



UNDERSTANDING VELOCITY PROFILES

▼ VELOCITY PROFILE INTRODUCTION

Decades of experience and years of research culminated in the RadiaFlo. Emulating the most successful performing radial diffuser on the market, the TAD, Krueger's latest critical room solution delivers a true 180° isovel, unlike others that typically feature 3-way air patterns. To better demonstrate this robust air pattern and to ensure that the performance fits the intended application, refer to the velocity profiles on the next few pages.

One of the most popular applications for the RadiaFlo is a room that contains functioning fume hoods. To expand on the importance of such velocity profiles, the excerpt to the right appears in the ASHRAE Handbook of Fundamentals.

Other applications for use:

- Hospital Rooms
- Clean Rooms
- Animal Cages
- Dust Control
- Smoke Control
- Office Spaces

▼ ASHRAE HANDBOOK EXCERPT

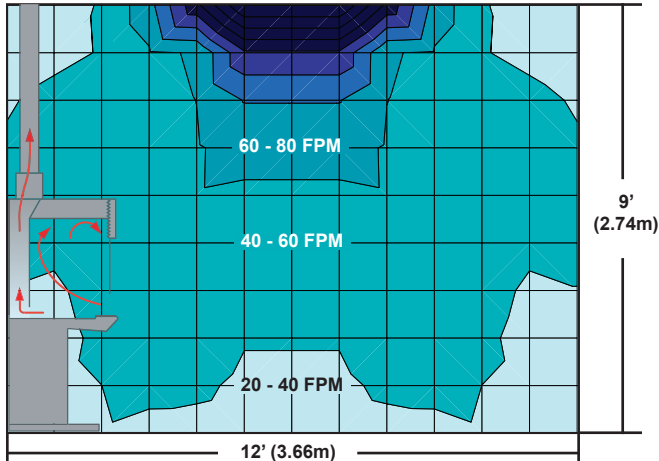
“Caplan and Knutson (1977, 1978) conducted tests to determine the interactions between room air motion and fume hood capture velocities with respect to the spillage of contaminants into the room. Their tests indicated that the effect of room air currents is significant and of the same order of magnitude as the effect of the hood face velocity. Consequently, improper design and/or installation of the replacement air supply can lower the performance of the fume hood.

Disturbance velocities at the face of the hood should be no more than one-half and preferably one-fifth the face velocity of the hood. This is an especially critical factor in designs that use low face velocities. For example, a fume hood with a face velocity of 100 fpm could tolerate a maximum disturbance velocity of 50 fpm. If the design face velocity were 60 fpm, the maximum disturbance velocity would be 30 fpm.” *

(*) Schwarts, Leonard; Louis Hartman, and Patrick Carpenter. 2003 ASHRAE Handbook - HVAC Applications. Chapter 14:14.5.

READING VELOCITY PROFILES

▼ EXAMPLE: 2'x4'x10", 600 CFM, -10 ΔT



The location of fume hoods, animal cages, and sensitive equipment within a space dictates a specific isovel. The RadiaFlo velocity charts aid in selecting the best product performance for your individual application requirements.

Varying colors of blue indicate velocity intensity. Darker colors indicate higher velocities; lighter colors indicate lower velocities.

► Class I fume hood shown in diagram (left) is simply an overlay to illustrate the location of critical components within a space and the selection of a desirable isovel.

