THE CALCULATION OF COOLING LOAD ON CABIN
AIRBUS 330-300

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Abstract

Definition of comfortable air conditioning is the process of air treatment to control temperature, humidity, cleanliness, and the distribution is simultaneously in order to achieve comfortable conditions that needed by residents inside, therefore an aircraft requires air conditioning system, because when the higher we fly, the temperature and pressure of the surrounding air would be lower. An aircraft in flight, with elevation about 8000 to 10000 m, pressure, temperature, and humidity is very different from the situation on the ground.

Objectives to be achieved in this final project is, to achieve the level of comfort of airline passengers that have been determined by the Federal Aviation Regulations (FAR) by calculate the total cooling load on the Airbus 330-300 on two different conditions, that is ground idle and maximum cruise.

In this final project, grand total calculation of heat obtained by the summary of cooling load (Q) of the roof, walls, glass, floors, solar radiation through glass, number of lights, number of passengers, and electronic equipment that generates heat. As well as for other factors that affect this calculation are dimensional plane, the departure time, departure month, destination and departure. From the calculation, the cooling load that obtained when on ground
idle condition is 947293,1963 $\frac{\text{BTU}}{\text{hr}}$ whereas when on maximum cruise is 148569,13 $\frac{\text{BTU}}{\text{hr}}$.

Keywords: cooling load, Ground Idle, Maximum Cruise, a grand total heat