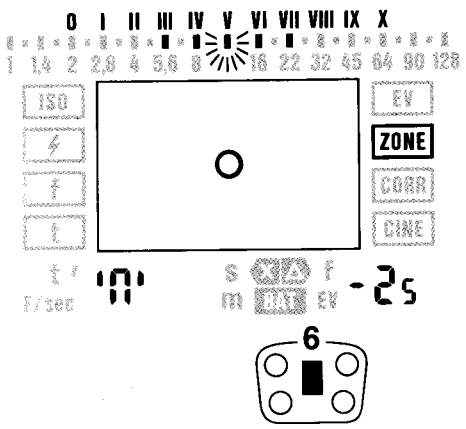
1 Select ZONE with a function button.
- Aim the Spot-Master 2 at the darkest spot that should still show up in the negative.

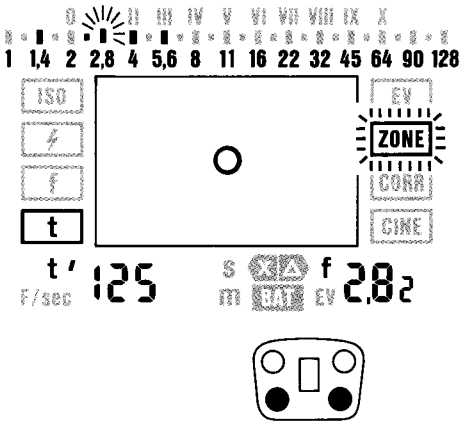
2 Press the button for single readings. The measured value is automatically allocated to zone V.
The zone is indicated in the zone scale and as a digital value on the right.

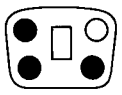
3 Use the slide switch to shift the measured value into the zone that is to contain the darkest value, for example zone III.

4 Measure up to 9 further spots, using the button for single readings, and include the brightest spot that should still show detail in the negative.
The following values are displayed and stored: the zone of each reading, indicated on the zone scale (identical values are displayed only once), and the current zone as a digital number on the right.
If the capacity of the display or the range of the meter are exceeded, the zone scale and the digital display flash uuu nnn.

5 Press the button for averaging. The following information is displayed:
The difference between the brightest and darkest spot in terms of aperature stops as a digital number on the right; and the average of the two extreme values flashing on the zone scale.







6 Compress (with slide switch shift flashing average to the left) or expand (shift flashing average to the right) the difference between the brightest and darkest spot until the flashing average is, for example, under zone V. The exposure range should be divided evenly on both sides of zone V. The digital display contains a hint for processing the film. Example 'n' – 2 5

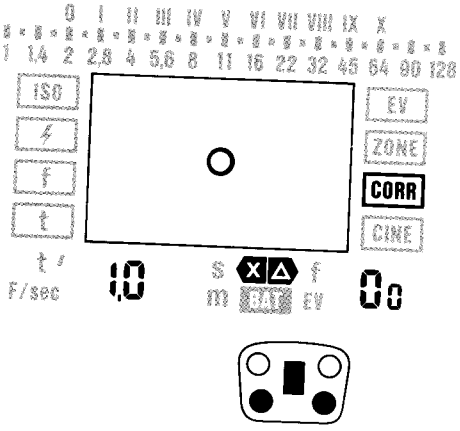
Note 'n' – 1 could, according to the manufacturer of the film and the chemicals, or based on own experience, mean reduction of the processing time by 30 %

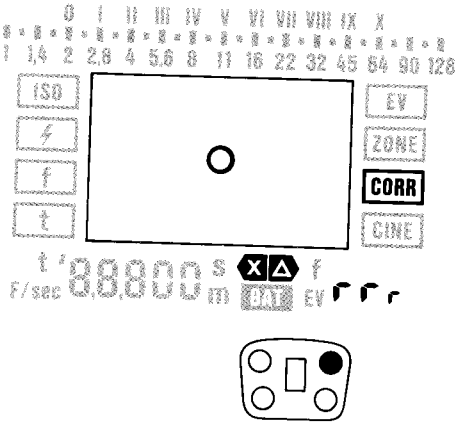
Determining settings for the camera
The flashing average is the reference value.

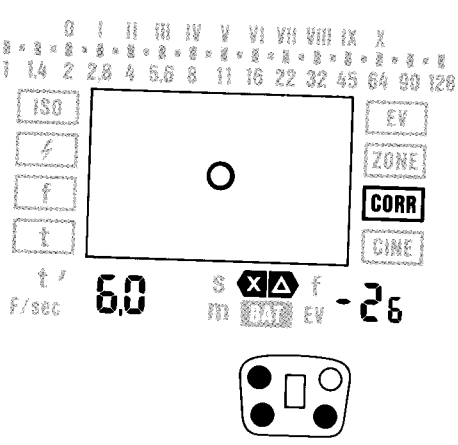
- Use one of the function buttons to select either "EV", "t" or "f" mode.
- Select a shutter speed/aperture combination for the camera, using the slide switch. The ZONE frame flashes to indicate that these settings originate from a Zone reading.
- If necessary, return to the ZONE mode for further operation in the zone system.
- Then return to "EV", "t" or "f" mode to scan the results.

