

**Supporting Information for**

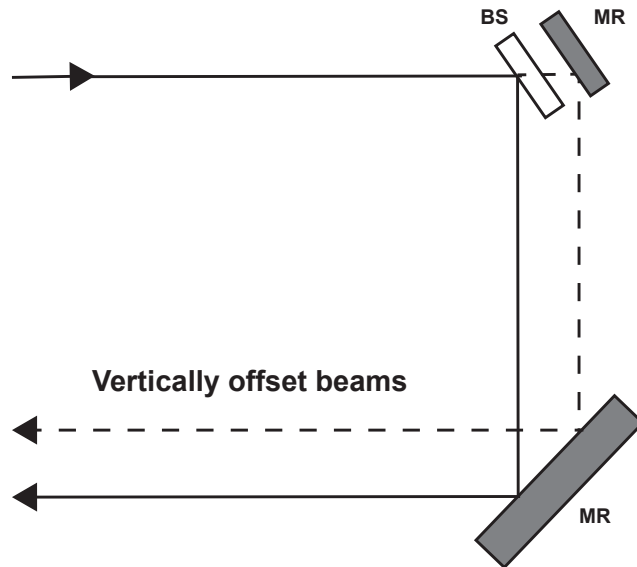
**Spatially Resolved Two-dimensional Infrared Spectroscopy via Wide-Field Microscopy**

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1. Schematic of Periscope used to Generate Vertically Offset Beams
2. 2D-WIRM Amplitude Image of Group 7 Elements of the USAF Test Target
3. Comparison of FTIR and 2D-WIRM Images for Group 7 Elements 2 and 3

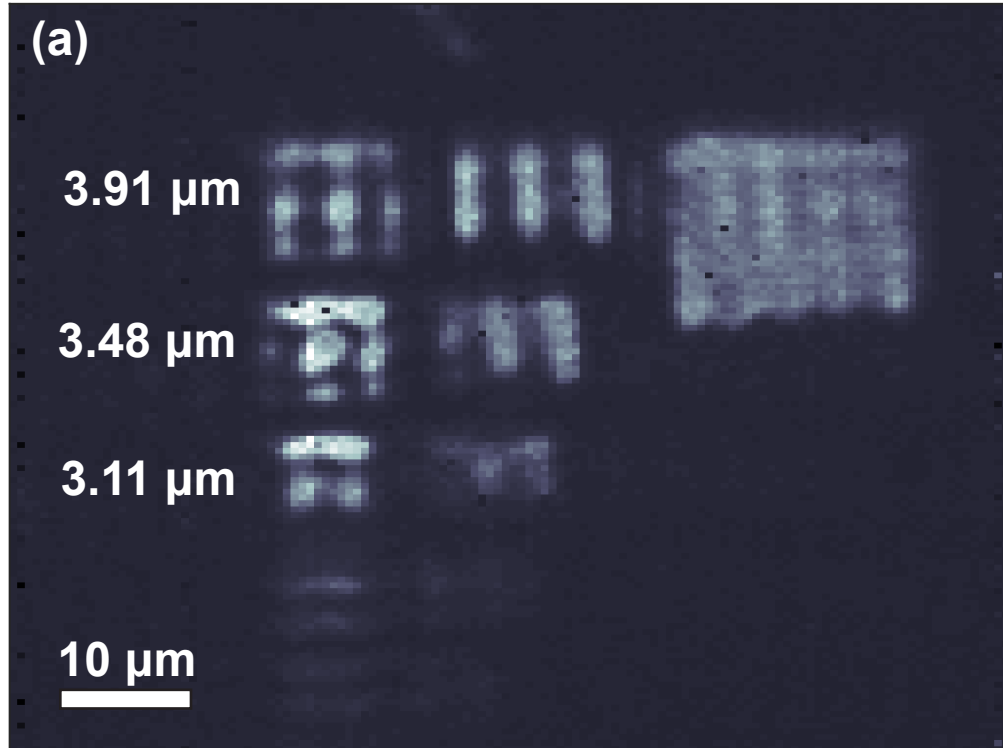
## 1. Schematic of Periscope used to Generate Vertically Offset Beams



**Figure S1.** Periscope used to generate vertically offset beams. MR stands for mirror and BS represents a calcium fluoride wedged beam splitter.

