



DESIGN & ENGINEERING GUIDE

METRIC & IMPERIAL

axiomfan.com

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THE AXIOM FAN - OUR NEWEST ADDITION

From showrooms to restaurants and atriums to office spaces, the Axiom Fan's creative touch of ambiance enhances the comforts and aesthetics of each space. The sleek, ultra-modern design allows for a magnitude of customizable finishes from vibrant red to brilliant chrome and every imaginable color in between, enhancing any sophisticate environment.



Standard Colour Finishes

BLADE DESIGN - MOVING AIR WITH STYLE

Envira-North Systems has been working with HVLS fans since 2003. Over that time, we've worked with flat blades, extruded blades, bigger extruded blades, pitched blades, and irregular edge blades. Each one of those blade designs has strengths and weaknesses that designers will and will not admit to.



What we've accomplished with the Axiom Fan Blade is based on 14 years of knowledge and experience. Using the strengths of each previous iteration while digging even deeper into conceptual low revolution rotors allowed us to create this high-performance blade.

Minimal Noise

Traditional airfoils (or blades) are linear in design and produce greater noise at a frequency. Using varying points on the leading edge of the blade spreads the noise or acoustic signature over a greater range of frequencies, virtually eliminating any noise.

Evenly Dispersed Air

As a fan rotates, the tip of a blade spins faster than the fixed point (or center hub), creating pockets of minimal air movement directly underneath the fan. The Axiom Fan blade design tackles this challenge with a varying degree angle of attack, never seen in our industry.

Maximum Efficiency

Ranging from 6° (tip) to 14° at its greatest point, the Axiom Fan diminishes the resistance against each blade maximizing air movement, yet minimizing power consumption.

Industrial Strength

The zinc coated steel mounting plate is formed and surrounded by injection mold fibre filled polypropylene. The rugged industrial strength composition provides a light weight yet heavy-duty blade that measures 58.5" from tip-to-tip.



Visually Appealing

The sleek, ultra-modern design is available in any custom color or in six standard colors; Alabaster, Cobalt, Onyx, Radiance, Slate, and Sterling. Also available with a magnitude of customizable textured finishes from rich Carbon Fibre to soft Leather, deep Mahogany and rustic Barn Board.

The Axiom Fan's unique blade design makes it possible to move more air; quietly, efficiently and in style. The essential point of any fan is its airfoil and it allows the Axiom fan to move up to 45,000 cfm.

GEARLESS MOVER

By eliminating the mechanical components, the Axiom Fan drastically reduces the sound signature created by typical HVLS Fans. The whisper quiet motor performance leaves only the sound of the breeze itself aural.

Unlike a typical DC motor in which copper is wrapped around the poles, the Axiom Fan's gearless mover utilizes a simple ring of coil, with ultra low resistance. This motor technology features a transverse flux brushless DC motor specifically designed for low speed high torque applications.

The compact motor housing is made of rigid and lightweight AISI 383 (ADC12) aluminum alloy, keeping the motor assembly under 15 lbs. All 60 poles provide the Axiom Fan with a continuous 52 lbf of torque across a broad operating speed and load window. And it provides zero backlash.





This Ultra-high continuous torque density motor is patented and proven. The motor adopted smart voltage technology is capable of accepting any single phase voltage in the range of 104-277 V, either 50 or 60 Hz.

The hollow shaft throughout the motor assembly and mounting allows access for power and fan/light control wires to be installed out of sight. This speeds up the installation process and provides a much more visually appealing finished product without sacrificing durability.

The Axiom Fan's direct drive (gearless) mover can be over 92% efficient and rotates at speeds between 20 and 120 RPM. Efficient and quiet, yet somehow light weight, this gearless mover is magnificently reliable for every application.



THE LIGHT

Designed to provide replacement level lighting, the Axiom Fan LED eliminates the strobing effect created by installing HVLS fans below the lighting level in any building.

Included with every fan shipped is the Axiom Fan LED Light. Seamlessly integrated, the built-in dimmable LED lighting system is purposely designed to adjust to any application. From 0 up to 1980 lumens, your space will be as bright or as dark as you need.

Separately controlled from the speed of the fan, the dimmable LED has twenty (20) different brightness levels purposely designed for every application; from commercial restaurants and showrooms to residential great rooms and gazebos.

Don't want a light included? No problem, the seamless integrated design disguises the light as a part of the fan. Don't turn it on – and you won't even know its there.



ON-BOARD CONTROLS

The Axiom Fan's advanced smart voltage on-board controls automatically detects input power when it's applied. Now the purchaser doesn't need to have an electrician onsite to determine what is needed prior to ordering.

Not only that, but the Axiom Fan's on-board controls constantly measures fan loads and makes real-time energy efficient adjustments, minimizing the environmental footprint while saving money on already minimal operating costs.



