**WHALENADO HVLS FANS**

As Supplied by Northern Dock Systems Ltd.

High Volume Low Speed Fan Specifications

Whalenado Fans are designed to circulate and/or de-stratify the air envelope. These fans should be strategically placed to maximize the efficiency of the space. Each fan is designed to move the maximum amount of air within a given space while consuming minimal electrical power. The Whalenado Fan utilizes WhalePower's Tubercle™ Technology to ensure maximum airflow.

**General Specifications:**

1. HVLS Fan Model to be used is Whalenado-WN-20 as supplied by Northern Dock Systems Inc. Jonathan Smith – Construction Manager, Northern Dock Systems Inc. – 1-519-621-7727 (jsmith@northerndocksystems.com); [www.whalenado.com](http://www.whalenado.com); [www.northerndocksystems.com](http://www.northerndocksystems.com)
2. Performance Specifications: Whalenado HVLS Fans to be rated for & perform to the following specifications:

|  |  |
| --- | --- |
| **Fan Size** | **20 FT (6.1 m)** |
| Motor Power | 2 HP (1.5kw) |
| Power Consumption | 1403 W |
| Amps @ 230 Volts  | 6.3A |
| Speed  | 63 rpm |
| Air Flow | 330,050 cfm (155,766 I/s) |
| Max Eff. Cooling Dia\* | 120 FT (18.3m) |
| Max Eff. Destrat Dia\* | 222 FT (61m) |
| Weight (no mount) | 350 lbs (158.7 kgs) |
| Recommended  | 40 FT – 56 FT |
| Fan Spacing \*\*  | 12 m – 17m  |
| Noise Level (2.4m below wing tip) | 63 dBA |

\* Maximum effective diameter is where horizontal air speed at 1.2 m (3.9 ft) above floor drops below 0.2 m/s (0.7 fps) in an empty room. \*\*Fan spacing based on facility and contributing factors to optimize product performance. Specifications may vary due to electrical and environmental conditions. Specifications are subject to change without notice.

1. Each Whalenado Fan shall be complete with five (5) extruded anodized aluminium blades positioned at 21 degrees including WhalePower's Tubercle™ Technology on the leading edge (high impact polystyrene).
2. The hub shall be 713 cast aluminium alloy and precision drilled to firmly support the blades and provide a safe connection to the Gear Motor.
3. The blades shall be connected to the hub by means of three (3) zinc-plated threaded bolts that are tightened to 200-ft-lbs to provide rotationally balanced blades and hub.
4. For additional safety purposes, each blade shall include a 6mm Galvanized Steel safety clips
5. A MIG welded motor frame from steel tubing and 36 gauge steel plate, galvanized for maximum resistance to rust and corrosion shall house the Gear Motor and mount directly to the adjustable mounting system.
6. The fan shall be supported by a two-axis adjustable mounting system that is designed to prevent vibration and movement while supporting the weight of the fan. 3/16” stainless steel safety cables shall tie together the beam, mounting system and motor/gear reducer.
7. Stabilization of the fan shall be provided by four (4) ⅛” stainless steel guy wires to avoid unnecessary sway and large movements from the fan.
8. The Whalenado Fan shall utilize up to a two (2) horsepower, high efficiency, Gear Motor as manufactured by NORD™ and feature a Unicase™ Design. The motor has thermal protection in case of overheating and wound with 392°F moisture resistant ISR magnetic wire.
9. The Gear Motor shall be triple reduction helical inline speed reducer with synthetic lubricant. The gear reducer shall be Insulation Class F and precision finished for long life and low noise level.
10. The Variable Frequency Drive will be rated NEMA 4X and be factory programmed to provide a soft start/stop, variable speed control capability, current limit and motor overload protection for the fan. The VFD is to be factory installed on the Fan Frame.
11. Main Power Supply for Motor to be: 230V | 460V | 575V, 3Ph, 60Hz
12. Each control shall be forward/reverse compatible and is to include the Low Voltage Key Pad controller for remote operation. Refer to drawings showing final location of Key Pad controller or final positioning to be determined at time of installation.
13. Mounting Method: Whalenado Fans are to be mounted to the building structure using the OWSJ (Open Web, Steel Joist) method. Whalenado Fans to be mounted from the top chord of the existing or new structure using two (2) OWSJ Mounting Brackets. Mounting Beams/Angles are to be provided by the manufacturer and must extend beyond the OWSJ a minimum of 12” on either side. For spans up to 7’, 3” x 3” x ¼” (76mm x 76mm x 6mm) angle is to be used. For spans above 7’, 4” x 4” x ¼” (102mm x 102mm x 6mm) angle is required. (Length of Angles dependent on joist spacing – please refer to structural drawings to determine span.)
14. Each Whalenado Fan is to be supplied with 1’ (305mm), 2’ (610mm) or 4’ (1220mm) Packaged UHM Mount in order to achieve and adhere to Whalenado Clearance requirements as listed below. Where additional clearance is required, a UHM Extension is to be used in conjunction with Packaged UHM Mount. UHM Extensions available in 2’ (610mm) & 4’ (1220mm) lengths.
15. Safety Cable: ¼” (5mm) Stainless Steel Safety Cable to be installed at all connection points to main building structure and at all connection points between Fan, Brackets, Packaged UHM Mount & UHM Extension (if applicable). Safety Cable to be supplied and included by manufacturer.
16. Whalenado HVLS Fan Clearance Requirements:
	1. Minimum 60” (1524mm) above blades to underside of roof deck/ceiling.
	2. Minimum 30” (762mm) from fan blade’s leading edge to obstruction above or below fan.
	3. Minimum 18” (457mm) from end of blade to fan obstruction.
	4. Fan must be installed at a minimum of 144” (3658mm) above finished floor
17. Warranty: Air Foil Shaped Blade - Lifetime Warranty

Aluminum Alloy Hub - Lifetime Warranty

Motor - 15 Year Limited Warranty

Gear Reducer - 15 Year Limited Warranty

VFD Control Panel - 15 Year Limited Warranty

Labour (if applicable) - 1 Year Limited Warranty

1. Installation: For Factory Trained Installation please contact Jonathan Smith – Construction Manager, Northern Dock Systems Inc. – 1-519-621-7727 (jsmith@northerndocksystems.com); [www.whalenado.com](http://www.whalenado.com); [www.northerndocksystems.com](http://www.northerndocksystems.com)