VIVIDAIR™
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Z-CHILL™
FAN & DIFFUSER SYSTEM

Catalog Number:	
Notes:	
Type of Fan:	

FEATURES & SPECIFICATIONS

Z-Chill™ HVTA™ Fan & Diffuser System Intended Use: High Volume Tempered Air is a breakthrough, patented, necessary improvment of the HVLS fan. Designed to effectively spot cool the unconditioned space within a facility by distributing tempered air and providing companies an efficient and economical cooling solution to keep business operating at their highest level. Applications include, transportation maintenance, aviation hangars, agriculture, education, commercial and retail spaces, government, manufacturing, recreational, warehousing and other indoor spaces where comfort and energy are required with minimum 20' ceiling.

NUMBER & TYPE OF BLADES: (5) patented Z-Tech™ blades with 20° plus pitch.

BLADE CONSTRUCTION: Two-piece extruded anodized aluminum blade with ABS leading edge and end caps with UV inhibitors. Frame is powder coated steel with a cast aluminum hub. Leading edge blade is riveted to the primary blade with stainless steel rivets.

DIFFUSER CONSTRUCTION: Constructed of cold rolled steel and protected with powder coated paint and feature a closed cell thermal insulation design to prevent/minimize condensation on the outside of the entire unit. with bottom perforations to equally distribute tempered air over the blades.

ELECTRICAL (MOTOR): IP 55; 208/230/460V 3 phase. Built specifically for VividAir applications.

ELECTRICAL (CONTROLLER): Premium control with hardware flexibility, programmability, and scalability for an optimal solution. GFY Variable Frequency Drive – Nema 4X, IP66. ESFR relay ready to connect to existing fire suppression systems, integral lock out, tag out (LOTO) disconnect ships standard. ROHS compliant. Available voltages are 200-240V 1 phase, 200-240V 3 phase, 380-480V 3 phase.

INSTALLATION: Suitable for mounting by I-Beam, Top Chord angle iron, Bottom Chord angle iron. Standard mount is used for 6"-10" I-beams, XL mount is used for 12"-15" I-beams. 3 foot down tube is standard with Z-Chill system.

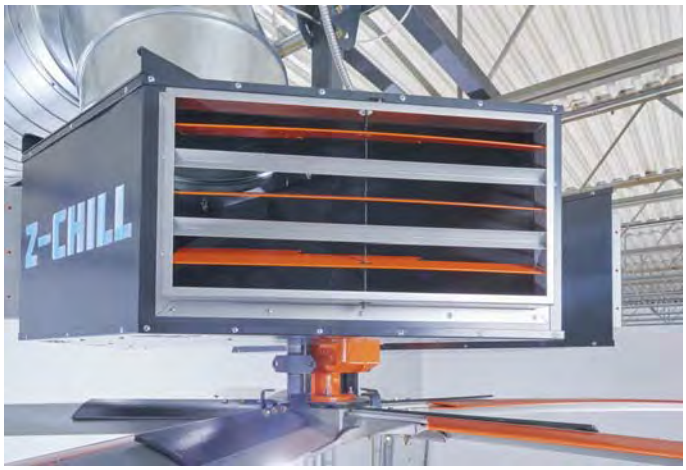
SAFETY: Z-Tech™ SS safety system includes (2) straps with a break strength of 16,000lbs each easily exceeding the break strength of the industry standard steel cable, Safety ring (1/4" powder coated steel)

DESIGNER COLOR: Optional color combinations & designs available.

OPERATING TEMPERATURES: Motor & Gearbox Class H (20°F to 140°F), 16ft Class F (20°F to 122°F); Controller (20°F to 122°F).

WARRANTY: Lifetime warranty on blades, hub and mounting system. 15-year limited warranty on motor, gearbox and controller.

CASE STUDY



Z-CHILL™ FAN & DIFFUSER SYSTEM
TECHNICAL SPECIFICATIONS

ORDERING INFORMATION

Example: GFY - Z-CHILL - 5 - 24 - NMSTD - 460 - 3 - 2 - STD - T - ABBSTD

Family	Style	Blades	Diameter	Motor	Voltage	Phase	Down Tube	Mount	Mounting Kit	Controller	Options
GFY	Z-Chill	5	16 18 20 22 24	NMSTD	460-3[1] 230-3[1] 230-1[1]	1 (Single) 3 (Three)	3 (3FT)[2]	STD[3] XL[4]	T[5]	VA	DS [6,7] RK [8] CP [9] FM [10] NAV [11]

