



AI

Axial Inline | Product Guide |



LOREN COOK COMPANY

INTRODUCTION



With higher efficiency than other axial units with more performance selections at a lower price point. AI offers advantages over other traditional axial units.



DESIGNED FOR

supply, exhaust or return air movement applications



EQUIPPED WITH

Heavy-duty cast aluminum axial impeller



DESIGNED WITH

the latest Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) softwares



OFFERED IN 14 SIZES

ranging from 31 to 160 (12.25" - 63" diameter)



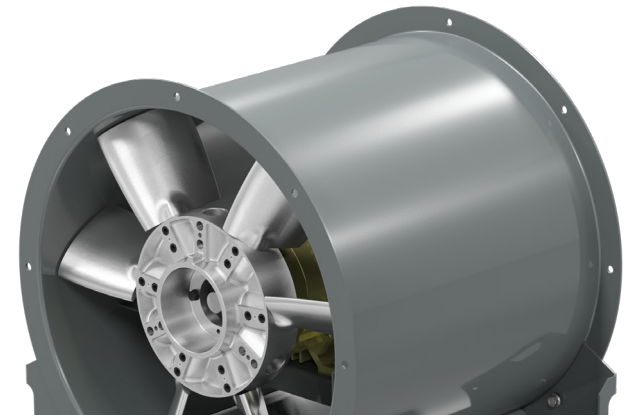
PERFORMANCE RANGE

400-140,000 CFM



STATIC PRESSURES

up to 5.5 in. wg



EXTRA BENEFITS

- ▶ UL/cUL 705 Listing is standard on all AI models.
- ▶ Lighter weight than other axial flow fans
- ▶ More impeller options than traditional adjustable pitch axial flow or vane axial fans at a lower initial cost

IMPELLER DESIGN



The axial impeller provides efficient airflow in one of the most compact designs in the industry.



PROP OFFERING

The combination of impeller sizes, number of blades, multiple hub sizes and pitch selection from 5° to 45° at single degree intervals, yields 2700 different impeller combinations. Allowing the ability to fine tune the fan to meet application demands.

	Hub Size		15 (6")		20 (8")		25 (10")		32 (12.5")		40 (16")		50 (20")	
	# of Blades		4	6	4	6	6	9	6	9	6	9	8	12
UNIT SIZE*	31 (12")		✓	✓										
	36 (14")		✓	✓										
	41 (16")		✓	✓	✓	✓								
	47 (18.5")		✓	✓	✓	✓								
	54 (21")		✓	✓	✓	✓	✓	✓						
	63 (24.5")		✓	✓	✓	✓	✓	✓						
	72 (28")				✓	✓	✓	✓	✓	✓				
	80 (31.5")				✓	✓	✓	✓	✓	✓				
	90 (35.5")						✓	✓	✓	✓	✓	✓		
	103 (40.5")						✓	✓	✓	✓	✓	✓		
	113 (44.5")								✓	✓	✓	✓	✓	✓
	123 (48.5")								✓	✓	✓	✓	✓	✓
	140 (55")									✓	✓	✓	✓	✓
	160 (63")									✓	✓	✓	✓	✓

