



## Z-TECH3™ FAN

### FEATURES & SPECIFICATIONS

**Z-Tech3™ 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:** (3) 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.

**ELECTRICAL (MOTOR):** Baldor/Dodge motor utilizes cast iron housing with precise shaft and gear alignment with 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 applications available.

**ELECTRICAL (CONTROLLER):** Premium control with hardware flexibility, programmability, and scalability for an optimal solution. ABB™ 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.

**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), Guy Wire Kits (1/8" stainless steel aircraft cable) required on all Z-Tech3™ fans.

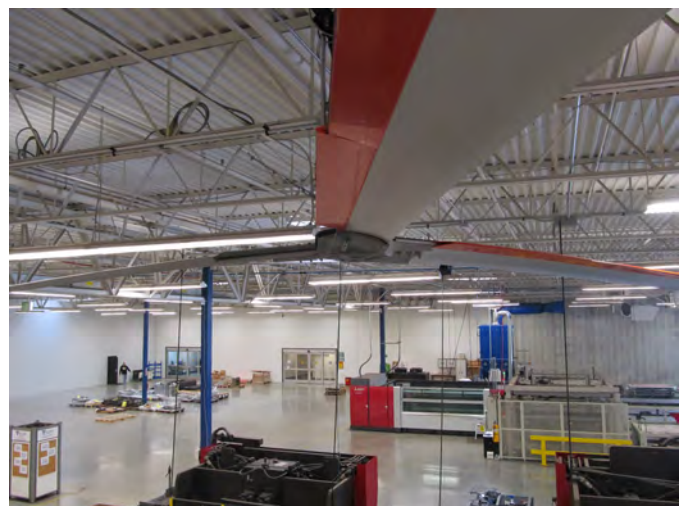
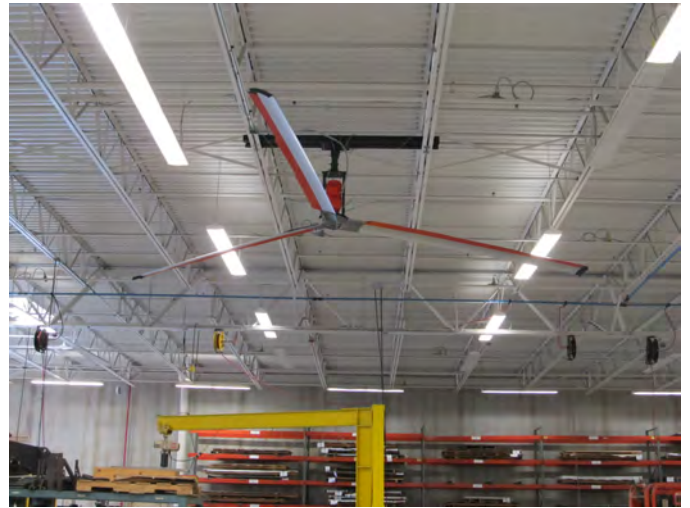
**OPERATING TEMPERATURES:** Motor & Gearbox (20°F to 122°F); Controller (20°F to 122°F).

**WARRANTY:** Lifetime warranty on blades, hub and mounting system. 12-year warranty on motor, gearbox and controller with GFY certified installation.

Catalog Number:

Notes:

Type of Fan:





### Z-Tech3™ Example Part Number: GFY - Z - 3 - 24 - 460 - 3 - 1 - STD - T

Family	Style	Blades	Diameter	Voltage	Phase	DownTube	Mount	Mounting Kit	Options
GFY	Z	3	8 12 16 20 24	120 <sup>1</sup> 230 <sup>1</sup> 460 <sup>1</sup> 575 <sup>1</sup>	1 (Single) 3 (Three)	1 (1FT) <sup>2,12</sup> 2 (2FT) <sup>12</sup> 3 (3FT) 4 (4FT) X (XFT) <sup>3</sup>	STD (6"-10" Beam) <sup>4</sup> XL (12"-15" Beam) <sup>5</sup>	T (Truss/I-Beam) <sup>6</sup> Z (Z-Purlin) <sup>6,9</sup> WB (Wood Beam) <sup>10</sup> (Concrete Beam) <sup>10</sup>	WM <sup>7</sup> (Wall Mount Keypad) CP <sup>8</sup> (Custom Programming) FM <sup>11</sup> (VFD Field Mounted to Fan Frame)