FOOTNOTES

1) Available voltages: 3 Phase Applications: 200-240VAC | 380-480VAC; Single Phase Applications: 200-240VAC
2) 3 FT down tube ships standard with all Z-Chill orders. Longer down tubes are not available with Z-Chill equipped fans.
3) Use STD mount (6-10" beams) for optional Truss Mount and Concrete Beam Mounts.
4) XL Mount is only used for 12"-15" I-beam
5) Truss Mount requires contractor supplied 3"x3"x1/4" steel angles cut to size. See **Z-Tech™ Installation and Technical Operations Guide.**
6) Designer Series Options (refer to pages 12 & 13):
   - Option #1 - Motor and all (5) Z-Tech™ leading edges a standard RAL color. Customer logo to replace Go Fan Yourself logo on hub.
   - Option #2 - Motor and (3) Z-Tech™ leading edges one standard RAL color, (2) Z-Tech™ leading edges another standard RAL color. Customer logo to replace Go Fan Yourself hub logo.
   - Option #3 - Motor and all (5) Z-Tech™ leading edges a standard RAL color. Aluminum Blades one standard RAL color. Customer logo to replace Go Fan Yourself logo on hub.
   - Option #4 - Motor and (3) Z-Tech™ leading edges one standard RAL color, (2) Z-Tech™ leading edges another standard RAL color. Aluminum Blades one standard RAL color. Customer logo to replace Go Fan Yourself hub logo.
   - Option #5 - Custom - Motor MUST be a standard RAL color. Z-Tech™ leading edges and aluminum blades may be a custom color. Customer logo to replace Go Fan Yourself hub logo.
7) Designer Series fans have custom lead times. Consult the factory to receive a lead-time quote for your desired option.
8) Keypad mounts inside a VividAir custom mounting bracket. Max. cable (568B) length is 300 FT, installing contractor supplied.
9) Consult the factory. GFY control's protocol compatibility adapts to the customers existing building management software. Not all programming options may be available on every control.
10) Optional fan mounted VFD. Remote Keypad Kit ships automatically. Max. cable (568B) length is 300 FT, installing contractor supplied.
11) VividAir Navigator Control System. HMI based control system offering full control with just a few clicks.

Fan Diameter	16FT	18FT	20FT	22FT	24FT
Fan Weight with Z-Chill	495 lbs.	525 lbs.	555 lbs.	565 lbs.	575 lbs.
Nominal Motor	2 HP	2 HP	2 HP	2 HP	2 HP
Nominal RPM	76	76	66	56	56
Max . Destratfication Coverage	160 FT	180 FT	200 FT	220 FT	240 FT
Max. Cooling Diameter	140 FT	170 FT	180 FT	165 FT	180 FT
Nominal Amperage (240V Single Phase)	240v / 11.0	240v / 14.0	240v / 14.0	240v / 14.0	240v / 14.0
Nominal Amperage (208v)	5.8	7.5	7.5	7.5	7.5
Nominal Amperage (230v)	5.3	7.0	7.0	7.0	7.0
Nominal Amperage (460v)	2.65	3.5	3.5	3.5	3.5

NOTE:

If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.

Number & Type of Blades: 5 patented Z-Tech™ blades with 20° plus pitch

Blade Construction: Extruded anodized aluminum blade with ABS leading edge and end caps with UV inhibitors

Diffuser Construction: Constructed of cold rolled steel and protected with powder coated paint and feature a closed cell thermal insulation designed to prevent/minimize condensation on the outside of the entire unit.

Standard or Optional XL Mount: Universal I-beam clamps; Down tubes 3ft in length only.