*Nominal diameters in parentheses

PITCHES

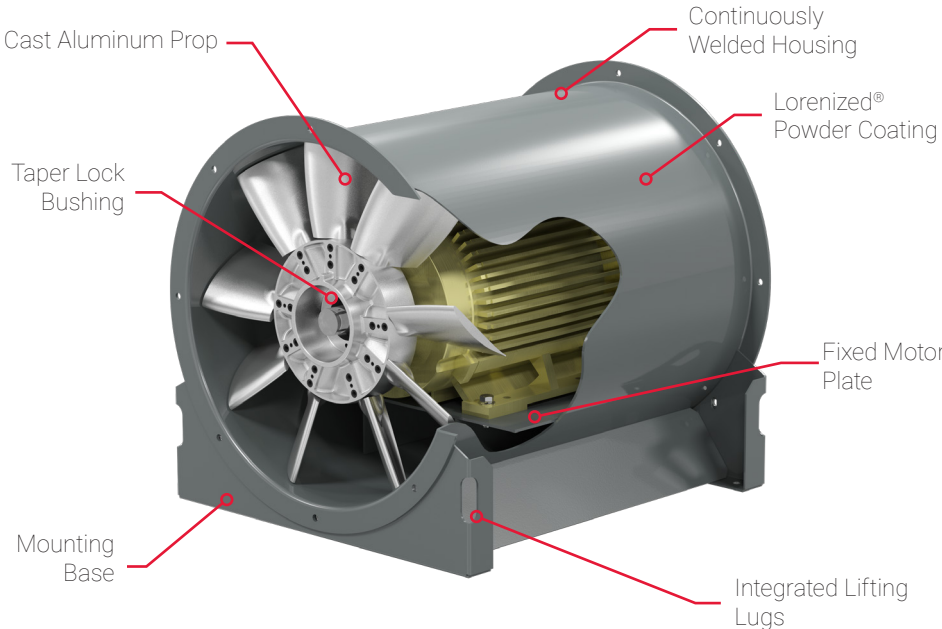
- ▶ Range: 5° to 45°
- ▶ 1° increments
- ▶ Combined with multiple hubs to meet pressure demands

LEVEL ONE FEATURES

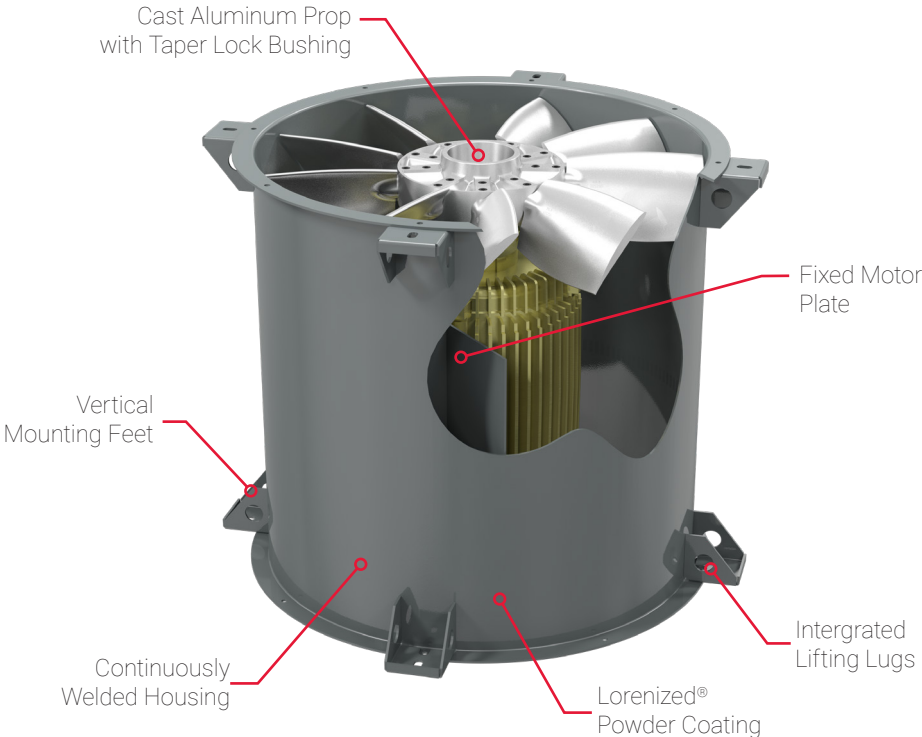


The Level One standard construction features are shown below on the horizontal and vertical Arrangement 4.