#### FOOTNOTES

- Available voltages: 3 Phase Applications: 200-240VAC | 380-480VAC | 500-600VAC ; Single Phase Applications: 100-120VAC (8, 12, 16 FT) | 200-240VAC (20, 24)
- 1 FT down tube is standard with Z-Tech3™ fan.
- Consult the factory for down tubes longer than 4 FT.
- Use STD mount (6-10" beams) for optional Truss Mount, Z-Purlin Mount and Wood/Concrete Beam Mounts.
- XL Mount is only used for 12"-15" I-beam applications.
- Truss Mount and Z-Purlin Mounts require contractor supplied 3"x3"x1/4" steel angles cut to size. See **Installation and Technical Operations Guide**.
- Allows the control keypad to be mounted up to 24 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.
- Consult the factory. ABB communication protocol compatibility adapts to the customers existing building management software. Not all programming options may be available on every control.
- Z-Purlin applications require a 2 FT down tube for all Z-Tech3™ fans 20 FT and larger to provide the fan the required 5 FT of clearance above the blades. .
- 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.
- Optional fan mounted VFD. ABB VFD control mounting bracket and hardware ships with fan to be field installed by the contractor. Contractor needs only run power to the fan location, mount the bracket to the fan, mount the controller to the bracket and make the motor and power connections inside the controller. Remote Keypad Kit ships automatically with a 150 FT CAT 6 data cable. Longer cable supplied by the installing contractor.
- A 2 FT down tube is required for 24 FT and 20 FT fans when Top Chord truss mounted to provide the 5 FT of clearance for the fan. 2 FT down tubes are also required when mounting with the optional Z-Purlin Kit.

Fan Diameter	8 FT	12 FT	16 FT	20 FT	24 FT
Fan Weight	200 lbs	215 lbs	235 lbs	285 lbs	305 lbs
Nominal Motor	1 hp	1 hp	1 hp	1.5 hp	1.5 hp
Nominal RPM	90	90	63	51	51
Air Movement (CFM)	34,385	109,025	148,130	268,230	329,800
Max. De-stratification Coverage	65 FT	95 FT	125 FT	155 FT	185 FT
Max. Cooling Diameter	50 FT	75 FT	100 FT	120 FT	140 FT
Torque	1,738	1,738	1,738	1,947	1,947
Power Consumption	828w	828w	828w	920w	920w
Nominal Amperage (230v 3 Ph)	3.6a	3.6a	3.6a	4.0a	4.0a
Nominal Amperage (460v 3 Ph)	1.8a	1.8a	1.8a	2.0a	2.0a
Nominal Amperage (575v 3 Ph)	1.44a	1.44a	1.44a	1.6a	1.6a

Number & Type of Blades: 3 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

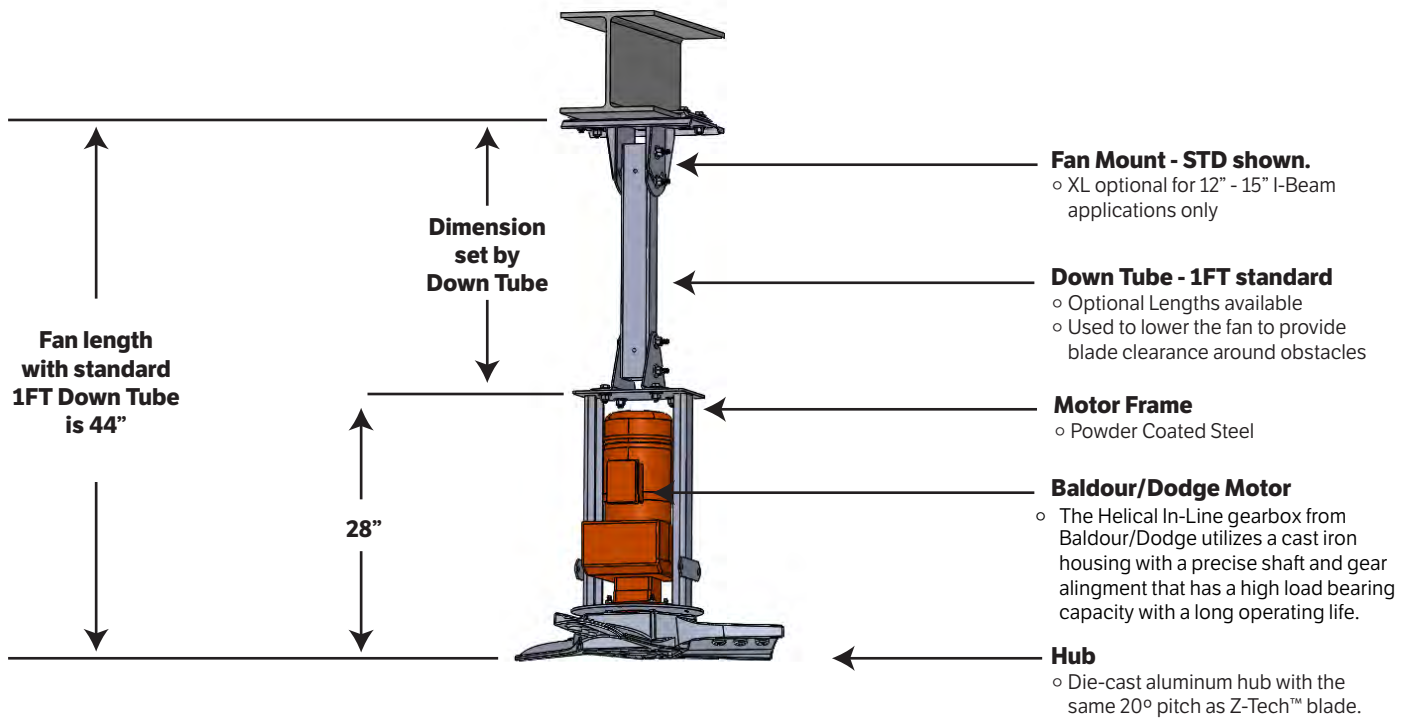
ABB VFD Controller: NEMA 4X, IP 66. Premium motor control w/ hardware flexibility, programmability & scalability for an optional solution. ROHS compliant, ESFR relay ready, integral LOTO disconnect

