

## FEATURES

- Microsoft ® Windows™ based program
- Analysis tool used in design of Inner-Rotor and Outer-Rotor DC Motors
- Computes all relevant motor parameters
- Allows printing of inputs, outputs & graphs
- Multi-window tasking
- Poly phase or single phase option
- Important constants built into program
- Variable definitions instantly available on screen
- Reduces development cycle time and cost
- Instantly check effects of design change
- Maximizes material usage
- On-line design tips
- Reduce number of prototype iterations

### Actual Customer Comments

- “Your software is very intuitive.”
- “It is so easy to use!”
- “You can tell that this software was written by someone who had to design motors for a living.”

## FEATURES con’t

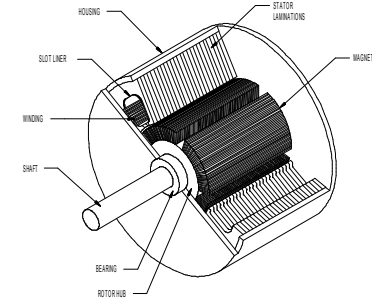
- Inputs:
  - Dimensions, material properties and winding information
  - Drive type; square or sine
- Outputs:
  - Magnetic circuit information including flux densities and MMF drops
  - Mechanical information, weights and inertias
  - Winding information including copper weight and slot fill
  - Performance; speed-torque, current, losses and efficiency, graph
  - Motor constants
  - Cost data of design

Call or email us for demos, additional information, or to place an order.

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## BLDC MOTOR DESIGN



## ANALYSIS SOFTWARE

### BENEFITS

- **Design it yourself, faster.**
- **Can pay for itself in one design project.**
- **Saves time and money.**
- **Fast, accurate results.**
- **Optimize motor costs.**

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MasterCard, Visa, Discover and American Express are accepted for your convenience.

# SAMPLES OF BLDC INPUT AND OUTPUT WINDOWS

Yeadon Energy Systems, Inc. \* 514 West Maple Street \* Iron River, MI 49935

**Inner Rotor BLDC Design 0.32 - DEMO.Y11**

File Edit Input Output Calculate Graph Materials Window Units Help

Designer  Description  Graph Calculate

Stat Rot ILoss Mag Elect Shaft L S \$ In FYI No L Lock Spd 1 Spd 2 Mech Wdg M C M K \$\$\$

Click to Select Rotor Hub Material X-Section **YES™**

**Stator Dim's**

Lamination Steel Type

Th\_Lam  cm

Slot Bottom  
 Round Bottom  
 Flat Bottom

Ds	7.6200	cm
Ds1	4.3571	cm
Ds2	6.4221	cm
IDs	4.2159	cm
Wsst	0.1544	cm
Wst	0.3752	cm
Rst	0.0442	cm
Nst	21	Teeth

**Magnet Data**

Magnet Material

Magnet Shape  
 Arc Segments  
 Bread Loaf

OD_Mag	4.1598	cm
Theta_P	35.7	deg
Lmr	0.3617	cm
Lma	11.4300	cm

**Motor Constants**

Kt	78.70	oz-in/Amp	Kd	24.219
Kb	58.195	Volts/KRPM	Kf	0.0010
Kbm	0.5556	Volts/rad/sec	Km	58.57
Tp	0.0018	seconds		

**Electrical Data**

Winding Type  
 Wye  
 Delta

Wire Insulation  
 Single  
 Heavy

Et  Volts

TPC  Turns

**No Load Performance**

Snl	3574.2	RPM
Snl	3573.3	RPM
Inl	0.03	Amps

**Speed-Torque-Current Curve**

SEM<sub>max</sub> = 3516.3 RPM    SPM<sub>max</sub> = 1786.6 RPM

**Rotor Hub & Shaft Data**

Type of Rotor Hub Steel

Lh

Aih  sq. in.

Rih  cm

Diagram

**Cross-Section of Motor**

DEMO.Y11

Zoom In Save Clear Wdg Close