

Linescanner Machine Alignment Checking/Causes/Effects

Examples of Misalignment and Possible Consequences to Thermal Profile

Note: Effects are exaggerated (made to look worse)

Actual alignment error may be less than indicated (therefore more difficult to detect and having a lesser effect)

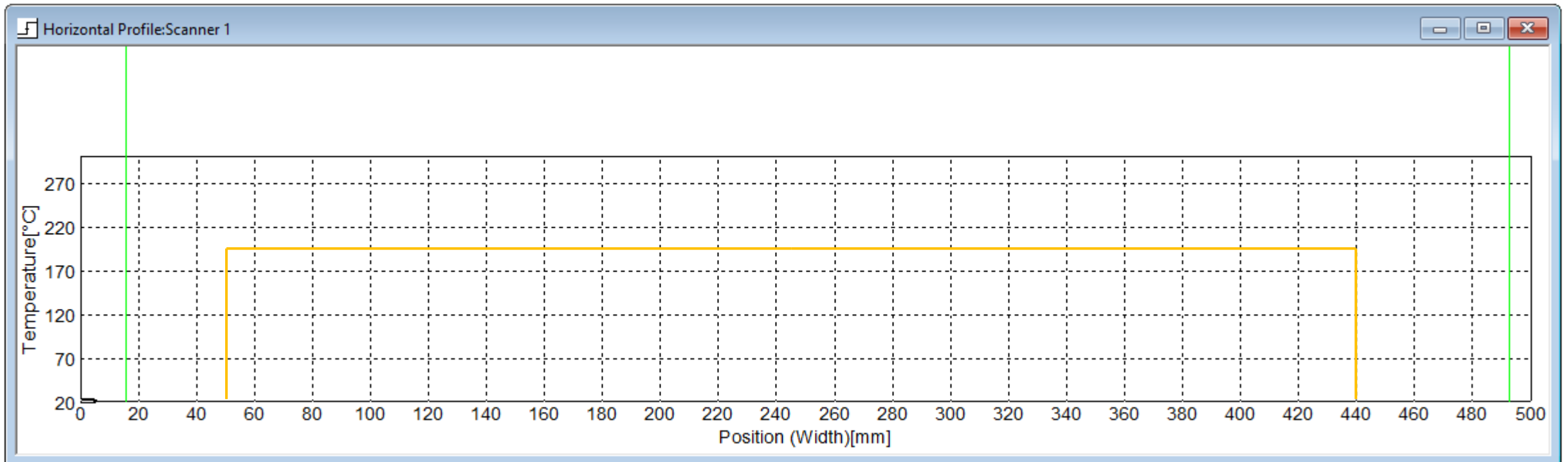
By Adam Ellis

Ideal Alignment to slit aperture

(assuming aperture was aligned during machine construction)