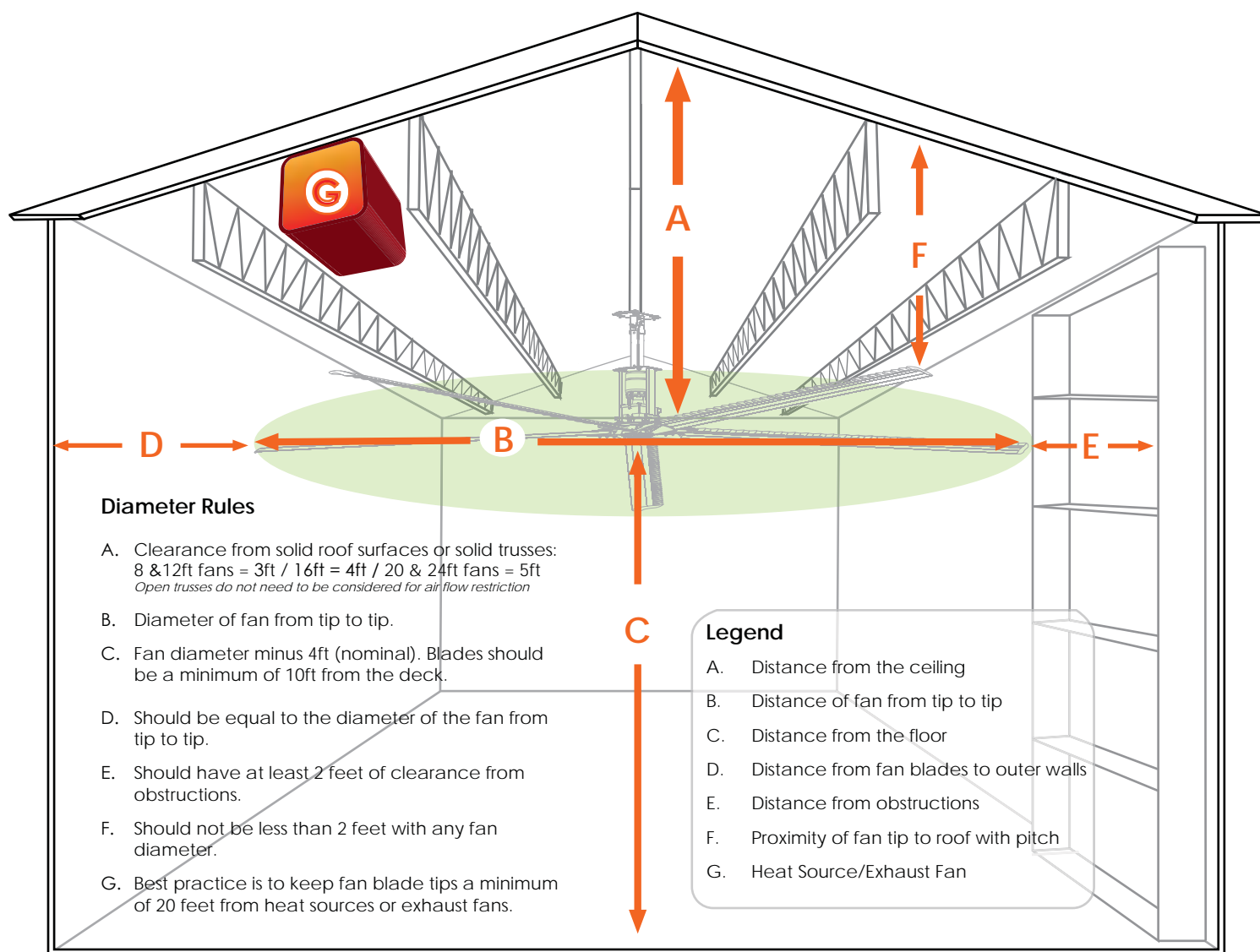
Safety Features: Safety ring (1/4" powder coated steel), two safety cables (5/16" stainless steel aircraft cable), fan stabilization kit (1/8" stainless steel aircraft cable) - required on all fan installations.

