

Z-TECH™ FAN

FEATURES & SPECIFICATIONS

Z-Tech™ Intended Use: Industrial high-volume, low-speed fan that is ideal for spaces in need of an energy efficient air movement solution. Applications include automotive dealerships, 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 14' ceiling height.

NUMBER & TYPE OF BLADES: (5) patent-pending 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 A356-T6. Leading edge blade is riveted to the primary blade with stainless steel rivets. Standard blade color is Safety Orange.

ELECTRICAL (MOTOR): NORD™ motor utilizes cast iron housing with a precise shaft and gear alignment that has a high load bearing capacity. Single housing block in which all bearing points are integrated. No sealing faces are subjected to torque or lateral forces. IP 55; UL 1004; 120/230/460/575v; single and three phase available.

ELECTRICAL (CONTROLLER): Premium control with hardware flexibility, programmability, and scalability for an optimal solution. ABB™ Variable Frequency Drive – Nema 4X, IP66/67. ESFR relay ready to connect to existing fire suppression systems, integral lock out, tag out (LOTO) disconnect ship standard. ROHS compliant.

INSTALLATION: Suitable for mounting by I-Beam, Top Chord angle iron, Bottom Chord angle iron, L-Bracket, Z-Purlin and Wood Beam. Standard mount is used for 6"-10" I-beams, XL mount is used for 12"-15" I-beams. 1 foot down tube is standard.

SAFETY: Safety ring (1/4" powder coated steel), two safety cables (5/16" stainless steel aircraft cable), guide wires (1/8" stainless steel aircraft cable) – with 4 foot or greater down tube extension.

DESIGNER SERIES: Optional color combinations & designs available.

OPERATING TEMPERATURES: Motor & Gearbox (20°F to 122°F); Controller (20°F to 122°F).

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

Catalog Number:

Notes:

Type of Fan:



**ORDERING INFORMATION**

Example: GFY - Z - 5 - 24 - NMSTD - 460 - 3 - 1 - STD - T - ABBSTD

Family	Style	Blades	Diameter	Motor	Voltage	Phase	Down Tube	Mount	Mounting Kit	Controller	Options
GFY	Z	5	8 12 16 20 24 C ¹	NMSTD	120 ² 230 ² 460 ² 575 ²	1 (Single) 3 (Three)	1 (1FT) ³ 2 (2FT) 3 (3FT) 4 (4FT) ⁴ X (XFT) ⁵	STD ⁶ XL ⁷	T ⁸ Z ^{8,14} CB ¹⁵ WB ¹⁵	ABBSTD	DS ^{9,10} RK ¹¹ CP ¹² FM ¹³ GW ¹⁶

FOOTNOTES

- 1) 10 FT, 14 FT, 18 FT custom sizes available. Consult the factory as longer lead-times may apply.
- 2) Available voltages: 3 Phase Applications: 200-240VAC | 380-480VAC | 500-600VAC ; Single Phase Applications: 100-120VAC (8, 12, 16 FT) | 200-240VAC (20, 24)
- 3) 1 FT down tube is standard with Z-Tech™ fan.
- 4) Down tubes 4 FT or greater require a guy wire kit - shipped automatically with the down tube.
- 5) Consult the factory for down tubes longer than 4 FT.
- 6) Use STD mount (6-10" beams) for optional Truss Mount, Z-Purlin Mount and Wood/Concrete Beam Mounts.
- 7) XL Mount is only used for 12"-15" I-beam applications.
- 8) Truss Mount and Z-Purlin Mounts require contractor supplied 3"x3"x1/4" steel angles cut to size. See **Installation and Technical Operations Guide**.
- 9) 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® logo.
- 10) Designer Series fans have custom lead times. Consult the factory to receive a lead-time quote for your desired option.
- 11) Remote Mount Keypad. Allows the control keypad to be mounted up to 25 FT from the ABB controller. Keypad mounts inside a Go Fan Yourself® custom mounting bracket. Kit ships complete with 25 FT CAT6 data cable. Maximum cable length is 300 FT. Longer CAT6 data cables to be supplied by installing contractor.
- 12) Custom Programming. Consult the factory. ABB control's protocol compatibility adapts to the customers existing building management software. Not all programming options may be available on every control.
- 13) Fan Mounted VFD. ABB VFD control ships mounted directly to the fan on an engineered bracket. VFD to fan connections made in the field. Contractor needs only to run power to the fan location and connect it to the controller. Remote Keypad Kit ships automatically with a 100' CAT6 data cable.
- 14) Z-Purlin applications require a 2 FT down tube for all Z-Tech™ fans 18 FT and larger to provide the fan the required 5 FT of clearance above the blades. .
- 15) Contact a local structural engineer for all concrete and wood beam applications to verify the beam will support the fan with the prescribed mounting system.
- 16) Guy Wire Kit