Because the controls are located on-board the fan assembly, all the connections are pre-wired before shipping to ensure a smooth and hassle-free installation. This minimizes electrical installation error, streamlines operation, and greatly diminishes the maintenance requirements.

The Axiom Fan can connect to standard building automation and fire suppression systems using the built-in Modbus 485 signal (other signals optional). The simple and compact design is hidden above the motor and completely invisible to the untrained eye.

WALL CONTROL



Placing all those finicky electronics inside the fan assembly means the bulk of the work is already done. No more reading wiring diagrams, ensuring the proper wiring is purchased/installed, incorrect wire connections being made... or lengthy troubleshooting with technician.

Once power is applied, a simple Cat5 cable connection to the provided control enables any user access to fan on/off, speed up/down, fan forward/reverse, light on/off and brightness up/down commands.

The compact design is light weight, compact and intuitive to all users. Simply knowing what you want the fan to do, is enough to operate the buttons and built-in LCD screen.

SAFETY SYSTEM

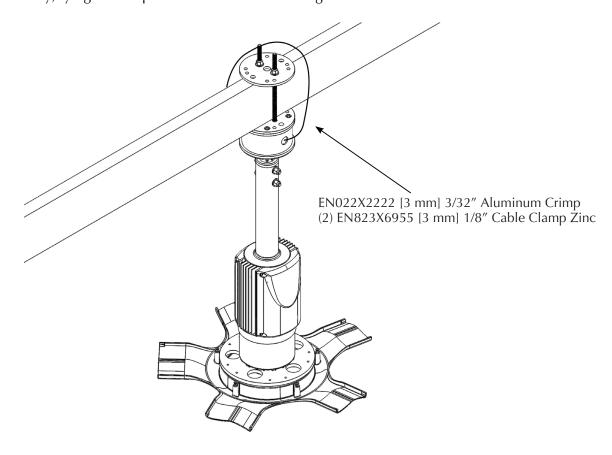
Hanging eighty-plus pounds of air movement technology in the ceiling is simple and straightforward. Ensuring its there forever is more important. Each Axiom Fan is supplied with superior harnessing system to maintain an integral safety status and give the customer peace of mind.

The Axiom Fan motor, LED Light and onboard controls have all been integrated to include current limits, motor overload sensors, thermal protection, acceleration/deceleration limits and minimum/maximum speeds.

The industrial strength construction includes;

- Four 1/4" studs with nylon-inserted lock nuts attach the fan assembly to the mounting hardware.
- The oversized heavy duty motor cap is bolted directly to the hub, via four M5 fasteners.
- An additional four 11/4" x 1/4" hex head bolts with serrated washers lock each blade tightly to the fan.
- All other components are pre-fastened during the manufacturing process to minimize installation error.

The entire assembly, from the mounting system to the blades was designed with safety as the main priority. The fail-safe 3/32 braided stainless steel cable is secured to the structure during the installation process and runs the length of the assembly, tying all components back to the building.



DISTINCTIVE UNIVERSAL MOUNTING SYSTEM

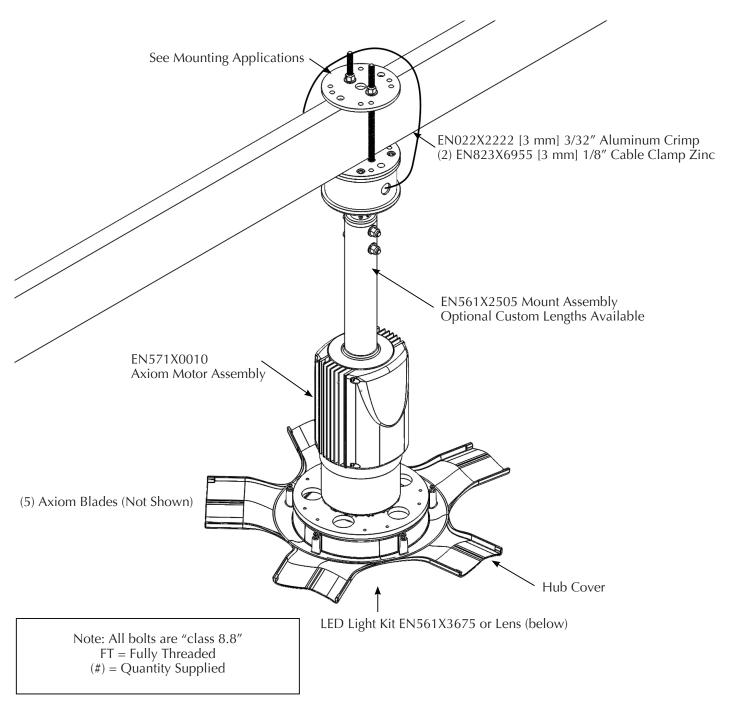
A complete redesign from top to bottom – no other HVLS Fan on the market can provide the robust yet sleek design of the Axiom Fan's Universal Mounting System. Included in every Axiom Fan, the distinctive Universal Mounting System permits the Axiom Fan to be installed on a wide range of ceiling structures that includes; Open Web Steel Joists, Wood Beams (Glu Lam), Purlins and Wooden Trusses.

