

Reznor Forced Air Destratification Fans



Agenda

- Why Building Destratification?
- Current Reznor Solutions
- HuracanTM Forced Air Destratification Fans Introduction
 - Product Offering
 - Product Specifications & Dimensions
 - Selection and Sizing
 - Controls
 - Installation
 - Unique Features
 - Ideal Applications
 - Market Size
 - Literature Availability
 - Product Availability
 - ACE Setup



HEAT RISES & COLD FALLS



Heat Rises Away from Occupancy Zone

Approximately **1°F** per **3** feet 10°F at 30 ft ceiling height 20°F at 60 ft ceiling height



Inefficient Use of Heat

Up to 50% increase in heating costs

Uncomfortable occupants



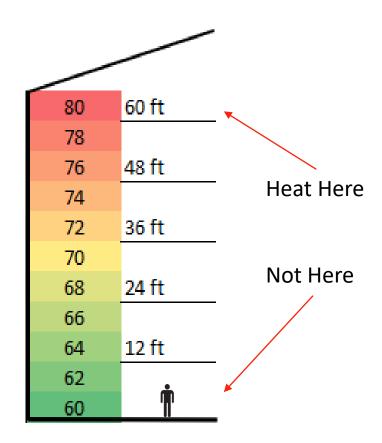
Product Safety Concerns

Temperature sensitive products at **unsafe** temperatures



Personnel Safety Concerns

Potential **condensation** at cold surfaces dripping to create slippery floor



EXISTING REZNOR SOLUTIONS

Current Solutions

- 1. Louvers On Unit Heaters
- 2. Downturn Nozzles On Unit Heaters
- 3. Gas-fired Unit Heater Fan On/Off Controls Scheme Using 2 Stage Thermostat
- 4. LDAP Unit Heater
 - Large & Unique Downflow Unit Heater That Is Mounted Near Ceiling
 - 2. Destratification Control Using Internal Thermostat



IMPROVED REZNOR SOLUTION



Operation

- 1. Typically Mounted Just Below Ceiling
- 2. Pushes Warm/Hot Humid Air From Ceiling Down To Floor
- 3. Pushes Cool/Dry Air Upwards Forcing Mingling
- 4. Repeating Until Temperatures Are Equal Throughout Building Height











PRODUCT OFFERING

- 4 Sizes
 - H25: Max 25 ft Ceiling Height
 - H35: Max 35 ft Ceiling Height
 - H50: Max 50 ft Ceiling Height
 - H60: Max 60 ft Ceiling Height
- 5 Voltage Option (V/Phase)
 - 120/1
 - 208/1
 - 230/1
 - 240/1
 - 277/1
- Single Unit with All 3 **Voltage Capabilities**

 12 Varian 	ts Total
-------------------------------	----------

SKU	Description	Size	Voltage
H0001001	H25 AK1 120/1/60	25	120/1/60
H0001002	H35 AK1 120/1/60	35	120/1/60
H0001003	H50 AK1 120/1/60	50	120/1/60
H0001004	H60 AK1 120/1/60	60	120/1/60
H0001005	H25 AK4 208-230/1/60	25	208-230/1/60
H0001006	H35 AK4 208-230/1/60	35	208-230/1/60
H0001007	H50 AK4 208-230/1/60	50	208-230/1/60
H0001008	H60 AK4 208-230/1/60	60	208-230/1/60
H0001009	H25 AK4 277/1/60	25	277/1/60
H0001010	H35 AK4 277/1/60	35	277/1/60
H0001011	H50 AK4 277/1/60	50	277/1/60
H0001012	H60 AK4 277/1/60	60	277/1/60