▼ AIRFLOW VELOCITIES

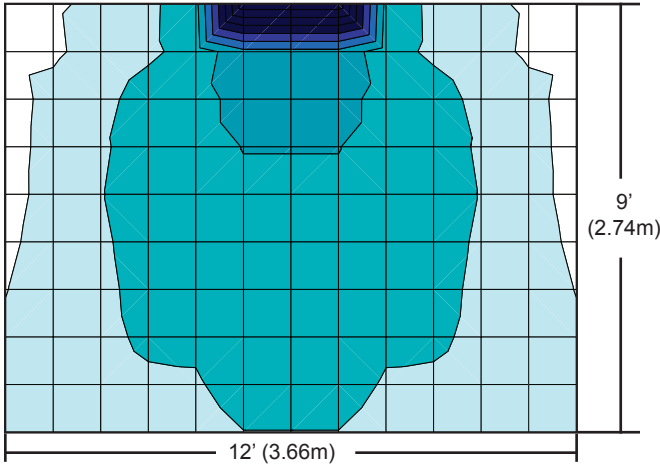




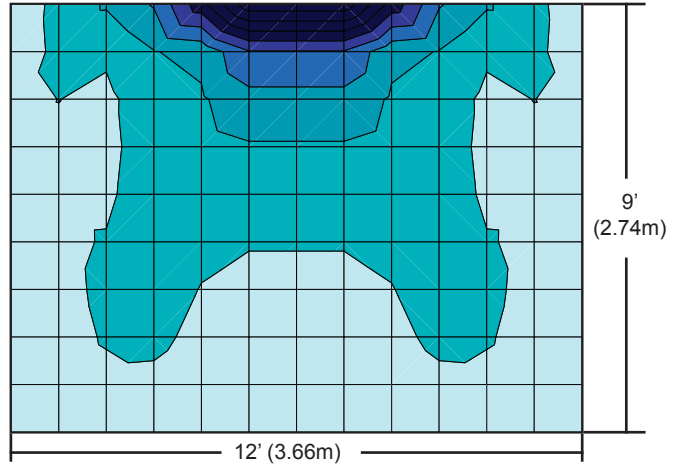
RADIAFLO™ (5RF/5RFHF/9RF/9RFHF) VELOCITY PROFILES: EQUAL CFM WITH INCREASING - ΔT

CRITICAL ROOM SOLUTIONS

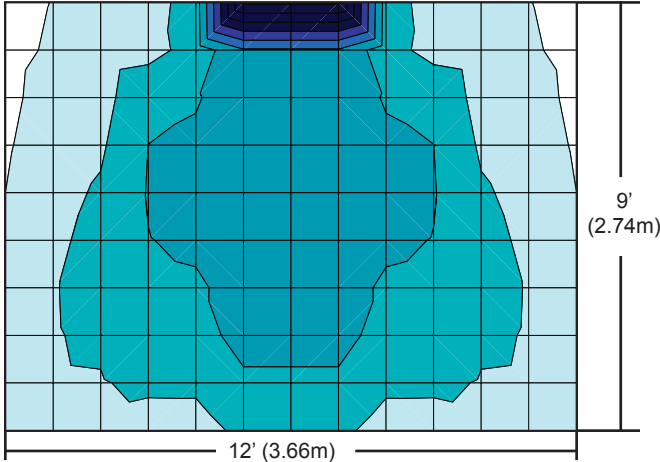
▼ 5RF/5RFHF/9RF/9RFHF, 2'x2'x10", 300 CFM, -5°ΔT



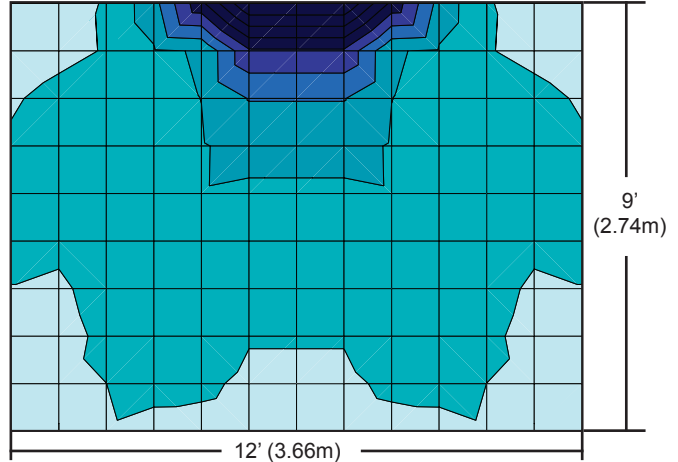
▼ 5RF/5RFHF/9RF/9RFHF, 2'x4'x10", 600 CFM, -5°ΔT



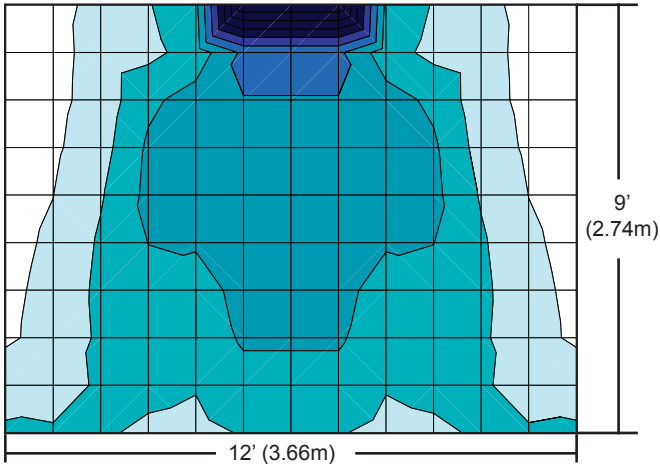
▼ 5RF/5RFHF/9RF/9RFHF, 2'x2'x10", 300 CFM, -10°ΔT