The design doesn't stop there – the entire mounting kit is intended to act as a housing for your electric wiring – meaning power to the fan and from the control is invisible to the people below. Better yet, the Universal Mounting System also allows for the Axiom Fan to be located on any sloped ceilings from 0-18.5° with a complete 360° swivel.

Different mounting lengths are available upon request.

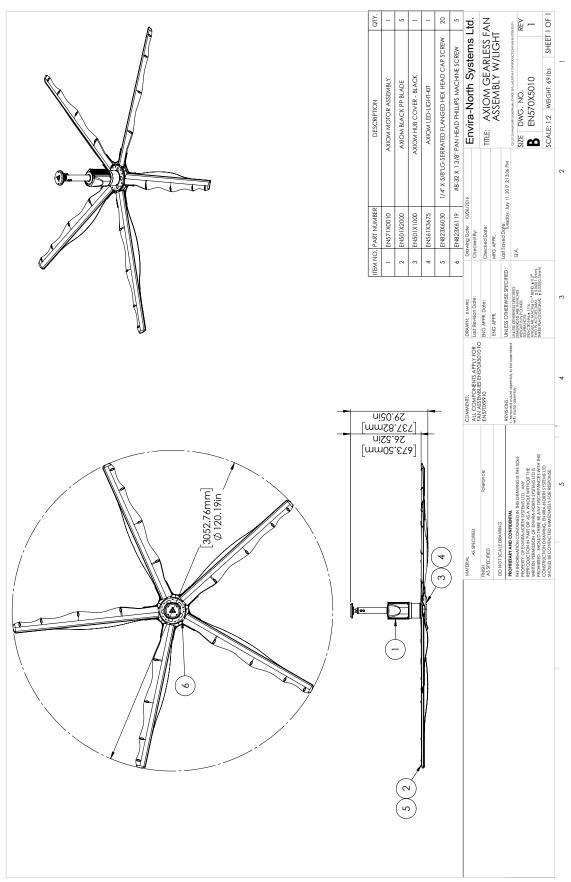


FAN COMPONENTS DIAGRAM





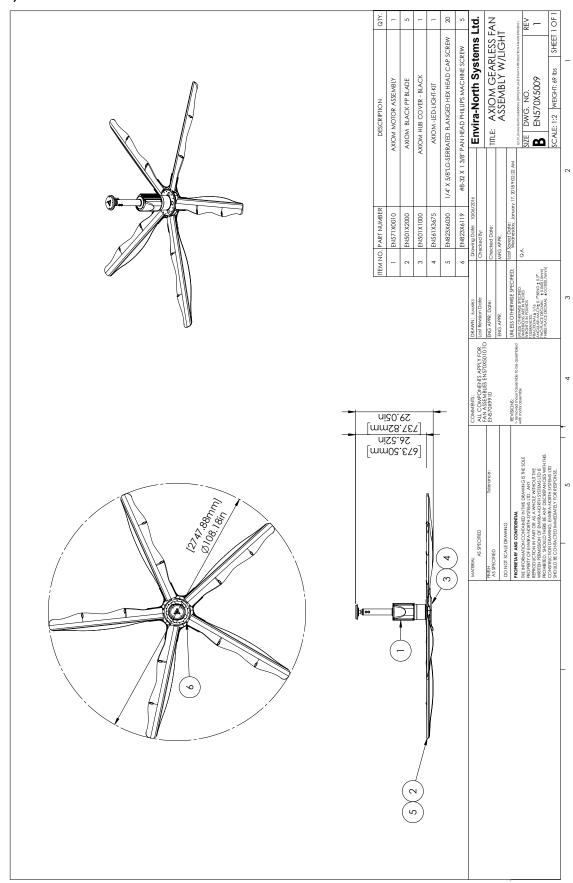
10 FT (3 M) AXIOM FAN SPEC DRAWING



10 FT (3 M) AXIOM FAN SPECIFICATIONS

General	
Model Number	. EN570X SERIES
Diameter	. 10 ft (3 m)
Number of Blades	. 5
Noise Level	. 39 dBA
Overall Weight (no mount)	. 85 lbs (38.5 kgs)
Packaged Fan Weight	98 lbs (44 5 kgs)
Certification	
Performance	
Airflow	. 45,000 CFM
Variable Speed	,
Power Usage	
Maximum Effective Diameter	•
Construction	
Blade Mount Plates	. Zinc Coated Steel
Blades	. Injection Molded Fibre Filled Polypropolene
Motor Housing	, , , , , , , , , , , , , , , , , , , ,
Safety Components	
Safety Cables	. 3/32" Stainless Steel Cable
Universal Mounting System	
Maximum Ceiling Slope	. 18.5°
Open Web Steel Joist (OWSJ) Hardware	
Purlin Hardware	
Wood Beam Hardware	. Included
Glu Lam Hardware	
Gearless Motor	
Type	. Transverse Flux Brushless DC Motor
Voltage	