DIMENSIONS

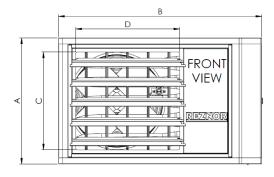
Table 2. Unit Mounting Height and Airflow								
Model	Mounting H	eight (Feet)	Nominal Airflow Rate	Nominal Area	Airflow Volume			
Model	Minimum*	Maximum	(CFM)	(Square Feet)	(Cubic Feet)			
H25	10	25	600	1000	25,000			
H35	18	35	1000	1500	52,500			
H50	25	50	1500	1500	75,000			
H60	30	60	2000	2000	120,000			

Dimensions

Table 3. Dimensions							
Model	Height	Width	Depth				
Model	Inches (mm)						
H25	14 (356)						
H35	17 (432)	27 (686)	12 (305)				
H50, H60	25 (635)						

Weights

Table 4. Weights							
Model							
H25	H35	H50	H60				
Pounds (kg)							
22 (10)	28 (13)	38 (18)	43 (20)				



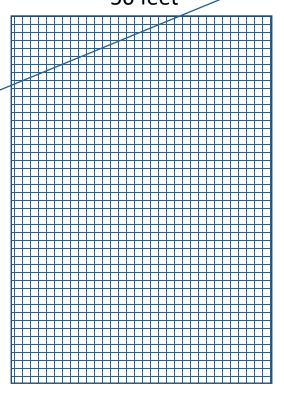
Selection & Sizing

Selection Recommendation

- 1. Size of Model Based on Ceiling Height
 - **1. H35** (18-35 ft range)
- 2. Fan Quantity Based on:
 - 1. Floor Area
 - 1. Calculate floor area = 50 x 70 = 3,500 square feet
 - 2. 3,500/1,500 = 2.33 fans = 3 fans
 - 2. Air Volume
 - 1. Use if lower than max ceiling height installation
 - 2. Calculate volume = $50 \times 70 \times 30 = 105,000$ cubic feet
 - 3. 105,000/52,500 = 2.0 Fans
- 3. Fans sized for 1-1.3 air turns/hour
 - 1. Ideal for Heating
- 4. Up to 2x Heating CFM if Cooling is Primary Need

Table 2. Unit Mounting Height and Airflow								
Model	Mounting Height (Feet) Nominal Airflow Rate		Nominal Area	Airflow Volume				
Model	Minimum*	Maximum	(CFM)	(Square Feet)	(Cubic Feet)			
H25	10	25	600	1000	25,000			
H35	18	35	1000	1500	52,500			
H50	25	50	1500	1500	75,000			
H60	30	60	2000	2000	120,000			

50 feet



70 Feet

30 feet

tall

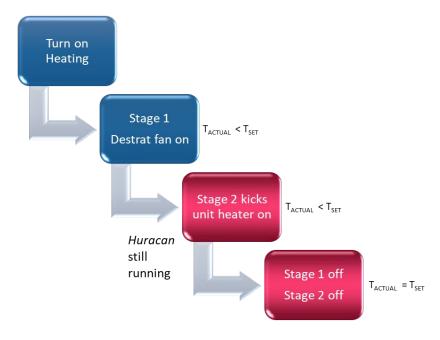
ceiling

CONTROLS

Control Options:

- On/Off Switch
- Wall Thermostat
- Unit Mounted Thermostat
 - Like LDAP
- 2 Stage T-stat Control With Unit Heater
- Multi-unit Control
 - Up To 5 Units
- BACnet Control

Staged Control Flowchart



INSTALLATION

7-position Hanger

- Enables 3-Dimensional Airflow Direction
 - Combined with Louvers on Face
- Optimized Air Movement for Best Destratification and Room Equilibration
- Simple Adjustment
 - Loosen center bolt
 - Remove 2 outer bolts
 - Rotate to position
 - Add and tighten all bolts
- Fully supported during adjustment





UNIQUE FEATURES/BENEFITS

- 1. Appliance Grade Appearance
- Many Controls Options to Optimize Ease & Effectiveness
- 3. Directed Airflow Enhances Building
- 4. Efficiency/Comfort/Usability
- 5. Multi-voltage Units Reduced SKUs
- Common Parts with Reznor Unit Heaters
 Minimizes Repair Part Complexity