Fan Diameter	8FT	12FT	16FT	20FT	24FT
Fan Weight	230 lbs.	255 lbs.	290 lbs.	355 lbs.	375 lbs.
Nominal Motor	1 HP (0.75kw)	1 HP (0.75kw)	1.5 HP (1.1kw)	2 HP (1.5kw)	2 HP (1.5kw)
Nominal RPM	100	100	70	53	53
Air Movement (CFM)	44,425	140,860	191,385	346,550	425,000
Max. Destratification Coverage	80 FT	120 FT	160 FT	200 FT	240 FT
Max. Cooling Diameter	65 FT	90 FT	130 FT	150 FT	180 FT
Torque	243 ft-lbs.	243 ft-lbs.	240 ft-lbs.	377 ft-lbs.	377 ft-lbs.
Power Consumption	892 W	892 W	989 W	1449 W	1449 W
Single Phase Voltage Nominal Amperage	120v / 12.0	120v / 12.0	120v / 18.0	240v / 15.0	240v / 15.0
Nominal Amperage (230v)	3.88	3.88	4.3	6.3	6.3
Nominal Amperage (460v)	1.94	1.94	2.15	3.15	3.15
Nominal Amperage (575v)	1.55	1.55	1.72	2.52	2.52

NOTE:

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

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

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

Standard or Optional XL Mount: Universal I-beam clamps; Down tubes from 1-10ft in length

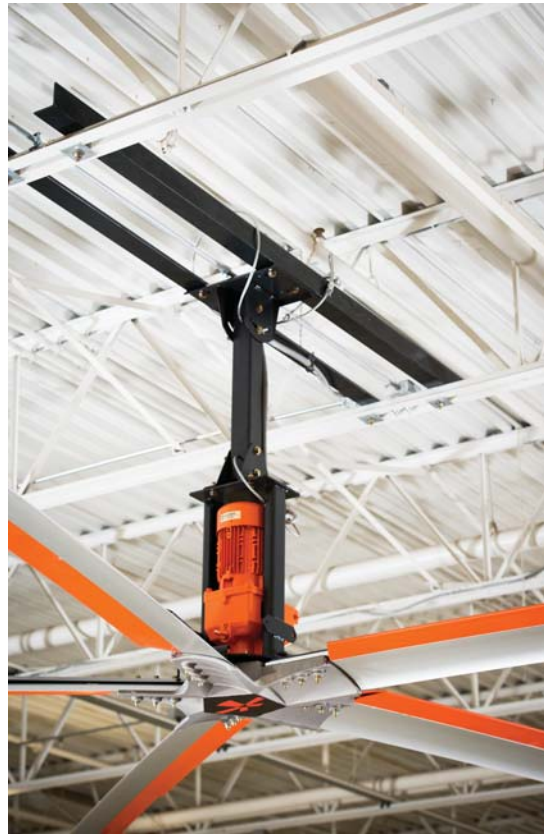
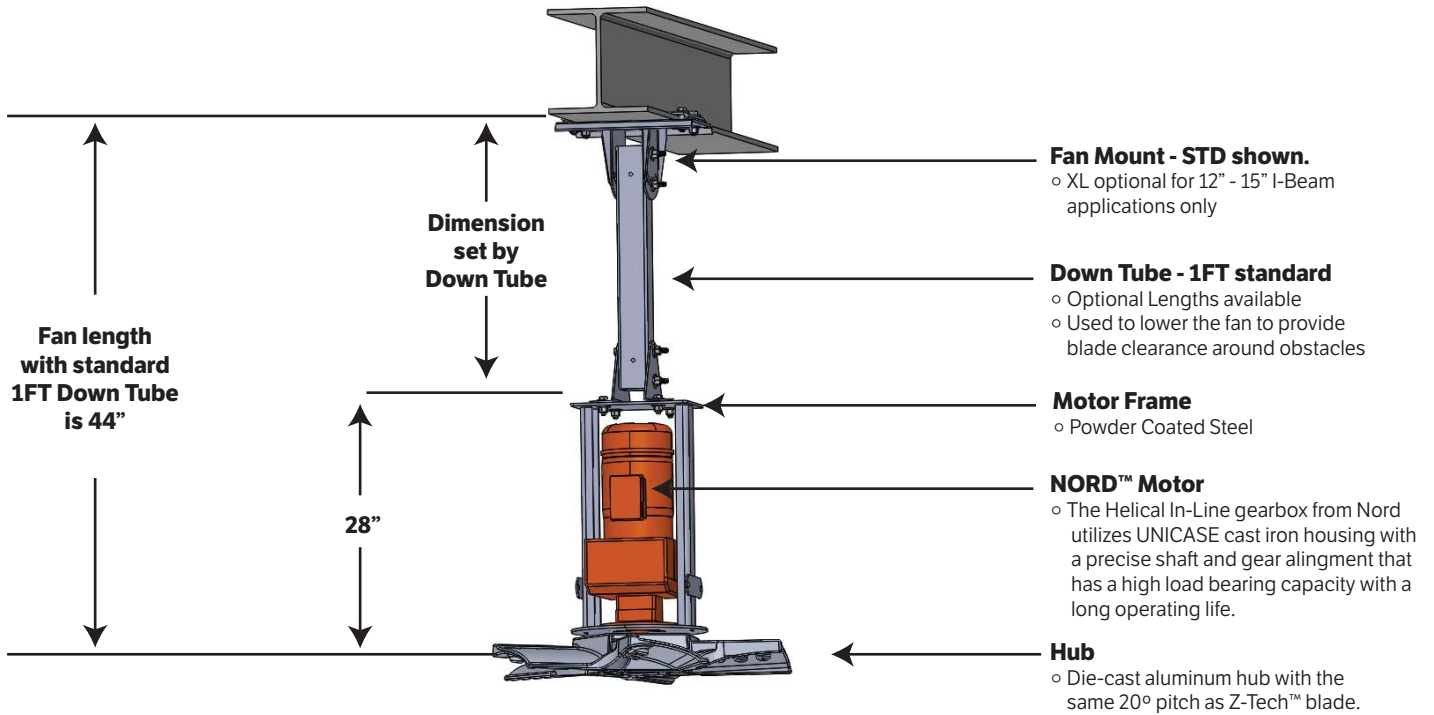
ABB VFD Controller: NEMA 4X, IP 66/67. Premium motor control w/ hardware flexibility, programmability & scalability for an optional solution. ROHS compliant, ESFR relay ready, integral LOTO disconnect