The values obtained in the ZONE mode can be cancelled:

- Select "f", "t" or "EV" mode.
- Press the button for single readings.
- Select ZONE mode again; take new reading(s).







Entering, changing and measuring corrections

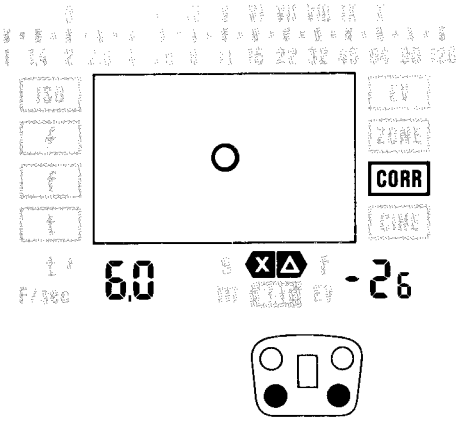
- Press one of the function buttons until the function CORR is highlighted by the frame.

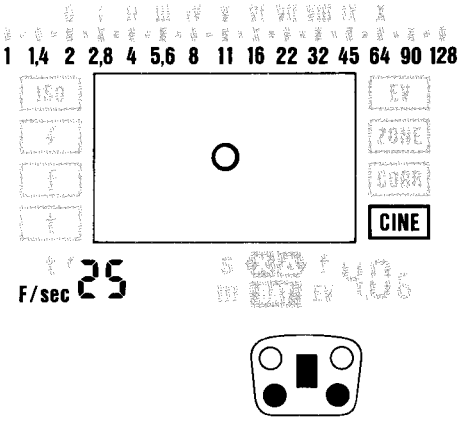
Entering and changing corrections:

- Slide the switch up or down.

Measuring corrections with a constant light level, for example an evenly illuminated surface whose brightness does not change:

- Aim the Spot-Master 2 at the surface.
- First press the button for averaging; a reference reading is taken and displayed as a digital value rrr on the right.
- Weaken the light, for example by holding a grey filter in front of the lens of the Spot-Master 2.
- Aim the Spot-Master 2 at the surface again.
- Press the button for single readings. The display shows: the exposure factor on the left and the difference in terms of stops on the right, both in digital format.
- Having entered or measured the correction, it needs to be stored: Press one of the function buttons a number of times. The warning symbol XΔ lights up in all modes (except ZONE) as an indication that the correction will be taken into account in future readings.





Recall corrections:

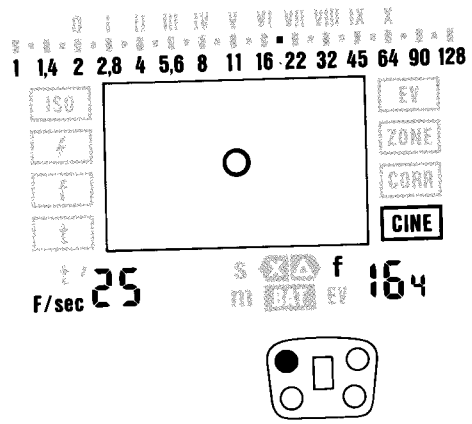
- Use a function key to select CORR. A previously stored correction is displayed as follows:
  Extension factor (greater than 1) as a digital number on the left. Exposure correction in steps of 1/10th stop from − 9.9 to + 9.9 EV. Negative values are preceded by a minus sign.

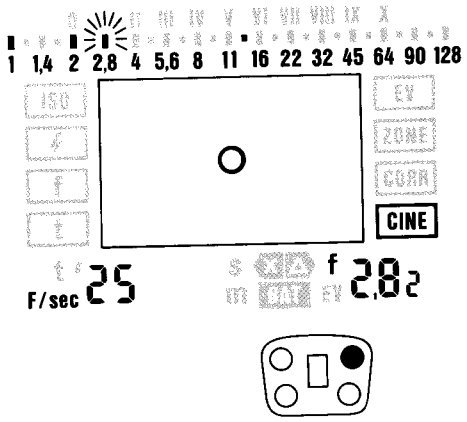
The warning symbol XΔ always lights up in CORR mode; in other modes only if a correction has been stored.

Movie/Cinecamera readings

For filming to TV standards at speeds of 25 and 30 frames/second (exposure times of 1/50 and 1/60 sec.):

- Use a function key to select CINE.
- Use the slide switch to select a speed between 8 and 64 f/sec. It is displayed as a digital number on the left (f/sec...).
- Aim the Spot-Master 2 at the subject.





Single readings

- Press the button for single readings. The aperture is displayed as a digital number on the right (f...) and as an analogue, rounded value on the aperture scale.

The aperture readings apply to cameras with 180° shutter. For other shutters, the aperture needs to be corrected by the extension factor V = 180° divided by the shutter angle. The result of this division is entered as described on page 15.

