

Title (en)
PARALLEL FLOW EVAPORATOR WITH SHAPED MANIFOLDS

Title (de)
PARALLELFUSSVERDAMPFER MIT GEFORMTEN VERTEILERN

Title (fr)
EVAPORATEUR A FLUX PARALLELES DOTE DE COLLECTEURS FAÇONNES

Publication
EP 1809968 A4 20110420 (EN)

Application
EP 05821090 A 20051114

Priority

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- US 98796104 A 20041112

Abstract (en)
[origin: WO2006053311A2] In a parallel flow evaporator, the inlet manifold construction consists of alternating expansion and contraction chambers to promote homogeneous conditions of the refrigerant, as it flows longitudinally through the inlet manifold, as a result of partial evaporation (throttling) and mixing and jetting effects (due to velocity augmentation). In a preferred embodiment, the parallel channels are fluidly connected to the expansion chambers so as to receive a homogeneous refrigerant mixture therefrom. In one embodiment, the expansion and contraction chambers are progressively smaller in size toward a downstream end, so as to accommodate the diminishing refrigerant flow as it progresses longitudinally along the inlet manifold. In another embodiment, the outlet manifold also consists of a repetitive pattern of alternating expansion and contraction chambers, so as to balance the impedances of the inlet manifold. In still another embodiment, these chambers are progressively larger in size toward a downstream end of the outlet manifold. In yet another embodiment, the flow-mixing inserts are introduced into the contraction chambers to further promote homogeneous conditions within the manifold. As a result, maldistribution in the heat exchanger is avoided, resulting in system performance augmentation and compressor reliability enhancement.

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F25B 39/028 (2013.01 - EP US); **F28D 1/05366** (2013.01 - EP US); **F28F 9/02** (2013.01 - EP US); **F28F 9/028** (2013.01 - EP US)

Citation (search report)

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Designated contracting state (EPC)
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