

Title (en)

Gas turbine combustor having a quarter wave damper

Title (de)

Gasturbinenbrennkammer mit Viertelwellen-Dämpfer

Title (fr)

Chambre de combustion de turbine à gaz avec amortisseur type quart d'onde

Publication

EP 2865948 A1 20150429 (EN)

Application

EP 14190194 A 20141024

Priority

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- EP 14190194 A 20141024

Abstract (en)

The present invention relates to a damping device for a combustor of a gas turbine for suppressing combustion instabilities. More specifically, the invention relates to a design of a broadband damping device for a low emission combustor having at least one resonator for damping pressure fluctuations in the combustion chamber. It is an object of the invention to provide a damping device with a quarter wave damper having broadband characteristics. The damping device for a combustor of a gas turbine according to the invention comprises a casing (3) defining a resonator volume (6), a hole (7) at a front face of the casing (3) for allowing fluid communication between the resonator volume (6) and the combustion chamber (8), the casing (3) having parameters such that it acts as a quarter wave damper (2), is characterized in that the resonator volume (6) is limited by a rear face (11) and at least one lateral surface (14) of the casing (3), whereby at least one lateral surface (14) is equipped with one or more cavities (9) inside and the rear face (11) is equipped with at least one feed hole (10) for feeding a purging fluid into the resonator volume (6). The preferably groove-shaped side cavities initiate energy dissipating vertical flows 13.

IPC 8 full level

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CPC (source: EP US)

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Citation (applicant)

EP 2402658 A1 20120104 - MITSUBISHI HEAVY IND LTD [JP]

Citation (search report)

- [Y] EP 1775515 A2 20070418 - DLR EV [DE]
- [Y] JP H04246221 A 19920902 - TOYODA GOSEI KK
- [YA] DE 102006053277 A1 20080508 - DEUTSCH ZENTR LUFT & RAUMFAHRT [DE]

Cited by

US10228134B2; US11506382B2; WO2019027508A1; EP2963345B1

Designated contracting state (EPC)

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