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Phase Separation Characteristics through Vertical Y Junction preceded by Elbow Tube

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Abstract **–** The distribution of two phase refrigerant flow (R32) in the Y junction after a horizontal to vertical 90º elbow tube are discussed through experimental and analytical approaches. In the experiment, the dependency of the distribution on structural parameters such as the orientation angle of elbow tube as well as operating conditions such as inlet flow rate and quality are evaluated. In addition, the results are analyzed with the reported perceptions for air-water flow. The dependence of R32 distribution in the Y junction on the mass flow ratio of the outlet channels was found to be similar to that of air-water flow. On the other hand, the characteristic dependency on the orientation angle reported for air-water flow was not observed in this study.

Keywords**:** Refrigerant, Two Phase Flow, Distributor, Elbow, Distribution Measurement