Amps Consumed	
Continuous Torque	•
Backlash	
Poles	
Insulation Class	
IP Rating	. 54
Efficiency	
Axiom Wall Control	
Operation	. Keypad & LCD Screen
Fan Controls	, ·
Light Controls	
Wiring	
Diagnositc Capability	

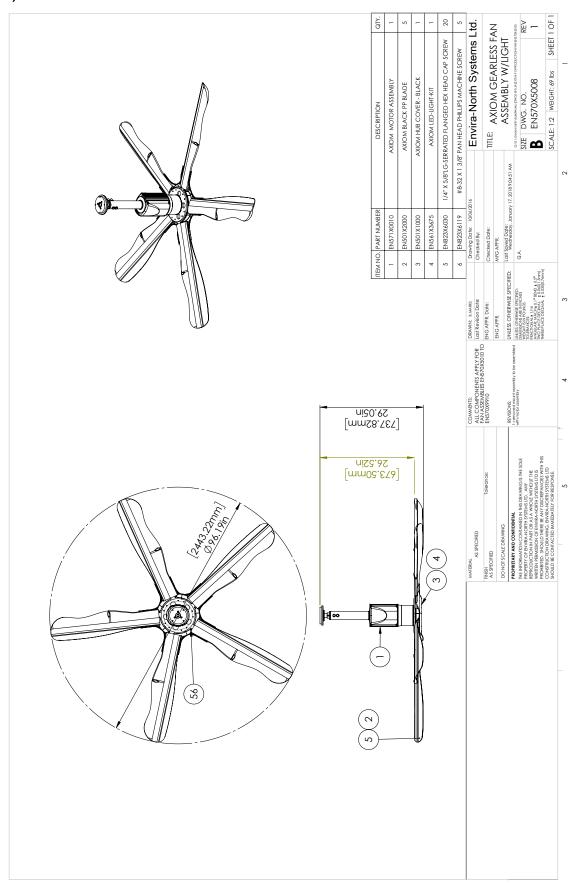
9 FT (2.7 M) AXIOM FAN SPEC DRAWING



9 FT (2.7 M) AXIOM FAN SPECIFICATIONS

General	
Model Number	FN570X SFRIFS
Diameter	
Number of Blades	
Noise Level	
Overall Weight (no mount)	
Packaged Fan Weight	00 II- (42 2 I)
Certification	
Certification	OL, CS/A & CL C
Performance	
Airflow	39.000 CFM
Variable Speed	•
Power Usage	
Maximum Effective Diameter	
Maximum Encerve Blameter	2,300 34 10 (232 111)
Construction	
Blade Mount Plates	Zinc Coated Steel
Blades	Injection Molded Fibre Filled Polypropolene
Motor Housing	, , , , , , , , , , , , , , , , , , , ,
Ü	7
Safety Components	
Safety Cables	3/32" Stainless Steel Cable
Universal Mounting System	
Maximum Ceiling Slope	
Open Web Steel Joist (OWSJ) Hardware	
Purlin Hardware	
Wood Beam Hardware	Included
Glu Lam Hardware	Included
Gearless Motor	
	Transverse Flux Prushless DC Motor
Type	
Voltage	,
Amps Consumed	•
Continuous Torque	
Backlash	
Poles	
Insulation Class	
IP Rating	54
Efficiency	92%
Aviora Mall Control	
Axiom Wall Control	Keynad & LCD Screen
Operation	
Fan Controls	·
Light Controls	
Wiring	
Diagnositc Capability	Full