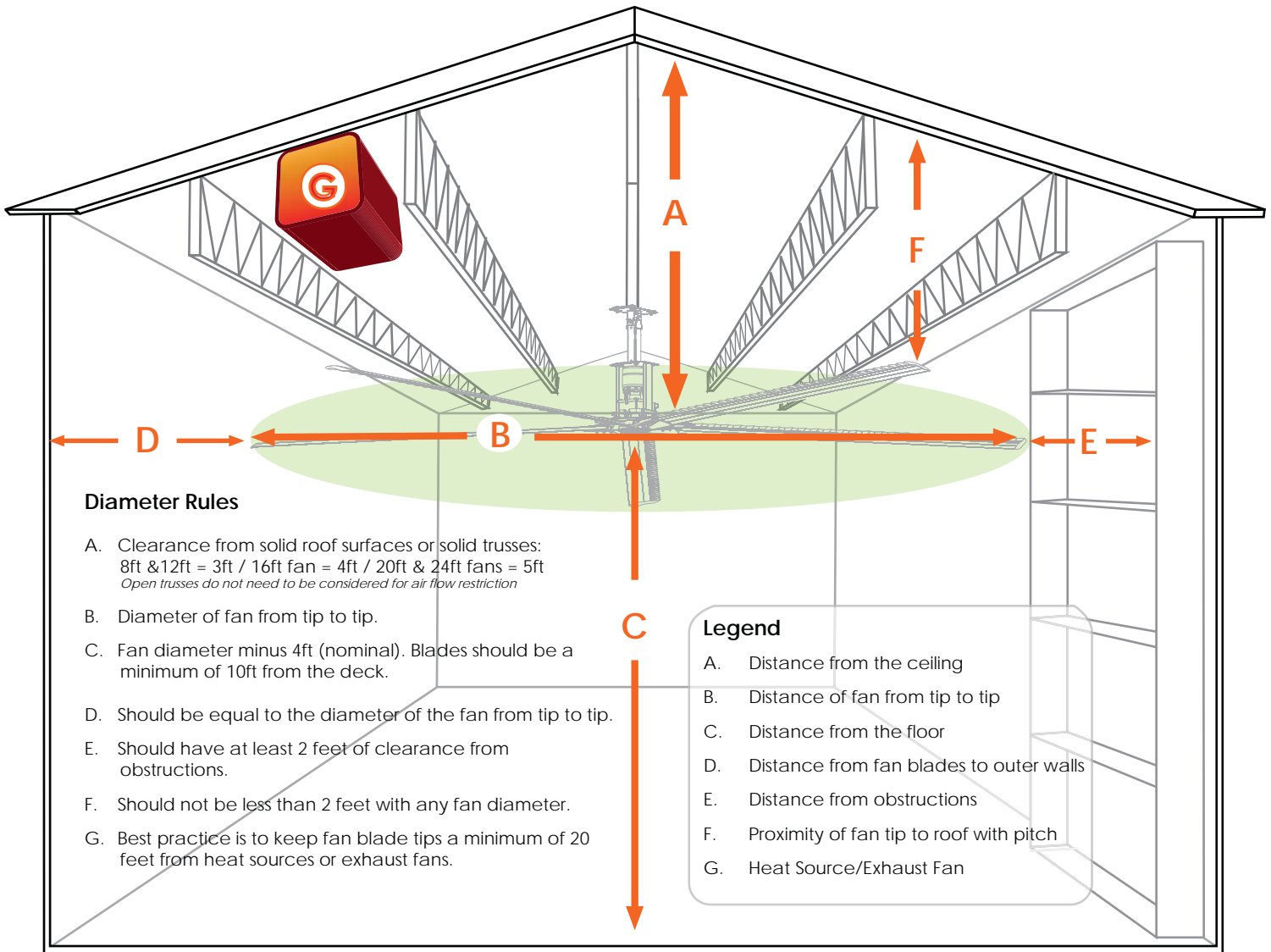
Safety Features: Safety ring (1/4" powder coated steel), two safety cables (5/16" stainless steel aircraft cable), guide wires (1/8" stainless steel aircraft cable) - with 4' or greater down tube extension