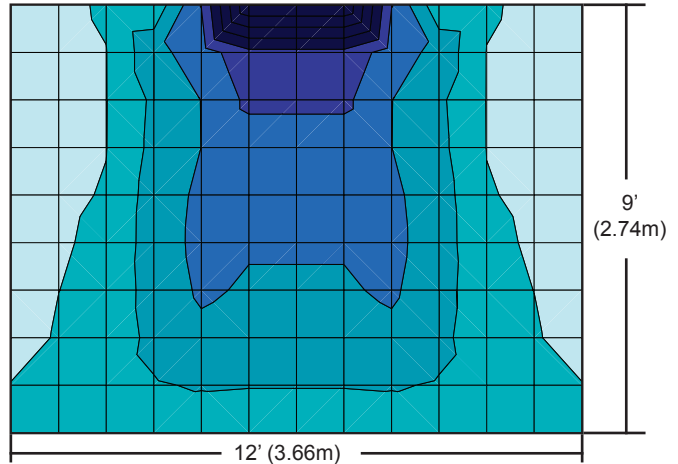
▼ 5RF/5RFHF/9RF/9RFHF, 2'x4'x10", 600 CFM, -10°ΔT



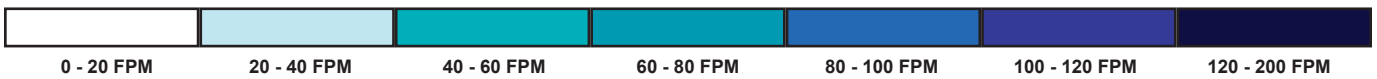
▼ 5RF/5RFHF/9RF/9RFHF, 2'x2'x10", 300 CFM, -15°ΔT



▼ 5RF/5RFHF/9RF/9RFHF, 2'x4'x10", 600 CFM, -15°ΔT



▼ AIRFLOW VELOCITIES



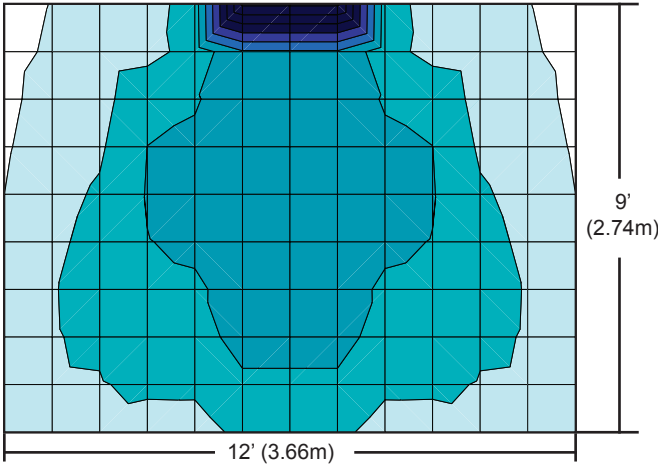
RADI AFLO

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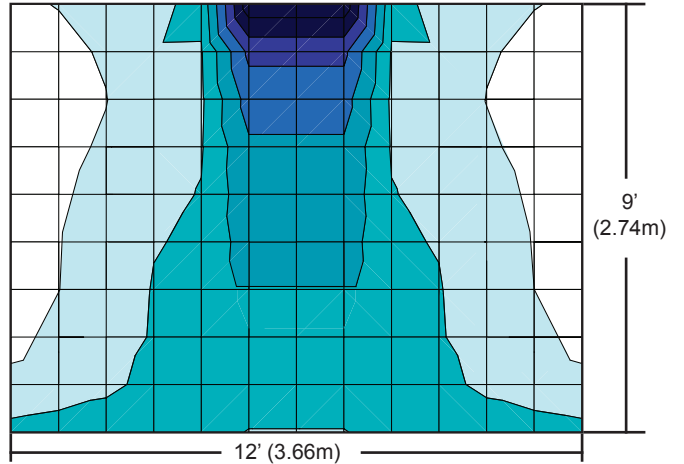