Warranty: 12-year: motor, gearbox, and control panel

Lifetime: blades, hub, and mounting system

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





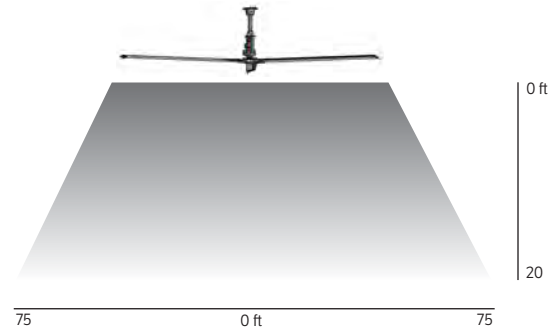
## HOW TO SIZE A Z-TECH3™ FAN FOR YOUR FACILITY

Fan Diameter	Coverage Area (Cooling)	Coverage Area (Destratification)	Nominal Spacing Between Fans	Minimum Spacing From Wall	Clearance Needed From Ceiling	Minimum Blade Height
8 FOOT	50 FT	65 FT	40 FT	8 FT	3 FT	10 FT
12 FOOT	75 FT	95 FT	65 FT	12 FT	3 FT	10 FT
16 FOOT	100 FT	125 FT	90 FT	16 FT	4 FT	12 FT
20 FOOT	120 FT	155 FT	110 FT	20 FT	5 FT	16 FT
24 FOOT	140 FT	185 FT	130 FT	24 FT	5 FT	20 FT



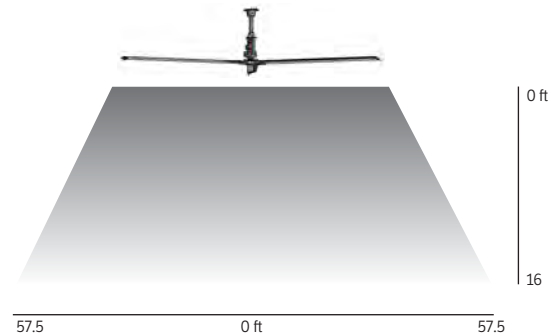
### 24' Diameter Fan

Number of Blades:	3 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	20 FT (blade from floor)
Maximum Cooling Diameter:	150 FT
Maximum Destratification Coverage:	180 FT
Air Movement:	329,800 CFM
Blade Rotations per minute:	51
Nominal Motor:	1.5 hp
Power Consumption:	920w
Actual Amps¹:	2.0
Torque:	1,947 in lbs
System Weight:	305 lbs
Typical mounting distance between fans:	145 FT
Clearance from solid roof surfaces:	5 FT



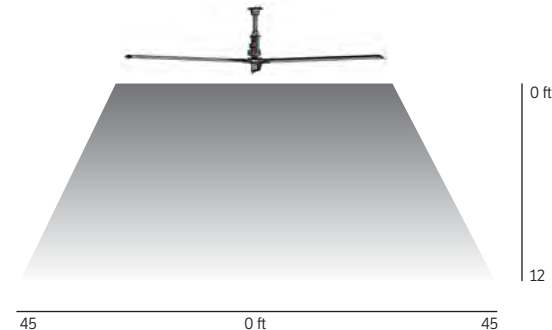
### 20' Diameter Fan

Number of Blades:	3 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	16 FT (blade from floor)
Maximum Cooling Diameter:	115 FT
Maximum Destratification Coverage:	150 FT
Air Movement:	268,230 CFM
Blade Rotations per minute:	51
Nominal Motor:	1.5 hp
Power Consumption:	920w
Actual Amps¹:	2.0a
Torque:	1,947 in lbs
System Weight:	285 lbs
Typical mounting distance between fans:	110 FT
Clearance from solid roof surfaces:	5 FT