IDEAL APPLICATIONS

Can be Used in ANY Space up to Maximum Ceiling Height

Ideal Applications:

- 1. Space/Ceiling Incompatible with HVLS Fan
- 2. Small Spaces
- 3. Spaces Requiring Directed Airflow
 - 1. Uniquely Shaped Spaces
 - 2. Racking or Shelving
 - 3. Partial Walls













Product Availability & Lead-time

Normal Operating Lead-time: 2-3 weeks





Technical Literature Availability

- Technical Specification
- Installation, Operation and Maintenance Manual
 - English, French
- Replacement Parts List



TECHNICAL SPECIFICATIONS

REZNOR®



Forced Air Destratification Fans



commercial and industrial spaces up to 60 feet in height. Huracan fans move warm air from the upper reaches of the space back to the floor

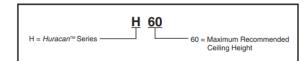
amount and cos safety by elimina heat already pro and puddles on eliminated when near the floor. Hu a consistent ve days during spri enable directed

> Reznor Huraca compliment any coated, scratchcorners and edg installer safety w physically match heating products the gas, hydronic control. Every Hu reliability that Re

FEATURES and BENEFITS

- Reduces heat load and building energy efficiency by distributing existing space heat to all levels including the floor that is occupied
- Provide cooling air movement improving occupant comfort
- Suitable for use in spaces with 10 to 60 feet of height to effectively drive air to the floor
- Available in 4 sizes to optimize space performance and
- Available in 5 common lighting voltage 277V for ease in installation and redu
- 230/1 and 240/1 voltages to simplify
- Easy hanging using provided brackets threaded downrods
- Hard-mounting for improved safety cohung models
- Integrated louvers to direct air to impre
- Directional hanging brackets add multi direction control to optimize space air

Models available that work interchange MODEL IDENTIFICATION CODE



External 24V control wiring terminal str TECHNICAL DATA

REZNOR

Révision: H-IOM-FR (01-23) 1042429-0

Remplace: - (Version originale)

VENTILATEUR DE DÉSTRATIFICATION INSTALLATION, FONCTIONNEMENT ET ENTRETIEN

MODÈLES DE LA SÉRIE HURACAN™ H25, H35, H50 ET H60



TABLE DES MATIÈRES

RENSEIGNEMENTS GENERAUX			 	 	 	 	 	
Références								:
Renseignements importants sur la sécurité .								2
Certification						 		2
Garantie				 		 	 	2
Emplacement de l'unité								:
Dimensions						 		:
Poids							 	:
INSTALLATION			 	 	 	 	 	4
Déballage et inspection								4
Liste de contrôle avant l'installation								4
Suspension d'unité								4
Connections electriques						 		!
CONTRÔLES			 	 	 	 	 	(
Commutateur de déconnexion			 	 	 	 	 	(
Thermostat et interrupteur MARCHE/ARRÊT	fournis si	ur place .						(
Contrôle de plusieurs ventilateurs						 		(
FONCTIONNEMENT			 	 	 	 	 	(
Liste de vérification avant le démarrage			 	 	 	 	 	(
Démarrage								(
ENTRETIEN			 	 	 	 	 	(
Liste de vérification d'entretien						 		7
Procédures d'entretien								1
Remplacement des composants électrique	es					 		:
Maintenance du ventilateur et du moteur.			 		 	 	 	7
DÉPANNAGE			 	 	 	 	 	. 1

Huracan Unit Size									
25	35	50	60						
25	35	50	60						
10	18	25	30						
	25	25 35 25 35	25 35 50 25 35 50						