RADIAFLO™ (5RF/5RFHF/9RF/9RFHF) VELOCITY PROFILES: EQUAL ΔT WITH INCREASING CFM

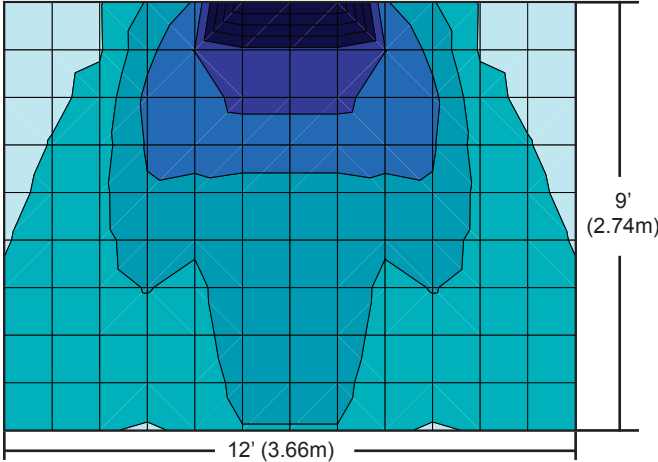
▼ 5RF/5RFHF/9RF/9RFHF, 2'x2'x10", 300 CFM, -10°ΔT



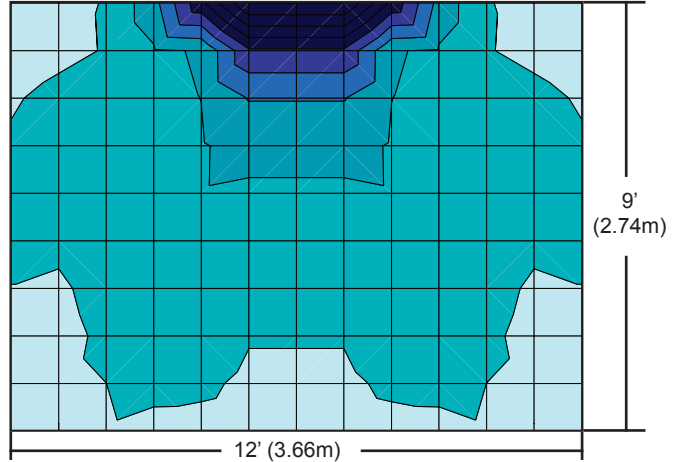
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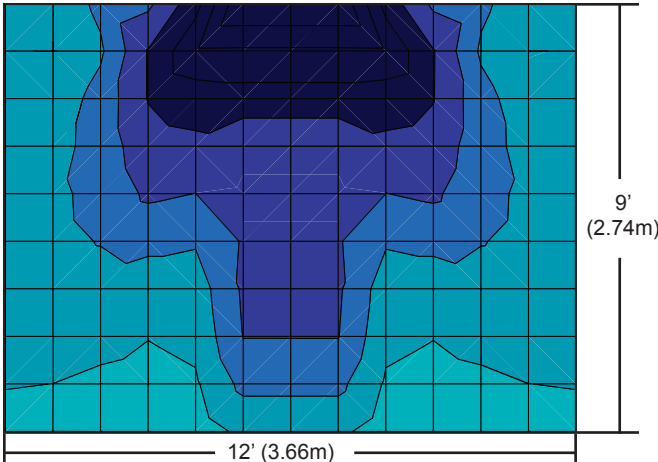
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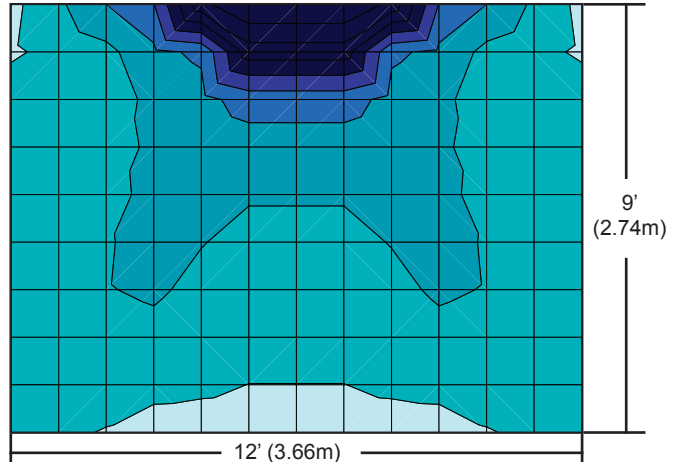
▼ 5RF/5RFHF/9RF/9RFHF, 2'x4'x10", 600 CFM, -10°ΔT



▼ 5RF/5RFHF/9RF/9RFHF, 2'x2'x10", 750 CFM, -10°ΔT



▼ 5RF/5RFHF/9RF/9RFHF, 2'x4'x10", 800 CFM, -10°ΔT



▼ AIRFLOW VELOCITIES

