

pressinformation

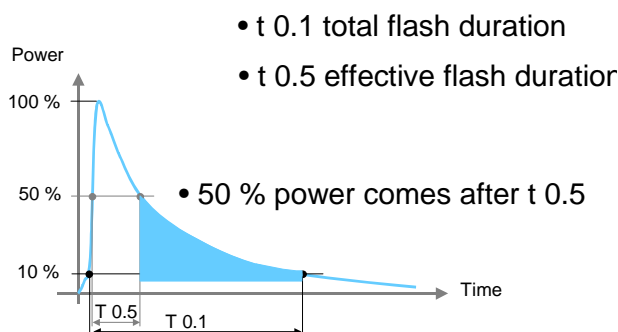
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On the trail of the secret of the short flash duration



Comparison of $t_{0.5}$ with $t_{0.1}$



ISO Standard 2827

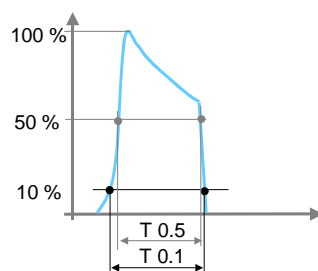
When comparing the technical data of various manufacturers, ISO Standard 2827 must be observed which defines two values for quoting flash duration:

- 1.) The effective flash duration $t_{0.5}$ is defined as being the period during which the flash intensity exceeds 50% of its maximum. 50% of the flash power is produced after $t_{0.5}$ has been reached.
- 2.) The total flash duration $t_{0.1}$ is defined as being the period during which the flash intensity exceeds 10% of its maximum.

- 3.) Flash manufacturers often only indicate the effective flash duration $t_{0.5}$ in data sheets and brochures. However, when the task is to “freeze” motion with short flashes, it needs to be considered that after the stated time $t_{0.5}$, the flash still discharges half its intensity, and that half of the light is produced after $t_{0.5}$ has been reached.
- 4.) In respect of attainable sharpness, $t_{0.5}$ cannot be compared with shutter speeds of the same duration, as the second half of the light quantity, not stated for $t_{0.5}$, can greatly influence the lighting and picture sharpness. It needs to be considered that the second half of the discharge (i.e. the time after $t_{0.5}$) requires twice as long as $t_{0.5}$ itself, as the discharge curve becomes flatter.

A goal of the manufacturers of professional studio flash units is the shortening of the flash duration to prevent motion blur. Various manufacturers have different electronic switching to achieve the desired effect.

The broncolor technology:

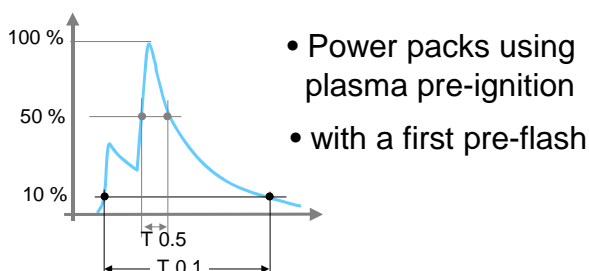


By cutting-off $t_{0.5}$ is almost equal to $t_{0.1}$

The cut-off technology of broncolor Scoro and Grafit

Software and high-performance electronics ensure that the flash is cut-off, just as the so-called “computer flash” of an amateur flash unit. The big difference from amateur flash – apart from the flash power – is that broncolor’s technology does not change the colour temperature. We are all aware of the blue dominance of short amateur flashes. In the next Newsletter, you will learn how broncolor achieves this.

A failed attempt (unfortunate) to a solution for short flash duration:



With pre-flash : $t_{0.5} = 1/5 \times t_{0.1}$



Other flash manufacturers try to shorten the flash duration with electronic tricks: e.g. the manufacturer creates a short pre-flash which can be identified in the diagram as a small peak. After this pre-flash, the actual main flash is triggered. The effect of this switching: The first impression is a short flash duration $t \approx 0.5$; the total flash duration is, however, prolonged, the pre-flash can also cause the first blurring. It is to be noted that the total flash duration is much longer than the broncolor solution. This can cause a motion blur.

Therefore it is important: That you always ask about the total flash duration $t \approx 0.1$, or make a comparison with practical shootings of a moving object, if you do not solely photograph still life. Even for food shoots, one likes to have a sharp image of the bubbles of champagne or the steam of a hot coffee.