REZNOR

Revision: H-RPL (02-23) 1042428-A Supersedes: H-RPL (01-23) 1042428-0 6.7

000

0,000

1.3 0.8 0.0

REPLACEMENT PARTS FOR DESTRATIFICATION FAN

HURACAN™ SERIES MODELS H25, H35, H50, AND H60



TABLE OF CONTENTS

REFERENCES2	
SERIAL NUMBER	
CABINET COMPONENTS3	
FAN AND MOTOR ASSEMBLY COMPONENTS4	
CONTROL BOX ASSEMBLY COMPONENTS5	
ACCESSORIES/OPTIONS6	

IMPORTANT

- plete model and serial number so that any specification change can be considered for parts repla
- In keeping with our policy of continuous product improvement, we reserve the right to alter any information shown here Specifications are subject to change without notice.
- 3. We reserve the right to substitute functional replacement
- 4. Order by Part Number (PN) not by option designation



Technical Literature Availability

- Destratification Catalog
 - Why destratification?
 - Huracan and LDAP
 - Tech Data
 - Dimension/Weight
 - Installation



Consumer Literature Availability

- Huracan Flyer
 - Optimizes **Building Energy** Efficiency
 - Especially when bundled with Unit Heaters





H MODEL TECHNICAL DATA

BOTH UNITS ON FOR MORE HEAT

Parameter		luracan	uracan Unit Size			
Parameter	25	35	50	60		
Maximum ceiling height recommendation (feet)	25	35	50	60		
Minimum ceiling height recommendation (feet)	10	18	25	30		
Air volume (cfm)	650	1100	1500	2000		
Air volume (meters ³ /min)	18.4	31.2	42.5	56.7		
Recommended nominal floor area/fan (feet²)	1000	1500	1500	2000		
Recommended air volume/fan (feet³)	25,000	52,500	75,000	120,00		
Discharge air opening area (feet²)	0.967	1.247	2.382	2.382		
Discharge air opening area (meters ²)	0.090	0.116	0.221	0.221		
Output velocity (fpm)	672	882	630	840		
Output velocity (meters/minute)	205	269	192	256		
Fan diameter (inches)	10	12	16	16		
Fan motor size (horsepower)	0.03	0.06	1/15	1/6		

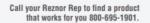


- 55,000 310,000 BTUH
- · 91-93% thermal efficiency
- Separated combustion
- · Flow-optimized secondary heat exchanger for peak performance



- 82-83% thermal efficiency 30,000-400,000 BTUH
- . UDZ sizes 30-400 certified for commercial industrial applications
- . UDZ sizes 30-125 approved for use in residential garages and workshops

The Huracan units can be controlled in sync with the unit heaters to give maximum building efficiency. First is a call for heat turning on the Huracan. When the space cools such that the second stage comes on, it activates the Unit heater as well. Huracan fans work where large fans cannot: narrow aisles, spaces with lighting or signage hanging down, and smaller spaces.



