

Title (en)
Heat Exchanger and Refrigeration Cycle Apparatus Having the Same

Title (de)
Wärmetauscher und Kältekreislaufvorrichtung damit

Title (fr)
Échangeur thermique et appareil de cycle de réfrigération en disposant

Publication
EP 2031335 A3 20110413 (EN)

Application
EP 08163152 A 20080828

Priority
KR 20070088489 A 20070831

Abstract (en)
[origin: EP2031335A2] A heat exchanger including a plurality of first refrigerant tubes, and a plurality of second refrigerant tubes separated from the plurality of first refrigerant tubes in an air flow direction. Further, a diameter of a respective refrigerant tube of the plurality of first refrigerant tubes is smaller than a diameter of a respective refrigerant tube of the plurality of second refrigerant tubes.

IPC 8 full level
F28F 1/32 (2006.01); **F25B 39/00** (2006.01); **F28F 13/08** (2006.01); **F28D 1/047** (2006.01); **F28D 1/053** (2006.01)

CPC (source: EP KR US)
F25B 39/00 (2013.01 - EP US); **F28D 9/00** (2013.01 - KR); **F28F 1/00** (2013.01 - KR); **F28F 1/325** (2013.01 - EP US); **F28F 13/08** (2013.01 - EP US); **F25B 2500/01** (2013.01 - EP US); **F28D 1/0477** (2013.01 - EP US); **F28D 1/05333** (2013.01 - EP US); **F28D 2021/007** (2013.01 - EP US); **F28D 2021/0071** (2013.01 - EP US); **F28F 2210/08** (2013.01 - EP US); **F28F 2215/02** (2013.01 - EP US)

Citation (search report)

- [XYI] GB 2299656 A 19961009 - TOSHIBA KK [JP]
- [YA] EP 0936432 A1 19990818 - DAIKIN IND LTD [JP]
- [XA] JP S58108394 A 19830628 - HITACHI LTD
- [A] US 2007151716 A1 20070705 - LEE HAN C [KR], et al
- [A] US 5611395 A 19970318 - KANG JONG K [KR], et al
- [XP] JP 2008111622 A 20080515 - TOSHIBA CARRIER KK

Cited by
DE102008049896A1; EP3117162A4; EP2498039A4; EP3062037A4; US10101091B2; WO2011061072A3

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA MK RS

DOCDB simple family (publication)
EP 2031335 A2 20090304; EP 2031335 A3 20110413; CN 101377368 A 20090304; KR 20090022840 A 20090304; US 2009084129 A1 20090402

DOCDB simple family (application)
EP 08163152 A 20080828; CN 200810215304 A 20080901; KR 20070088489 A 20070831; US 20185708 A 20080829