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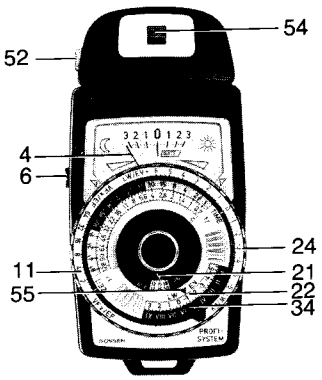
GOSSEN **LAB**

LAB + PROFISIX, LUNASIX F, LUNALITE

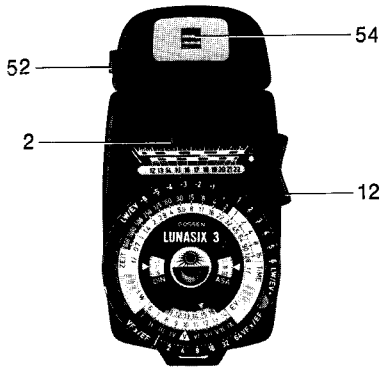
4 Indicator needle or LED (38) of LUNALITE
6 Measuring button (red)
11 Extension factors
21 Index for DIN-/ASA-setting
22 Exposure values (EV)
24 Computer ring
34 Division for zone system
52 Locking knob
54 Lug for attaching
55 Measuring aperture
[illegible] Index mark for exposure values

When using the LAB togheter with the MASTER-S[illegible] or the MULTISIX please refer to the instruc-[illegible]s "Attachments" containing the relevant infor-[illegible]



LAB + LUNASIX 3S

2 Indicator needle
12 Range selector switch
52 Locking knob
53 Lug for attaching (see page 8)
54 Measuring aperture



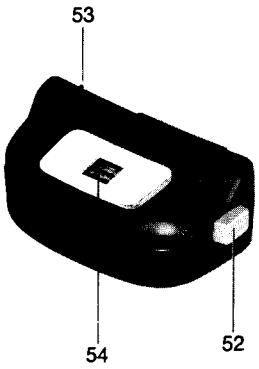
When taking your photographs you took great pains to get outstanding pictures. Your exposure meter helped you in giving you accurate exposure.

Now you want to make the best of your negatives and insist on doing your own darkroom work. There, too, reliable measurement of the exposure data is a must. It ensures considerable saving of time and materials, otherwise wasted. Exact exposure determination aids you in improving your print quality and makes it easier for you to use your creative abilities in producing outstanding prints.

The LAB attachment quickly and easily converts your GOSSEN system exposure meter PROFISIX, LUNASIX F, LUNASIX 3S or LUNALITE into a reliable darkroom exposure meter. It not only gives you the proper exposure for your black and white or colour enlarging but also helps you to determine negative contrast for the proper selection of paper grade for black and white printing.

Attaching the LAB is quite simple.

a) Slide the spherical diffusor of the system exposure meter to the right so that it will fit into the cavity of the attachment.
b) Insert the lug (53) of the LAB into the slot at the front of the meter housing.
c) While pressing the locking knob (52) slide the attachment flush onto the meter (the diffusor of the meter fits into the recess of the attachment). Releasing the locking knob (52) will fasten the attachment in place.



Measuring method

Whether you want to determine negative contrast or the proper exposure, the basic form of the operating steps remain the same:

Set up the enlarger, size and focus the negative on the easel.

Adjust the lens to the working aperture normally used. Switch off the darkroom light, as it may affect the results. Place the system exposure meter +LAB attachment on the easel and move the measuring aperture (54) to the area of the projected negative you want to measure. Next take a reading with te exposure meter in the usual way: **PROFISIX, LUNASIX F, LUNALITE:** set the index for the DIN/ASA values (21) to 36 DIN. Adjust the indicator needle (4) to "0" or the central LED (38) will light up and read on the scale (22) the expo-

sure value (LW/EV) indicated. This exposure value will be the calibration value for further correct exposures.

The null meter concept of the system exposure meters enables you to keep on working with the exposure time you once determined to be the correct one and make the necessary corrections for the paper you are using by changing the aperture of the enlarger lens. You place the measuring window within the lightest area of the projected image (shadow portion of the finished print) which contains still sufficient detail. Next change the aperture of the enlarger lens until the indicator needle will move to "0" or the central LED (38) will light up.

LUNASIX 3S:

Press either the upper or lower part of the range selector switch (12) of the meter and when the indicator needle comes to rest, release switch and read the indicated scale value. This scale value will be the calibration value for your further work. The remaining scales on the computer dial of the meter do not apply when working with the LAB attachment. You need not be concerned with the filter factor of any filter used in the enlarger, since the light absorption of a filter is automatically adjusted for during the measurement.

Table:

Contrast as difference in Exposure Values EV	Contrast as brightness ratio	appropriate paper grade
1/3	1 : 1.25	Ultra Hard
2/3	1 : 1.6	
1	1 : 2	
1 1/3	1 : 2.5	Extra Hard
1 2/3	1 : 3.2	
2	1 : 4	
2 1/3	1 : 5	Hard
2 2/3	1 : 6.3	
3	1 : 8	
3 1/3	1 : 10	Normal
3 2/3	1 : 12.5	
4	1 : 16	
4 1/3	1 : 20	Soft
4 2/3	1 : 25	
5	1 : 32	
5 1/3	1 : 40	Extra Soft
5 2/3	1 : 50	
6	1 : 64	
6 1/3	1 : 80	
6 2/3	1 : 100	
7	1 : 125	

Note:
The values given in this table are an average of indications given by paper manufacturers. For exact indications of specific papers, apply to the manufacturer or dealer.