HORIZONTAL ARR 4



VERTICAL ARR 4

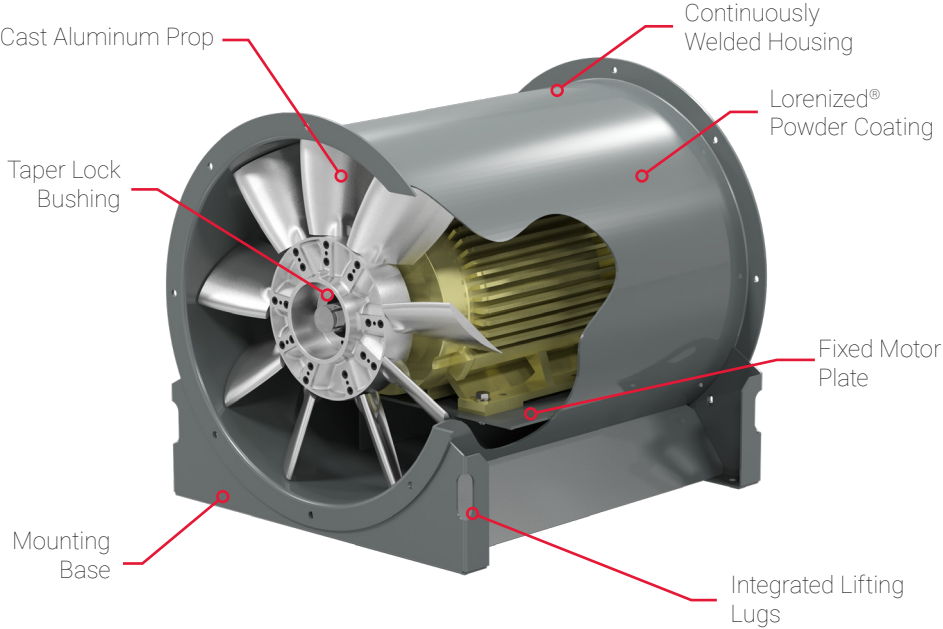


LEVEL TWO FEATURES

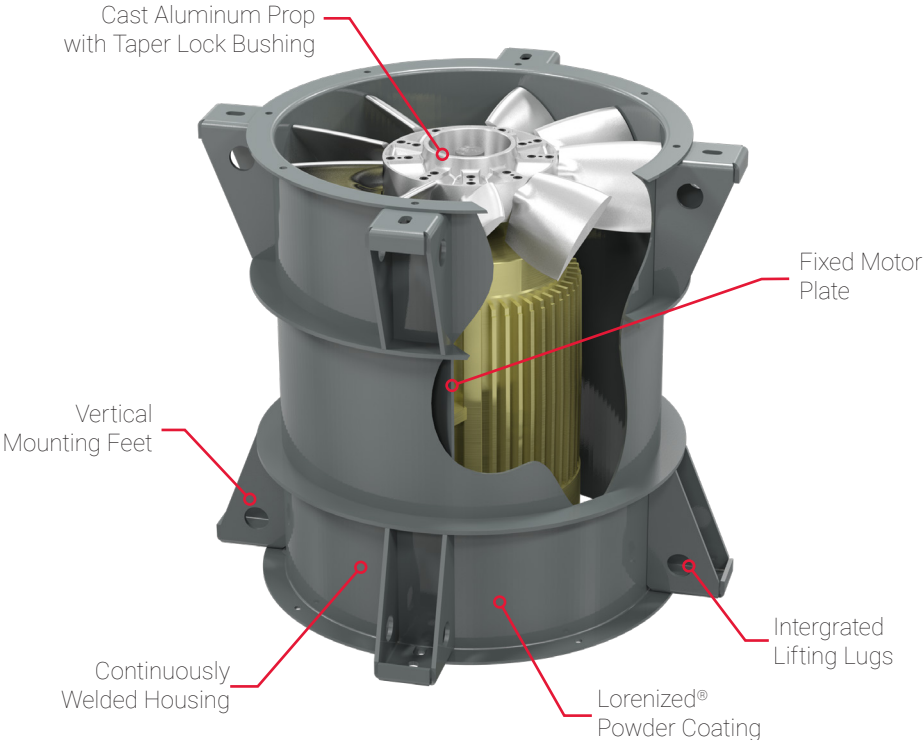


The AI is available in two construction levels. Level 1 is designed for typical applications. Level 2 can accommodate larger motor applications. See below for key differences between levels.