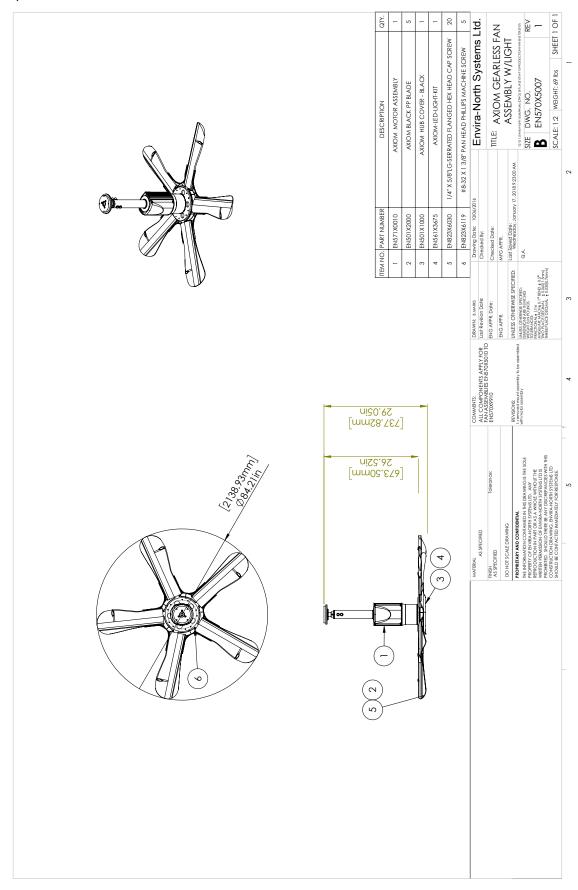
8 FT (2.4 M) AXIOM FAN SPEC DRAWING



8 FT (2.4 M) AXIOM FAN SPECIFICATIONS

General	
Model Number	. EN570X SERIES
Diameter	
Number of Blades	` '
Noise Level	
Overall Weight (no mount)	
Packaged Fan Weight	00 lbs (20.0 lcgs)
Certification	
Certification	. OL, CON CC C US
Performance	
Airflow	. 35.000 CFM
Variable Speed	,
Power Usage	
Maximum Effective Diameter	
Maximum Encerve Diameter	. 2,100 3q it (133 iii)
Construction	
Blade Mount Plates	. Zinc Coated Steel
Blades	. Injection Molded Fibre Filled Polypropolene
Motor Housing	, , , , , , , , , , , , , , , , , , , ,
O	,
Safety Components	
Safety Cables	. 3/32" Stainless Steel Cable
Universal Mounting System	
Maximum Ceiling Slope	. 18.5°
Open Web Steel Joist (OWSJ) Hardware	
Purlin Hardware	. Included
Wood Beam Hardware	. Included
Glu Lam Hardware	. Included
Gearless Motor	
Туре	
Voltage	,
Amps Consumed	· ·
Continuous Torque	. 52 lbf
Backlash	. 0
Poles	. 60
Insulation Class	. B
IP Rating	. 54
Efficiency	
Axiom Wall Control	
Operation	
Fan Controls	. Speed Up/Slow Down, Forward/Reverse, On/Off
Light Controls	
Wiring	. 100' Cat5 Cable Included
Diagnositc Capability	

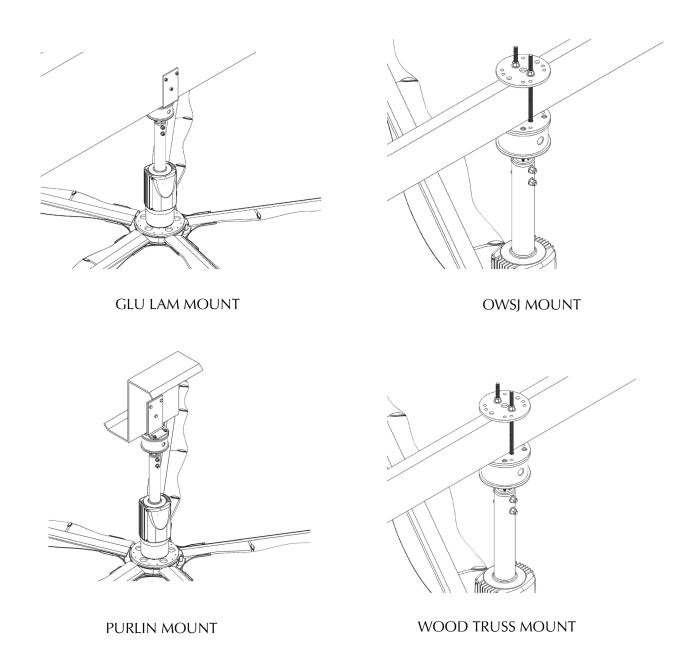
7 FT (2.1 M) AXIOM FAN SPEC DRAWING



7 FT (2.1 M) AXIOM FAN SPECIFICATIONS

General	
Model Number	EN570X SERIES
Diameter	7 ft (2.1 m)
Number of Blades	5
Noise Level	39 dBA
Overall Weight (no mount)	70 lbs (31.8 kgs)
Packaged Fan Weight	83 lbs (37.6 kgs)
Certification	
Performance	
	27.000 CEM
Airflow	,
Variable Speed	
Power Usage	•
Maximum Effective Diameter	1,850 sq ft (1/2 m²)
Construction	
Blade Mount Plates	Zinc Coated Steel
Blades	Injection Molded Fibre Filled Polypropolene
Motor Housing	
	·
Safety Components	
Safety Cables	3/32" Stainless Steel Cable
Universal Mounting System	
Maximum Ceiling Slope	10 50
♥ 1	
Open Web Steel Joist (OWSJ) Hardware	
Purlin Hardware	
Wood Beam Hardware	
Glu Lam Hardware	Included
Gearless Motor	
Туре	Transverse Flux Brushless DC Motor
Voltage	
Amps Consumed	2.2 amps (at 120 V)
Continuous Torque	52 lbf
Backlash	
Poles	
Insulation Class	
IP Rating	
Efficiency	
· · · · · · · · · · · · · · · · · ·	
Axiom Wall Control	V 1010D 0
Operation	
Fan Controls	
Light Controls	
Wiring	
Diagnositc Capability	Full