Warranty: 15-year: motor, gearbox, and control panel

Lifetime: blades, hub, and mounting system

Refer to **Installation & Technical Operations Guide** for warranty specifications/exclusion





Diameter Rules

- A. Clearance from solid roof surfaces or solid trusses:
8ft & 12ft = 3ft / 16ft fan = 4ft / 20ft & 24ft fans = 5ft
Open trusses do not need to be considered for air flow restriction
- B. Diameter of fan from tip to tip.
- C. Fan diameter minus 4ft (nominal). Blades should be a minimum of 10ft from the deck.
- D. Should be equal to the diameter of the fan from tip to tip.
- E. Should have at least 2 feet of clearance from obstructions.
- F. Should not be less than 2 feet with any fan diameter.
- G. Best practice is to keep fan blade tips a minimum of 20 feet from heat sources or exhaust fans.

Legend

- A. Distance from the ceiling
- B. Distance of fan from tip to tip
- C. Distance from the floor
- D. Distance from fan blades to outer walls
- E. Distance from obstructions
- F. Proximity of fan tip to roof with pitch
- G. Heat Source/Exhaust Fan

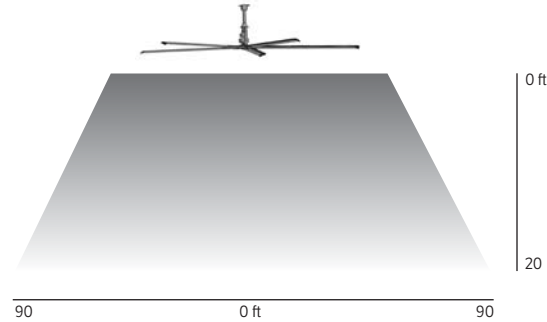
HOW TO SIZE A Z-TECH™ FAN FOR YOUR FACILITY

Fan Diameter	Coverage Area (Cooling)	Coverage Area (Destratification)	Spacing Between Fans	Minimum Spacing From Wall	Clearance Needed From Ceiling	Minimum Blade Height
8 FOOT	60 FT	80 FT	50 FT	8 FT	3 FT	10 FT
12 FOOT	90 FT	120 FT	80 FT	12 FT	3 FT	10 FT
16 FOOT	130 FT	160 FT	110 FT	16 FT	4 FT	12 FT
20 FOOT	150 FT	200 FT	140 FT	20 FT	5 FT	16 FT
24 FOOT	180 FT	240 FT	170 FT	24 FT	5 FT	20 FT



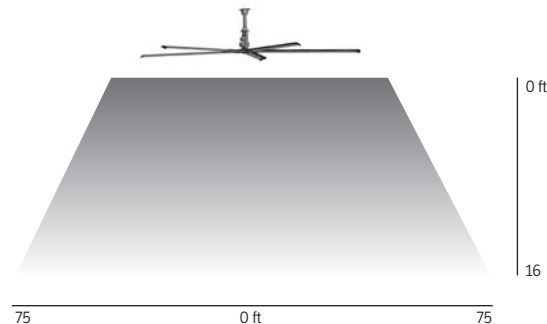
24' Diameter Fan

- Number of Blades: 5 patent-pending Z-Tech™ blades
- Blade Pitch: 20° plus
- Minimum Blade Height: 20 FT (blade from floor)
- Maximum Cooling Diameter: 180 FT
- Maximum Destratification Coverage: 240 FT
- Air Movement: 425,000 CFM
- Nominal Blade Rotations per minute: 53 RPM
- Nominal Motor: 2 HP (1.5kw)
- Power Consumption: 1449 watts @ 480v
- Actual Amps¹: 3.15 amps @ 480v
- Torque: 377 ft-lbs
- System Weight: 375 lbs
- Typical mounting distance between fans: 170 FT
- Clearance from solid roof surfaces: 5 FT



