

Benefits and Value

Efficiency —

Lower capex, better opex, improved scope 2 and 3 emissions

Serviceability —

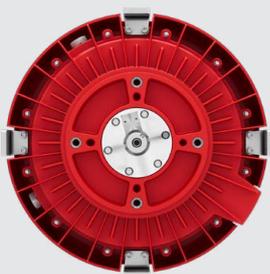
Modular and serviceable components with spare parts and service organization readily available

Lower noise and vibration —

Harmonics mitigation available

Circularity —

Keep motors out of landfills thru reuse, remanufacture, recycle



In-House Fan Array Tests

Infinitum is running two different fan array configurations on a continuous basis to test motor reliability in its own ISO 17025 accredited lab. The motors have run successfully for more than 8,000 hours without issue. Infinitum uses customer configurations to run several in-house tests simulating real world HVAC applications. These tests are run 24/7/365 and remotely monitored for any off-normal conditions.

Bearing L10 Calculations

Infinitum Aircore EC motors use industry standard deep groove ball bearings, with the choice of either steel or hybrid ceramic balls.

- For steel bearings operating at 65 degrees C, the L10 Life averages 200k hours (Horizontal), with a grease life of 80k hours.
- With reduced friction losses and industry experience as a guide, hybrid ceramic bearings are expected to exceed the L10 of steel ball bearings while also extending grease life.

Third-Party MTBF Assessment & Results

MTBF calculations were conducted using MIL-HDBK-217F and ANSI/VITA 51.1 standards. These assessments provided quantitative metrics for the motor's operational lifespan under "Ground, Benign" environmental conditions. Key factors included:

- Failure rate calculations for individual components based on stress, quality, and temperature factors.
- Aggregation of failure rates to determine overall system MTBF, offering a probabilistic measure of reliability.

The calculated MTBF for the Aircore EC motor is 121,770 hours, equivalent to an estimated lifespan of approximately 13.9 years.

Third-Party PCB Stator Tests

- The voltage endurance of PCB stators is near four orders of magnitude longer (10,000 times) than conventional form wound coils of traditional iron-core stators
- A PCB stator life is at least 10 times longer than a form wound coil stator.
- PCB stators showed exceptional voltage endurance and resistance to degradation under stress, making them a promising alternative to traditional winding technologies.



ETL Listing (UL, MG1 Tests)

Infinitum Aircore EC motors are rigorously tested and certified to meet the following UL, CSA and NEMA standards.

- UL-61800-5-1, Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical, Thermal and Energy
- UL 1004-1, Rotating Electrical Machines – General Requirements
- UL 1004-7, Electronically Protected Motors
- CAN/CSA-C22.2 No. 77, Motors with Inherent Overheating Protection
- CAN/CSA-C22.2 No. 274, Adjustable Speed Drives
- CAN/CSA-C22.2 No. 100, Motors and Generators
- NEMA MG-1, Standard for Construction, Guide for Selection, Installation and Use of Electric Motors and Generators

Install Base

Units Installed	Run-time	Locations	Cooling IT Load
30,000 in data centers	525M hours collectively 20k hours avg. run time	15 data center owners across 50 data halls	1.5 GW

Supply Chain

OEMs



Fan Partners



CDUs



Pump Partners



In Development



Office
12234 N IH 35 SB
Building B
Austin, TX 78753

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