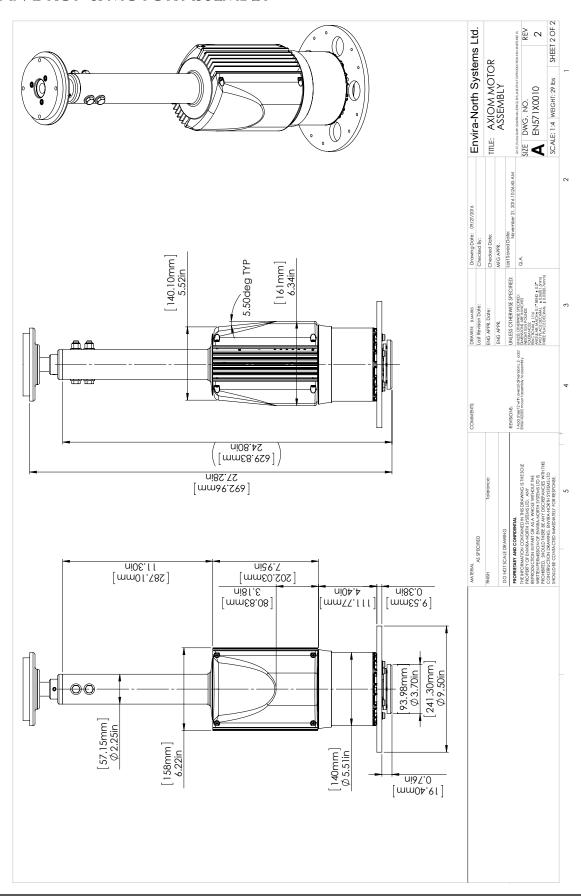
DIFFERENT MOUNTING APPLICATIONS



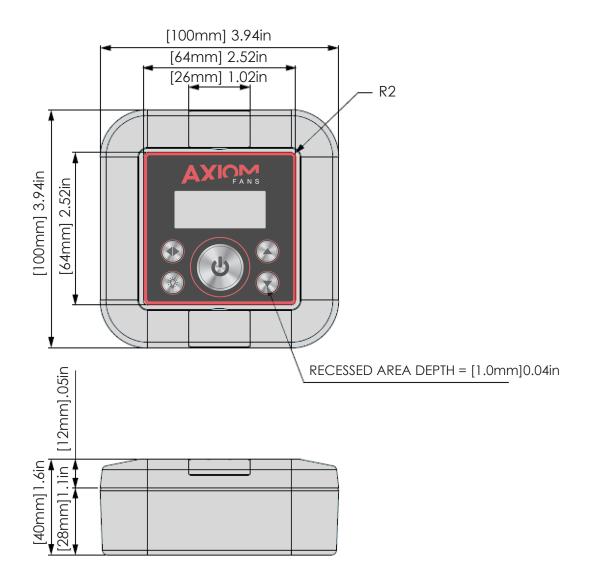
For a complete review of the mounting system and how it applies to your application, please reference the Axiom Fan Installation Guide.

To obtain a copy, please contact us by phone at 1-519-527-2198 or by email at bigair@enviranorth.com.

AXIOM FAN DROP & MOTOR ASSEMBLY



AXIOM FAN CONTROL ASSEMBLY

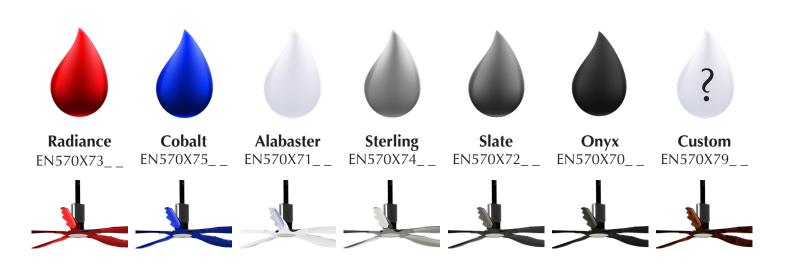


ORDERING AND INSTALLATION MADE SIMPLE

Axiom Fans come as a complete package that includes; the Axiom Fan, Universal Mounting System, Wiring Kit, and Control Panel. Having everything included in this complete package streamlines ordering, shipping and installation. From start to finish, Envira-North Systems provides everything you need – in one simple package.

