



Fig. 4. Illustration of the reconstruction of an experimental dual-comb hologram hypercube in presence of an absorber (gaseous ammonia) on the object beam path. The object is a coin. (a) Two reconstructed amplitude images of the coin at focus (697 mm) for the frequencies of 195.351 THz and 195.731 THz, respectively. Each of the 81920 pixels of the reconstructed amplitude-image cube may be plotted as a high-resolution spectrum, such as that plotted here for pixel (160;128). The spectrum reveals the blended transition $PP(5, 3)a$ of the $\nu_1 + \nu_3$ band in $^{14}\text{NH}_3$ [25], measured with sufficiently high signal-to-noise ratio to enable precise concentration measurements.