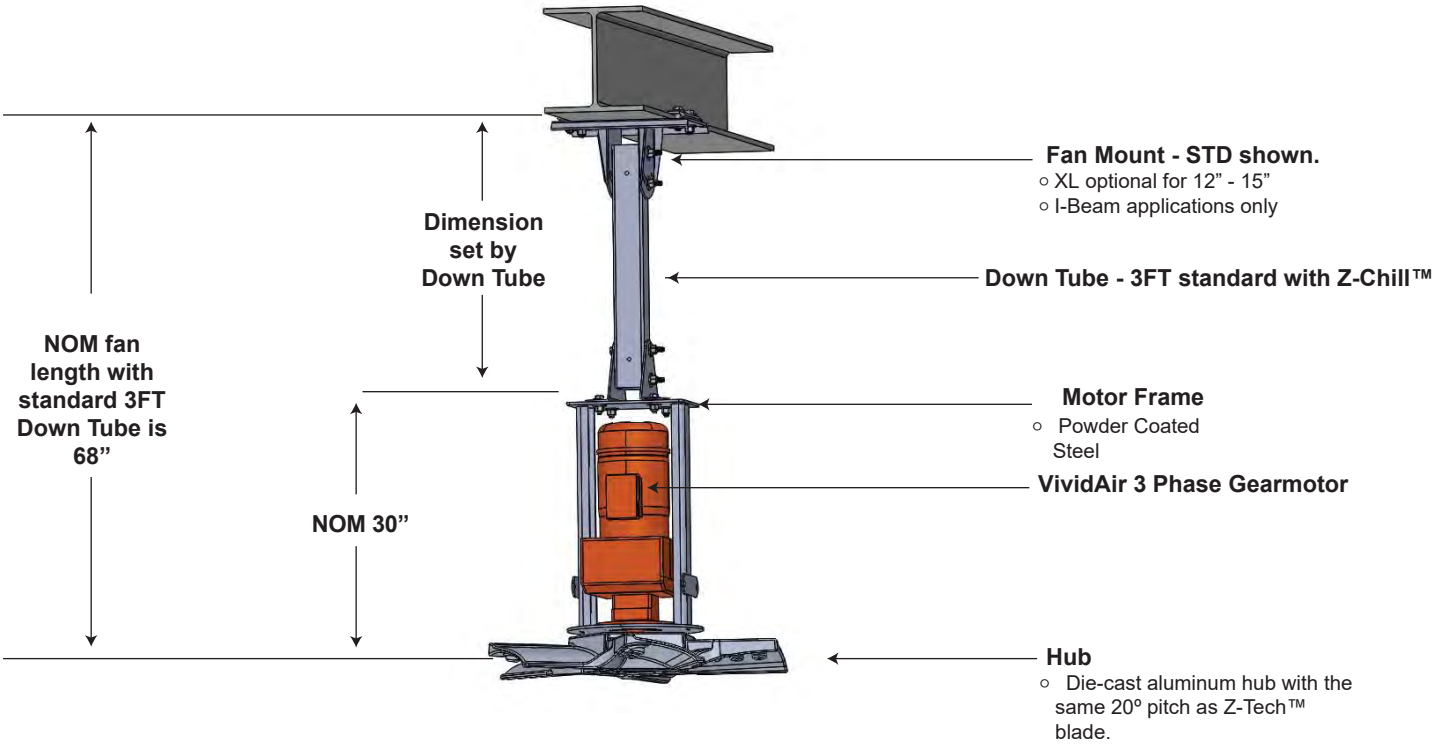
VividAir VFD Controller: NEMA 4X, IP66. Premium motor control w/ hardware flexibility, programmability & scalability for an optional solution. ROHS compliant, ESFR relay ready, integral LOTO disconnect

Safety Features: Z-Tech™ SS safety system (4 straps with a break strength of 16,000lbs each), Safety ring (1/4" powder coated steel)

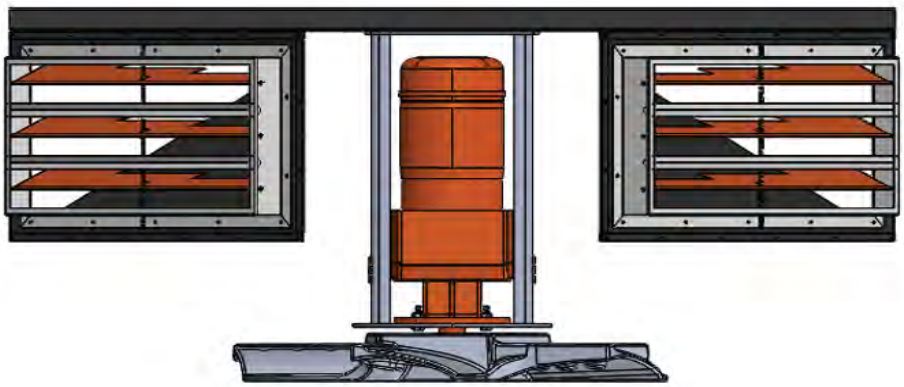
Limited Warranty: 15-year: motor, gearbox, and control panel
Lifetime: blades, hub, and mounting system. HVAC components are not warrantied by VividAir. Refer to **Installation & Technical Operations Guide** for warranty specifications/exclusion. All warranty for HVAC components by others.

