

Title (en)
Heat exchanger and fin for the same

Title (de)
Wärmetauscher und Lamelle dafür

Title (fr)
Échangeur de chaleur et ailette correspondante

Publication
EP 2447659 A3 20150408 (EN)

Application
EP 11187109 A 20111028

Priority
KR 20100106368 A 20101028

Abstract (en)
[origin: EP2447659A2] A heat exchanger having a structure in which micro-channel tubes are respectively fitted into both sides of corresponding flat fins for heat exchange, thereby achieving enhancements in drainage and heat transfer performance. The heat exchanger includes a first header connected with an inflow tube and an outflow tube, a second header spaced apart from the first header by a desired distance and arranged parallel to the first header, a plurality of flat micro-channel tubes arranged in a front row and a rear row between the first header and the second header, and a plurality of plate type fins. Each of the micro-channel tubes includes micro-channels. Each of the fins includes slots arranged in a front row and a rear row to respectively fit the front row and rear row micro-channel tubes into the slots.

IPC 8 full level
F28F 1/32 (2006.01); **F28D 1/053** (2006.01)

CPC (source: EP US)
F28D 1/05391 (2013.01 - EP US); **F28F 1/325** (2013.01 - EP US); **F28F 2215/12** (2013.01 - EP US)

Citation (search report)

- [X] EP 1231448 A2 20020814 - MODINE MFG CO [US]
- [X] EP 1586844 A1 20051019 - T RAD CO LTD [JP]
- [A] JP H1089870 A 19980410 - NIPPON LIGHT METAL CO
- [A] CN 101619950 A 20100106 - DANFOSS SANHUA HANGZHOU MICRO
- [A] WO 2005108899 A1 20051117 - SHOWA DENKO KK [JP], et al

Cited by
FR3038977A1; CN108369076A; CN109000488A; WO2017012867A1; US10914530B2

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2447659 A2 20120502; **EP 2447659 A3 20150408**; CN 102706040 A 20121003; KR 20120044847 A 20120508; US 2012103583 A1 20120503

DOCDB simple family (application)
EP 11187109 A 20111028; CN 201110341848 A 20111028; KR 20100106368 A 20101028; US 201113317740 A 20111027