**Fig. 2 Flow from image analysis to acquisition of the high-dynamic-range intensity profile**

(1) The laser entry point is estimated by using the image acquired with 10 ms exposure time (a). Pixels with intensities between 1875 and 3750 are selected (b) to detect an ellipse. The center of the ellipse is the estimated entry point (c).

(2) The region of interest (ROI) is set manually (d).

(3) The intensities of all the pixels in the ROI are averaged on the basis of the radial distance from the entry point. The intensity profile is acquired for the eight exposure times (e), legend shared with (f). After dark correction, each profile is multiplied by the inverse of the exposure time and transformed logarithmically (f). Finally, the average of the eight intensity profiles is calculated (g).