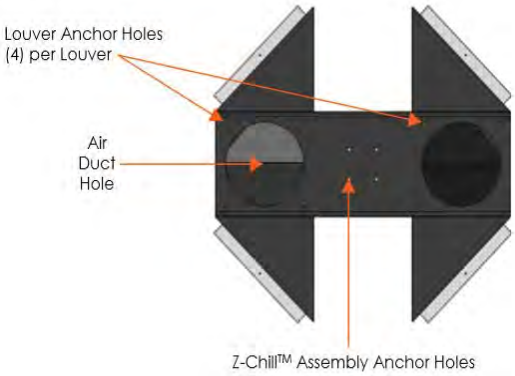
Z-CHILL™ FAN & DIFFUSER SYSTEM

COMPONENT DESCRIPTIONS
NOMINAL DIMENSIONS
MOUNTING/MOTOR DETAIL



PATENTED Z-CHILL™ DIFFUSER





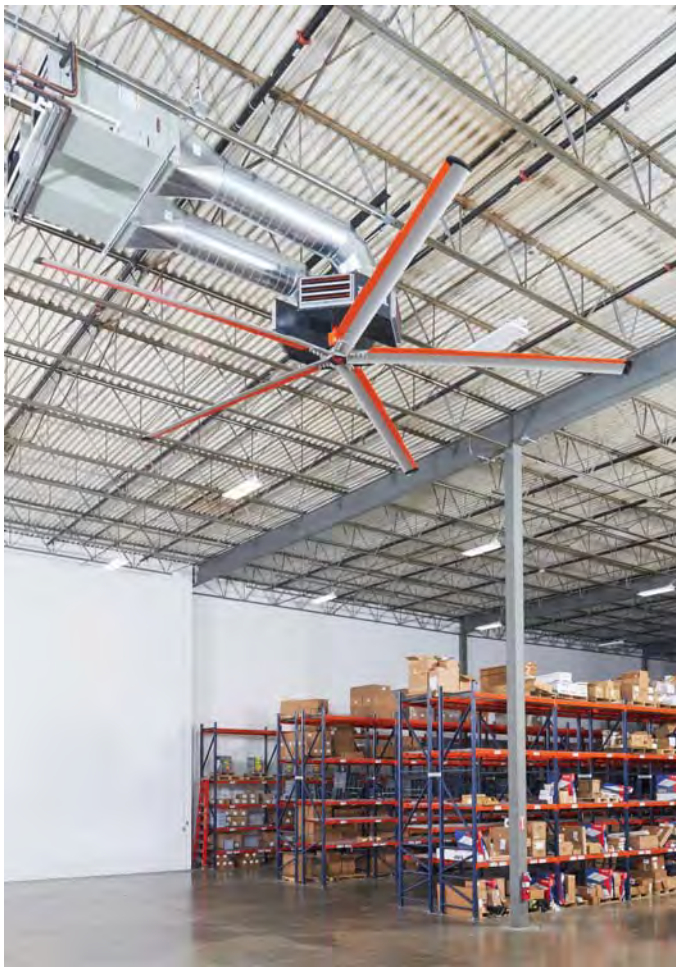
- Dual Z-Chill™ diffusers are specifically designed to equally distribute both filtered, conditioned and or forced heat into the designed air distribution pattern of the Z-Tech™ (16 - 24ft) fans. Includes a closed cell thermal insulation design to prevent/minimize condensation on the outside of the entire unit.
- Z-Chill™ diffusers incorporate stepped Z-Tech™ internal prisms to equally split the incoming conditioned air and the adjustable stepped Z-Tech™ vented louvers are designed to equally distribute the air across the entire circumference of the 5-blade Z-Tech™ stepped fan blade design. The diffusers include bottom perforations that are designed to disperse air spread in the center.
- The system is direct mounted between the down tube and weldment and motor/hub mounting yoke hardware and requires no additional support. The incoming sprial insulated ducting (provided by others) will need support prior to final connections. Dual Z-Tech™ diffusers feature 16-inch round HVAC ducting receptacles. Receptacles are rated for 5-10 ton HVAC capacity each (supplied by others). It is recommended all attached spiral inlet ducting be wrapped and insulated.
- Z-Chill™ works the same with tempered forced air (HVAC systems) for both cooling and heating. Roof top (industrial & commercial) units as well as split systems incorporate energy efficient heat pumps that can disperse the heat through the Z-Chill™ dual diffusers.
- True reversibility is achieved because of the symmetrical Z-Tech™ blades including the engineered pitch, rake and cup. Applying forced heat and stratifying several thousand square feet without creating uncomfortable wind chills make this superior patented technology the only chameleon to properly solve conditioned air movement in large spaces at a low operating cost.

