

Maximizer Series



DE-STRATIFICATION FANS



REZNOR®

Maximizador Series

DE-STRATIFICATION FANS

Introduction

With any conventional air heating system warm air will rise to roof level by natural convection. In high buildings such as factories, warehouses and sports centres, this can result in high temperature gradients and consequently increased energy usage.

Maximizador de-stratification fans reverse the natural convection process, re-circulating warm air back to working level providing a permanent reduction in roof space temperature and uniform temperature distribution.

For new buildings the energy savings of a correctly designed de-stratification system are calculated within the SBEM compliance software in order to achieve the carbon reductions required for building regulations approval.

Features

- Heat recovery by re-circulating high level hot air back to occupancy level
- Reduced fuel bills by eliminating excess temperature at roof level
- Heat reclaim from lighting and machinery
- Improved comfort levels for occupants
- Reduced pre-heat time

Model Range

Maximizador fans are available in four sizes:

- Models 2100 & 3000 have a square casing and are suitable for lower mounting heights between 3 and 8 metres. The 2100 unit has outlets on four sides for horizontal discharge for installation in lower buildings where reduced air movement and noise levels may be required.
- Models 4500 & 9000 have a cylindrical design to create a venturi effect, this significantly increases secondary air induction to re-circulate more warm air back to working level. The precise air jet allows increased mounting heights with effective air re-circulation, making the units ideal for higher factory or warehouse buildings.

2100 model



3000 model



4500 & 9000 models

Installation

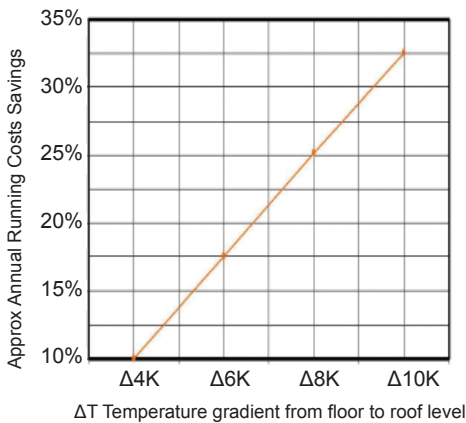
Maximizor fans are supplied ready for automatic operation with installation only requiring mounting and connection to a single phase electrical supply.

Standard units are supplied with an integral thermostat to operate the fans as soon as the roof space temperature rises.

For frost protection applications units are supplied without thermostats to be linked to frost protection controls.

The adjustable outlet blades allow air direction and terminal velocity to be set to suit the application and mounting height.

Potential savings of reducing excess stratification



For effective de-stratification, sufficient fans must be installed to re-cycle heat from the full roof area.

Design Data

Select the Maximizor unit to suit the mounting height required, ideally the units should be installed approximately 1 metre below the apex.

For 2100 or 3000 models required calculate the volume of the building and multiply by two to determine the amount of air that needs to be re-circulated for effective de-stratification. Divide by the primary air volume of the unit to determine the number of units required.

For 4500 & 9000 models use the formula below:

