



Figure 2. **Resolvable volumes obtained with current commercial super-resolution microscopes.** A schematic 3D representation of focal volumes is shown for the indicated emission maxima. The approximate lateral (x,y) and axial (z) resolution and resolvable volumes are listed. Note that STED/CW-STED and 3D-SIM can reach up to 20 μm into the sample, whereas PALM/STORM is usually confined to the evanescent wave field near the sample bottom. It should be noted that deconvolution approaches can further improve STED resolution. For comparison the "focal volume" for PALM/STORM was estimated based on the localization precision in combination with the z-range of TIRF. These indications do not necessarily constitute actual resolution as many other effects (e.g., fluorophore orientation, local refractive index variations, flatfield quality of the camera, local aberrations, and statistical selection bias) influence image quality and final resolution.