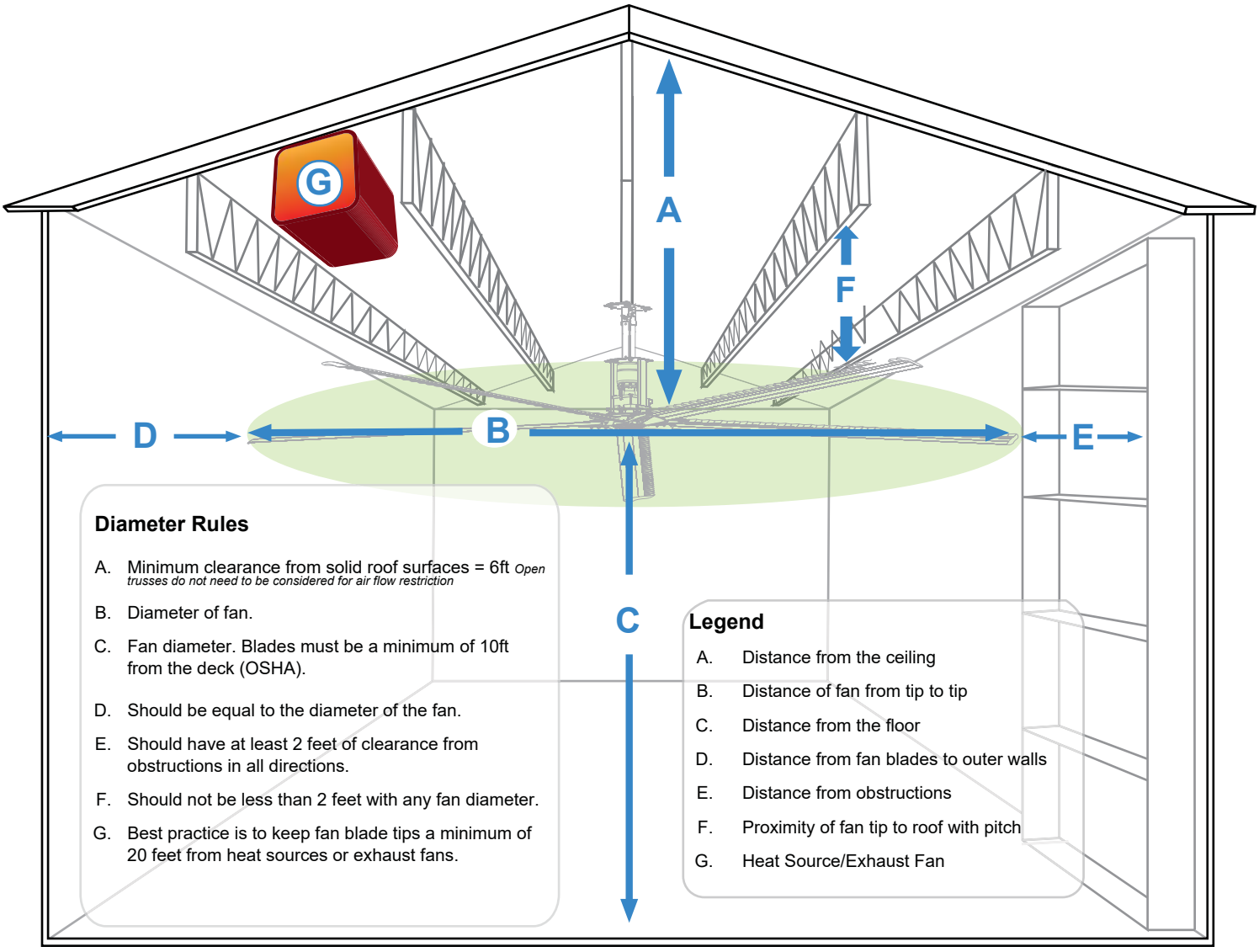
FLEXIBLE CLOSED CELL SHEET INSULATION

- INSUL-SHEET® insulation is an environmentally friendly, CFC-free, flexible elastomeric thermal insulation.
- Non-porous, non-fibrous and resists mold growth. An EPA registered antimicrobial agent is incorporated into the product providing additional protection against mold, fungal and bacterial growth.
- Retards heat gain and prevent condensation or frost formation on cold equipment, tanks, vessels, ducts, or large O.D. pipes.
- Tough skin which withstands tearing, rough handling, and severe environmental conditions, and yet is quite flexible for easy installation and has superior cold weather flexibility.
- K-Flex USA elastomeric insulation products are GREENGUARD® certified as low VOC materials, meeting the requirements of the "Children and Schools" classification, the most stringent requirements. Additionally, all K-Flex USA elastomeric insulation products are GREENGUARD® listed for mold resistance and meet the "mold resistant" criteria.
- INSUL-SHEET® thickness has been calculated to control condensation on cold surfaces.
- The closed-cell structure and unique formulation of INSUL-SHEET® effectively retards the flow of moisture vapor, and is considered a low transmittance vapor retarder.
- INSUL-SHEET® insulation in thicknesses of 1 1/2" (38 mm) and below has a flame spread rating of 25 or less and a smoke development rating of 50 or less as tested by ASTM E 84 Method of Testing entitled: "Surface Burning Characteristics of Building Materials."
- Acceptable for use in duct/plenum applications meeting the requirements of NFPA 90A
- MADE IN USA

SPECIFICATION COMPLIANCE

- ASTM C 534 Type 2 (Sheet), Grade 1 ASTM D 1056-00-2C1 New York City MEA 186-86-M Vol. IV USDA Requirements STC = 17 per ASTM E 90
- UL 94-5V Flammability Classification (Recognition No. E300774) ASTM E 84 1 1/2" 25/50-tested according to UL 723 and NFPA 255 Complies with requirements of CAN/ULC S102-03
- NFPA No. 101 Class A Rating Meets requirements of NFPA 90A/B Sect. 2.3.3 for Supplementary Materials for Air Distribution Systems
- Meets requirements of UL 181 sections 11.0 and 16.0 (Mold Growth/Air Erosion)
- Meets requirements of ASTM C 411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation) MIL-P-15280, Form S (Sheet)
- R8 Sheet meets R-value requirements of the International Energy Conservation Code for Outdoor Ductwork.



