

Technical Note

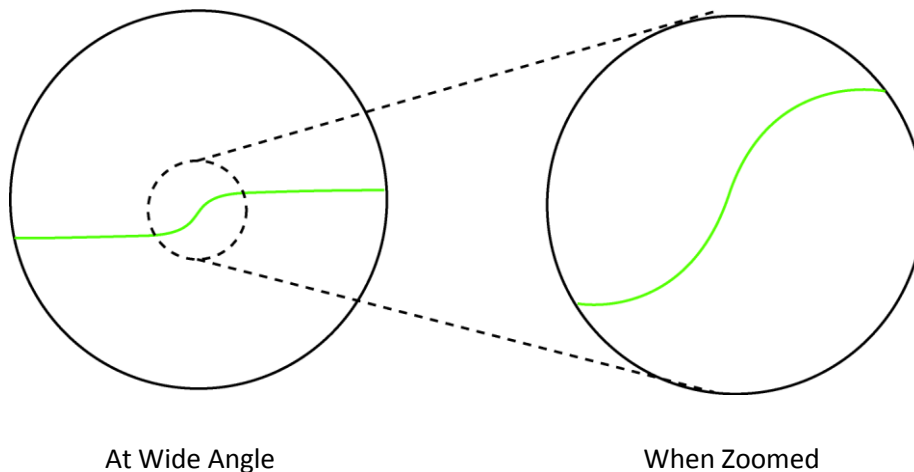


Ref	003
Title	COSE Pan/Tilt "Wander"
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Status	Current
Key words	COSE, Risley Prism

Claresys COSE products use Risley Prisms to provide the pan and tilt capability. Risley Prisms have several known performance constraints around the centre of field / boresight position. For a full discussion of these issues see Section 1 of the paper at:-

<http://www.optics.arizona.edu/optomech/Fall06/reports/synopses%20of%20paper/for%20Mark.pdf>

The effect of these issues for COSE users is a degree of "wander" and difficulty to establish a precise position close to the axis of the device. Because the scale of the effects are dependent on the tolerance of the individual glass elements involved, they can vary both in size and effect between individual lenses. These effects also appear to be magnified when the lens is zoomed in. Examples of a typical path that the device may follow when panning is shown below. As can be seen, when zoomed in, the device could appear to be behaving largely randomly.



This "feature" means that for optimum pointing performance and control, it is often best to place the centre of interest slightly off the centre axis of the device, either up or down, or to one side. Experimentation and familiarisation is usually the best way to determine the area of the FOV where control is optimum.