

TRUE EXPOSURE

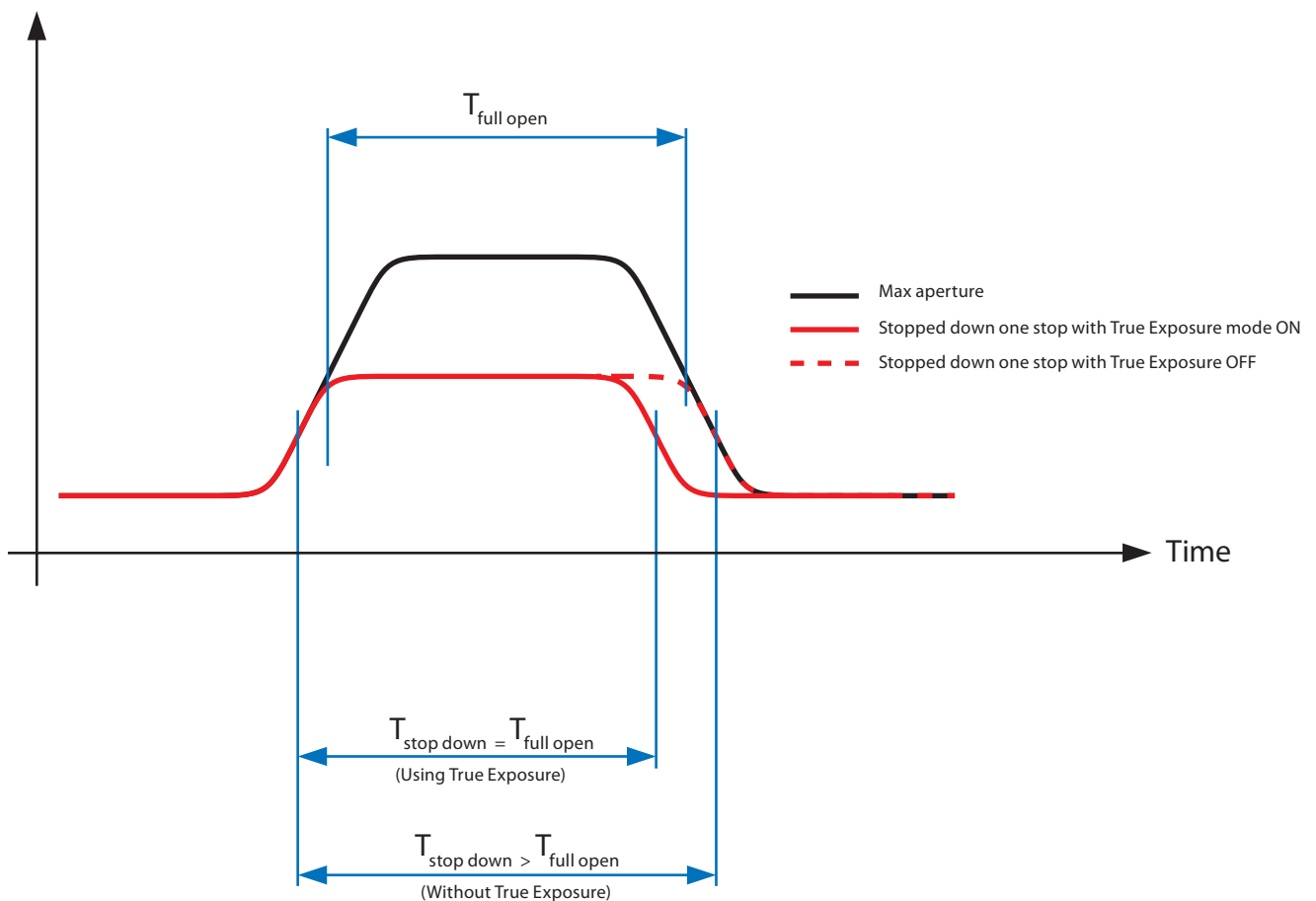
True Exposure is an HC/HCD lens function that allows the shutter speed to remain unaffected when stopping down. This effect is perhaps not so commonly understood as it is restricted specifically to integral lens shutters as opposed to focal plane shutters.

When a lens is stopped down, the effective shutter speed becomes longer, consequently affecting the set exposure. At slow shutter speeds the effect is minimal but at faster speeds, e.g. 1/500s, the effect becomes clearly visible. As Hasselblad knows exactly how the shutters behave in HC lenses, automatic compensatory measures in speed setting adjustments are therefore employed.

As compensation can only be put into effect where speeds can be adjusted, this prevents the possibility of adjusting the fastest speed of 1/800s. To counter this, compensatory adjustments are therefore made to the aperture instead to retain the set exposure.

However, this compensation is not always required and when using flash/strobe as the main light source is actually undesirable because compensation will result in underexposure. Therefore, when using flash/strobe as the main light source, then you should set True Exposure to OFF in Custom Options #13.