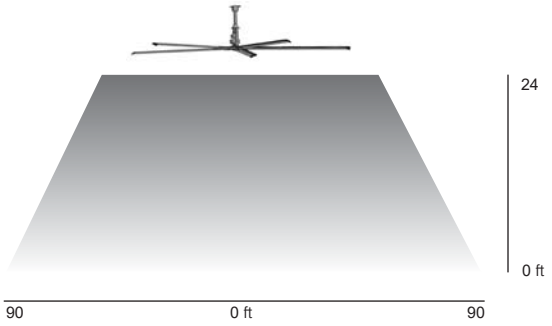


How to size a Z-Chill™ fan & diffuser system for your facility

Nominal Fan Diameter	Maximum Coverage Area (Cooling)	Maximum Coverage Area (Destratification)	Maximum Spacing Between Fans	Minimum Spacing From Wall	Clearance Needed From Ceiling	Minimum Blade Height
16 FOOT	140 FT	160 FT	125 FT	16 FT	5 FT	16 FT
18 FOOT	170 FT	180 FT	155 FT	18 FT	5 FT	18 FT
20 FOOT	180 FT	200 FT	165 FT	20 FT	5 FT	20 FT
22 FOOT	165 FT	220 FT	150 FT	22 FT	5 FT	22 FT
24 FOOT	180 FT	240 FT	165 FT	24 FT	5 FT	24 FT

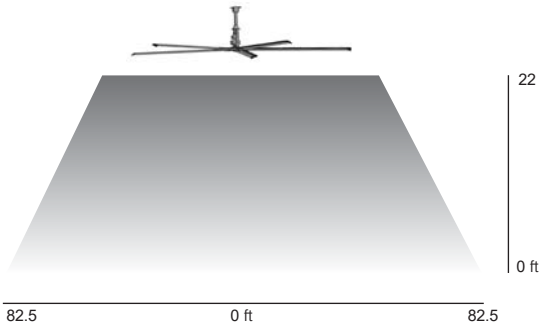
24' Diameter Fan

Number of Blades:	5 Patented Z-Tech™
Blade Pitch:	20° plus
Minimum Blade Height:	24 FT (blade from floor)
Maximum Cooling Diameter:	180 FT
Maximum Destratifiation Coverage:	240 FT
Nominal Blade Rotations Per Minute:	56 RPM
Nominal Motor:	2 HP (2.2kw)
Nominal Amps:	3.5 amps @ 460v
System Weight:	575 lbs
Maximum Mounting Distance Between Fans:	165 FT
Nominal Clearance From Solid Roof Surfaces:	6 FT



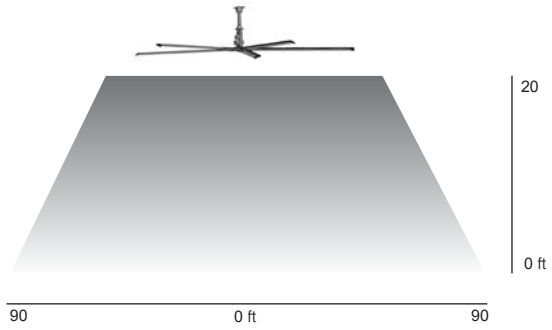
22' Diameter Fan

Number of Blades:	5 Patented Z-Tech™
Blade Pitch: Minimum	20° plus
Blade Height:	22 FT (blade from floor)
Maximum Cooling Diameter:	165 FT
Maximum Destratifiation Coverage:	220 FT
Nominal Blade Rotations Per Minute:	56 RPM
Nominal Motor:	2 HP (2.2kw)
Nominal Amps:	3.5 amps @ 460v
System Weight:	565 lbs
Maximum Mounting Distance Between Fans:	150 FT
Nominal Clearance From Solid Roof Surfaces:	6 FT



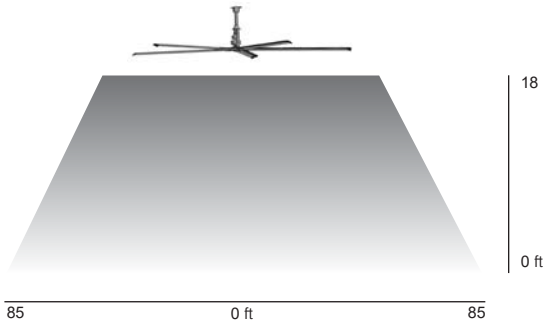
20' Diameter Fan

Number of Blades:	5 Patented Z-Tech™
Blade Pitch:	20° plus
Minimum Blade Height:	20 FT (blade from floor)
Maximum Cooling Diameter:	180 FT
Maximum Destratifiation Coverage:	200 FT
Nominal Blade Rotations Per Minute: Nominal	66 RPM
Motor:	2 HP (2.2kw)
Nominal Amps:	3.5 amps @ 460v
System Weight:	555 lbs
Maximum Mounting Distance Between Fans:	165 FT
Nominal Clearance From Solid Roof Surfaces:	6 FT