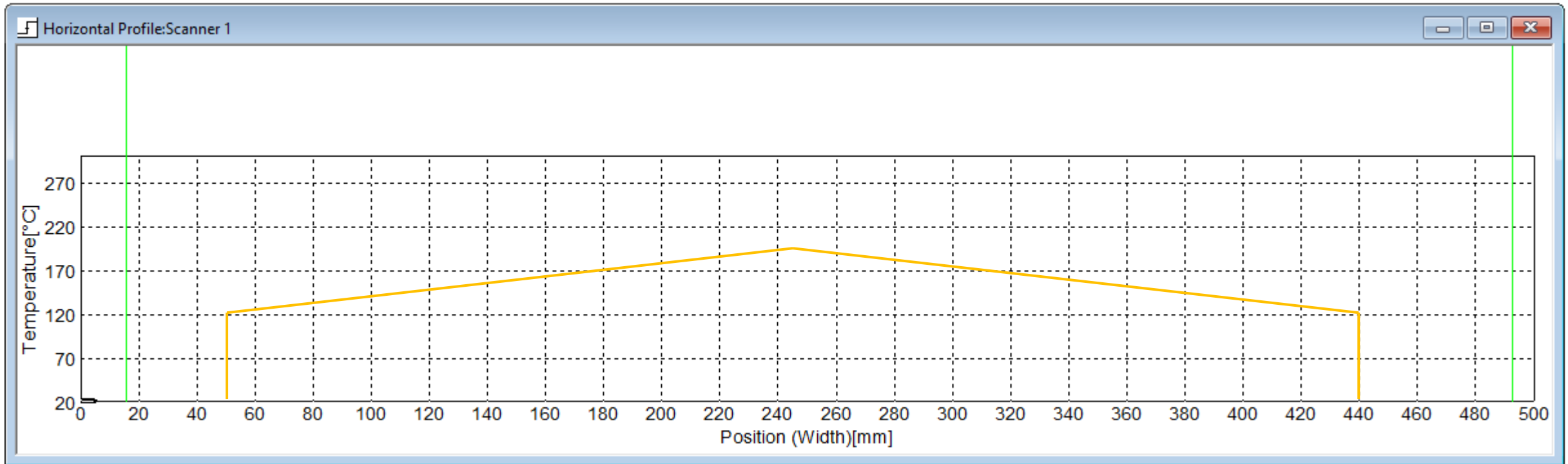
General assumption that spot size diameter < slit (aperture) height – spot energy not reduced



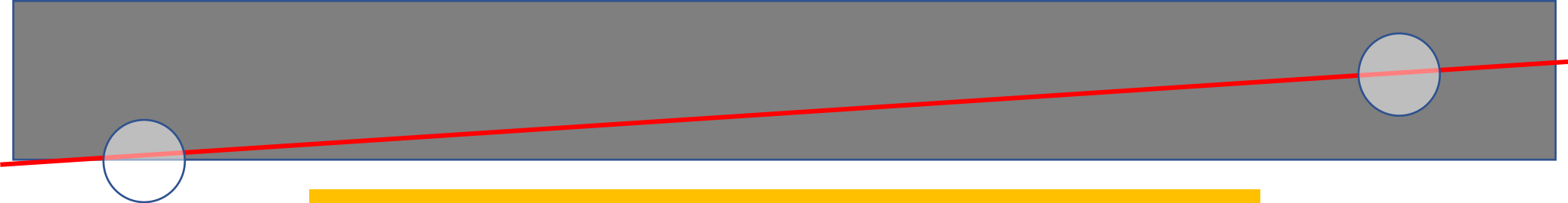
Concentrically Rotated Alignment to slit aperture



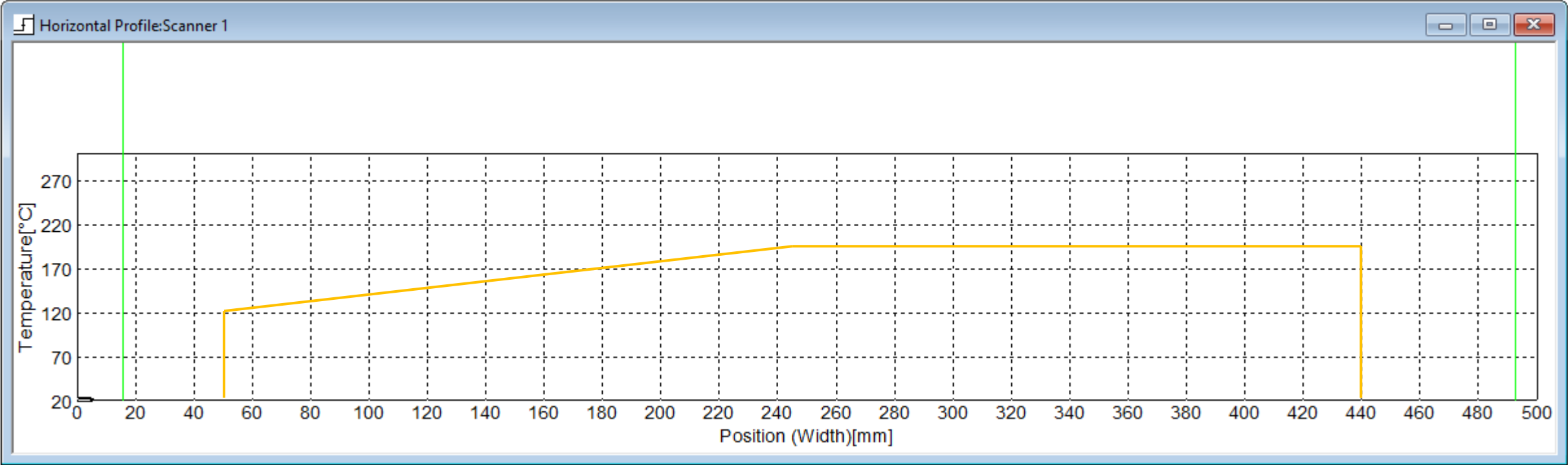
Spot energy reduced – increasing towards edges on both sides