### 16' Diameter Fan

Number of Blades:	3 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	12 FT (blade from floor)
Maximum Cooling Diameter:	90 FT
Maximum Destratification Coverage:	115 FT
Air Movement:	148,130 CFM
Blade Rotations per minute:	63
Nominal Motor:	1 hp
Power Consumption:	828w
Actual Amps¹:	1.8a
Torque:	1,947 in lbs
System Weight:	235 lbs
Typical mounting distance between fans:	85 FT
Clearance from solid roof surfaces:	4 FT



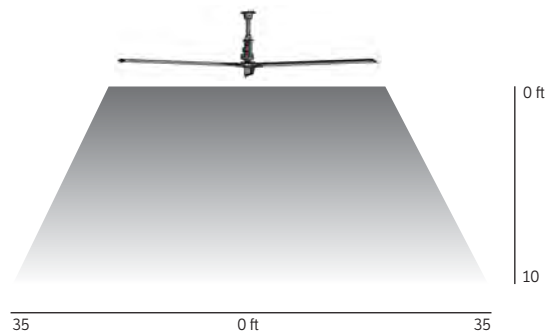
#### FOOTNOTE:

1.) Actual amps may vary depending on building power



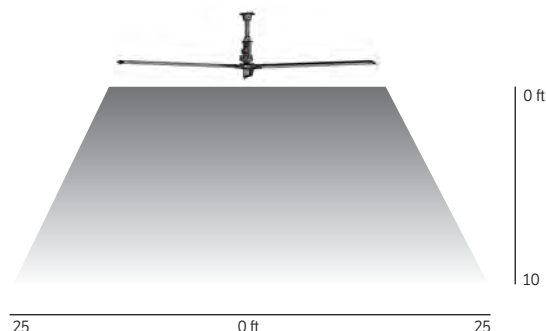
### 12' Diameter Fan

Number of Blades:	3 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	10 FT (blade from floor)
Maximum Cooling Diameter:	70 FT
Maximum Destratification Coverage:	95 FT
Air Movement:	109,025 CFM
Blade Rotations per minute:	89
Nominal Motor:	1 hp
Power Consumption:	828w
Actual Amps¹:	1.8a
Torque:	1,738 in lbs
System Weight:	215 lbs
Typical mounting distance between fans:	65 FT
Clearance from solid roof surfaces:	3 FT



### 8' Diameter Fan

Number of Blades:	3 patent-pending Z-Tech™ blades
Blade Pitch:	20° plus
Minimum Blade Height:	10 FT (blade from floor)
Maximum Cooling Diameter:	50 FT
Maximum Destratification Coverage:	65 FT
Air Movement:	34,385 CFM
Blade Rotations per minute:	89
Nominal Motor:	1 hp
Power Consumption:	828w
Actual Amps¹:	1.8a
Torque:	1,738 in lbs
System Weight:	200 lbs
Typical mounting distance between fans:	45 FT
Clearance from solid roof surfaces:	3 FT



### Additional Specifications:

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

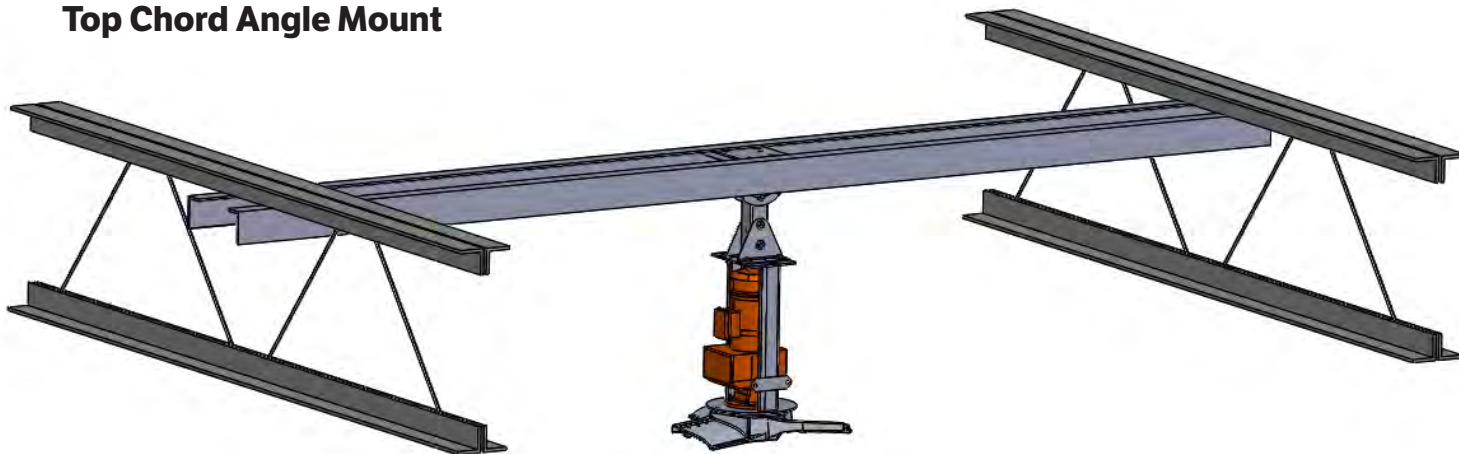
Refer to **Fan Application Diameter Rule Guidelines** in this spec sheet for additional details

