We think and hear a lot about Depth of Field (DoF) – apertures, Bokeh, circles of confusion, foreground, background and such. But rarely do we hear the words DoF used for light, yet we deal with it – whether we are aware of it or not – every time we light and/or meter. Light emitted from light-sources lose intensity the further it travels because it spreads out (lasers are an altogether different story). When light particles (photons) are emitted from any given point of a light source, they spatter out from that point in every-which direction, well 180˚ to be exact – they don't march out in a perfect straight line. So, two photons travelling side by side will quite possibly be on slightly different tangents. If the subject you are lighting is close to the light source, then chances are they will both hit the subject. If the subject is far away from the light, then by the time they have both travelled the distance to the subject, they will have spread so far apart that quite possibly one of them misses the subject all together.

Let's break it down further; let's say that with the light at 1 metre away, 4 trillion photons will strike our subject. What happens if we double the light/subject distance? At twice the distance (2 metres), only 1 trillion photons (1/4 of previous) will strike because the light will have spread out – the light path will be covering four times more area than at the first distance. Light falls off by the inverse square of the distance so doubling the distance means that the light path will cover two times more horizontally and two times more vertically – 2x2=4 times more area (area is height x width). Fewer photons striking our subject equals less brightness. Sorry to bore you with that (I talked about the Inverse Square Law in Part 31). As photographers we are supposed to know this; however, I'm afraid the Inverse Square Law – like so many other lighting principles – has become rhetoric, everyone mouths the words but few explain it so many don't actually understand it and it is important to having a deeper understanding of light and lighting.

When lighting larger areas, objects, or groups of people, we tend to work with our lights further away so as to have near even brightness over all. You gain "Light DoF" when the distance between the light and the subject(s) is far. Conversely, you lose "Light DoF" when the distance between the light and the subject(s) is less. Meaning, with the light far, the area to be lit will have less variance in exposure from edge to edge. When close, greater difference in illumination will occur over this area. That can be a real hassle in a tight space where you can't place your lights far enough away. You can use feathering, that is turn the light away from the nearest subject, and aim it at the furthest. Or, flag or gobo some of the light off nearest subject(s). Or you can use grids – honeycomb grids directly on your lights or soft-grids on soft-boxes, octa-boxes and scrims. You are probably thinking, "Grids?" how does a grid increase "Light DoF"? A light source fitted with a grid can even out light over a greater distance than can a non-gridded source. Look at Image 002, imagine that you are the subject in this lighting set-up and are looking at the main light from your position on set. In this image the large Chimera soft-box (4'x6') is just 4 feet away from you; notice that the grid cells are square in the centre but become more and more rectangular as our gaze moves from the soft-box centre to its outer edges. This means that the outer cells are partially blocking the soft-box's diffusion material from view and so are partially blocking the light from the soft-box to the subject. Next look at Image 003, you are now 8 feet away from this same light source. Notice that the outer cells appear less rectangular and more square, and so most of the white soft-box diffusion material is visible. In a nutshell, the cells of the soft-grid progressively block more light as you move closer to the source and progressively block less as you move away from the source, thereby evening out the exposure at the two distances by quite a bit.

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How is this useful? Any type of shoot where there will be movement such as dancers, small children, fashion models flowing through poses, their distance to the light source will vary and so will their exposure, so grids really help to even out the light over a larger area. In the scenario above, with the gridless Chimera soft-box, the light at the subject read f8.0 with an incident meter. When I increased subject to light source distance from 4 feet to 8 feet, it read f4.0, 2 stops less light. With a 40˚ soft-grid in place the meter reading read darker, so after increasing the power on the strobe to maintain f 8.0 at 4 feet, an incident meter reading at 8 feet read f5.6 and 5/10ths – the former two-stop difference between near and far dropped to just 1/2 a stop! That is quite a gain, but the realised difference is, however, dependent upon what degree grid you use and the distance of the light.

A perfect of example of soft-grids extending "Light DoF" was on this devil of a shoot (see Image 001) with Lucy-Fur (Sven Black's stage alter-ego). It was an absolute nightmare shooting Lucy in the studio, s/he was so agitated that s/he kept leaping around the set – demons do tend to be agitated by nature as well as hot-tempered making them short on patience, a good argument for having the set allready to go before they arrive so that all hell doesn't break loose. To that end, the Lighttools soft-grids were a godsend, otherwise Lucy-Fur's exposure would have been all over the place since Lucy's distance from the lights kept changing.

Grids a godsend? Yes! But like any deal with the devil or in photography, you don't get something for nothing – you lose light when you add a grid, but it is the selective way that it reduces the light that makes this work. In conclusion, when a subject moves closer to light, they receive more brightness; adding a grid darkens them back down. If the subject moves away from the light, they receive less brightness, but now the grid has less of a light-reducing effect and so subject brightness between near and far evens out.