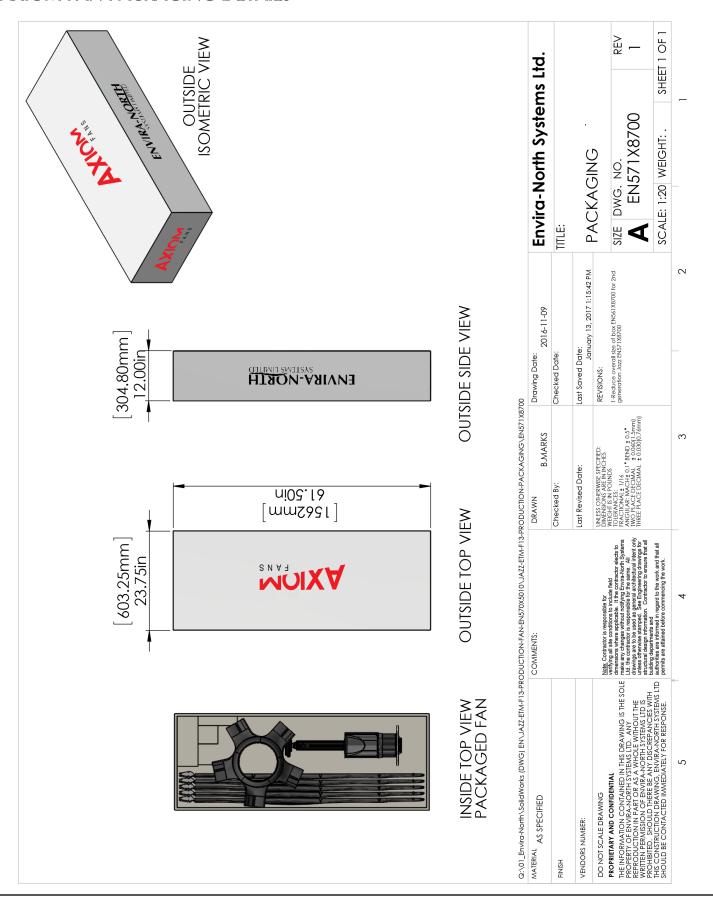


MODEL NUMBERS

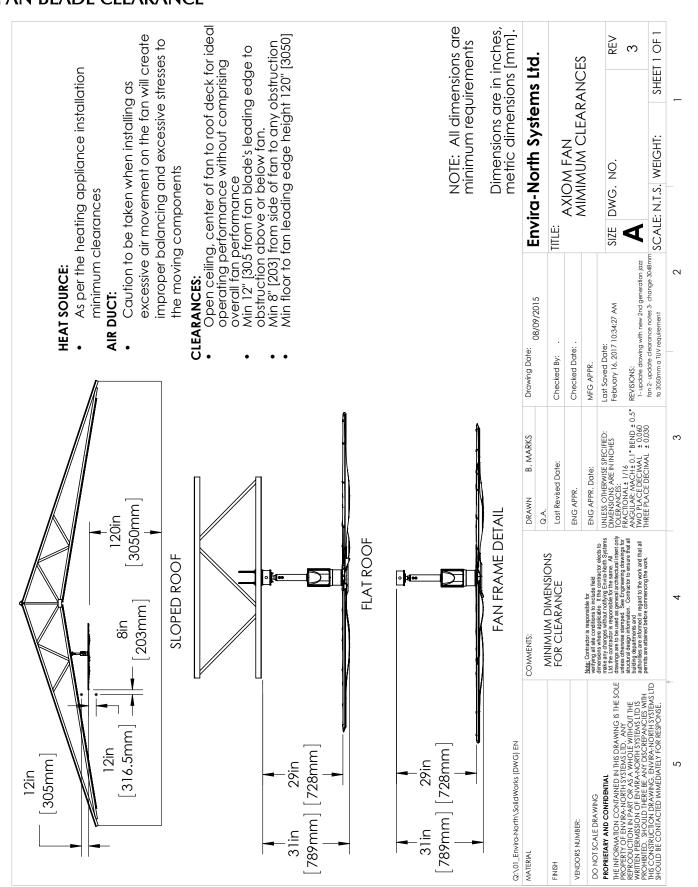


Standard lead time is 1 week. Custom lead time is 4 weeks.