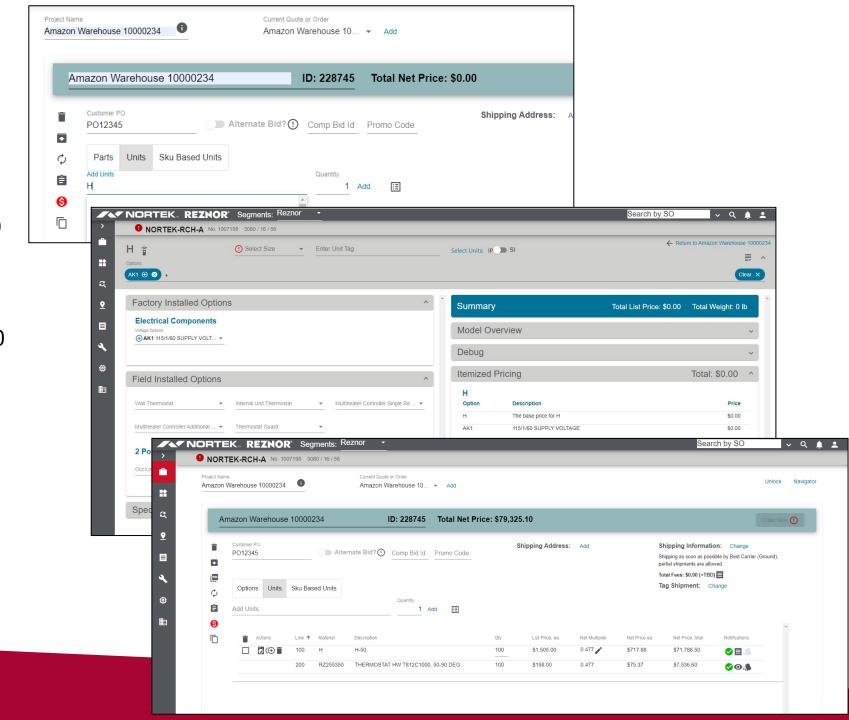
REZNOR

Visit reznorhyac.com for more information on the Reznor product line.

TIME TESTED. CONTRACTOR APPROVED.

ACE Setup

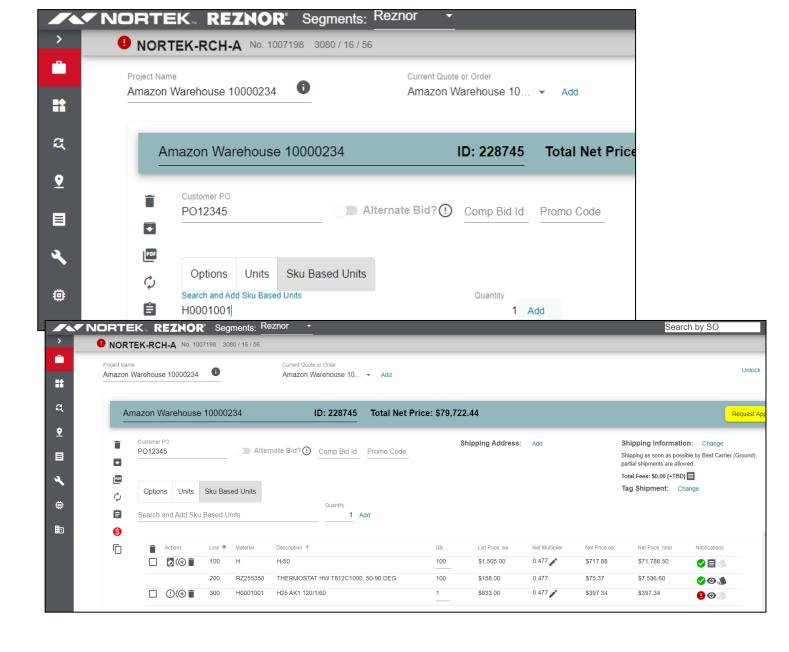
- Select H-Series In Units
 - Select Size (required)
 - Select Voltage (required)
 - AK1 auto-populates (115/1)
 - AK4 = 277/1
 - AK19 =208, 230 or 240 volt
 - Select Control Options
 - CL1 auto-populates
 - None are required in any fields
- Finish the quote as normal



ACE Setup

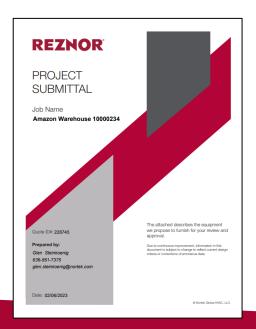
 SKU-unit selection is an option

SKU	Description	Size	Voltage
H0001001	H25 AK1 120/1/60	25	120/1/60
H0001002	H35 AK1 120/1/60	35	120/1/60
H0001003	H50 AK1 120/1/60	50	120/1/60
H0001004	H60 AK1 120/1/60	60	120/1/60
H0001005	H25 AK4 208-230/1/60	25	208-230/1/60
H0001006	H35 AK4 208-230/1/60	35	208-230/1/60
H0001007	H50 AK4 208-230/1/60	50	208-230/1/60
H0001008	H60 AK4 208-230/1/60	60	208-230/1/60
H0001009	H25 AK4 277/1/60	25	277/1/60
H0001010	H35 AK4 277/1/60	35	277/1/60
H0001011	H50 AK4 277/1/60	50	277/1/60
H0001012	H60 AK4 277/1/60	60	277/1/60