The vertically offset pump and probe pulses are generated in periscope as shown in Figure S1. To avoid the back reflection from interfering with the pulses, a wedged beam splitter is used so that this reflection does not travel parallel to the pump and probe pulses. From this periscope, the pump and probe pulses are directed into the dual-AOM pulse shaper.

## 2. 2D-WIRM Amplitude Image of Group 7 Elements of the USAF Test Target

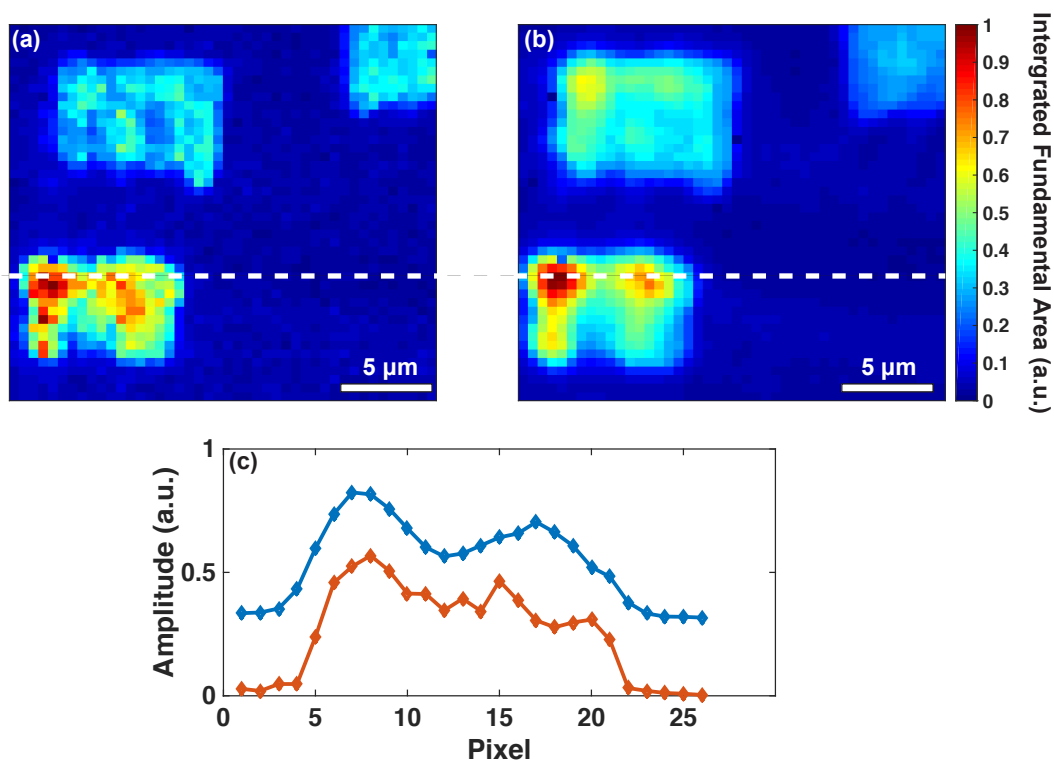


**Figure S2.** 2D-WIRM Amplitude image of the Group 7, elements 1,2, and 3 of a standard USAF test target.

Figure S2 shows the 2D-WIRM image of group 7, elements 1,2, and 3 of a standard USAF test target. The elements have line widths of 3.91, 3.48, and 3.11 μm. Figure S3 shows a close up of the smallest elements resolvable and a comparison between FTIR and 2D IR images. We estimate our resolution to be about 3.48 μm using the 20% contrast method, which we observed with our previous fully coherent pulse shaping-based FTIR microscope.

### 3. Comparison of FTIR and 2D-WIRM Images for Group 7

#### Elements 2 and 3



**Figure S3.** (a) 2D-WIRM image and (b) FTIR image of elements 2 and 3 of Group 7. Slices through the dashed white lines are shown in, corresponding to elements separated by 3.11 μm (c). Blue is the FTIR slice while red is the 2D IR image slice.