AXIOM FAN PACKAGING DETAILS



FAN BLADE CLEARANCE



LIMITATION OF WARRANTY & LIABILITY

Three Year Limited Warranty

Axiom Fans should provide many years of virtually maintenance-free use. Warranty duration is as follows:

a) Blades
b) Mount
c) Motor
d) Driver
e) HMI Control Panel
f) Labour
g) Fan Wraps/Paint
3 year Limited Warranty
3 year Limited Warranty
4 year Limited Warranty
5 year Limited Warranty
6 year Limited Warranty
7 year Limited Warranty
8 year Limited Warranty
9 Fan Wraps/Paint
1 year Limited Warranty

Envira-North warrants that this Product will under normal use and service as specified by Envira-North, operate properly and be free of defects in materials and workmanship for a period of three years from the date of purchase by customer. The term "operate properly" in this context applies to mechanical, electrical and structural functions only. No guarantee, unless and except by separate written agreement, is made regarding dimensions of air movement generated or the effectiveness of this Product for its intended purpose.

Labour Warranty will cover all reasonable costs paid by the customer to an independent contractor (including dealers) to remove, dismantle, reassemble or reinstall any of the warranted Products during the first year that the Product is in service. All pre-approved receipts are to be submitted to Envira-North which will be paid upon completion of the installation of the Product and after the return of the failed unit. Envira-North will only issue a credit/cheque to the customer/dealer and will not be held responsible for paying the independent contractor.

WARRANTY EXCLUSIONS

Please note that the following may or could void any or all of the above listed Warranties.

- Not following required installation procedures as in installation guide and all other documentation supplied with the fans and related equipment, supplied by manufacturers of individual fan and control components.
- Not following all relevant codes and ordinances, not limited to National Electrical Code, provincial
 or state and local building codes.
- Not following electrical engineering industry standards regarding approved method of installing solid-state electrical equipment having characteristics of fans and all components included in this product.
- Any modification to installation, product and or controls without written authorization from Envira-North, even if attempting to diagnose and or repair a problem.

- Misuse, abuse, accidents, unreasonable use or Acts of God.
- Incorrect electrical current, voltage or supply
- Failure to use all installation and mounting hardware supplied by Envira-North.
- Failure to perform periodic maintenance as detailed in the Envira-North installation guide.

Envira-North reserves the right to make the final determination, based on its own evaluation of the components as to whether:

- The problem in question is the result of a defect in design, workmanship or materials and not the result of error, misuse or abuse on the part of the customer as stated above.
- Whether the problem or defect is material and requires action under this Warranty.
- Whether the remedy of repair or replacement is appropriate.

Envira-North will not be responsible for remedial work necessary to correct installation procedures that do not conform to those established by the instructions, codes and standards, regardless of when the installation occurred.

With regard to electrical and electronic components provided by Envira-North that comprise part of the Products, including motors, motor drives and variable frequency drives, Envira-North relies on the determination by the original manufacturer as to whether the failure of such component was the result of a defect. If the manufacturer of such component determines that there was no defect and therefore refuses to cover it under warranty, Envira-North likewise will not warranty such item unless Envira-North determines that the failure of such electrical or electronic component was the result of a defect of design, workmanship or material within some other part of the products.

WARRANTY DURATION

With respect to replacement or repair rendered, Envira-North warrants that the parts replaced or repaired will operate properly and be free from defects in materials and workmanship for a period of 90 days from the shipment date of the replacement products to the customer, or for the remainder of the original Warranty period, whichever is longer.

WARRANTY CLAIM INSTRUCTIONS

- 1. Contact your original dealer/salesman of the purchase when you first notice problem with the Product.
- 2. It will be the responsibility of the dealer or salesman to assist the customer in determining what Product is causing the problem.
- 3. If they cannot diagnose the problem, they are to contact Envira-North with all the necessary information.
- 4. The appropriate department will then be in contact with the customer to determine the cause of the problem.
- 5. Once diagnosed, submit a Purchase Order for a replacement component complete with price.
- 6. Replacement component will be shipped out upon receipt of the PO. This PO allows for an order to be

7. 8.	established in the Envira-North System. Once the units have been changed over, submit all pre-approved costs to Envira-North for payment. No credits or cheques will be issued until all original products are received back at Envira-North or unless Envira-North directs otherwise.	

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CERTIFICATE

No. U8 17 02 91907 005

Holder of Certificate: Envira North Systems Ltd

92 Railway Street Seaforth ON N0K 1W0

CANADA

Production Facility(ies):

91907

Certification Mark:



Product: Ceiling fans

Industrial Ceiling Fan

Model(s): "EN560X" or "EN570X"; followed by two digits number

from 00 to 99; followed by "10"

Parameters: Rated Input Voltage: 120 / 240 Vac

Rated Frequency: 60Hz

Rated Input Current: Up to 6.7 A at 120Vac

(See attachment for more details)

Tested CSA C22.2 No. 113:2015-05

according to: UL 507:1999/R:2017-01

The product was voluntarily tested according to the relevant safety requirements noted above. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited certification body.

Test report no.: 240-1500831-100

Date, 2017-02-27

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TUV®



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