GOSSEN

Instructions for Use

MEASURING PROBE

General introduction

The **MEASURING PROBE** attachment transforms the system exposure meters MASTERSIX, MULTISIX, LUNASIX F, PROFISIX and LUNASIX 3 S into special-purpose instruments for measurements of which an ordinary exposure meter is incapable. The extreme sensitivity of these system exposure meters is optimally exploited by the **MEASURING PROBE** attachment. The flexible measuring probe with its confined measuring aperture will prove to be ideal wherever very small and inaccessible points have to be measured for exposure. The **MEASURING PROBE** is particularly advantageous for exposure measurements in connection with macrophotography and for ground-glass screen measurements. Even contrast measurements can be easily completed.

Technical information

The **MEASURING PROBE** consists of some 4.000 glass fibres, each one having a diameter of no more than 70 µm (= 0.07 mm). The probe must not be sharply bent as this may break individual fibres, thereby causing a loss of light.

Length	approx. 400 mm
Measuring aperture:	5 mm dia., ≙ 19.6 mm²
Measuring angle:	30°

Difference in exposure values between the meter plus probe and the actual exposure meter:

With ambient light:	EV + 3
With flashlight:	EV + 2

Attaching the measuring probe

The **MEASURING PROBE** is easily attached to the exposure meter. Push the spherical diffuser dome of the exposure meter in such a manner that it fits into the recess provided in the attachment for this purpose. Now press the meter and attachment together while keeping the locking button depressed. The system exposure meter and the **MEASURING PROBE** are firmly locked together as soon as the locking button is released.

The film speed is adjusted according to the instructions for the system exposure meter.

Reflected light measurement

The **MEASURING PROBE** is ideally suited for macrophotography, close-up measurements of particularly small areas and for detail measurements of small subjects that are inaccessible with an exposure meter, e.g. scaled down models of interiors and landscapes, specific details of architectural models, circuit designs, art objects, etc.

Point the measuring aperture of the **MEASURING PROBE** at the subject. Ensure that a shadow is not cast on the subject. More reliable results will be obtained if the measurement is conducted with a grey-card. For this purpose place a small grey-card in front of the important image details and point the measuring aperture at the grey-card, taking care not to cast a shadow. Ensure that the metered reading is strictly limited to the surface of the grey-card. The area surrounding the grey card will falsify the reading if the distance is too great.

The distance between the grey card and measuring aperture must not be greater than the diameter of the largest circle that can be drawn on the grey card.

To compensate for loss of light due to the **MEASURING PROBE** adapt the exposure value in the following manner before taking a reading:

- Adjust the outer computer ring on the analog meters LUNASIX F, PROFISIX and LUNASIX 3 S.
- Adjust the CORR function on the digital meters MASTERSIX and MULTISIX

	Ambient light	Flashlight
PROFISIX, LUNASIX 3 S	+ 3 EV	
LUNASIX F	+ 3 EV	+ 2 EV
MASTERSIX, MULTISIX	+ 3 Δ	+ 2 Δ

The accuracy of these recommended values can be increased in the following manner:

Ambient light

Measure a grey card with the attached **MEASURING PROBE** and note the measured value. Now remove the **MEASURING PROBE** and measure the same again, adjust the compensation value established in this manner on the outer computer ring of the analog exposure meter.

The established compensation value can be directly stored when this measuring procedure is repeated in the same sequence with the CORR function of the MASTERSIX and MULTISIX.

Measuring example:

1. Measurement with measuring probe M	Reference display rrr
2. Measurement without measuring probe M	Display 3.0 or individual value, e.g. 2.8 Δ

The comparative measurements for **flashlight** must be completed with the ϟ function of the MASTERSIX, MULTISIX and LUNASIX F. The resulting compensation value must be adjusted in the CORR function or transferred to the outer computer ring.

Ground-glass screen measurement (exclusively with ambient light)

Exposure measurement in general
The **MEASURING PROBE** ensures exceptionally simple exposure measurements from a ground-glass screen. All variations such as bellows extension factor, tolerances of aperture settings, filter factors and stray light, are taken into account by the measurement. The measuring aperture of the **MEASURING PROBE** is placed on the point of the ground-glass screen that is to be measured. Extraneous light that could falsify the reading must be eliminated with a black cloth. Do not measure in the corners of the ground-glass screen as a drop in the light level must be expected at these points. A fresnel screen should be used to secure uniform light distribution over the entire screen area. To determine the actual exposure time it is advisable to use a grey-card positioned in such a way that it receives the same light as the important details of the subject. Readings are then taken of the grey-card image.

PROFISIX, LUNASIX F and LUNASIX 3 S
Take a reading and compensate with the computer ring. Read the exposure time over the f/1-stop on the aperture scale. The f/1 stop is the **reading index** for this **form of measurement** with the selected working aperture. Extension factors for bellows or filters are automatically taken into account.