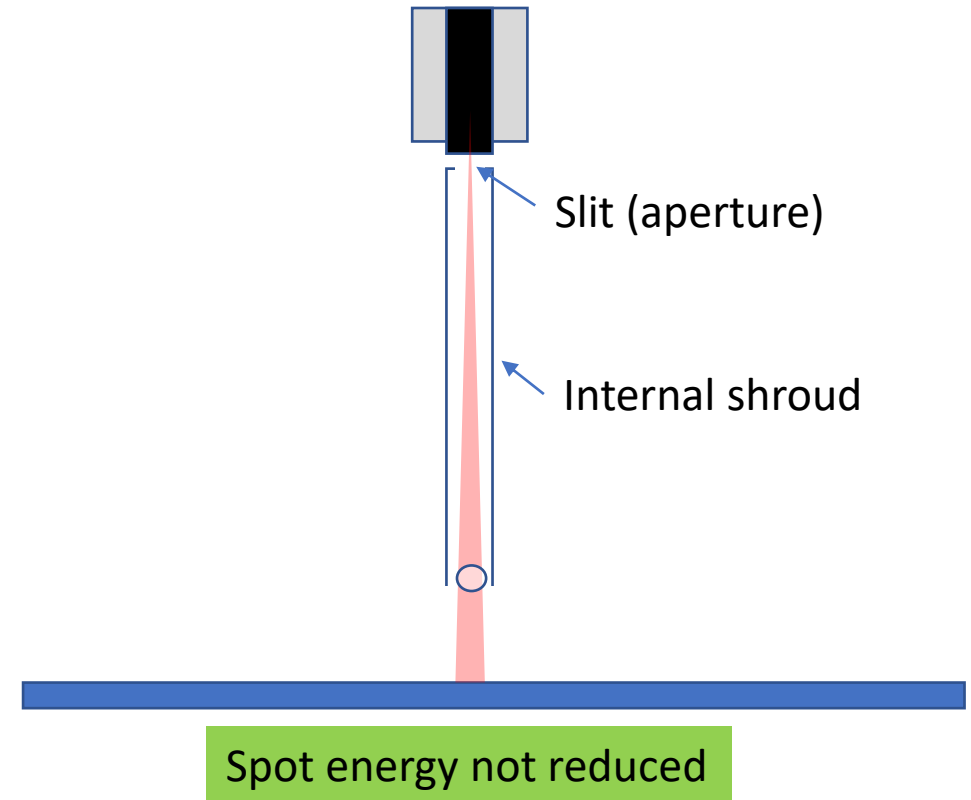
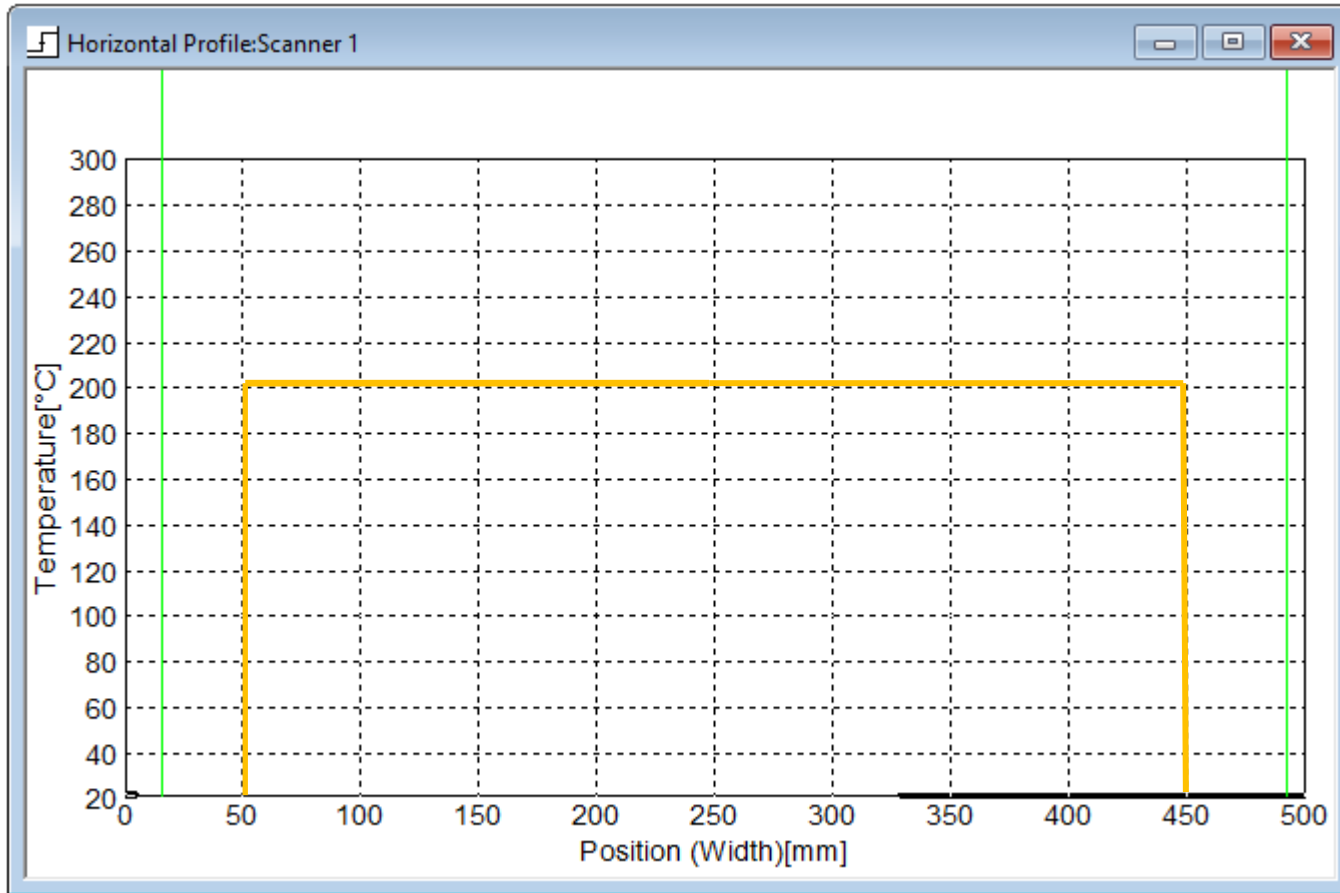
Non-Concentrically Rotated Alignment to slit aperture



