

General Features

- Ironless Core with Low Inductance (No Back Iron or Lamination Required)
- Improved & Low Inertia of the Rotor
- High Specific Power in Continuous Operation
- Improved Thermal Cooling with Air-Cooled Design
- Light Weight and Compact
- Quiet, Efficient Operation
- Sustained High-Speeds beyond 10,000 rpm

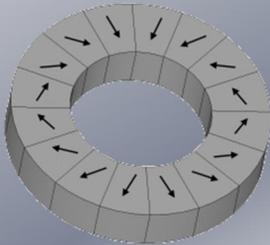


Figure 1: Halbach Array Alignment of Permanent Magnets



Figure 2: TFT 10 kW Halbach UHEHM1 Motor

Contact Us

730 Eastern Avenue, Suite 96
Malden, MA 02148
P: 774.855.6811
www.topflighttech.com ; info@topflighttech.com



Ultra High Efficiency Halbach Motors (UHEHM1™ Series)

Invented by Klaus Halbach in the 1980s at Lawrence Berkeley National Laboratory, the Halbach array is a unique arrangement of permanent magnets that augments the magnetic field on one side of the array and cancels the field on the other side of the array. The result is a series of novel “ironless” electric permanent-magnet motor/generators designs using the Halbach array with high power density, high specific power, and low losses—even at high speeds.

These motor designs leverage a passive cooling method in conjunction with a proprietary magnetic construction based on a Halbach array that results in a very light, very compact motor assembly with very smooth commutation and unmatched efficiency and smoothness of motion. They are especially suitable for weight- and volume-sensitive applications such as UAV propulsion and mobile hybrid electric generator motors.

Top Flight Technologies, with our partner IIMANII™, is proud to offer an initial product line of Ultra High Efficiency Halbach Motors (UHEHM1™ series) that includes motors sized for 2-10 kW with the ability to scale to 100+ kW of continuous power operation, with smaller and larger models available upon request.

Please email motors@topflighttech.com for more information.

Live Demo of Motor: [Live Demo of 10 kW Halbach UHEHM1 Motor](#)

Link: <https://youtu.be/6EJVWX5f6g8>

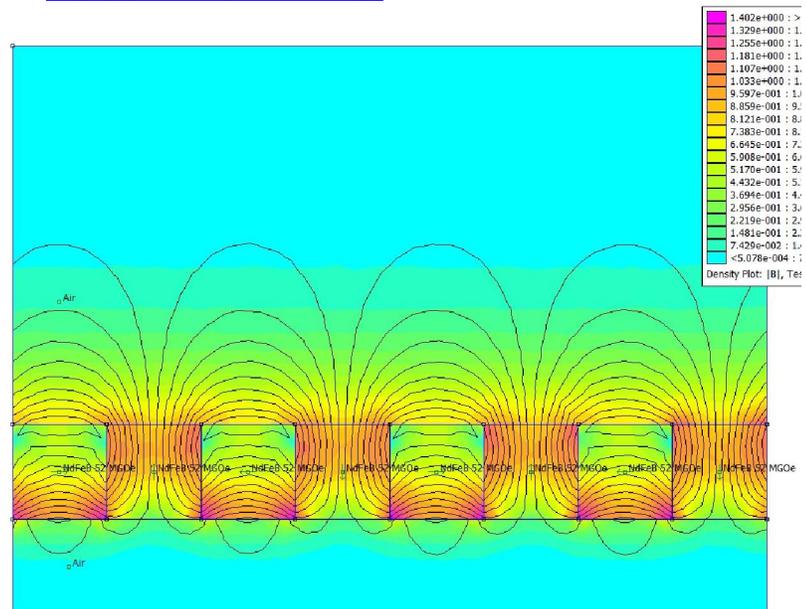


Figure 3: The Flux Diagram of a Halbach Array

Contact us to get started with your project application.