### FOOTNOTE:

- 1.) Actual amps may vary depending on building power

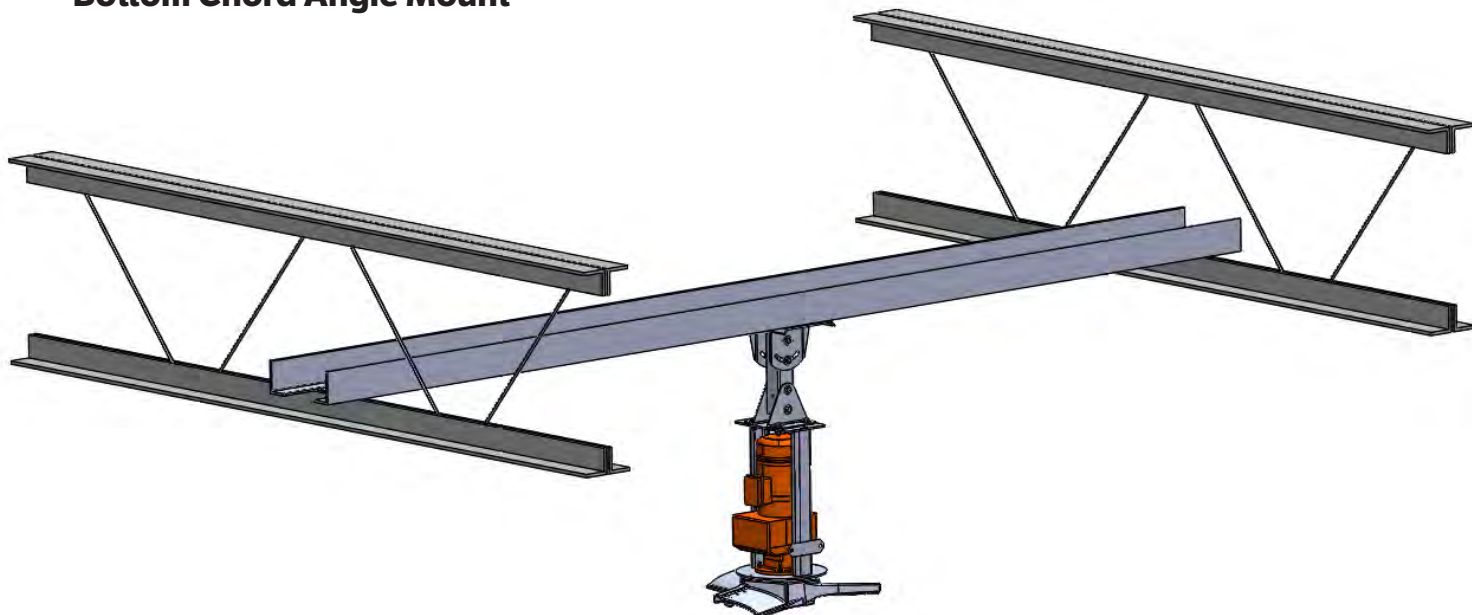


### Top Chord Angle Mount



- 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
- 2 FT Down Tube is required for 20 FT and 24 FT fans to achieve the 5 FT of space required above the fan.
- Required Guy Wire Kit is not shown in this drawing
- If the truss span is wider than 8 FT, four steel angles are required. Reference the **Installation & Technical Operations Guide** or contact Go Fan Yourself for additional instructions

