

## CALIBRATION OF THE UV EXPOSURE FOR THE TECHNICAL GEAR AND MATERIALS

Once you have calibrated your exposure unit (UV light) to the photopolymer plate, the work process and the exposure times are always the same, provided that you do not change your technical set-up: light source, distance between light source and vacuum frame, transparent film, printer settings etc. You have to do this every time you expose the plate to the sun, because in this case the light intensity is never the same. It depends for instance on the season. The quality of the sun's rays are always optimal.

As in all other suitable UV light sources the wavelength of the UV light from the sun is always 360 nm, and this is the optimal wavelength for the UV light-sensitive photopolymer plates. However, the intensity of the light is not the same on a cloudy day as on a clear sunny day. Therefore, we often do not know how long we should expose the photopolymer plate. The exposure time in sunlight is never the same since the intensity of the light is never the same. The amount (dose) of sunlight the photopolymer plate must have to reproduce a particular image correctly is always the same. That is the time we find when we calibrate our equipment. This time tells us for instance that exposure time of the aquatint screen in a particular UV exposure unit is optimal at 3.30 min., and that the positive is optimally exposed at 2.30 min.

Between exposure time, intensity and dose this main rule applies:


$$\text{time} \times \text{intensity} = (\text{dose} \div 10)$$

If we can measure the dose of UV light that hits the plate during an optimal exposure of the photopolymer plate, we can always find out how many seconds the plate must be exposed by measuring the UV light intensity. For this purpose, we can use a UV exposure dose meter. If you place the UV exposure dose meter under your UV light source, in exactly the same place you normally place the photopolymer plate and switch it on, you can read the light intensity, how many seconds it is switched on and the dose this way: Turn on the light and start the light meter, keep the light on for the optimal time, e.g. 150 sec. Switch off the light, stop the light measurement and read intensity and dose. The time was 150 sec. the light intensity 45 and the dose 6750. Now you know that no matter which suitable UV exposure unit in the world you use to expose your plates, your positive should always be exposed with a dose of 6750, before the plate is optimally exposed and ready for etching.

This also applies in the sun. When you place the plate to be exposed under the sun, place UV exposure dose meter next to it in the same direction towards the sun. You activate the UV light meter exactly at the same time as you remove the light

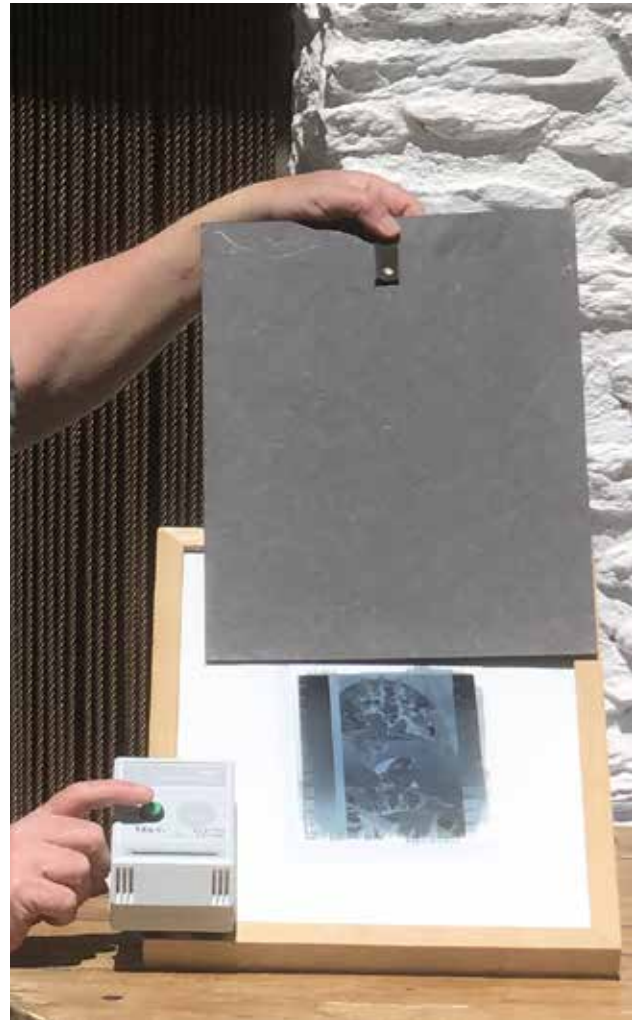
shield covering the plate. When the dose shows approx. 6750, you cover the plate again, and it is optimally exposed. It goes fast in clear sunshine and can take several minutes on a cloudy day. The exposure time depends of the UV light intensity, but don't worry, just stop the exposure when the dose is achieved.

### SAFETY LIGHT

Nowadays you can work safely and without risk of damaging the photosensitive photopolymer plate under LED lights between 2700 and 3000 degrees Kelvin – and you can clearly see what you are doing. The plates are in fact extremely tolerant. As long as they are not exposed to direct or indirect UV light, you can easily work with open windows in daylight. If you are in doubt, you can always measure the amount of UV light in the room with a UV exposure dose meter (ill. 15).

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UV exposure dose meter for measuring exposure time, UV light intensity and dose



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UV light metering in the sun.