

What is a rotary dehumidifier?

A rotary dehumidifier consists of a rotating porous matrix made of a desiccant with mechanically supporting materials. The dehumidification performance of a rotary dehumidifier wheel depends on its rotational speed, the sorption properties of the desiccant, the heat and mass transfer characteristics of the matrix, and the size of the dehumidifier.

Does a rotary dehumidifier effectively remove moisture from the air?

This study presents a comprehensive experimental analysis of the dehumidification and thermal performance of a rotary dehumidifier with molecular sieve desiccant designed to effectively remove moisture from the air by utilizing coupled regeneration mode (complete waste heat liberated out of condenser and electric rod heat).

Can a rotary dehumidifier use a molecular sieve desiccant?

Experimental analysis of a rotary dehumidifier with molecular sieve desiccant. Performance analysis of solid desiccant dehumidifier using coupled regeneration mode. Full waste heat from condenser and electric rod heat used as coupled regeneration mode.

What is the maximum performance of a rotary dehumidifier?

However, the maximum performance of a rotary dehumidifier occurs for a desiccant material having an isotherm shape that can be characterized to have a separation factor of 0.07. Also, as the desiccant moisture uptake increases, the dehumidifier performance also increases.

Does a rotary dehumidifier have different adsorption characteristics?

The results show that the using desiccant materials in a rotary dehumidifier with different adsorption characteristics results in a wide variation in dehumidification performance.

What are the applications of dehumidification technology?

As a result of these developments, the new dehumidification technologies directly impact numerous energy-related applications, namely, outdoor coolers, heat pumps, sorption chillers, atmospheric water harvesters, indoor humidity control, and energy storage. Energy Information Administration USEI. International Energy Outlook 2019.

A Peltier dehumidifier also use the process of condensation to remove moisture. We won't dwell on these too much as they're particularly good and although they don't require much energy to ...

Regardless of the working conditions, one rotary desiccant dehumidifier can beat at least 10 dual semiconductor Peltier dehumidifiers. Say no t ... consumes only 25% of the power of a semiconductor

dehumidifier per pint of water ...

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A rotary desiccant-based air-conditioning system is a heat-driven hybrid system which combines different technologies such as desiccant dehumidification, evaporative cooling, refrigeration, and regeneration. This ...

As for the application of zeolite adsorption system in the energy storage and heat transfer field, zeolite-based heat exchanger (HX), energy storage system (ESS), dehumidifier, ...

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