III. Experiment Result

In this research, we proceeded with altering the air volume of both existing dehumidifier and the dehumidifier after applied heat-pipe. Figure2 shows dehumidifying rate and performance for both model. The air which passing through heat absorption part on entrance of the dehumidifier cooled by 1℃ ~ 2.5℃ depending on air volume. At this point, absorbs the energy by 55 to 70W. As the air volume increases, absorption rate also increases. The surface temperature of evaporator decreases on heat-pipe applied model. The dew point temperature reduce rate increased to 0.2 ℃ ~ 1.0 ℃ and the performance of dehumidifier improved by 15 to 31.8%.

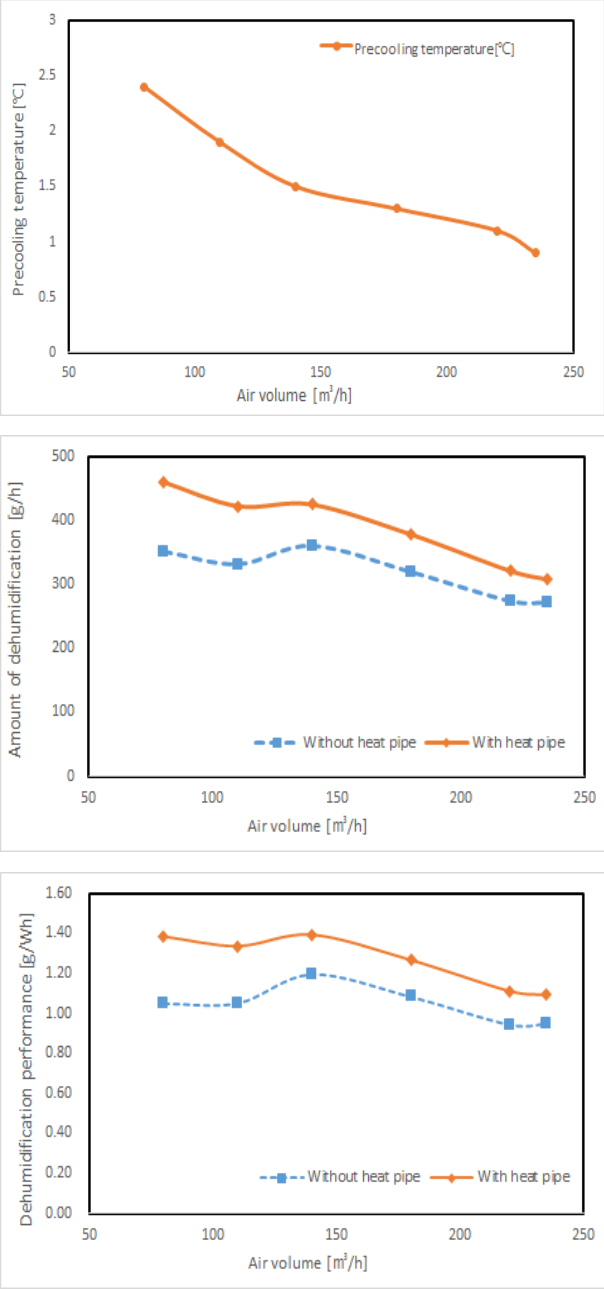

Fig. 2. Amount & Performance of dehumidification

IV. Conclusion

In this research, we have considered applying heat-pipe to increase energy efficiency of refrigerative dehumidifier and the results are listed as follows:

(1) The dew point temperature reduce rate increased to 0.2℃ ~ 1.0℃ and the performance of dehumidifier improved by 15 to 31.8%.

(2) The research confirmed that using heat-pipe on refrigerative dehumidifier improves the performance hence

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