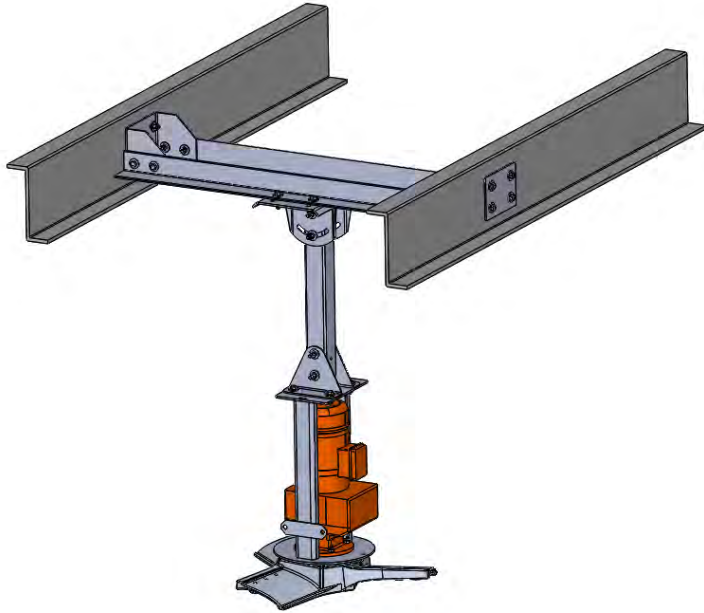
### Bottom Chord Angle Mount



- 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
- Required Guy Wire Kit is not shown in this drawing
- If the truss span is wider than 8 FT, four steel angles are required. Reference the **Installation & Technical Operations Guide** or contact Go Fan Yourself for additional instructions



## Z-Purlin Mount

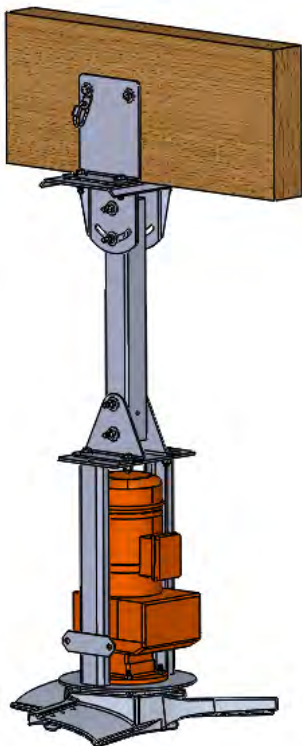


### Z-Purlin Requirements

- The 3" x 3" x 1/4" steel angles must be supplied by the installing contractor
- Maximum unsupported length (see chart below)
- Spacing between Z-Purlins must be 5 FT or less
- Z-Purlins must be a minimum of 14 gauge steel
- Required Guy Wire Kit is not shown in this drawing.
- This mounting system may also be required to span concrete beams. Consult a local structural engineer for any concrete beam applications.

		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 or 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
- Contact a local structural engineer for all concrete or wood beam applications.
- Required Guy Wire Kit is not shown in this drawing.

## Go Fan Yourself Helical Gearmotor Specifications

Motor Speed (RPM)	1.5 hp	1.0 hp	1.0 hp
Ratio	34.04	27.97	19.64
Output Speed (RPM)	51	63	89
Service Factor	1.96	1.93	2.46
Nominal Current At 460 VAC 3 Ph	2.0	1.5	1.5
Maximum Torque Capacity (lb-in)	1,947.00	1,947.00	1,738.00
Available Voltage – Single Phase (V)	120 & 240	120 & 240	120 & 240
Available Voltage – Three Phase (V)	230, 460 & 575	230, 460 & 575	230, 460 & 575
Frequency (Hz)	60	60	60
Motor Enclosure Type	TEFC	TEFC	TEFC
Insulation Class	F	F	F
Protection	IP55	IP55	IP55
Environmental Temp	122F	122F	122F





## 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, 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

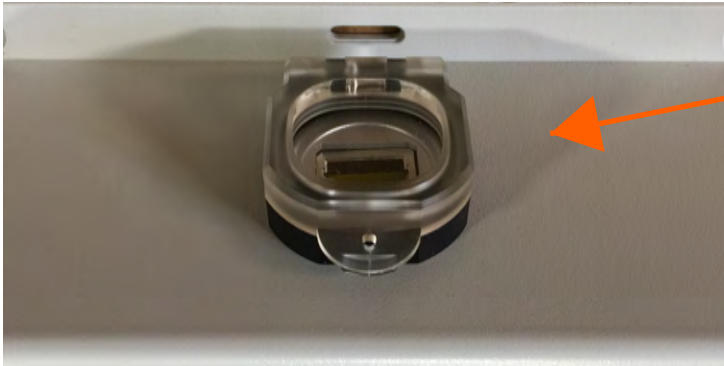
There will be a minimum charge placed on any order (this is a per order charge, not per fan) when custom programming is involved. Lead time will be increased.