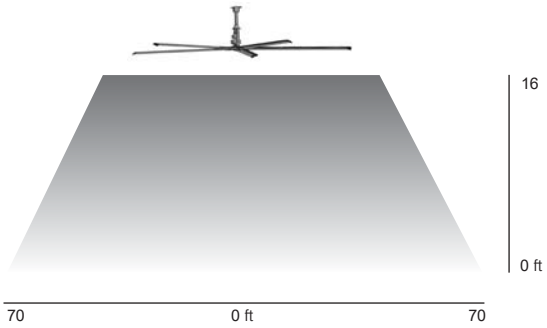
18’ Diameter Fan

Number of Blades:	5 Patented Z-Tech™
Blade Pitch:	Blades 20° plus
Minimum Blade Height:	18 FT (blade from floor)
Maximum Cooling Diameter:	170 FT
Maximum Destratifiation Coverage:	180 FT
Nominal Blade Rotations Per Minute:	76 RPM
Nominal Motor:	2 HP (2.2kw)
Nominal Amps:	3.5 amps @ 460v
System Weight:	525 lbs
Maximum Mounting Distance Between Fans:	155 FT
Nominal Clearance From Solid Roof Surfaces:	6 FT



16’ Diameter Fan

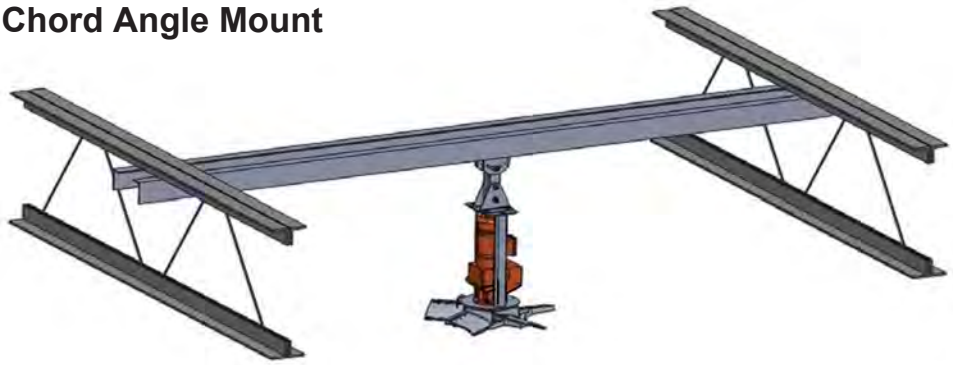
Number of Blades:	5 Patented Z-Tech™
Blade Pitch:	Blades 20° plus
Minimum Blade Height:	16 FT (blade from floor)
Maximum Cooling Diameter:	140 FT
Maximum Destratifiation Coverage:	160 FT
Nominal Blade Rotations Per Minute:	76 RPM
Nominal Motor:	2.0 HP (1.5kw)
Nominal Amps:	2.65 amps @ 460v
System Weight:	495 lbs
Maximum Mounting Distance Between Fans:	125 FT
Nominal Clearance From Solid Roof Surfaces:	6 FT



ADDITIONAL SPECIFICATIONS See VividAir FAN LOCATION GUIDELINES in this spec sheet for additional details.

1. Minimum 2 FT of clearance from obstructions.
2. Minimum 2 FT below truss with any fan diameter.
3. Should be at least 20ft away from a heat source.
4. Should be at least 20ft away from any exhaust fan(s).
5. Should be at least one fan diameter away from any wall.
6. Fan should be approximately centered between 4 sprinkler heads (observe local codes) where applicable.
7. Lights may need to be spaced 2 FT or greater away from the tip of the fan blade to prevent shadowing.

