

Accepted Manuscript

Title: Investigation of Heat Load Calculation for Air Carrying Energy Radiant Air-conditioning System

Author: Guangcai Gong Jia Liu Xiong Mei

PII: S0378-7788(16)31759-5

DOI: <http://dx.doi.org/doi:10.1016/j.enbuild.2016.12.005>

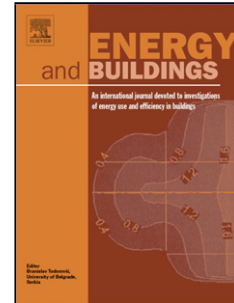
Reference: ENB 7184

To appear in: *ENB*

Received date: 8-6-2016

Revised date: 29-9-2016

Accepted date: 3-12-2016



Please cite this article as: Guangcai Gong, Jia Liu, Xiong Mei, Investigation of Heat Load Calculation for Air Carrying Energy Radiant Air-conditioning System, Energy and Buildings <http://dx.doi.org/10.1016/j.enbuild.2016.12.005>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Investigation of Heat Load Calculation for Air Carrying Energy Radiant Air-conditioning System

Guangcai Gong*, Jia Liu, Xiong Mei

Department of Building Environment and Energy Engineering

College of Civil Engineering, Hunan University, Changsha, Hunan, 410082, China

*Corresponding author: Tel: (0086) 13973123865, Fax: (0086) (0731) 8823082

E-mail address: gcgong@hnu.edu.cn; gcgong2000@aliyun.com

Highlights

- The Air Carrying Energy Radiant Air-conditioning System (ACERS) is presented.
- ACERS has performance of high thermal comfort, saving energy and preventing condensation.
- A practical correction coefficient load calculation method for ACERS is developed.
- Correction coefficient of 0.75 and 0.8 are obtained respectively for summer and winter operation.
- Two basic phenomena of layering and small vortices are found in radiation heat transfer process of ACERS.

Abstract

Radiant heating and cooling has been widely acknowledged as an important energy-saving technique for building air-conditioning. This paper put forward the concept of Air Carrying Energy Radiant-air-conditioning System (ACERS) to solve some of the limitations of existing radiant air-conditioning systems. Since the orifice plate of ACERS would enable

Download English Version:

<https://daneshyari.com/en/article/4919433>

Download Persian Version:

<https://daneshyari.com/article/4919433>

[Daneshyari.com](https://daneshyari.com)