Job Submittal

- Typical Contents
 - Technical Overview
 - Options
 - Dimensions
 - Technical Data



REZNOR

TECHNICAL SPECIFICATIONS

REZNOR®

@Huracān. Series

Forced Air Destratification Fans



move warm air from the upper reaches of the space back to the fi using minimal energy improving overall building energy efficiency a occupant comfort. During heating season, this action minimizes t

FEATURES and BENEFITS

- Suitable for use in spaces with 10 to 60 feet of height to effectively drive air to the floor Available in 4 sizes to optimize sp

- Directional hanging brackets add multi-dimensional air direction control to optimize space air movement
- External 24V control wiring terminal strip for quick connection to thermostat
- Integrated control opportunities with Reznor unit heate to optimize building efficiency

OPTIONAL FEATURES

- Multi-unit controls for zoning up to 5 units

DIMENSIONS

	Height Width		
Model		Inches (mm)	
H25	14 (356)		
H35	17 (432)	27 (686)	12 (305)
H50, H60	25 (635)		

WEIGHTS

Model					
H25	H25 H35 H50 H60		H60		
Pounds (kg)					
22 (10)	28 (13)	38 (18)	43 (20)		

P:Amazon Warehouse 100 | Q:228745 | D:H-50

REZNOR

Included Options for H-50

AK4 277/1/60 supply voltage



CL1 Single-stage thermostat 40-80F, 24 volt

IT13 INTERNAL TSTAT KIT, FIELD INST

REZNOR

TECHNICAL DATA

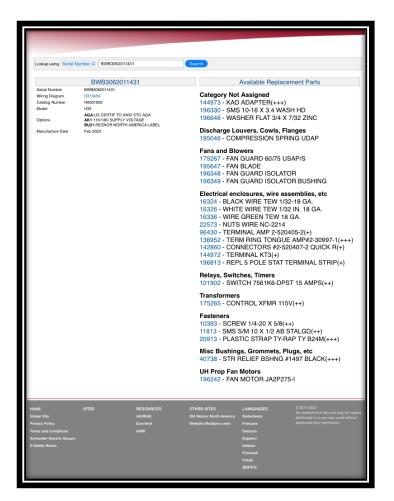
Parameter	Huracan Unit Size			
Parameter	25	35	50	60
Maximum ceiling height recommendation (feet)	25	35	50	60
Minimum ceiling height recommendation (feet)	10	18	25	30
Air volume (cfm)	650	1100	1500	2000
Air volume (meters3/min)	18.4	31.2	42.5	56.7
Recommended nominal floor area/fan (feet2)	1000	1500	1500	2000
Recommended air volume/fan (feet2)	25,000	52,500	75,000	120,000
Discharge air opening area (feet2)	0.967	1.247	2.382	2.382
Discharge air opening area (meters2)	0.090	0.116	0.221	0.221
Output velocity (fpm)	672	882	630	840
Output velocity (meters/minute)	205	269	192	256
Fan diameter (inches)	10	12	16	16
Fan motor size (horsepower)	0.03	0.06	1/15	1/6
Estimated Sound level (dba @ max. recommended height)	36	36	49	41
Full load am	ps			
Voltage/Phase/HZ				
115/1/60	0.5	1.0	0.9	1.3
000/4/00	0.0	0.4	0.4	0.0

REZNOR®

Product Tracking



Rating Plate Found on top of unit



QR Code Scan Results in Serial Number Lookup



Questions?