MASTERSIX and MULTISIX
Preadjust the f function and adjust f/1.0 as the reference value. After the measurement the exposure time can be read off directly.

Correct the aperture if additional tenth values appear: Close the aperture slightly until exactly f/1.0 appears. Read off the exposure time.

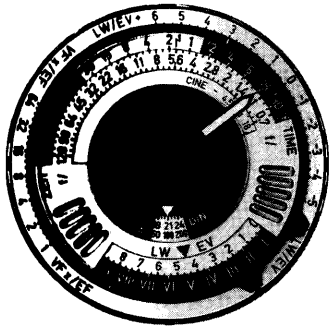
The reading index of f/1.0 specified here represents a tried and tested mean value. The following describes how an even more accurate reading index can be established to suit your particular requirements.

Establishing the individual reading index with PROFISIX, LUNASIX F and LUNASIX 3 S

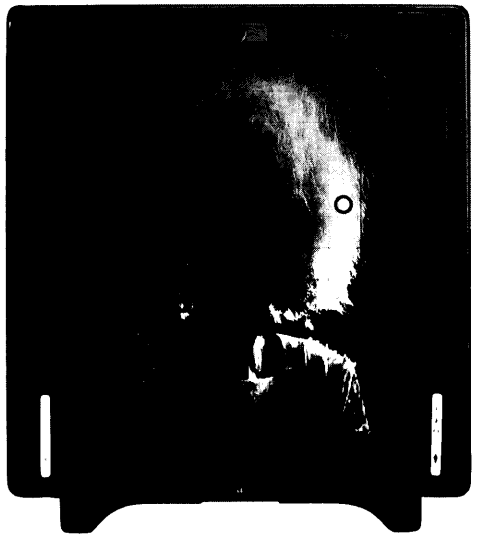
1. By comparative measurement: Measure the grey-card directly with attached **MEASURING PROBE** and the adjusted exposure value compensation of + 3 EV to establish the exposure time obtained with the aperture adjusted on the camera. Then measure the ground-glass screen image with the grey-card and compensate once again. The aperture value read with the previously established exposure time is your individual reading index.

2. The optimal exposure settings of a certain subject are already known. The aperture has been adjusted on the lens, and the corresponding shutter speed is either known or the setting is confirmed by a test shot. Afterwards measure the important image details on the ground-glass screen. The individual reading index is then the aperture value that was paired with the previously established exposure time.

Use the self-adhesive labels supplied with the **MEASURING PROBE** to mark the individual reading index on your system exposure meter.



Example for LUNASIX F, PROFISIX and LUNASIX 3 S:
The **MEASURING PROBE** established 1/15th sec. as the correct shutter speed for an adjusted aperture of f/8 at a film speed of ISO 100/21°. The resulting measured value compared with 1/15th sec. is the aperture f/1.0 + 1/3 stop. This then represents your particular reading index which you should mark on the meter with a self-adhesive arrow.



Individual establishment of the reading index for MASTERSIX and MULTISIX
The best way is to complete a comparative measurement. Attach the **MEASURING PROBE**. Adjust + 3 Δ on the exposure meter in the CORR function, and complete a reflected light measurement directly on the grey-card. The established exposure time is the result of the aperture adjusted on the camera. If not already performed then adjust this exposure time in function t and measure the grey-card image on the ground-glass screen. The aperture value established in this manner, e.g. between f/1.0 and f/1.0 9/10, is the future reading index for the required shutter speed.
For the subsequent practical measurements on the ground-glass screen adjust f/1 in function f to obtain the precise exposure time through renewed measurement. For example, if your individually established reading index is f/1.0 + 1/3 stop (display: f/1 0 3), then change the aperture setting on the lens until this value is reached on the display. An extremely accurate exposure will be achieved in this manner.

Note:
It is not possible to measure flashlight on the ground-glass screen with the **MEASURING PROBE** because the attachment is unsuitable for this purpose. Users of large-format cameras (4 x 5 and 5 x 7) should use the special-purpose PROFI-select TTL for flashlight and ambient light measurement in the film plane, i.e. in front of the ground-glass screen.
The PROFI-select TTL is used with the exposure meters MASTERSIX and PROFISIX.

Contrast measurement

- Subject related

Measure the brightest and darkest point either directly on the subject or on the ground-glass screen.
The difference in the displayed meter readings represents the subject contrast in exposure value settings (EV).

- For film negatives and diapositives

Use a light box or a slide viewer with an opal screen for the measurement of film negatives and diapositives. It is advisable to check the opal screen for uniform illumination with the **MEASURING PROBE** prior to the actual measurements. If necessary restrict the measuring area of the opal screen by defining lines.

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