HORIZONTAL ARR 4



VERTICAL ARR 4



AI ACCESSORIES



Beyond the AI standard construction features, Cook offers accessories to fit your custom air-movement requirements and/or preferences.

ARRANGEMENT 4

ACCESS DOOR

- ▶ Available in bolted or hinged configuration.
- ▶ Provides access to the propeller for cleaning and inspection.

INLET/OUTLET COMPANION FLANGE

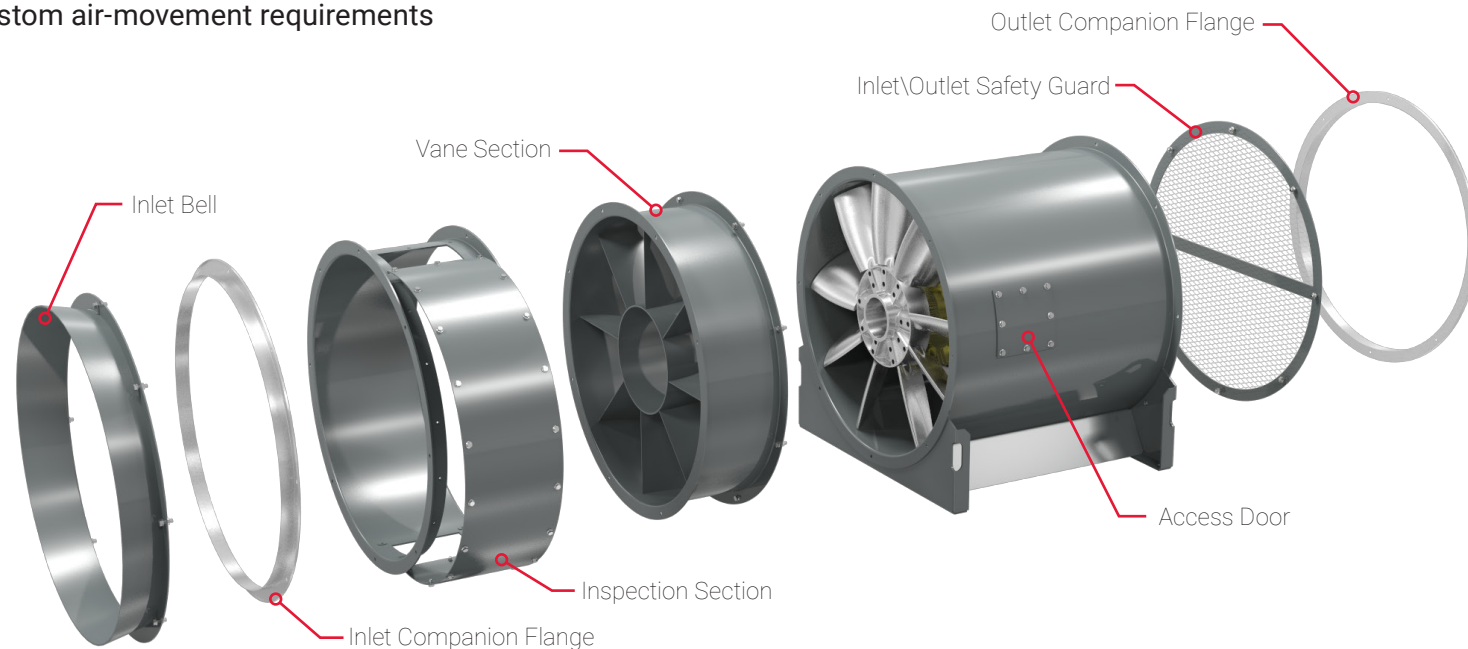
- ▶ Attached to the adjacent ductwork to provide an exact mate to the flanged connection on the fan.

INLET/OUTLET SAFETY GUARDS

- ▶ Protect personnel and prevent debris from entering the fan.
- ▶ Safety guards are constructed of expanded metal.