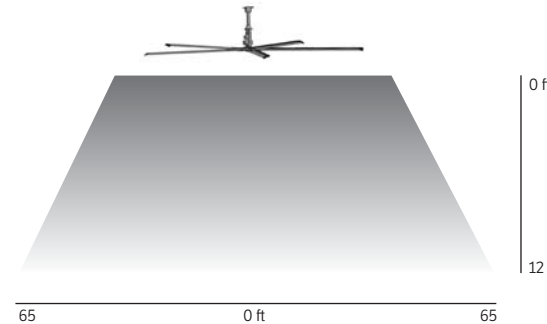
20' Diameter Fan

- Number of Blades: 5 patent-pending Z-Tech™ blades
- Blade Pitch: 20° plus
- Minimum Blade Height: 16 FT (blade from floor)
- Maximum Cooling Diameter: 150 FT
- Maximum Destratification Coverage: 200 FT
- Air Movement: 354,000 CFM
- Nominal Blade Rotations per minute: 53 RPM
- Nominal Motor: 2 HP (1.5kw)
- Power Consumption: 1449 watts @ 480v
- Actual Amps¹: 3.15 amps @ 480v
- Torque: 377 ft-lbs
- System Weight: 355 lbs
- Typical mounting distance between fans: 140 FT
- Clearance from solid roof surfaces: 5 FT



16' Diameter Fan

- Number of Blades: 5 patent-pending Z-Tech™ blades
- Blade Pitch: 20° plus
- Minimum Blade Height: 12 FT (blade from floor)
- Maximum Cooling Diameter: 130 FT
- Maximum Destratification Coverage: 160 FT
- Air Movement: 191,285 CFM
- Nominal Blade Rotations per minute: 70 RPM
- Nominal Motor: 1.5 HP (1.5kw)
- Power Consumption: 989 watts @ 480v
- Actual Amps¹: 2.15 amps @ 480v
- Torque: 240 ft-lbs
- System Weight: 290 lbs
- Typical mounting distance between fans: 110 FT
- Clearance from solid roof surfaces: 4 FT

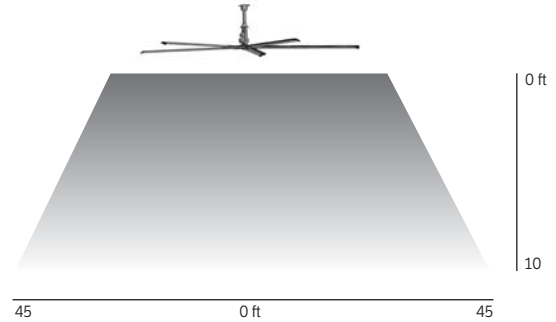


FOOTNOTE:

1.) Actual amps may vary depending on building power

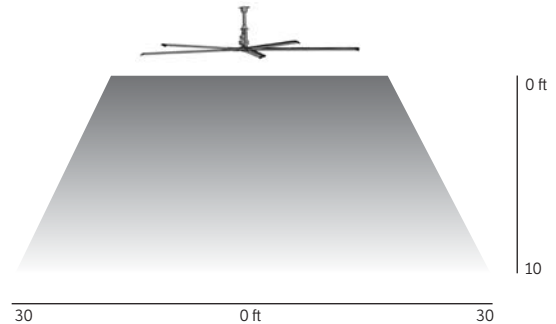
12' Diameter Fan

Number of Blades:	5 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	10 FT (blade from floor)
Maximum Cooling Diameter:	90 FT
Maximum Destratification Coverage:	120 FT
Air Movement:	140,860 CFM
Nominal Blade Rotations per minute:	100 RPM
Nominal Motor:	1HP (0.75kw)
Power Consumption:	892 watts @ 480v
Actual Amps ¹ :	1.94 amps @ 480v
Torque:	243 ft-lbs
System Weight:	255 lbs
Typical mounting distance between fans:	80 FT
Clearance from solid roof surfaces:	3 FT



8' Diameter Fan

Number of Blades:	5 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	10 FT (blade from floor)
Maximum Cooling Diameter:	60 FT
Maximum Destratification Coverage:	80 FT
Air Movement:	44,425 CFM
Nominal Blade Rotations per minute:	100 RPM
Nominal Motor:	1 HP (0.75kw)
Power Consumption:	892 watts @ 480v
Actual Amps ¹ :	1.94 amps @ 480v
Torque:	243 ft-lbs
System Weight:	230 lbs
Typical mounting distance between fans:	50 FT
Clearance from solid roof surfaces:	3 FT



Additional Specifications:

