A fundamental understanding of the effects of gas-blasting on electron density distributions over extinguishing arc discharges is important for the development of highly reliable gas circuit breakers. High temporal and spatial resolutions and measurement accuracy makes Shack-Hartmann type laser wavefront sensors a practical choice of technology for measuring 2-dimensional electron density distributions over 3-mm-gap pulsed arc discharges with the peak current of 1250A in axial air-flow whose velocity ranged from 30 to 80m/s. The arc channel diameters for the air-flow velocity of 30 and 80m/s were narrower than those for no air-flow when an instantaneous current decreased to 14 and 35A, respectively. Moreover, no significant changes were observed in the values of the electron densities between with and without air-blasting.