

## Film Speed – Ads vs Reality

### *Is There ISO 12800/42°?*

#### **The Practical Use of Higher, and Highest Film Speeds**

Users consistently claim they can attain incredibly high film speeds using certain films and developers. One example of this is information to be found on the internet portal [Digitaltruth](#) suggesting ISO 6400/39° may be achieved using high speed films and specific developers. Now one provider even alleges his developers will make an ISO 400/27° film hit straight ISO 12800/42°, supplying negative scans published on the internet as ostensible evidence.

In contrast to such excessively exaggerated claims we state the highest speed attainable using our new developer [SPUR Ultraspeed Vario](#) to be ISO 1600/33°, while at the same time, on the grounds of performed measurements, we are convinced that this figure represents in fact the highest film speed attainable to date in general. Having said that, we have not yet fully tested Ilford Delta 3200, whereas Kodak Tmax P 3200, previously the most sensitive film, has ceased to exist. As however we have stocked some Tmax P 3200, we shall still perform tests to determine the highest possible speed attainable with this film.

In order to provide factual information to our customers, we have decided to demonstrate by reference to some example photos how one may arrive at such common, but wrong estimates with regard to the highest attainable film speed. All five example photos were exposed on the very same roll of film (Kodak Tri-X 400, 35 mm). The film was subsequently developed in SPUR Ultraspeed Vario (developing parameters: dilution 1+9, first developing time 5 minutes, second developing time 19 minutes). Those times for achieving ISO 1600/33° with this film are as indicated on the SPUR data sheet.

Two photos were taken during normal daylight conditions, and three in the deep twilight hours (nearly nighttime).

As to the selected subject, I would like to emphasise that we have deliberately not chosen a beautiful scene, but an ordinary street by virtue of its exhibiting the whole negative range from the deep shadows to the highlights. Besides, the lanterns may also serve as indicators of the point in time of day or night when the individual pictures were taken. The photos were shot using a handheld camera, i.e. without a tripod.

Naturally the foreground is out of focus in the photos taken during twilight, since we used f/1.2. The day shots were taken with the help of a grey filter due to the high film speed we used. All photos are total raw scans, so not even brightness and contrast were adjusted in any way whatsoever.



1. Day light ISO 1600/33°



2. Day light ISO 12800/42°



3. Deep twilight ISO 1600/33°



4. Deep twilight ISO 12800/42°



5. Deep twilight ISO 6400/39°

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The day light shots disclose ISO 1600/33° as the correct film speed (image 1). The photos taken at ISO 12800/42° however are completely underexposed (image 2).

The shots taken during deep twilight disclose ISO 12800/42° as the correct working speed for an atmospheric twilight shot (image 4). The photo taken at ISO 1600/33° however is completely overexposed and is not recognisable as a twilight shot (image 3). The picture taken at ISO 6400/39° (image 5) is just recognisable to be a twilight shot, though due to the brightness of the sky it does not display the typical kind of twilight atmosphere.

As all shots were exposed on one film and consequently all negatives were naturally developed in precisely the same way, the ostensibly completely diverging film speeds for daylight and nighttime shots cannot be due to the development, but only due to the exposure metering and the characteristic features applied to each subject respectively.

The explanation is actually very simple: The exposure metering of the daylight shots were performed correctly aiming at medium grey with a reflectivity of 18% (Zone System Zone V), which every exposure meter is calibrated to. Zone I effectively being omitted, while an only weak rendering of Zone II is normal in a push to ISO 1600/33°. Still you can assume a film speed of ISO 1600/33°.

Exposure for the night shots on the other hand was measured aiming at the shadows, which is nearly compulsory in such subjects when automatic exposure is used. In the present example, we measured aiming at Zone III. The exposure meter has compensated the difference up to Zone V, which it is calibrated to, hence indicating a value that leads to an overexposure of 2 f-stops. This overexposure can be compensated by setting a film speed that is 2 f-stops higher, so in our example the twilight shots would have a speed of ISO 6400/39°. Our example photos show that you would have to stop down by another f-stop in order to realise an atmospheric twilight shot. This is to be accounted for by the specific features of the subject and by what we would visually perceive as ambiance.

Therefore ISO 12800/42° here provides the right setting for this subject. This value does however not concern the actual film speed, but the necessary exposure compensation that is owed to the method of measurement and the peculiarities of the subject. The actual film speed is still ISO 1600/33°. So you have to proceed from there when trying to find the right exposure determined by the method of measurement and the peculiarities of the subject.

Now if any provider alleges that on the basis of example photos shot at ISO 12800/42° he has achieved an actual film speed of ISO 12800/42°, you know what to expect. To my mind such claims are marked by a lack of competence and are dubious from the technical perspective.

The proof of the pudding is fairly simple: Take a picture from a subject with a high negative range

at ISO 12800/42° in normal daylight conditions (overcast sky is best) using an ISO 400/27° film. For this purpose you need a lens that can be stopped down quite far and a grey filter. Take care to measure the exposure aiming at Zone V. If there is no grey card at hand, you may use a grey pavement or the palm of your own hand. In light-skinned Central Europeans the skin colour corresponds with Zone VI of the Zone System. Therefore when using this method you have to adjust the measured value by widening the aperture by one f-stop.

After development and no matter what developer you used you will ascertain a horrific underexposure of at least three f-stops!

Our new developer SPUR Ultraspeed Vario can be used for pushing Kodak Tri-X 400 to ISO 1600/33°, which is what we have used as example photos. Due to this actual high film speed this film/ developer combination affords outstanding possibilities for taking photos in twilight or in low-light conditions, e.g. in the theatre.

This actually attained speed was measured in the shadows of the characteristic curve. Zone I is certainly not to be found in a push by two f-stops at this speed. Even so there is still a slight rendering of Zone II, i.e the shadows with low differentiation.

Therefore the film speed measured by us is not analogous to, and cannot be compared with various indications that can be found on the internet, e.g. on Digitaltruth. An alleged speed of ISO 6400/39° for instance, which according to Digitaltruth may be reached with Kodak Tri-X 400 in Ilford Ilfotec DD-X at a dilution of 1+4 and a developing time of 25 minutes, or alternatively in Kodak HC 110, dilution B, developing time 26 minutes, according to our criteria merely amounts to actual ISO 800/30°. We have ourselves tested the above stated developers using the indicated developing times with Kodak Tri-X 400 and subsequently measured the film speed.

You may convince yourself of the quality of our new developer SPUR Ultraspeed Vario by reference to the user photos published on our website, e.g. by [Tim Moog](#) or [Lars-Göran Hedström](#).

We hope that all our customers thoroughly enjoy developing with SPUR Ultraspeed Vario, and we would be pleased to publish even your example photos on our website soon.

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