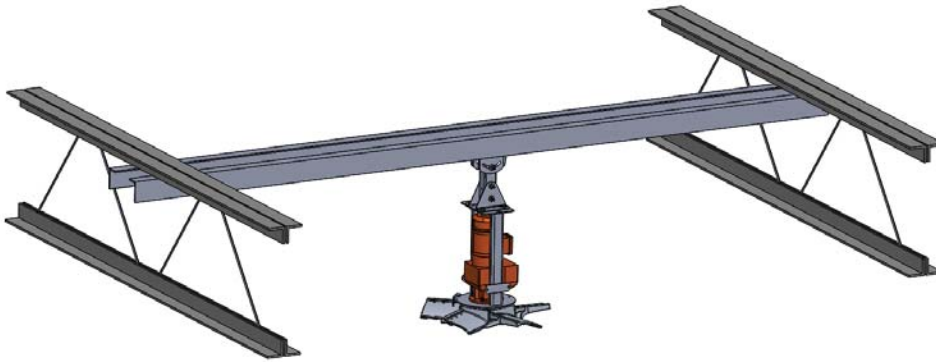
- Maintain a minimum 2ft clearance from tip of blade from obstructions
- Maintain a minimum 2ft below truss with any fan diameter
- Location of fan should maintain a minimum of 20ft away from a heat source
- Location of fan should maintain a minimum of 20ft away from any exhaust fans
- Location of fan should be centered between sprinkler heads but maintain 2ft clearance from tip of blade
- Lights to be spaced 2ft or greater away from the tip of the fan blade to prevent shadowing and strobe effect

Refer to **Fan Application Diameter Rule Guidelines** in this spec sheet for additional details

FOOTNOTE:

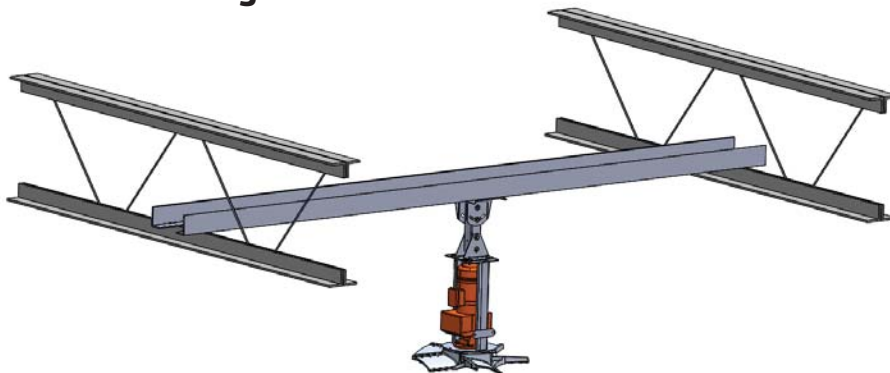
1.) Actual amps may vary depending on building power

Top Chord Angle Mount



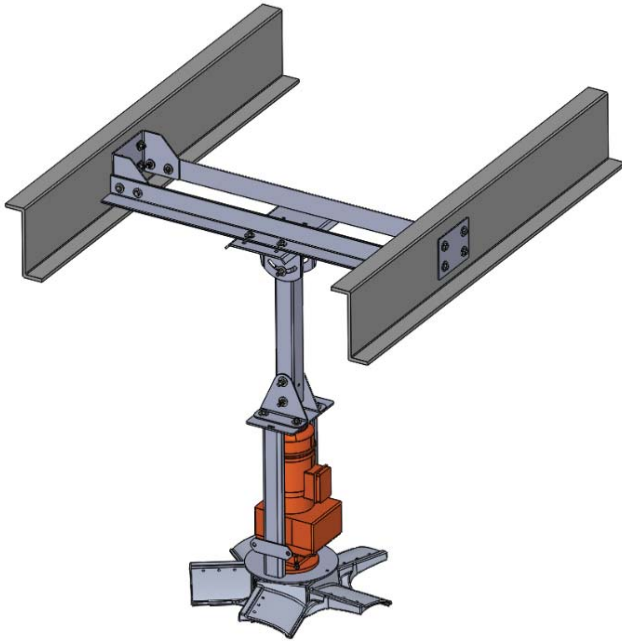
- The 3" x 3" x 1/4" steel angles must be supplied by the installing contractor. Hardware used to secure the angles to the mounting structure is not included
- A 2FT down tube is required with 20FT and 24FT fans to provide the required 5FT of clearance above the fan when utilizing the Top Chord Angle Mount.
- If the truss span is wider than 8FT, four steel angles and the XL mount are required. Reference the **Installation & Technical Operations Guide** or contact Go Fan Yourself® for additional instructions
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.

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 Go Fan Yourself® for additional instructions
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.