VANE SECTION

- ▶ Bolt-on component containing vanes to straighten the airflow for greater efficiency and static pressure.



INLET BELL

- ▶ In non-ducted inlet design systems provides reduced entrance loss.

INSPECTION SECTION

- ▶ Bolt-on component containing a door that can be removed to inspect or remove the prop.

FLEXIBLE DUCT CONNECTOR

- ▶ Provides a flexible connection between the fan and the attached ductwork.
- ▶ Constructed of reinforced neoprene fabric and aluminum bands.
- ▶ **NOT to be used for smoke control units or temperatures in excess of 250°F.**

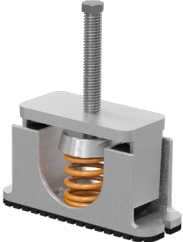
AI ISOLATORS



Cook offers six types of isolators to reduce vibration transmission from equipment to building structure.

HOUSED SPRING

Floor Mounted



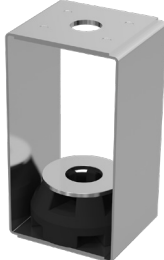
FREE STANDING SPRING

Floor Mounted



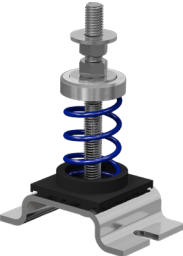
RUBBER-IN-SHEAR

Ceiling Mounted



RESTRAINED SPRING

Floor Mounted



SPRING

Ceiling Mounted



RUBBER-IN-SHEAR

Floor Mounted

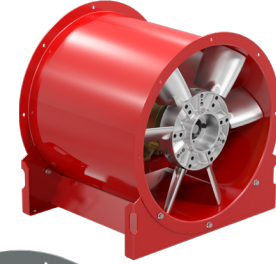


 See our Vibration Isolation Brochure for more information.

STANDARD COATING



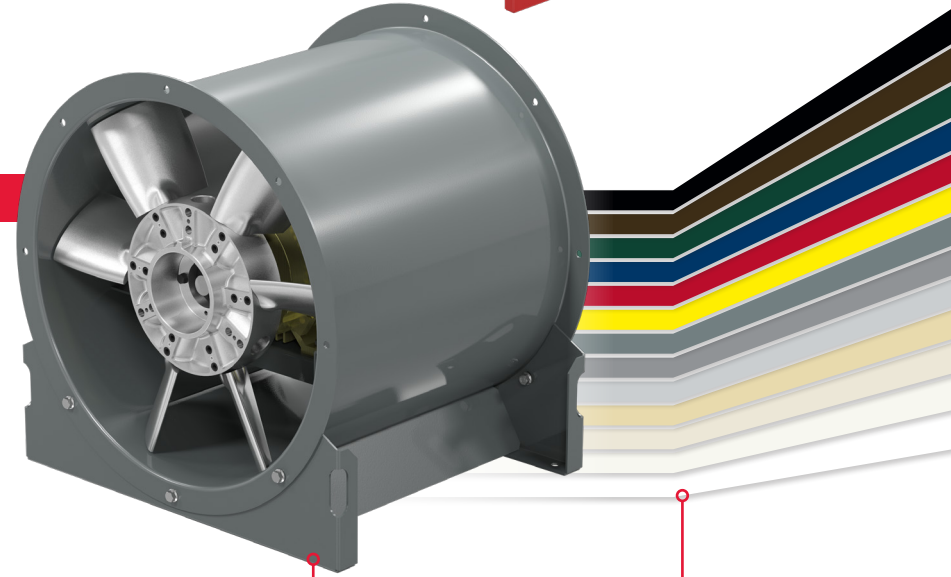
The AI is available with a variety of coatings to meet your needs . The Lorenized™ coating in gray is standard. Lorenized™ is also available in 12 other colors shown.



