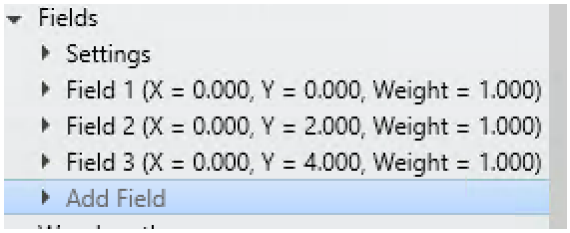
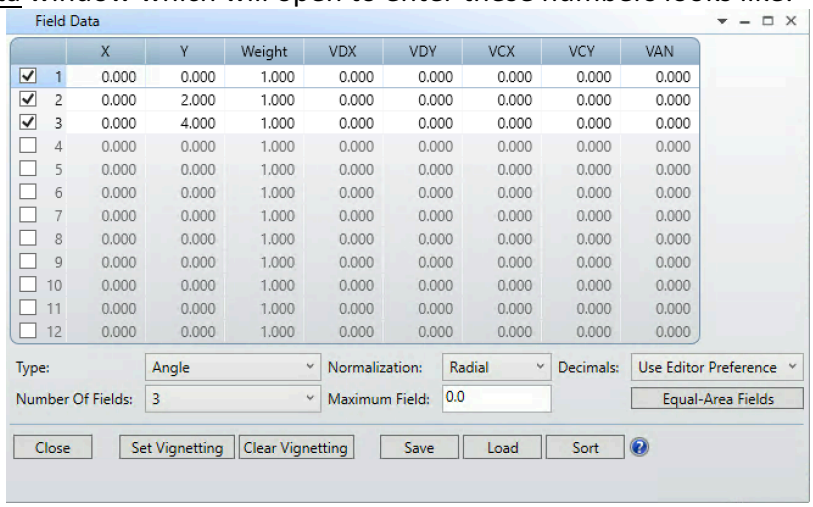
Now you will analyze the performance of this lens by finding how tightly the rays are focused for various objects. We will specify the objects by angle, not height, because the object is at infinite distance. In the jargon of optical design, the *field of view* is the region occupied by the object, often abbreviated as just the *field*. When the object is at infinity, we use the term *angular field of view*.

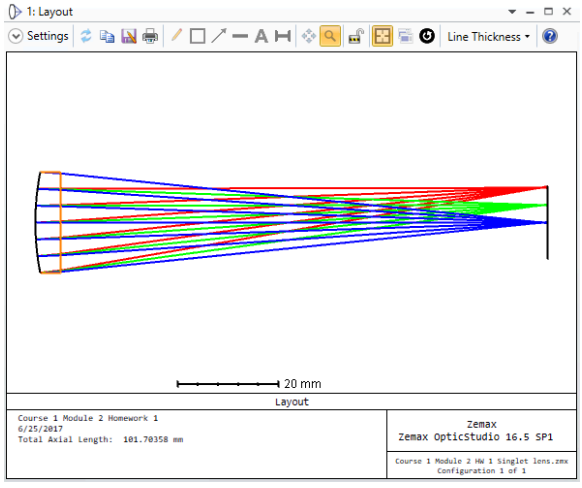
1. Use the System Explorer to add two more object points, specified as *field angles*. That is, the object at infinity is currently on the axis and thus the rays entering from the left are at an angle of 0 degrees. Add objects at 2 and 4 degrees such that the System Explorer / Fields menu looks like:



and the Field Data window which will open to enter these numbers looks like:



2. Verify this using the Layout window as before. It should look like:



Note that the Settings menu can be used to modify this (and all) plots. In this case, rays are colored by field angle.

3. We will learn later in this course that the ray from the object that strikes the middle of the lens (where the surface is perpendicular to the optical axis) exits the lens with no change in angle. Since this ray continues on to the image plane, it allows you to calculate the *image height* as a function of the *object ray angle* and focal length. Find this formula and verify your results using the cursor on the Layout window. Hint: You may find it helpful to use the Settings menu of the Layout window to reduce the number of rays to 1. This shows just the central ray of the bundle.