The following images show a side by side comparison of two fisheye lenses designed for a high resolution, 1/2" format CMOS sensor. The lens in figure 2 is a custom Sunex lens with *tailored distortion*. This tailored distortion 'stretches' the feautres at the periphery of the image in order to spread the region of interest over more pixels, increasing the number of pixels per field angle. This also decreases the apparent size of features on-axis, at the center of the image. Tailored distortion is especially useful in applications that unwrap or dewarp the fisheye image by post-processing the image. This allows for greater resolution near the edges as compared to a traditional fisheye design. Figure 1 shows a standard fisheye design.

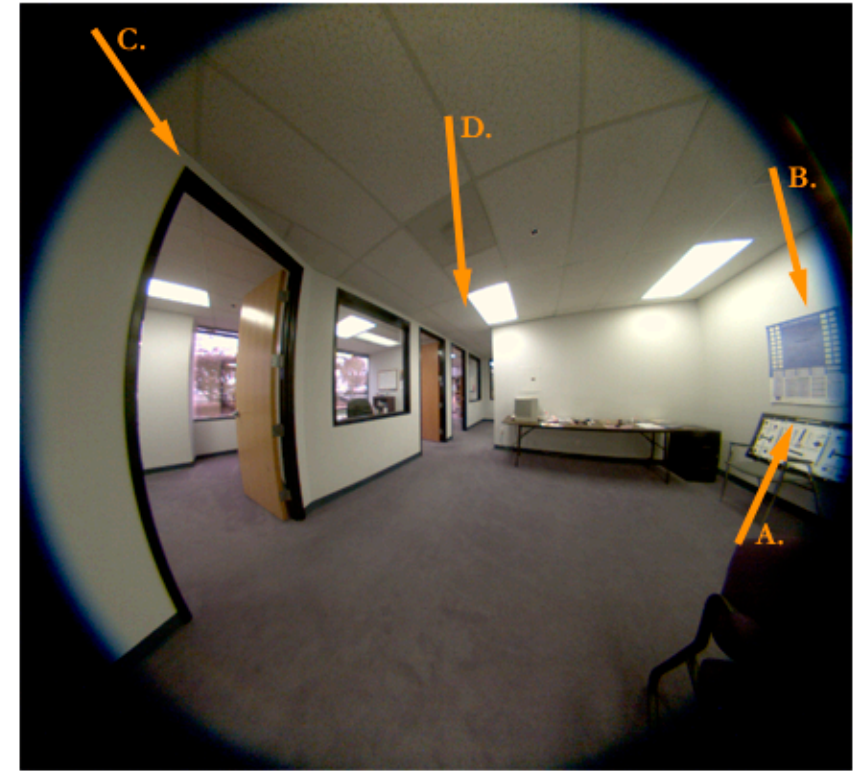**Figure 1. Standard Fisheye Lens**

Figure 2. Fisheye lens with *tailored distortion*

A. At the edge of the field the resolution target is 'stretched' significantly, spreading the periphery over more pixels
B. The poster on the wall is also stretched
C . The tailored distortion has stretched the door
D. The on-axis features at the center of the image are smaller as a result of stretching the periphery