Shown in Lorenized Cook Red

LORENIZED™ COATING

- ▶ Electrostatically applied, baked polyester powder coating
- ▶ Undergoes a five-stage environmentally friendly pretreatment/wash process before coating
- ▶ Baked and cured at 400°F; final coating thickness of 1.5–2.5 mil
- ▶ Coating is required to exceed 1,000 hour salt spray under ASTM B117 test method
- ▶ Offers strong chemical resistance, durable mechanical performance and tough protection from outdoor elements



Lorenized™ standard coating on Al

all 13 available Lorenized™ colors

OPTIONAL COATINGS



Each type of coating offers unique qualities, benefits and color availability.

COOK HIGH TEMP COATING

- ▶ Solvent based, heat resistant liquid coating which exhibits good corrosion resistance and color stability
- ▶ Final coating thickness is 0.8–1.5 mil
- ▶ Withstands service temperatures up to 1,000°F

Available in **BLACK**.

COOK EPOXY POWDER

- ▶ Electrostatically applied, baked epoxy powder coating
- ▶ Final coating thickness is 2.5–3.5 mil
- ▶ For outdoor applications, an optional UV resistant topcoat is available to prevent coating deterioration

Available in **DARK GRAY**.

AIR DRY PHENOLIC

HERESITE® VR-514

- ▶ Conventional spray applied phenolic resin coating
- ▶ Final coating thickness is 2.0–4.0 mil
- ▶ For outdoor applications, an optional UV resistant topcoat (Heresite® UC-5500) is required to prevent deterioration of the coating

Available in **BROWN**.

COOK EASY-CLEAN POWDER

- ▶ Electrostatically applied, baked modified epoxy silicone powder coating
- ▶ High temperature "non-stick" coating
- ▶ Final coating thickness is 1.0–2.0 mil

Available in **BLACK**.

COOK PHENOLIC EPOXY POWDER

- ▶ Electrostatically applied, baked phenolic epoxy powder coating
- ▶ Final coating thickness is 1.5–4.0 mil
- ▶ For outdoor applications, an optional UV resistant topcoat is required to prevent coating deterioration

Available in **LIGHT GRAY** and **BROWN**.



**See our Coatings Brochure
for more information.**

AI CERTIFICATIONS



Cook uses third party verification to certify, list, label or otherwise verify performance criteria

SMOKE CONTROL UL 705 LISTED

Power Ventilator for Smoke Control Systems

The UL Listing “Power Ventilator for Smoke Control Systems” is a test procedure and category initiated by Loren Cook Company and developed in a joint effort with UL in 1990. The products below are UL Smoke Control Listed.

All Models



UL Requirements

- ▶ Unit must be listed under UL 705
- ▶ Unit must withstand specified elevated air stream temperature for specified duration



**For more information, see
UL Smoke Control Flyer.**

Power Ventilator

The UL 705 Listing is the standard for electrical safety for permanently connected power ventilators. All AI models are constructed in accordance with UL 705, only when with motors.

All Models

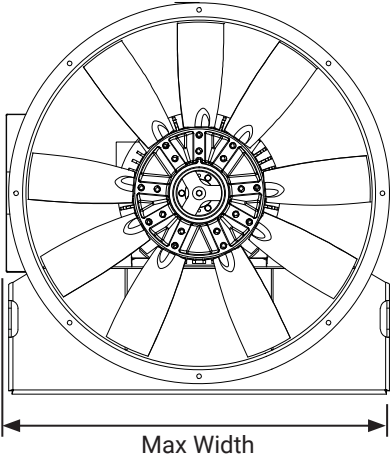
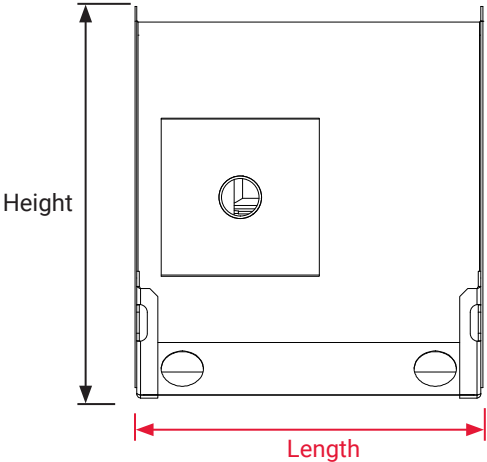


OVERALL DIMENSIONS



Dimensions are in inches. For more detailed dimensions, see the product submittal.