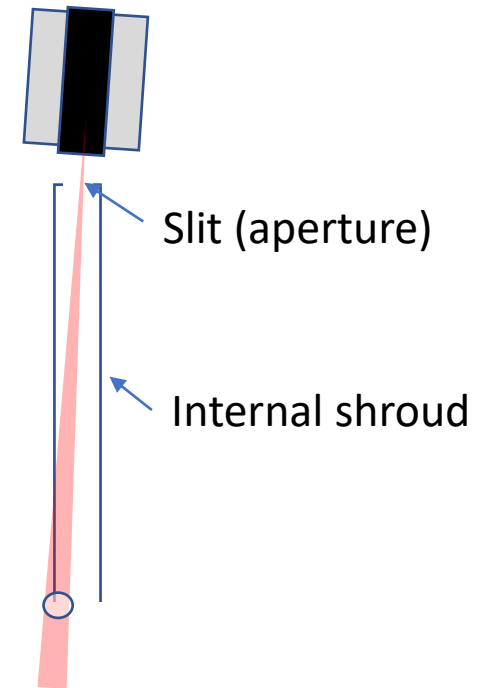
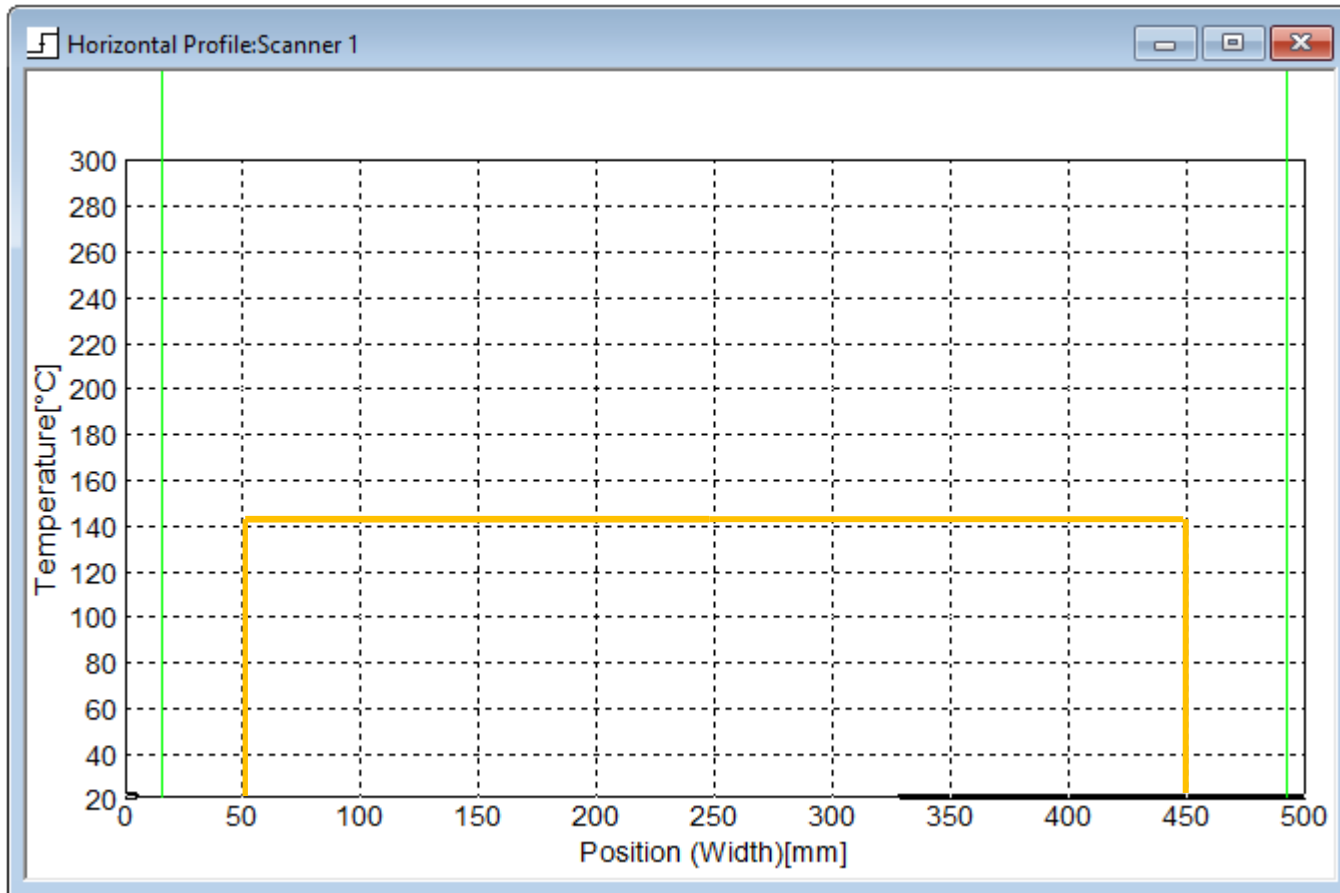
Spot energy reduced – increasing towards edge on one side



