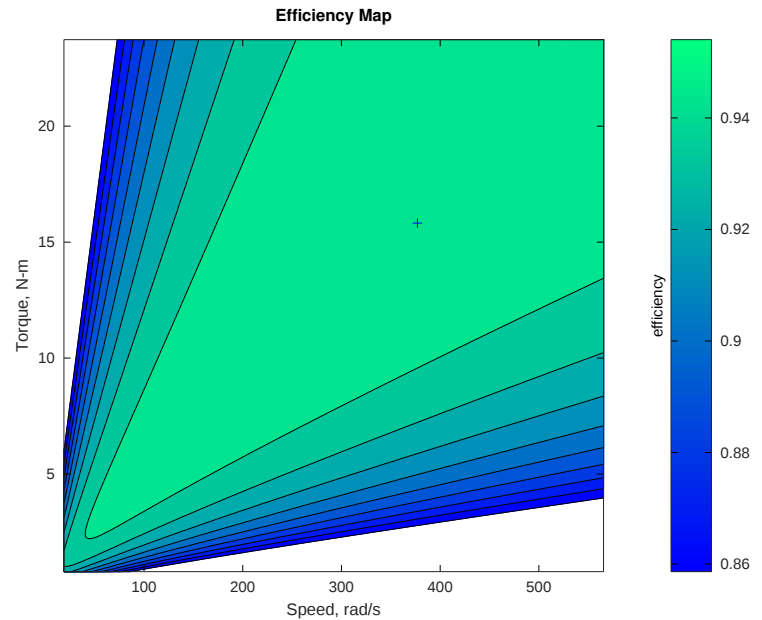
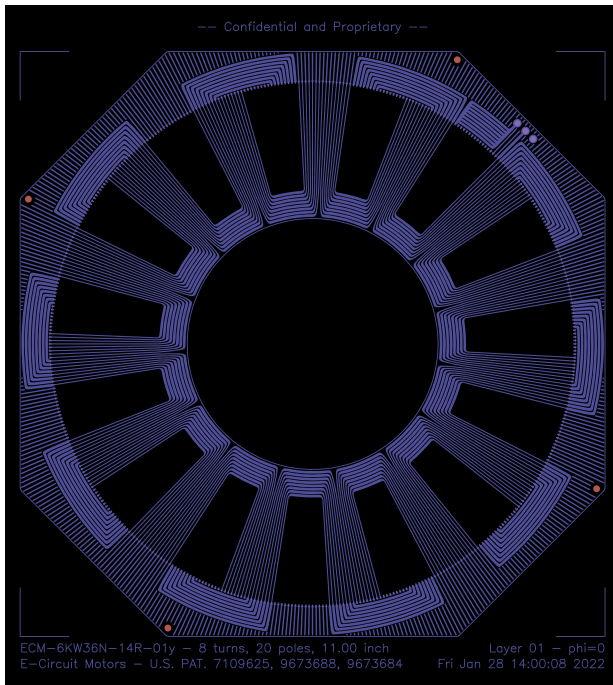


Design Control Information

Project	ECM-6KW36N-14R-01y
Design Criterion	optset (eta(1)); constraints 4; depth 3 (okay)

Stator Preview



Primary Operating Point Parameters Per Stator

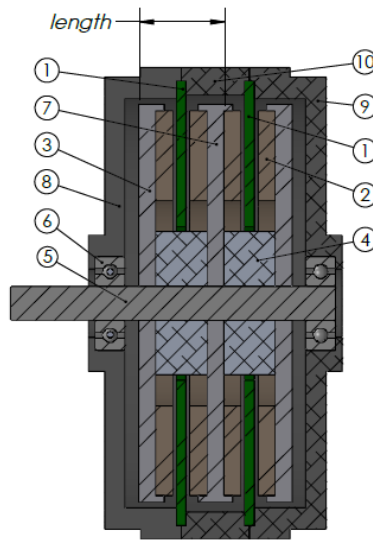
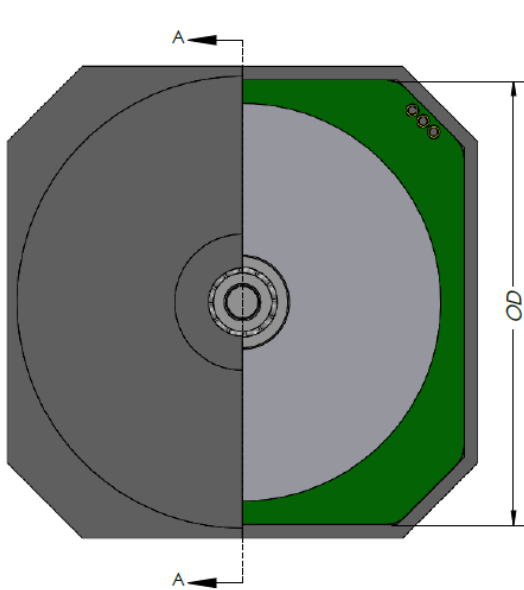
Quantity	Value	Units	Comment
n	3.6e+03	1/min	rotor speed
τ	15.8	Nm	torque
η	0.93	-	operating point efficiency
TSF	0.825	-	motor thermal safety factor
P_m	5.96e+03	W	mechanical power
P_e	6.26e+03	W	electrical power
V_{qs}	233	V	Line-to-neutral voltage amplitude
I_{qs}	17.9	A	Phase current amplitude
ω_r	377	rad/s	rotor speed

Model Parameters

Quantity	Value	Units	Comment
η_{max}	0.955	-	predicted peak efficiency over τ , ω_r
K_t	0.907	Nm/A	torque constant
K_e	1.05	Vs/rad	voltage constant
K_m	1.43	Nm/ $\sqrt{W}$	“motor constant”
τ_m	0.0184	s	motor time constant

Build Information

Quantity	Value	Units	Comment
magnets	N42	-	grade
OD	27.9	cm	motor outer diameter
length	2.88	cm	length (nominal)



PARAMETRIC CONCEPTUAL CAD MODEL
FEATURE AND PART GEOMETRY SUBJECT TO CHANGE

ITEM NO.	PART NUMBER	QTY.
1	PCB Stator	2
2	Magnet	4
3	Back Iron Rotor	2
4	Aluminum Hub	2
5	Stainless Steel Shaft	1
6	Deep Groove Ball Bearing	2
7	Middle Back Iron Rotor	1
8	Aluminum Case Front	1
9	Aluminum Case Back	1
10	Aluminum Case Middle	1

PLEASE REFER TO MOTOR DATASHEET “BUILD INFORMATION”
FOR OD AND LENGTH VALUES. MOTOR HOUSING DESIGN,
BEARING SELECTION, MATERIAL SELECTION, SHAFT STICKOUT ETC.
ARE ALL SUBJECT TO CHANGE PENDING FURTHER DESIGN
DISCUSSIONS.