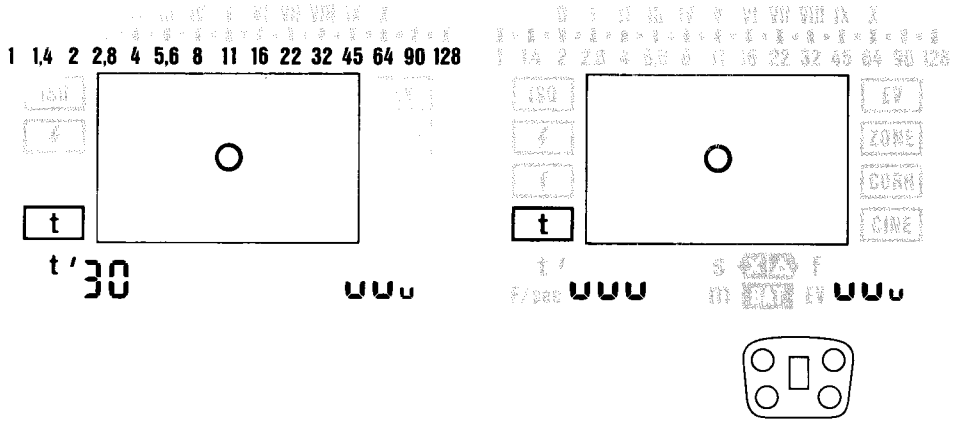
Contrast readings can be made as described in "Ambient light – Measuring contrast..."

Averaging

After a single reading

- Take up to 9 further readings with the button for averaging. The following information is displayed: The individual contrast values on the analogue aperture scale, as well as the average as a digital number on the right (f...) and as a flashing analogue number on the aperture scale.

The CINE readings are stored separately and not converted to other ambient light functions.



If the display flashes

If a measured value is outside the measuring or display range, this is indicated by flashing.

If the digital display left or right flashes together with the aperture scale:

The display range has been exceeded. Use the slide switch to select a different value.

If the digital displays left and right flash:

The measuring range has been exceeded. The reading is void and not recorded.

This means:

When the display range has been exceeded, the readings are stored.
If the measuring range has been exceeded, the readings are not stored.

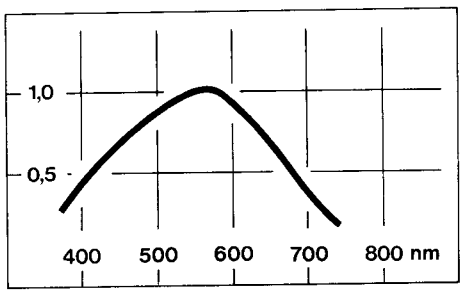
If, during averaging, a reading is outside the display range but within the measuring range, the correct average reading is displayed as a digital number and the aperture scale flashes. If, in "t" mode, the average is outside the display range, the aperture scale and the digital display on the right flash. If a reading is outside the measuring range, it is deleted.

Technical data

Light sensor Silicon Blue Cell
All readings are processed by a microprocessor

Spectral sensitivity

A special filtering system adjusts the light sensor to the spectral sensitivity of film material.



The diagram shows average relative spectral sensitivity of a silicon blue cell of SpotMaster 2.

Measuring ranges at ISO 100/21°

Ambient light	EV 1 to EV 22
Electronic flash light	f2.8 to $9^{9}/_{10}$

Display ranges

Film speed	ISO 1/1° to ISO 80 000/50°
Apertures	f1.0 to f90 9/10
digital	in 1/10 stops
analogue	half stops
Shutter speeds	1/8000 sec. to 60 min. 1/90 sec. also provided
For cine cameras	8 to 64 frames/sec. 25 and 30 f/sec. also provided
Zone system	0 to X; adapted to film development

Miscellaneous specifications

Measuring angle	1°
Field of view	approx. 15°
Flash synchronization time (measuring time)	1/1000, 1/500, 1/250, 1/125, 1/90, 1/60, 1/30, 1/15 and 1/8 sec.
Averaging	of up to 10 discrete readings in ambient light mode
Exposure value correction	−9.9 to +9.9 stops
Extension factors	1 fo 955
Duration of display and illumination	approx. 15 seconds
Memory storage retention	until deliberately erased
Measuring distance	1 m to ∞ 0.65 to 1 m: with 1-diopter supplementary close-up lens M 43 × 0.75*
Dry cell/rechargeable battery	9 Volts
Tripod socket	1/4"
Dimensions	approx. 90 mm long with lens, 57 mm wide, 190 mm high with grip
Weight without battery	approx. 340 g
Filter thread	M 43 × 0.75
Viewfinder adapter*	for correction lens; HAMA Item. No. 339/04*
Correction lens*	HAMA 23 mm dia.; Item No. 4521 to 4539, depending on dioptre ratings
Standard accessories	Case, carrying strap, battery, selfadhesive grey cards

* Available from specialized trade outlets

Care and Service

In the event that your Spot-Master 2 is not working to your complete satisfaction, please send it to:

Neue Adresse - New Address

GOSSEN

Foto- und Lichtmeßtechnik GmbH

Thomas-Mann-Strasse 16-20

D 90471 Nürnberg

you will make things easier, if you return your Spot-Master 2 without any accessories, i.e. without case, carrying cord, etc.