Custom Programming includes:

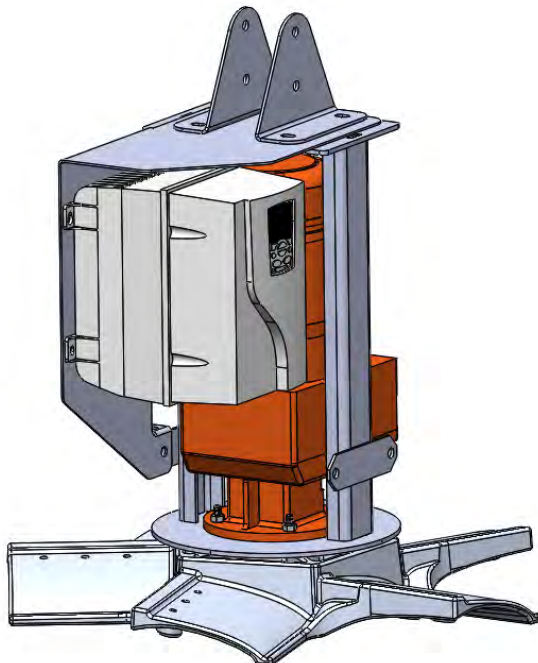
- Controlling multiple fans from a single keypad
- Connecting to building management systems or other software/hardware packages
- Any customer requests beyond the standard one drive controls one fan

The remote keypad option is not considered custom programming.

## WALL MOUNT KEYPAD AND ON BOARD CONTROLS



- Optional Wall Mount Keypad provides unlimited flexibility for your GFY 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.
- Wall Mount Keypad option ships from GFY with a 15 FT CAT6 data cable allowing the keypad to be mounted approximately 24 FT below the VFD Controller.
- Max CAT6 data cable length is 300 FT.
- Box size is 9" x 6" x 2 3/4"



- Fan Mounted Control option locates the VFD Controller on a bracket mounting directly to the fan frame.
  - GFY - Access to the VFD is available without fan disassembly.
  - 8-10 airfoil fans - One airfoil must be removed to access the VFD for service work.
- The Wall Mount Keypad option is included in the cost of this option.
- GFY provides a 150 FT data cable to connect the Wall Mount Keypad option. Longer cables are supplied by the installing contractor.

### GO FAN YOURSELF STANDARD "RAL" COLORS

<b>Black #9005</b>	<b>White #9003</b>
<b>Orange #2004</b>	<b>Red #3002</b>
<b>Green #6024</b>	<b>Blue #5005</b>
<b>Yellow #1018</b>	<b>Blue #5015</b>
<b>Silver #9007</b>	

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



Custom RAL\*  
Motor, Z-Tech™,  
Aluminum Blades & Logo



Best practice for customers with one custom RAL color?  
Z-Tech™ = custom color / Motor = #9005 Jet Black

- Fill out the order form on the following page and submit the completed Designer Series Order Form with your fan order.
- Please submit customer artwork for the logo in an ".ai" file (Adobe Illustrator) electronically to Go Fan Yourself when placing the order.
- All custom color requests must be approved by Go Fan Yourself as additional cost and longer lead times may apply.
- All custom colors may not be available or may not be available on all components.
- Consult RAL website for color definitions and samples
  - [www.ralcolors.com](http://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 GFY standard RAL color list shown below
- 4) Enter the RAL number for each fan component
- 5) Logo MUST be sent to GFY with your order in an "ai" file (adobe illustrator)

### Go Fan Yourself Standard "RAL" Colors

BLACK #9005	WHITE #9003
ORANGE #2004	RED #3002
GREEN #6024	BLUE #5005
YELLOW #1018	BLUE #5015
SILVER #9007	

Motor Color

Custom colors are available.  
Contact GFY for cost and lead time.

Z-Tech™ Color

Color #1 (All 3 or 2 of 3 blades)

Color #2 (1 of 3 Blades Only)

Custom colors available.  
Contact GFY for cost and lead time.

Blade Color

Enter Blade color. All 5 Blades must be the same RAL color.  
Custom colors available. Contact GFY for cost and lead time.

Hub Color

Enter Hub color.  
Custom colors available. Contact GFY for cost and lead time.

Custom Logo

Please send logo artwork in "ai" file (Adobe Illustrator)

NOTES: