

Fig. 4.3 Velocity vectors on the cross plane  $\theta=0^\circ$  &  $180^\circ$  at steady state for  $D_j = 10.0 \text{ mm}$ ,  $H = 10.0 \text{ mm}$  and  $Ra = 0$  ( $\Delta T = 0^\circ\text{C}$ ) for  $Re_j =$  (a) 135 ( $Q_j = 1.0 \text{ slpm}$ ), (b) 270 ( $Q_j = 2.0 \text{ slpm}$ ), (c) 406 ( $Q_j = 3.0 \text{ slpm}$ ), (d) 541 ( $Q_j = 4.0 \text{ slpm}$ ), and (e) 676 ( $Q_j = 5.0 \text{ slpm}$ ).

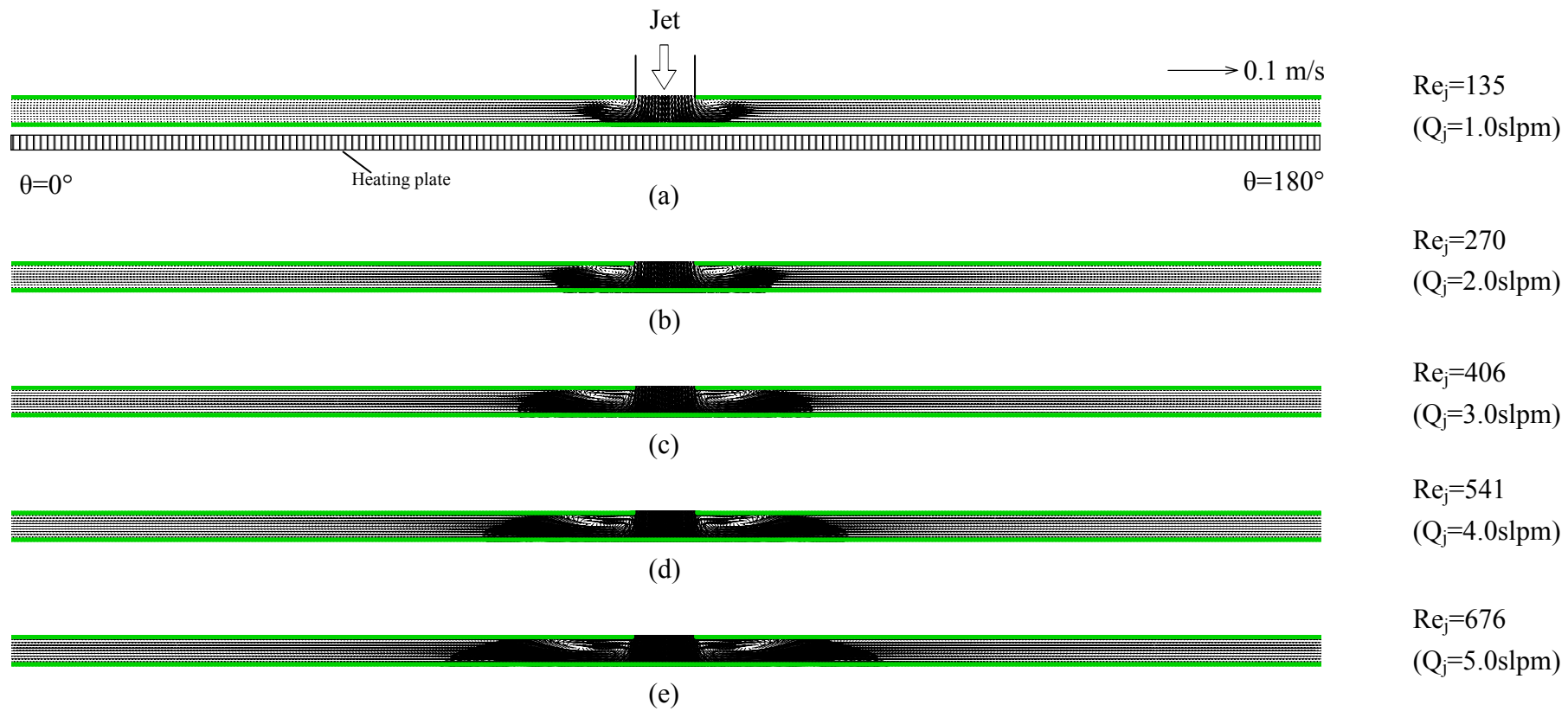


Fig. 4.4 Velocity vectors on the cross plane  $\theta = 0^\circ$  &  $180^\circ$  at steady state for  $D_j = 20.0 \text{ mm}$ ,  $H = 10.0 \text{ mm}$  and  $Ra = 0$  ( $\Delta T = 0^\circ\text{C}$ ) for  $Re_j =$  (a) 68 ( $Q_j = 1.0 \text{ slpm}$ ), (b) 135 ( $Q_j = 2.0 \text{ slpm}$ ), (c) 203 ( $Q_j = 3.0 \text{ slpm}$ ), (d) 270 ( $Q_j = 4.0 \text{ slpm}$ ), and (e) 338 ( $Q_j = 5.0 \text{ slpm}$ ).

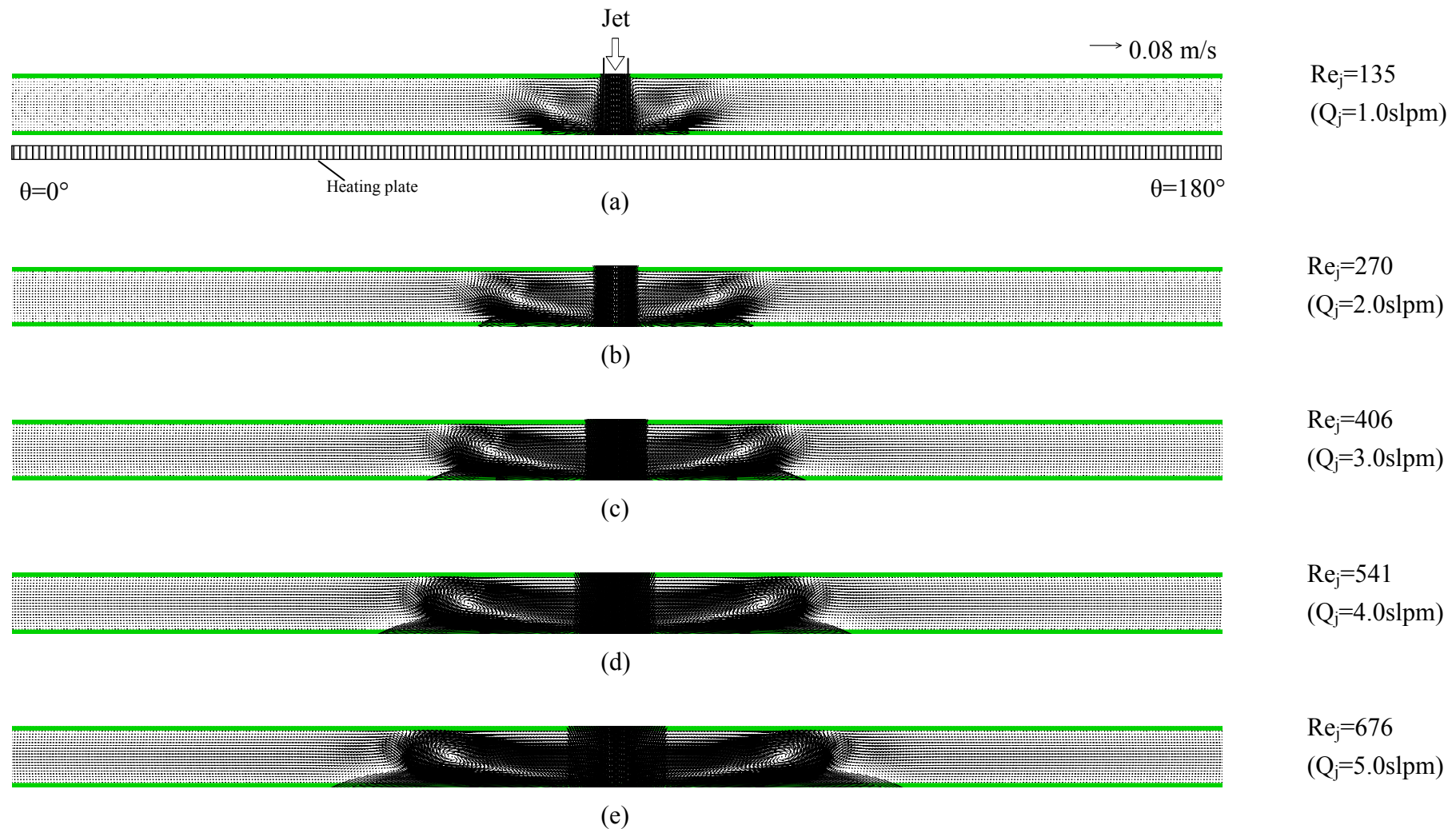


Fig. 4.5 Velocity vectors on the cross plane  $\theta=0^\circ$  &  $180^\circ$  at steady state for  $D_j=10.0 \text{ mm}$ ,  $H=20.0 \text{ mm}$  and  $Ra=0$  ( $\Delta T=0^\circ\text{C}$ ) for  $Re_j =$  (a) 135 ( $Q_j=1.0 \text{ slpm}$ ), (b) 270 ( $Q_j=2.0 \text{ slpm}$ ), (c) 406 ( $Q_j=3.0 \text{ slpm}$ ), (d) 541 ( $Q_j=4.0 \text{ slpm}$ ), and (e) 676 ( $Q_j=5.0 \text{ slpm}$ ).

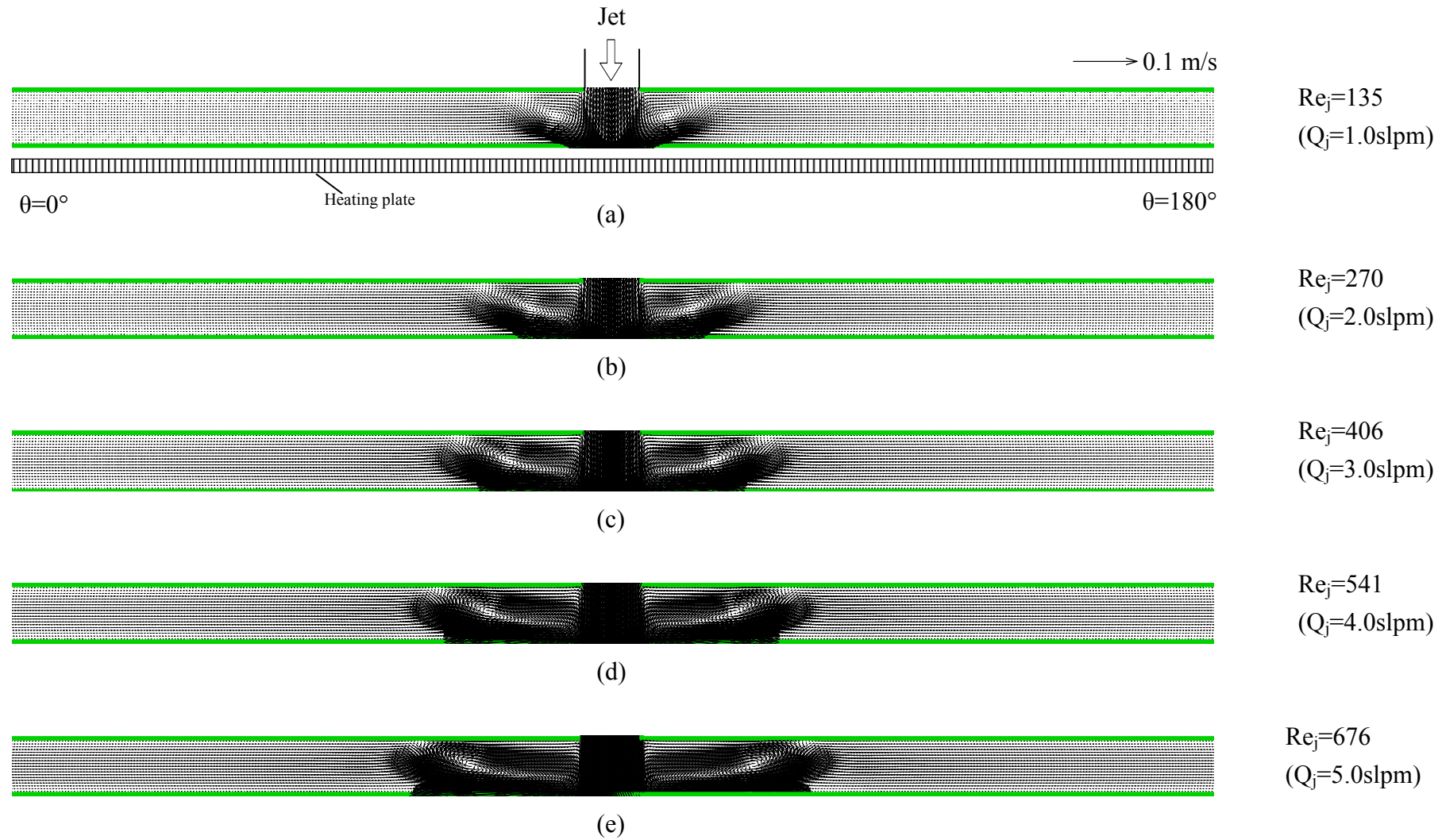


Fig. 4.6 Velocity vectors on the cross plane  $\theta = 0^\circ$  &  $180^\circ$  at steady state for  $D_j = 20.0 \text{ mm}$ ,  $H = 20.0 \text{ mm}$  and  $Ra = 0$  ( $\Delta T = 0^\circ\text{C}$ ) for  $Re_j =$  (a) 68 ( $Q_j = 1.0 \text{ slpm}$ ), (b) 135 ( $Q_j = 2.0 \text{ slpm}$ ), (c) 203 ( $Q_j = 3.0 \text{ slpm}$ ), (d) 270 ( $Q_j = 4.0 \text{ slpm}$ ), and (e) 338 ( $Q_j = 5.0 \text{ slpm}$ ).

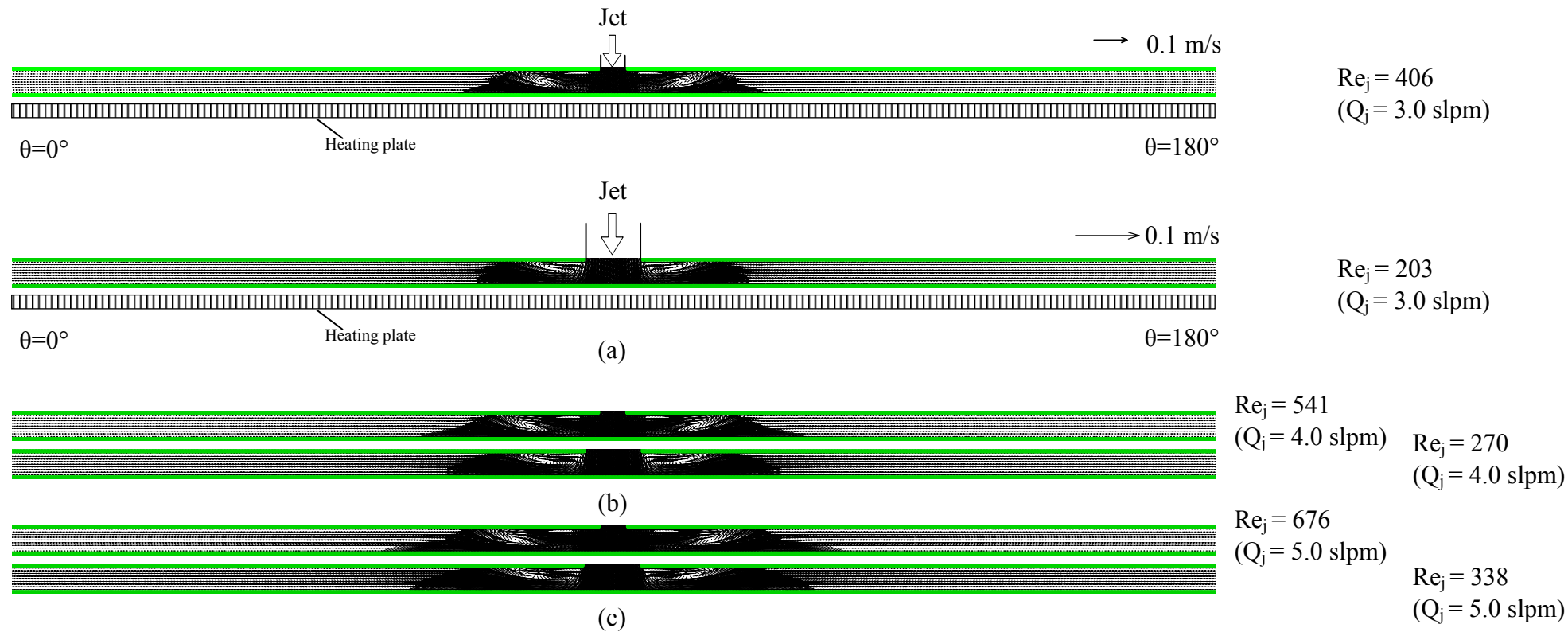


Fig. 4.7 Velocity vectors on the cross plane  $\theta = 0^\circ$  &  $180^\circ$  at steady state for  $H = 10.0$  mm with  $D_j = 10.0$  &  $20.0$  mm at  $Ra = 0$  ( $\Delta T = 0^\circ\text{C}$ ) for  $Re_j =$  (a) 406 and 203 ( $Q_j = 3.0$  slpm), (b) 541 and 270 ( $Q_j = 4.0$  slpm), and (c) 676 and 338 ( $Q_j = 5.0$  slpm).