

Comet Tail Reduction/Elimination

Applies to: All current WinCamD-UCD & TaperCamD-UCD series CCD products.

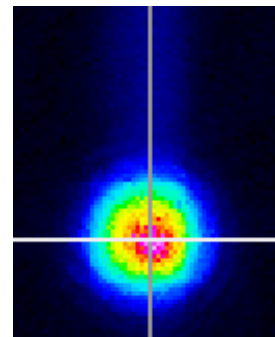
Software versions 7.1B6 and higher.

Issue addressed: Reducing comet tail effects ... in most scenarios. Hardest at very short exposures.

CCD 'Comet' Tail. At short exposures and $\lambda > 900$ nm, a vertical 'comet' tail may appear. This is an unavoidable 'feature' of high resolution CCD chips. Incident light leaks past the metal over the vertical transfer register. The effect is worse at longer wavelengths and for beams incident at other than normal incidence.

Comet Tail Minimization ... DO THIS FIRST:

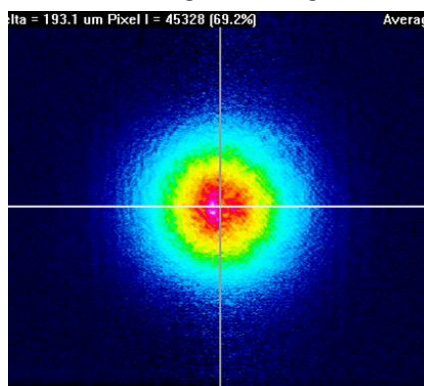
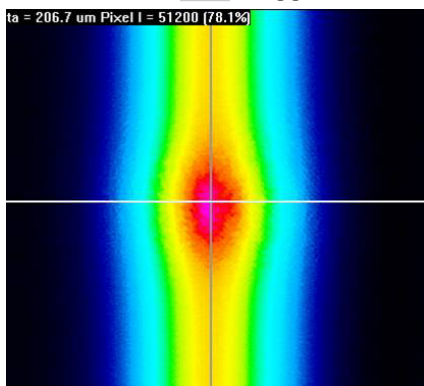
- Use exposure times > 1.0 ms wherever possible, > 10 ms if possible.
- Ensure that the light is incident close to 90° . Fine tune the angle.
- Set up a **Capture Block** appropriate to the size of your beam.
- Optional: Set the crosshairs to 45° to move the measured profile off the tail.



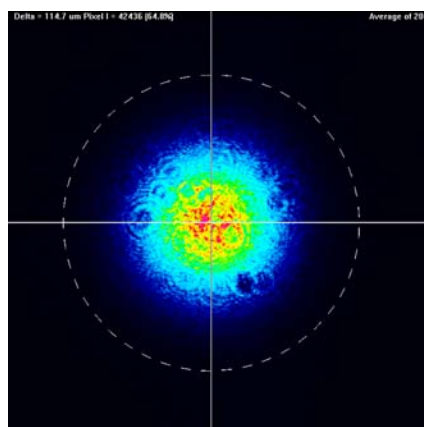
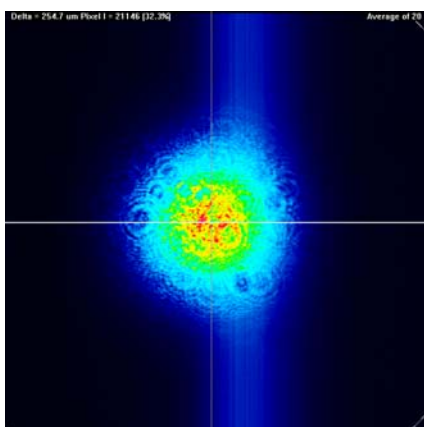
Comet Tail Subtraction:

The first pair of images are on a CW 1064 nm beam. Long wavelengths give worse comet tail. The left-hand image is at 0.693 ms exposure. [*Too much below 0.5 ms at long λ & the technique may not work.*]

To eliminate the tail, select the **Ce** (toggle) button in the toolbar. To give the right hand image [**@ Av. 20**].



This next pair is for a (dirty) 675 nm laser at 0.043 s exposure (where 0.040 ms is the minimum exposure).



Issues? Go Stop, File, Save, Save Current data as wcf. Email file(s) plus comments to support@dataray.com.