Z-Purlin Mount

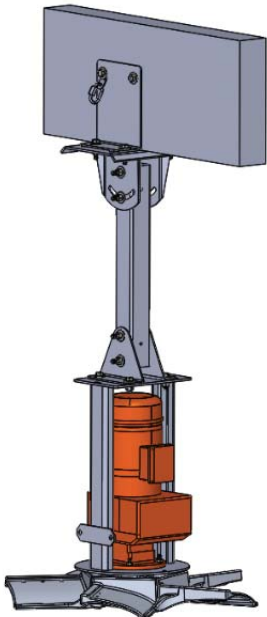


Z-Purlin Requirements

- The 3" x 3" x 1/4" steel angles must be supplied by the installing contractor
- A 2FT down tube is required with 20FT and 24FT fans to provide the required 5FT of clearance above the fan when utilizing Z-Purlin mount.
- Maximum unsupported length (see chart)
- Spacing between Z-Purlins should be 5FT or less
- Z-Purlins must be a minimum of 14 gauge steel
- This mounting system may also be required to span concrete beams. Consult a local structural engineer for any concrete beam applications
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.

		Purlin Height		
		8" (20.3 cm)	9" (22.9 cm)	10" (25.4 cm)
Purlin Length	<20' (6.1 m)	Intended Use	Intended Use	Intended Use
	<25' (7.6 m)	N/A	Intended Use	Intended Use
	<30' (9.1 m)	N/A	N/A	Intended Use

Wood Beam Mount



Wood Beam Requirements

- Installing contractor must supply L-bracket anchor hardware as described below:
 - (2) 1/2" - 13 x 1 1/2" longer than the support structure Grade 8 Hex Cap Screw
 - (4) 1/2" ASTM F436 Type 1 Grade 8 Mechanical Galvanized Steel Structural Flat Washer
 - (2) 1/2" - 13 Grade 8 Steel Nylock Nut
- If the installation is in a seismic zone, contact a local structural engineer to verify fan mount requirements.

Go Fan Yourself Helical Gearmotor Specifications

	2HP	1.5HP	1HP
Motor Speed (RPM)	1,660	1,660	1,650
Ratio	31.16	23.74	12.20
Output Speed (RPM)	53	70	100
Service Factor	1.90	2.10	6.20
Nominal Output Torque (lb-in)	2,366	1,352	466
Maximum Torque Capacity (lb-in)	4,532	2,885	2,912
Voltage – Single Phase (V)	200-240	100-120	100-120
Voltage – Three Phase (V)	200-240 380-480 500-600	200-240 380-480 500-600	200-240 380-480 500-600
Frequency (Hz)	60	60	60
Motor Enclosure Type	IP 55	IP 55	IP 55
Insulation Class	F	F	F
Rated Current 1 (200-240 VAC)	6.34	4.84	3.66
Rated Current 2 (380-480 VAC)	3.17	2.42	1.83
Environmental Temp	50° C	50° C	50° C
Breather	Autovent	Autovent	Autovent
Shaft Seal	Dual Output	Dual Output	Dual Output



NORD™ motors are quality assured based on ISO 9000 standards and designed and manufactured up to AGMA Class 13 with case-hardened steel and exceptional hardness of 60 Rc. IP 55 and UL 1004 listed; 120/230/460/575v; single and three phase.

The Helical In-Line gearbox from NORD™ utilizes UNICASE cast iron housing with a precise shaft and gear alignment that has a high load bearing capacity with a long operating life. NORD™ gearboxes are complimented frequently on quiet running operation.

The Unicase housing from NORD™ is a single housing block in which all bearing points are integrated. In this way, no sealing faces are subjected to torque or lateral forces caused by flanges or bearing points that are screwed on. All axes and sealing faces of the gear block are machined in a single setup on the most modern CNC-controlled production lines, which translates to the highest degree of manufacturing accuracy.

NORD™ utilizes heavy duty (VL) bearings over standard bearings so the bearing sizes are larger and offer high load capacity. The thick wall housings provide stable shaft and bearing centers which promotes higher bearing and gearing life. The housing features a high quality paint system. The housing is primed, then a Polyurethane coating is applied and each unit is hand sprayed to cover all surfaces and inspected to high standards.

Protective features to eliminate damage include Autovent and Quadralip.

- Autovent helps prevent bearing and gear damage by utilizing cleaner gearbox oil with an extended lubrication life and longer lasting seals, gears and bearings. The Autovent system is not open to the atmosphere, yet allows the internal of the unit to release pressure, if needed, in extreme thermal conditions. The ball-check valve is spring loaded to release at 2-3 PSI.
- The Quadralip sealing provides superior protection against leaks and contaminants. Two-component paint resin withstands exposure to acids, alkalis, solvents and oil based product with enhanced chemical resistant and USDA approved standard paint.