$$N = \frac{V \times 2}{V_p \times F}$$

N = number of units required

V = volume of building

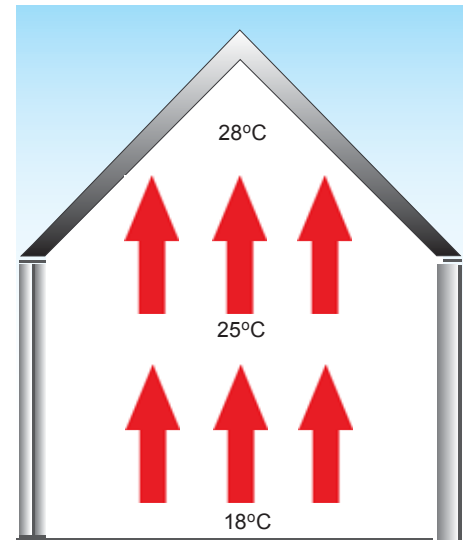
V_p = primary air volume of unit

F = induction factor

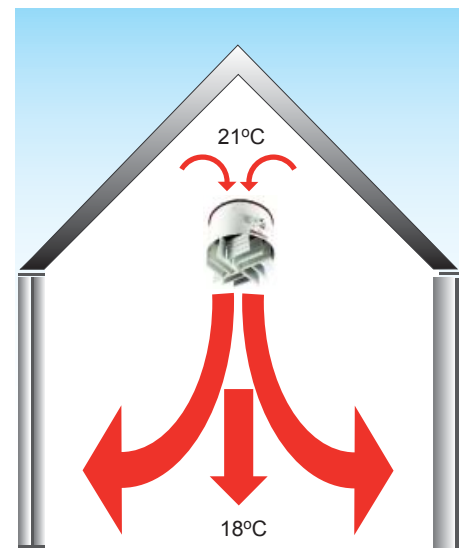
Induction Factor

| 4500 Series | | | | |
|----------------------------|-----|------|------|-------|
| Approx mounting height (m) | 5 | 6 | 7-9 | 11-16 |
| Induction factor 'F' | 1.3 | 1.35 | 1.4 | 1.5 |
| 9000 Series | | | | |
| Approx mounting height (m) | | 6-8 | 9-11 | 12-23 |
| Induction factor 'F' | | 1.35 | 1.4 | 1.5 |

Benefits



Heat rises resulting in poor distribution, increased heat loss and running costs



Maximizor units return heat to the working zone for improved comfort and reduced running costs.

Performance Data

| Louvre setting angle I° | Primary air volume V _{prim} m ³ /h | | | Mounting height to floor H (m) | | | Effective area covered A x A (m) | | |
|-------------------------|---|------|------|-----------------------------------|------|------|-------------------------------------|------|------|
| | 3000 | 4500 | 9000 | 3000 | 4500 | 9000 | 3000 | 4500 | 9000 |
| 0° | 3000 | 4400 | 8840 | 12.0 | 19.5 | 27.0 | 3.0 | 4.0 | 6.0 |
| 15° | 2900 | 4300 | 8620 | 6.5 | 10.5 | 13.5 | 5.0 | 6.0 | 9.0 |
| 30° | | 4150 | 8400 | 5.5 | 9.0 | 11.0 | 8.0 | 13.0 | 19.0 |
| 45° | | 4000 | 8180 | 4.5 | 7.0 | 8.5 | 10.0 | 17.0 | 25.0 |
| 60° | | 3800 | 7960 | 3.5 | 5.5 | 6.0 | 11.0 | 19.0 | 29.0 |
| 75° | | 3600 | 7740 | 3.0 | 4.0 | 4.0 | 11.0 | 19.8 | 29.0 |

TECHNICAL DATA

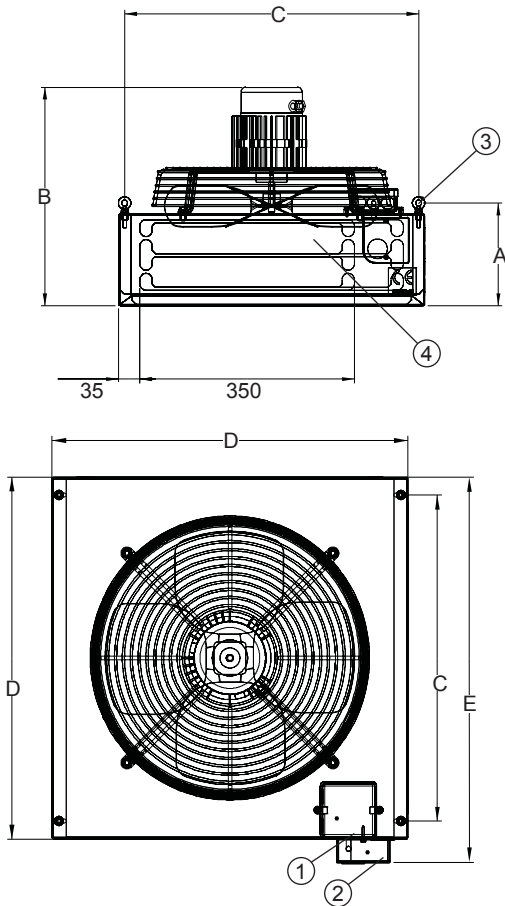
| Model | | 2100 | 3000 | 4500 | 9000 |
|-----------------------------------|-------------------|--------------|------|------|------|
| Primary air volume | m ³ /h | 2100 | 3000 | 4440 | 8840 |
| Electrical rating | | 230V 1N 50Hz | | | |
| Current rating | A | 0.5 | 1.0 | 1.2 | 2.1 |
| Absorbed power | kW | 0.12 | 0.16 | 0.25 | 0.41 |
| Sound pressure level ¹ | dB(A) | 44 | 51 | 52 | 62 |
| Maximum mounting height | m | 4 | 10 | 17 | 23 |
| Minimum mounting height | m | 2.5 | 3 | 5 | 6 |
| Net weight | kg | 10 | 16.5 | 16 | 27 |