Ideal - Not Tilted - Looking Down



Problem – “Tilted” - Looking Down



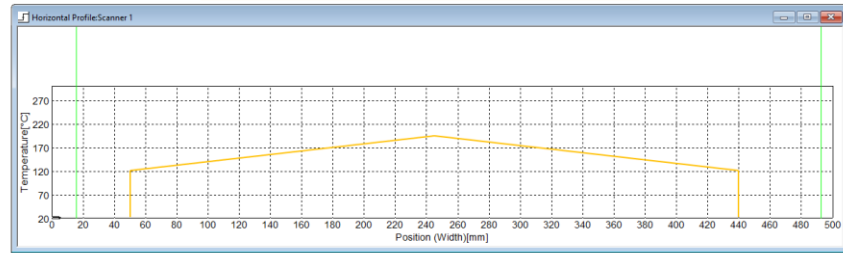
Spot energy reduced across complete scan line

Check for Combinations!

Concentrically Rotated Alignment to slit aperture



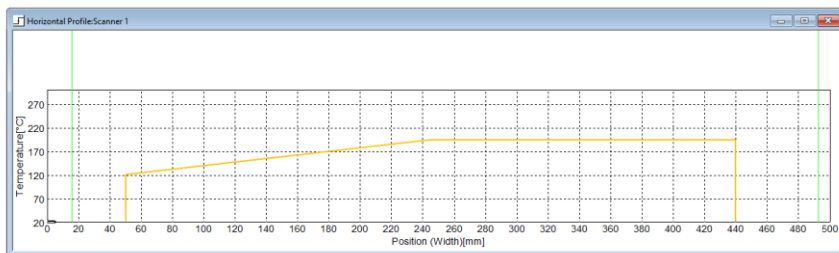
Spot energy reduced – increasing towards edges on both sides



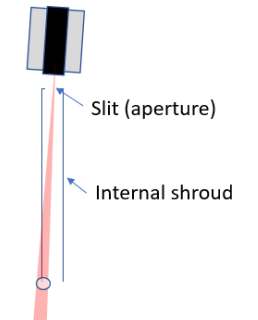
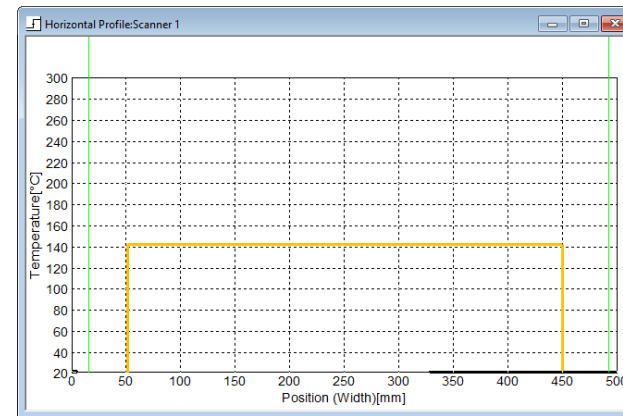
Non- Concentrically Rotated Alignment to slit aperture



Spot energy reduced – increasing towards edge on one side



Problem – “Tilted” - Looking Down



Spot energy reduced across complete scan line