Contrast measurement

The contrast is the difference in brightness between the brightest and the densest portions of a negative. The LAB attachment measures this contrast as a difference in exposure values (PROFISIX, LUNASIX F, LUNALITE) and scale values (LUNASIX 3) between the highest and lowest obtainable measuring values.

First place the measuring aperture (54) of the LAB within the lightest area of the projected negative on the easel and record the highest reading. Second find the darkest portion of the negative and record the lowest reading. The difference between the highest and the lowest readings is the contrast ratio expressed as difference of exposure values or scale values. The proper paper grade shown in the table on pages 12 and 13 can also be determined by counting on the ring for extension factors (11) of the PROFISIX, LUNASIX F, LUNALITE.

Example:

Exposure value (22) measured in the lightest portion $10^{2}/_{3}$, exposure value measured in the darkest area $5\ ^{2}/_{3}$. The difference in exposure values of 5 corresponds to a brightness ratio of 1 : 32. You can find that ratio also by counting on the ring (11) 5 of the logarithmic steps. The proper paper grade for that ratio would be "soft", as can be seen from the table on pages 12 and 13.

Example LUNASIX 3S:

Scale value measured in the lightest portion $10\ ^{1}/_{3}$; value obtained for the darkest area $5\ ^{2}/_{3}$. The difference in scale values of $4\ ^{2}/_{3}$ corresponds to a brightness ratio of 1 : 25. The proper paper grade for that range would be "soft", as can be seen from the table on pages 12 and 13.

Significance of negative contrast

Knowledge of the negative contrast is essential for printing good quality prints, as it determines the correct grade of paper to be used. If the negative contrast exceeds the acceptance range of the paper, your enlargements could contain blocked up shadows (no detail), high lights or both. On the other hand, if the negative contrast is greatly less than the range of the paper, the enlargements would be flat and muddy.

Exposure determination

Adjust the enlarging lens to your usual "working aperture". Place the measuring window within the lightest area of the projected image (shadow portion in the finished print), which contains some detail. Next measure and read and record the exposure value or the scale value which will serve as calibration index for correct exposure.

Now, make a test strip print varying your exposure times. Process the print and select the strip with the best exposure. The exposure time of this selected strip is your standard printing time. This standard value will yield always perfect enlargements as long as you are using the same paper type and process, if in your further work

with the **PROFISIX, LUNASIX F, LUNALITE** the black triangular index mark (55) will be at the exposure value previously determined and the indicator needle will be nulled or the central LED (38) will light up by adjusting the lens aperture;

with the **LUNASIX 3S** the indicator needle will be reset to the scale value you previously determined as calibration index.

Example:

You will optain an exposure value (PROFISIX, LUNASIX F, LUNALITE) or scale value (LUNASIX 3) of 5 and find that the test strip exposed for 20 sec. to be the best one. These two values represent the calibration value of the paper grade you are using. It is a good idea to note them on the paper package for future reference. Note: such a calibration value must be determined for each type of paper and for each contrast grade you will use, if the paper manufacturers' indications concerning relative exposure times of the various paper types will not be sufficient for you.

In some cases it may happen that you cannot null the system exposure meter or set the needle of the LUNASIX 3 to the calibration value by closing the enlarger lens. Then you should use a different exposure value and the corresponding different exposure time. Increasing the exposure value by one increment requires dividing the exposure time by two.

For the previous example "exposure value 5 or scale value 5 and exposure time 20 sec." the modification would be

exposure value or scale value	3	4	**5**	6	7
exposure time (sec.)	80	40	**20**	10	5

If the reading is not precisely at a scale division line, then the following trick will facilitate the subsequent work for you:

with the **PROFISIX, LUNASIX F, LUNALITE** you turn the computer ring (24) until the black triangular index (55) will be precisely on the nearest scale line. Then press the measuring button (6) and open or close the lens aperture until the indicator needle (4) will be precisely at "0" or the central LED (38) will light up.

With the **LUNASIX 3S** open or close the enlarger lens slightly until the needle is exactly on the nearest scale line.

The method described applies equally to black and white and colour printing. Exposure factors of filters used may be desregarded unless you change filters between original exposure measurement and exposure.

Some practical hints

Consistently successful enlarging depends on careful working methods which will give you real time saving with the exposure meter+LAB attachment combination. Lamps used in the darkroom may not affect the paper but they do influence exposure measurement. If possible, couple the darkroom lamp with the enlarger so that the darkroom lamp goes out when the enlarger is switched on. It is advisable to keep a constant check on line voltage because fluctuations in voltage negate all relations between measurement and correct exposure. A voltage stabilizer is the best remedy.

Developer should always be standardized and the temperature and time of development carefully observed.

If repair or adjustment should ever become necessary, send your LAB, carefully packed, to

GOSSEN GMBH
Servicestelle B
Nägelsbachstrasse 25
D-8520 Erlangen

or to the GOSSEN agency in your own country.

To expedite handling please send your LAB only – **without case or accessories.**