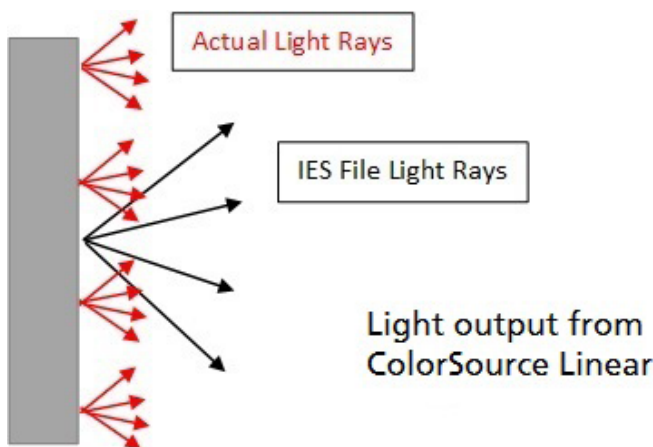


## The Validity of ColorSource Linear IES Files

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Both IES and Eulumdat files consist of an array of luminous intensity values—that is, the lumens per solid angle heading off in various directions away from a source. Technically, the values are accurate only for very large distances from the source; however, a commonly used rule-of-thumb is that they are reasonably accurate for distances of at least 10 times the source width.

Thus, if a lighting designer uses an ETC IES file to predict the illuminance on a surface, he/she can expect reasonably accurate results at distances of 0.7m or more for a S4 Mini (source size 7cm), or 5m or more for a 1/2m Color Source Linear. At closer distances, s/he will come up with a narrower-than-correct beam width.



There is a further complication. At ETC, IES files are computed by our Prometric software from a single calibrated snapshot of the screen. In order for the created file to be accurate, the screenshot should be taken at a distance of at least 10 times the source width. With the Color Source Linear fixtures this is not always possible, because at the required distance of 5m or more, the beam from a wide lens such as the WL or XWL will overfill the camera field-of-view. Typically, the fixture is positioned at the maximum distance from the wall for which the beam under-fills the camera field-of-view. The resulting IES file is technically valid only at the same distance it was shot at.

In order to minimize errors from computations using IES files, follow these recommendations:

1. Only look at surfaces that are at least 10 times the source width away. Illuminance computations at closer distances will be erroneously narrow and erroneously bright. The errors are greatest very close to the fixture (<5 times the source width away).
2. For the ColorSource Linear 1, use the IES file for the corresponding Color Source PAR. Because the PAR is a smaller fixture the IES file on our website is more accurate. For the other models, Linear 2 and Linear 4, the IES file should be multiplied by 2x and 4x as if multiple par fixtures were hung .5 meters on center.
3. The only place that the CS Linear IES files should be used is at distances close to the distance that they were shot at.