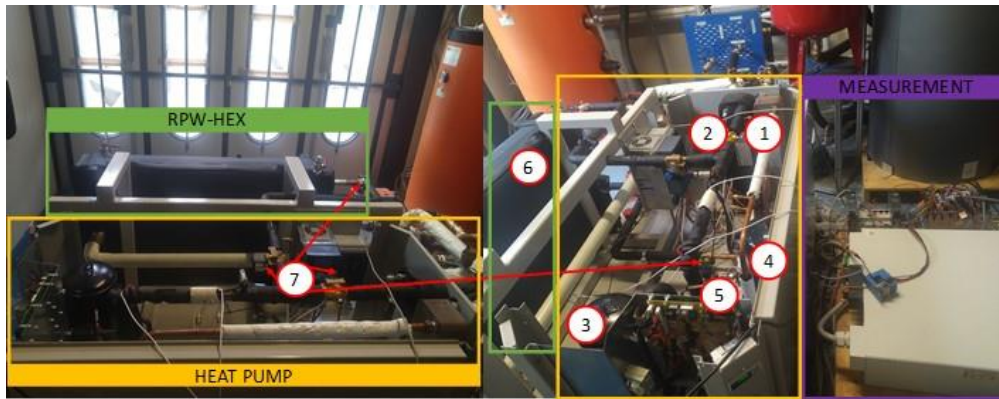


Experimental evaluation of a heat pump-latent storage system for increasing renewable share of the residential stock

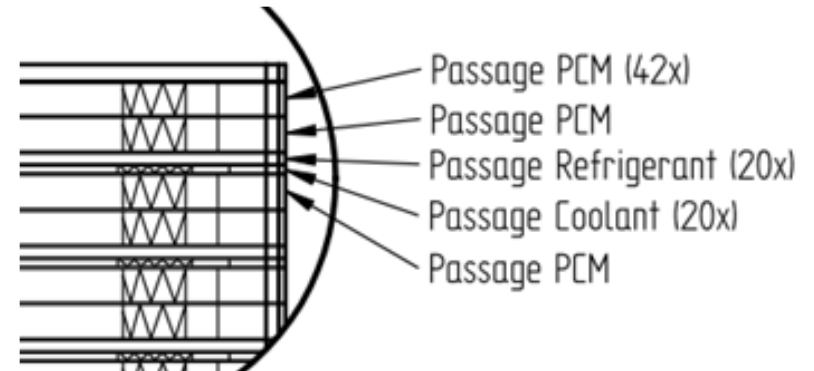
V. Palomba^{1*}, S. Varvagiannis², E. Monokrousou², B. Nitsch³, N. Barmparitsas⁴, A. Bonanno¹, G.E. Dino¹, A. Leontaritis², A. Strehlow³, S. Karellas², A. Frazzica¹, L.F. Cabeza⁵

THE SYSTEM TESTED: R410A DC-DRIVEN HEAT PUMP + LATENT STORAGE



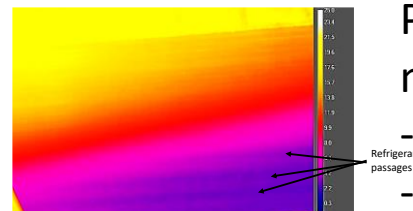
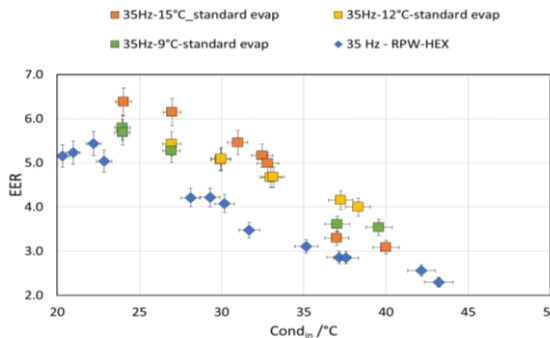
1: condenser, 2: standard evaporator, 3: compressor, 4: liquid receiver, 5: expansion valve, 6: latent storage

FOCUS ON: LATENT STORAGE



Three-fluid aluminium heat exchanger.
PCM used: RT4 commercial paraffin with nominal melting point of 4°C

TEST RESULTS IN A NUTSHELL



SYSTEM OPTIMIZATION

Performance maps under different operating modes:

- heat pump 2.5 < EER < 7.5 ,
- latent storage up to 3 kWh, efficiency >80%
- Discharge power up to 9 kW

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[V. Palomba](#)



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