HORIZONTAL LEVEL 1



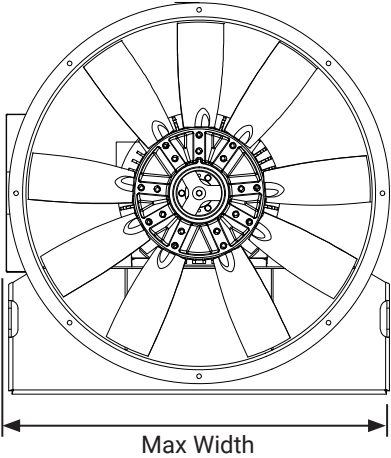
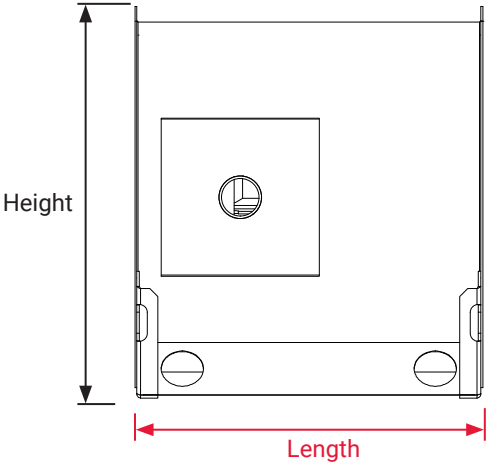
Unit Size	31	36	41	47	54	63	72	80	90	103	113	123	140	160
Height	16	17 7/8	19 5/8	22 5/16	25 1/4	28 15/16	33 1/4	37 1/8	42 1/16	47 1/4	51 11/16	56 3/16	63 9/16	70 3/8
Length	19	19	22	22	22	22	26	33	39	39	39	41	41	41
Width	15 3/8	17 7/16	19 1/2	21 7/8	24 7/8	28	32 5/16	36 3/8	41 5/16	45 5/8	49 7/8	54 3/16	60 15/16	69 3/16

OVERALL DIMENSIONS



Dimensions are in inches. For more detailed dimensions, see the product submittal.

HORIZONTAL LEVEL 2



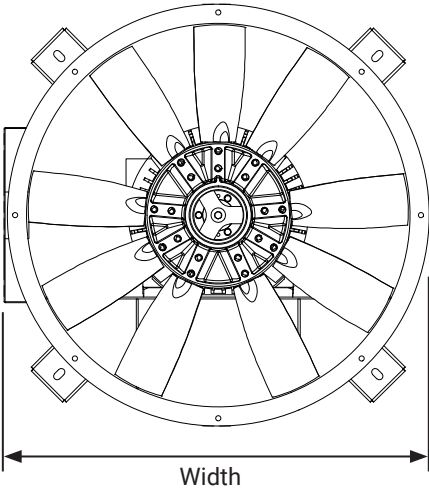
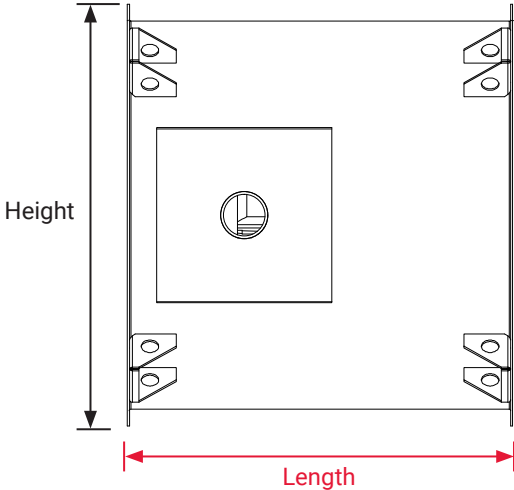
Unit Size	41	47	54	63	72	80	90	103	113	123	140	160
Height	19 5/8	22 5/16	25 1/4	28 15/16	33 1/4	37 1/8	42 1/16	47 1/4	51 11/16	56 5/16	63 11/16	70 3/4
Length	25	25	30	30	33	35	39	39	45	50	50	50
Width	19 1/2	21 7/8	24 7/8	28	32 5/16	36 3/8	41 5/16	45 5/8	49 7/8	54 3/16	61	69 1/4