¹ Distance of 5.0 metres, Q = 1, A = 160m²

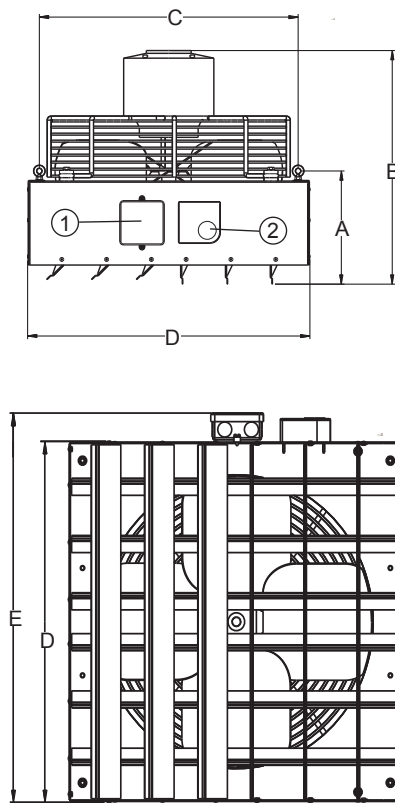
DIMENSIONS

| Model | | 2100 | 3000 | 4500 | 9000 |
|-------------------|----------|------|------|------|------|
| Suspension height | A | 167 | 220 | 580 | 645 |
| Overall height | B | 357 | 417 | 560 | 635 |
| Suspension points | position | C | 480 | 465 | 495 |
| | qty | | 4 | 4 | 3 |
| Body diameter | OD | D | 504 | 475 | 639 |
| Overall diameter | E | 534 | - | 515 | 665 |

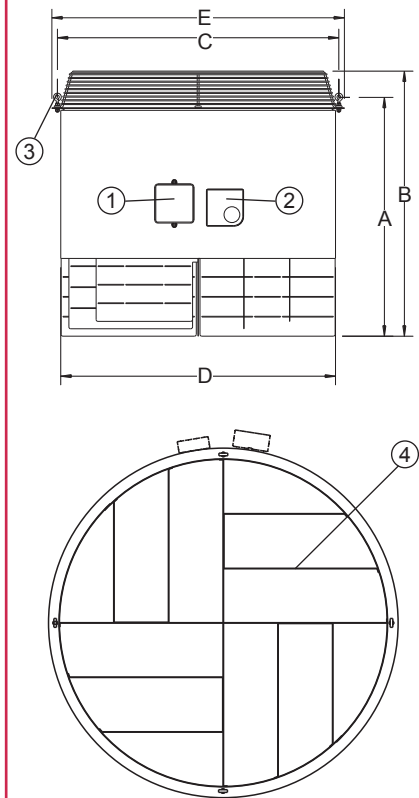
2100 Model



3000 Model



4500 & 9000 Model



Note : 1. Electric connections. 2. Thermostat. 3. Suspension points. (model 2100 & 3000 x4 ø10mm, model 4500 x3 at ø8mm, model 9000 x4 at ø8mm). 4. Adjustable Louvres.



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