

Title (en)
Cooling device

Title (de)
Kühlvorrichtung

Title (fr)
Dispositif de refroidissement

Publication
EP 2339234 A1 20110629 (DE)

Application
EP 09405231 A 20091223

Priority
EP 09405231 A 20091223

Abstract (en)
The cooling device (1) has a fan (12) having a fan wheel and a heat sink (6) through which there is a flow for cooling purposes when the fan wheel rotates. The heat sink has guide vanes (7) that deviates from the radial direction and is embodied as an integral shaped portion. The fan is integrated in the heat sink. The guide vanes are integrally formed on a plate having an outer side, on which the components to be cooled is fixed.

Abstract (de)
Die Kühlvorrichtung besitzt einen ein Lüfterrad (21) aufweisenden Lüfter (12) und einen Kühlkörper (6), der zur Kühlung bei drehendem Lüfterrad (12) durchströmt ist. Der Kühlkörper (6) besitzt von der radialen Richtung abweichende Leitschaufeln (7,16,20) und ist als einteiliges Formstück ausgebildet. Insbesondere sind die Leitschaufeln spiralförmig ausgebildet. Die Kühlvorrichtung dient insbesondere zum Kühlen einer LED Lampe.

IPC 8 full level
F21V 29/02 (2006.01); **F21K 99/00** (2010.01)

CPC (source: EP US)
F21K 9/23 (2016.07 - EP US); **F21V 29/677** (2015.01 - EP US); **F21V 29/74** (2015.01 - EP US); **F21V 29/773** (2015.01 - EP US);
F21Y 2115/10 (2016.07 - EP US)

Citation (search report)
• [X1] US 7575346 B1 20090818 - HORNG ALEX [TW], et al
• [X1] US 2006193139 A1 20060831 - SUN TSUNG-TING [TW], et al

Citation (examination)
• WO 2008086665 A1 20080724 - NINGBO ELEGANCE ELECTRICAL APP [CN], et al
• US 2009195159 A1 20090806 - SMITH JERRY L [US]

Cited by
DE102020207382A1; DE102015104541A1

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 MK MT NL NO PL PT RO SE SI SK SM TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)
EP 2339234 A1 20110629; CN 102109157 A 20110629; JP 2011135081 A 20110707; US 2011146966 A1 20110623

DOCDB simple family (application)
EP 09405231 A 20091223; CN 201010622308 A 20101223; JP 2010285437 A 20101222; US 97033510 A 20101216