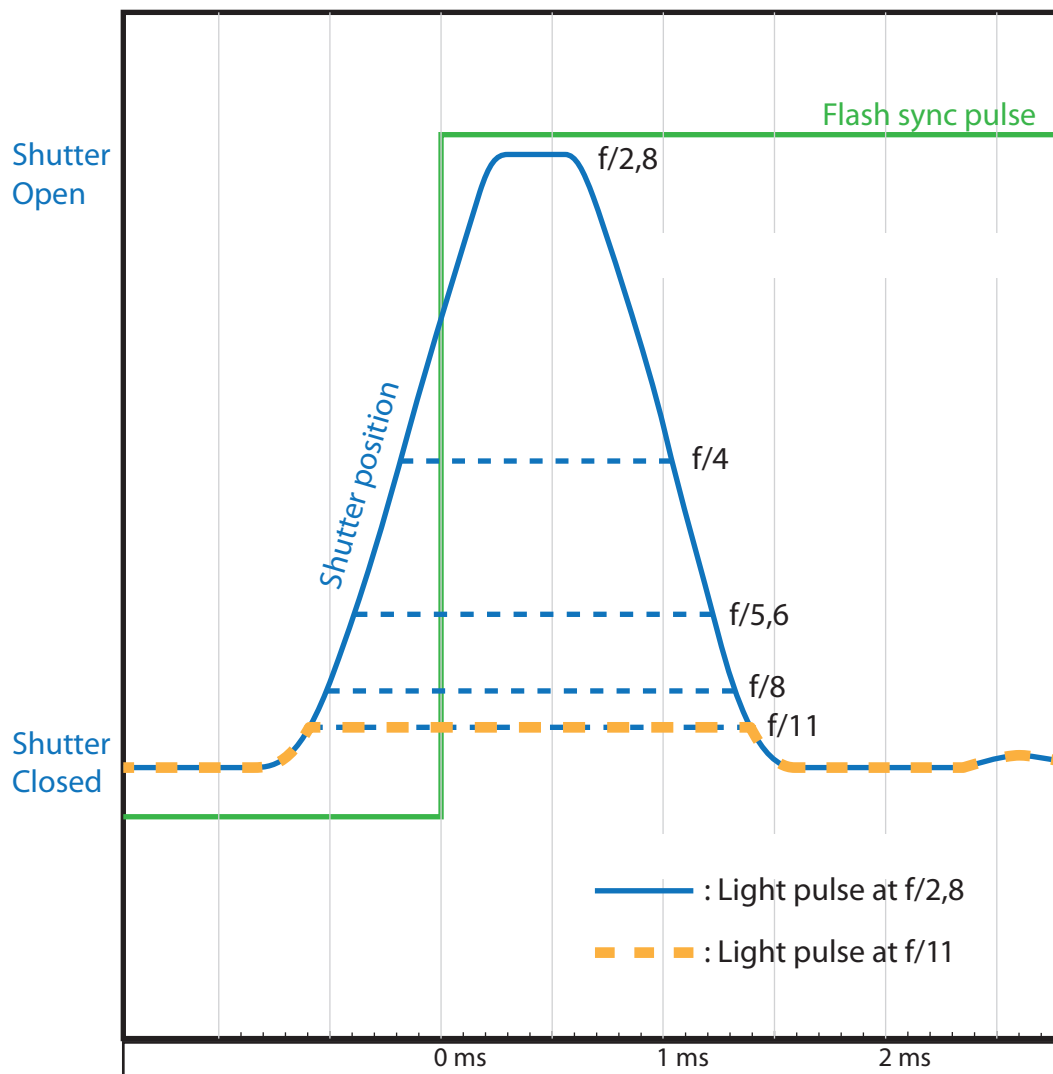
Light level
at image plane



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The diagram below shows an actual light pulse measurement from a HC 80mm lens at 1/800 second. It also shows that the light pulse height is lower when the lens is stopped down. The width also increases which is equal to an effective longer shutter speed. The diagram also shows when the flash is triggered. As most flashes have a delay, the main light level from the flash will be produced when the shutter is fully open.

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Aperture	Measured shutter speed	EV diff.
f/2,8	1,23 ms	0
f/4	1,62 ms	+0,4
f/5,6	1,84 ms	+0,6
f/8	1,99 ms	+0,7
f/11	2,1 ms	+0,8

A table showing approximate exposure adjustments for different apertures.

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The images below clearly show what happens when the True Exposure mode is used in a situation where flash is the main or only light source. When shooting at 1/500 the camera can still adjust the shutter speed to compensate for stop down. As flash is used this will not be visible in the final image. However, when shooting at the fastest shutter speed where the camera has to use the aperture for exposure adjustment, it will result in an underexposed image when the True

Exposure mode is active (= ON). The simple solution is to deactivate the True Exposure mode in this case.

A useful method for flash photography is to deactivate the True Exposure mode in Custom Option #13 and then save this setting on a "Profile" that you can give a descriptive name to. Then you can quickly switch between different situations without forgetting to set the camera correctly.



1/500 second, f/11, True Exposure = ON
Correct exposure. Camera adjusts shutter speed.



1/500 second, f/11, True Exposure = OFF
Correct exposure.



1/800 second, f/11, True Exposure = ON
Underexposed. Camera adjusts aperture.



1/800 second, f/11, True Exposure = OFF
Correct exposure.