OVERALL DIMENSIONS



Dimensions are in inches. For more detailed dimensions, see the product submittal.

VERTICAL LEVEL 1



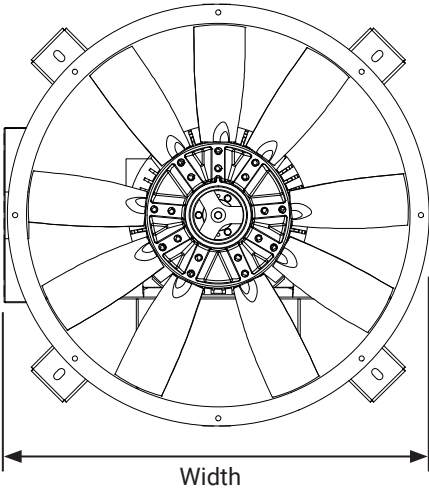
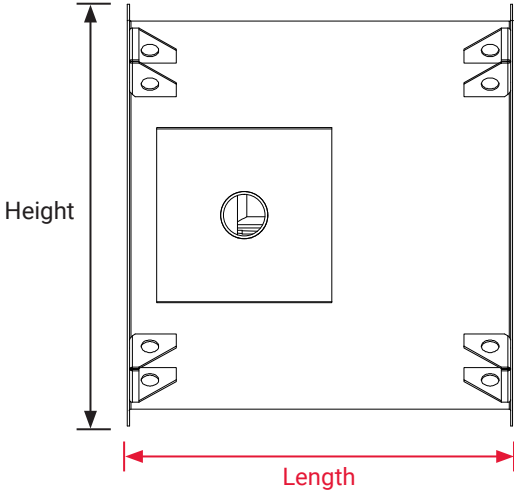
Unit Size	31	36	41	47	54	63	72	80	90	103	113	123	140	160
Height	17 ³ / ₈	18 ¹³ / ₁₆	20 ⁵ / ₁₆	21 ⁷ / ₈	24 ³ / ₄	27 ⁷ / ₈	32 ¹ / ₈	36 ¹ / ₈	41 ¹ / ₄	45 ³ / ₈	49 ¹ / ₂	53 ³ / ₄	60 ³ / ₈	68 ¹ / ₂
Length	19	19	22	22	22	22	26	33	39	39	39	41	41	41
Width	17 ³ / ₈	18 ¹³ / ₁₆	20 ⁵ / ₁₆	21 ⁷ / ₈	24 ⁷ / ₈	28	32 ⁵ / ₁₆	36 ³ / ₈	41 ⁵ / ₁₆	45 ⁵ / ₈	49 ⁷ / ₈	54 ³ / ₁₆	60 ¹⁵ / ₁₆	69 ³ / ₁₆

OVERALL DIMENSIONS



Dimensions are in inches. For more detailed dimensions, see the product submittal.

VERTICAL LEVEL 2



Unit Size	41	47	54	63	72	80	90	103	113	123	140	160
Height	20 1/2	22 1/16	24 3/4	27 7/8	32 1/8	36 1/2	41 1/4	45 3/8	49 13/16	53 15/16	60 9/16	69 3/16
Length	25	25	30	30	33	35	39	39	45	50	50	50
Width	20 1/2	22 1/16	24 7/8	28	32 5/16	36 3/8	41 5/16	45 5/8	49 7/8	54 3/16	61	69 1/4

