

# //light//story<sup>02</sup>

LONG LIVE THE  
EXPOSURE METER! //

photo // miriam merkel



For years, camera-integrated exposure meters have been the standard also in professional cameras. Thanks to innovations like matrix metering and pre-flash function to measure the reflection properties, the current TTL metering systems (TTL = through the lens) are perfectly suited to obtain good exposure, especially for dynamic motifs. The success rate is quite high and deviations can easily be corrected with digital retouching, though this causes a loss in quality. However, these systems are still not perfect. Basically, any TTL metering has a construction-based disadvantage: it measures the light reflected by the motif and not the light striking it.

When cameras with built-in, photo-electric exposure metering were introduced in the mid 30's of the past century, a lot of experts were startled by the question what the sense and purpose of such an exposure meter in or on the camera was supposed to be. Nevertheless, this often only measured the reflection properties of the motif. For a

long time, until the early 90's, many professional cameras did not come with an integrated exposure meter. A handheld exposure meter was part of any photographer's standard equipment. But ultimately convenience won.

## INCIDENT VERSUS REFLECTED LIGHT METERING

In principal, there are two methods of metering: incident light metering and reflected light metering. In incident metering, the amount of light striking the motif is measured, and in reflected metering, the amount of light reflected by the object is measured.

Regardless whether inside the camera or not, all exposure meters are calibrated to a grey scale value of 18% ("neutral grey"). This standard value is based on the average reflective properties of many motifs.

### RESULTS OF EXPOSURE METERING



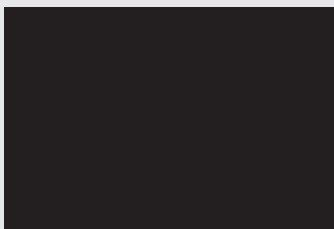
Black with reflected/TTL metering



Grey with reflected/TTL metering



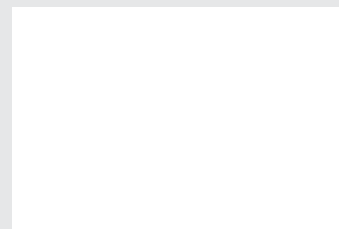
White with reflected/TTL metering



Black with incident metering



Grey with incident metering



White with incident metering

You can achieve usable results with average reflected metering, as is the case with TTL systems. However, if you are dealing with extremely light or dark motifs, extreme contrasts, or even backlit settings, reflected measuring reaches its limitations. Even sophisticated matrix metering systems including complex correction algorithms, often can not handle these situations: the bride in front of a light church wall turns out grey, the manager in a black suit in front of a night skyline turns out grey, and the model on the very right side who is subtly peeking into the picture in front of a white background turns out – you guessed it, grey. The camera's integrated exposure meter functioned perfectly and did technically exactly what it was designed to do: metering the reflected light and based on this, adjusting the exposure to an 'average grey value.' This happens regardless whether the lighting was done with continuous light, flash light, or both. The camera does not know what type of motif we are dealing with, nor does it know the photographer's ideas.

Of course, the experienced user will help his camera – correct the exposure, change the metering point, conduct selective metering, or even use a grey card. He also likes to take a look at the histogram and tries to interpret it the right way. However, these are not the most direct methods. There is a better and (often) faster way: "good old" light metering.

Metering the light illuminating the motif is done via a calotte located in front of the photo cell which permits 18% of the light to pass through. Metering is done at an angle of approximately 180°. In most cases, this type of metering delivers optimum results, black stays black, white stays white, and even large contrasts do not lead to wrong exposures.

Because this incident metering must be done from the motif in direction to the camera, it can not be sensibly integrated into the camera and requires a handheld exposure meter. You trade a tiny bit of convenience for an exact exposure.

## SIMPLE IS SOMETIMES VERY COMPLICATED

Looking at the current TTL systems including controls, one can not help but wonder how people manage to get professional results when using several flash units at once. You have to assign which flash is the main flash and which one is the fill flash, and assign the light distribution. If no individual programming is done, the TTL system controls the flash intensity equally. The menu setting for these functions is not always simple and sometimes time consuming and the instruction manuals of many TTL flashes are more like a thick book. Experienced photographers manually use their system flashes to begin with — that is faster and leads directly to the desired results.

If you take the limited output and slow recycling times of many “Speedlights” into account, notwithstanding their price which compares to that of a quality studio flash (especially in combination with external radio systems and batteries), then working with such technology in complex set-ups ends up being a foul compromise.

But even for the latest generation of higher performance battery compact flash units with TTL option, the disadvantages of any type of reflected light metering apply: as soon as you are dealing with multiple units and/or unusual motif situations, the automatic becomes unnecessarily complicated and tends to result in wrong exposures.

Exposure automatic was developed to deal with the most common natural light situations. When working with professional, artificial light sources like flash systems, you do not have to come to terms with the ambient light and correct the exposure accordingly. Instead, you can directly control the light source(s) regarding position, output, and character.

## YOUR FRIEND & HELPER

Aside from its solely technical job to take care of the best possible exposure, the handheld exposure meter is also an ideal tool for intentional picture design, especially in connection with all possible (and impossible) artificial lights. These devices are not a relict from the early times of photography but a modern, useful tool.

First of all, you can already define the brightness of the light sources at set-up, and establish its distribution. And all of this without making test exposures and approaching the result in an empirical manner. This truly makes your job easier, not just with large sets.

Such basic things like lighting a background or a repro template evenly turn out best with an external exposure meter.

Then you can — experts listen up — measure and adjust the lighting contrast of several light sources with a handheld exposure meter. This prevents muddy shadows and frayed highlights. Furthermore, the control over lighting contrasts is not a design element which we normally like to leave up to an automatic exposure.

When working with mixed lighting, daylight and flashlight combined, you can meter the ratio between sun and flash and fine-tune the desired outcome.

## TTL FLASH CONTROL INSIDE THE STUDIO



Optimum exposure? With TTL flash control.

Optimum exposure! Thanks to incident metering.

## THE EXPOSURE METER – TODAY MORE VALUABLE THAN EVER!

To make a long story short: The TTL flash control is useful when you are pressed for time. Manual flash control is ideal when perfect results are needed.

Especially people using professional flash systems inside and outside the studio, work much more precisely and deliberately with a hand-held exposure meter. Top-of-the-line models like the Strobe Master are also very convenient because they offer wireless flash synchronization and power control when combined with Hensel flashes and their integrated Strobe Wizard Plus functionality.

Exposure automatic and TTL flash control deliver results which are sufficient in many picture shooting situations. The professional, however, works goal oriented and leaves nothing to chance by using a good handheld exposure meter.

### TO THAT EFFECT: GOOD LIGHT!

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## HENSEL STROBE MASTER EXPOSURE METER //

### HIGHLIGHTS //

#### MEASUREMENT OPTIONS //

INCIDENT LIGHT MEASUREMENT, REFLECTED LIGHT MEASUREMENT, CONTRAST MEASUREMENT, FLASH MEASUREMENT (Cord/Cord-free/Strobe Wizard), displays portion of continuous light, programmable exposure correction and multiple flash

**EXPOSURE TIMES //** 1/8.000 s to 60 minutes

**FLASH SYNC TIMES //** 1/1.000 s to 1s and 1/90 s

#### RADIO SYNCHRONIZATION & REMOTE CONTROL //

Hensel Strobe Wizard Plus channel 1, 2, 3 + ALL, freemask and four additional groups programmable

#### REMOTE CONTROL FUNCTIONS //

flash synchronization, flash output, modeling light (ON / PROP / OFF)



COMMUNICATIVE // UNIQUE // PROFESSIONAL