ABB ASC250 VFD Controller

100-120V 1 Phase
200-240V 1 Phase
500-600V 3 Phase



ABB ASC355 VFD Controller

200-240V 3 Phase
380-480V 3 Phase



ASC355 Fan Control

- ABB™ Variable Frequency Drive Enclosure - solid aluminum powder coated frame with a plastic IP67 cover and membrane covered touchscreen.
- Advanced multi function keypad with a display keypad that allows for quick on demand program changes
- NEMA 4X, IP66/67, ROHS compliant; 50/60 HZ operation
- Run up to 26 fans from a single keypad (additional wiring required)
- Deepest heat sink in the industry extends the life of drive and controller
- Install up to 200 feet from fan; disconnect per NECA code within eyesight
- 5 digital inputs, all programmable. 1 digital NO/NC and 1 Relay (AC/DC)
- 0(4) - 20mA analog output. This allows the speed reference control from drive to drive without the need to use resistors on the circuit.
- Ethernet compatible with expansion module
- Highly customizable programming
- Capable of linking to building automation systems
- Controls ship standard with an Early Suppression Fast Response relay ready to connect to existing fire suppression systems and an integral lock out, tag out disconnect

ASC250 Fan Control

- 100-120VAC | 200-240VAC single phase & 500-600VAC three phase only
- Cannot be utilized to control multiple fans with a single controller

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.

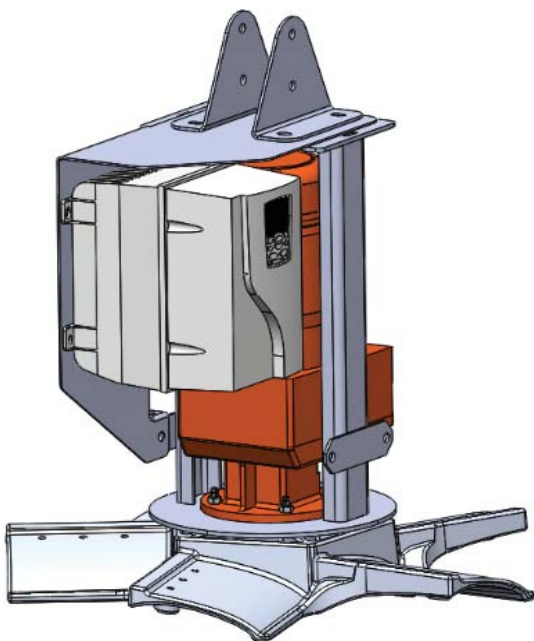
Custom Programming includes:

- 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 remote keypad option is not considered custom programming.



- Optional Remote Keypad provides unlimited flexibility for your Go Fan Yourself® fan installation
- Mount the VFD controller in the ceiling or high on the column for safety and security and drop the keypad down to a user friendly mounting height
- Remote keypad option ships from Go Fan Yourself® with a 25FT CAT6 data cable allowing the keypad to be mounted approximately 25 feet below the VFD controller
- Maximum CAT6 data cable length is 300FT



- Fan mounted control option locates the VFD controller on a bracket mounting directly to the fan frame
- Access to the VFD is available without fan disassembly
- Remote mount keypad option is included in the cost of this option
- Go Fan Yourself® provides a 100FT data cable to connect the remote mount keypad option

GFY® Designer Series

Custom RAL Color Options

- Black #9005
- Orange #2004
- Green #6024
- Yellow #1018
- White #9003
- Red #3002
- Blue #5005
- Blue #5015
- Silver #9007C

Option #1

Motor, Z-Tech™ & Logo


Option #2

Motor, Mixed Z-Tech™ & Logo


Option #3

Motor, Z-Tech™,
Aluminum Blades & Logo


Option #4

Motor, Mixed Z-Tech™,
Aluminum Blades & Logo


Option #5 - Custom RAL*

Motor, Z-Tech™,
Aluminum Blades & Logo



- Motors are only available in GFY® standard RAL colors
- Fill out the order form on the following page and submit the completed Designer Color Order Form with your fan order
- Submit customer artwork for the logo in an Adobe Illustrator file electronically to Go Fan Yourself® when placing the order
- Any custom color requests must be approved by Go Fan Yourself® as additional cost and longer lead times apply
- Only the components listed have optional colors
- All custom colors may not be available or may not be available on all components.
- Consult RAL website for color definitions (www.ralcolors.com)

Instructions:

- 1) This form must accompany the GFY® Z-Tech™ fan order
- 2) Complete one form for each unique Designer Series fan
- 3) Reference the Go Fan Yourself® custom RAL color list
- 4) Enter the RAL number for each fan component
- 5) Logo must be sent to Go Fan Yourself® with fan order in an Adobe Illustrator file

GFY® Designer Series

Custom RAL Color Options

- Black #9005
- Orange #2004
- Green #6024
- Yellow #1018
- White #9003
- Red #3002
- Blue #5005
- Blue #5015
- Silver #9007C

Motor Color

Enter RAL number from the list above.
Motors are only available in standard 8 RAL colors.

Z-Tech™ Color

Color #1 (all 5 or 3 of 5 blades)

Color #2 (2 of 5 blades)

Additional custom colors available.
Contact Go Fan Yourself® for cost and lead time.

Blade Color

Enter blade color.
All 5 blades must be the same RAL color.
Contact Go Fan Yourself® for cost and lead time.

Custom Logo

Logo must be sent in an Adobe Illustrator file.

Notes