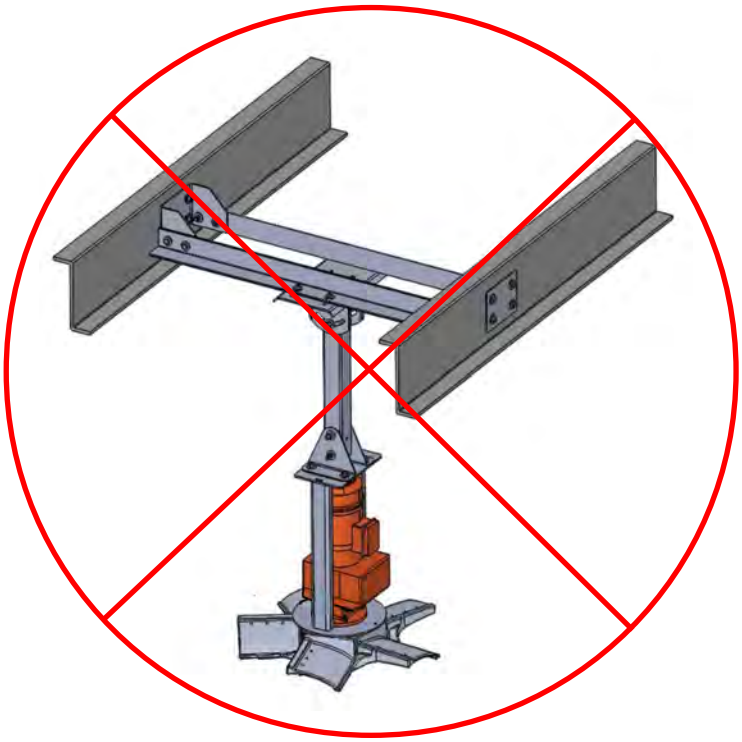
Top Chord Angle Mount



- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.
- A longer down tube will be necessary to give Z-Chill™ the required clearance for the duct work. The down tube dimension should be calculated as follows: Truss height + 2 FT
- The 3” x 3” x 1/4” steel angles must be supplied by the installing contractor. Hardware used to secure the angles to the mounting structure is not included
- If the truss span is wider than 8FT, four steel angles are required. Reference the **Installation & Technical Operations Guide** or contact VividAir for additional instructions

Bottom Chord Angle Mount

- The 3” x 3” x 1/4” steel angles must be supplied by the installing contractor. Hardware used to secure the angles to the mounting structure is not included
- If the truss span is wider than 8FT, four steel angles are required. Reference the **Installation & Technical Operations Guide** or contact VividAir for additional instructions
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.



Z-Purlin Mount is not allowed with Z-Chill™. Z-Chill™ must mount directly to the I-Beams.
If a purlin mount is required a local structural engineer must be contracted to verify mounting and roof structure is capable of supporting Z-Chill™

Concrete or Wood Beam Mount

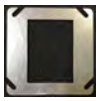
Concrete or Wood Beam Requirements

- Contact a local structural engineer for all beam mount projects. The beam will need to be calculated and the method of anchoring the brackets to the beam must be verified.
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mounting requirements.

VividAir VFD Controller
200-240V 1 Phase
200-240V 3 Phase
380-480V 3 Phase

Optional Wall Mount Keypad

Wall Mount Keypad Adapter Plate



Fan Controls

RoHS COMPLIANT

- GFY Variable Frequency Drive Enclosure - Nema 4X (IP66).
- Special Wiring (Thermostats, Fire Alarm Interface, Networking, Etc.) (Optional) Consult Factory.
- 50 / 60 Hz Operation.
- All VividAir Z-Tech™ Controls ship standard with an Early Suppresion Fast Response Relay ready to connect to existing fire suppression systems.
- VividAir Z-Tech™ Fan Controls ship standard with an integral Lock Out Tag Out Disconnect.
- All fans require their own VFD Controller but multiple fans may be controlled from a single keypad (additional wiring required)

Custom Programming
There will be a minimum charge placed on any order (this is a per order charge, not per fan) when custom programming is involved. Lead time will be increased.

Custom Programming includes:
Controlling multiple fans from a single keypad
Connecting to building management systems or other software/hardware packages
Any customer requests beyond the standard one drive controls one fan

The wall or column mount keypad option is not considered custom programming.

VIVIDAIR NAVIGATOR
FAN CONTROL SYSTEM

The best performing fan company brings you the ultimate control for your VividAir Fan system!

VividAir Navigator provides one-touch control of all your Go Fan Yourself and VividAir fans!

- All On - turns all fans on to their last requested speed and direction.
- All Off - turns all fans off.
- All Low - turns all fans on to the user defined "low" speed setting in the last direction requested.
- All Med - turns all fans on to the user defined "medium" speed setting in the last direction requested.
- All High - turns all fans on to the user defined "high" speed setting in the last direction requested.

Name your fans and name the (5) fan pages to group your fans by area.
Group your fans by performance!

- Each fan can have a unique setting for "low, medium & high" so when and "all" command is given each fan can be set to perform perfectly for its responsibility within your operations.

Installation is easy! Just daisy chain CAT6 (568B) shielded data cable from Navigator to a fan and then from fan to fan.

VividAir Navigator is powered by 100-120VAC and the wall transformer plugs into any standard outlet.
Contact your Go Fan Yourself/VividAir rep or visit www.vividairmovement.com to learn more!