

Hollow Type Frameless Servo Motor RBC Series Specification



(주)로보비즈코어

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Motor Parameters

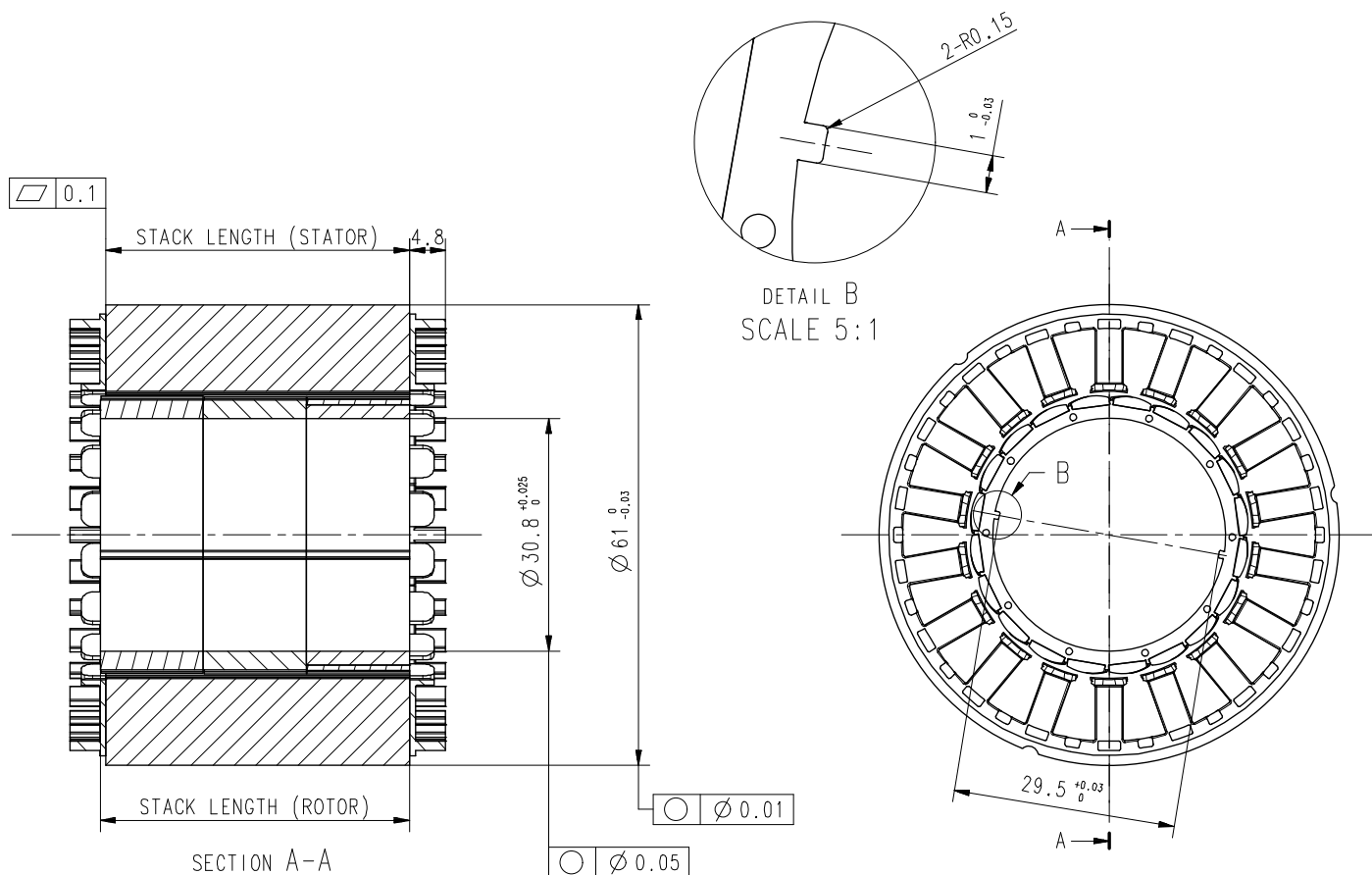
Model		RBC061											
Stack Length		15			20			40			60		
Winding		A	B	C	A	B	C	A	B	C	A	B	C
Pole pairs	-	10	10	10	10	10	10	10	10	10	10	10	10
Resistance	Ohm	1.122	1.840	2.886	1.634	2.503	3.562	2.192	3.711	6.112	2.284	3.898	6.020
Inductance	mH	0.444	0.753	1.215	0.749	1.188	1.733	1.284	1.976	3.479	1.364	2.246	3.801
Flux linkage	mWb	6.23	8.05	10.39	9.35	11.77	14.20	17.31	21.47	28.39	21.82	28.04	36.35
Back-EMF Const.	$V_{rms}/krpm$	7.99	10.32	13.32	11.99	15.09	18.21	22.20	27.53	36.41	27.98	35.97	46.63
Torque Const.	Nm/A	0.094	0.121	0.156	0.140	0.177	0.213	0.260	0.322	0.426	0.327	0.421	0.545
Rotor inertia	$(10^{-4})kg \cdot m^2$	0.107	0.107	0.107	0.143	0.143	0.143	0.280	0.280	0.280	0.417	0.417	0.417
Weight	g	210	205	205	260	265	260	490	480	485	715	710	720

*Resistance and Inductance are measured on phase to phase.

*Flux linkage is measured on a single phase rms.

*Back-EMF Const. is measured on a line to line Back-EMF peak value.

Dimensions



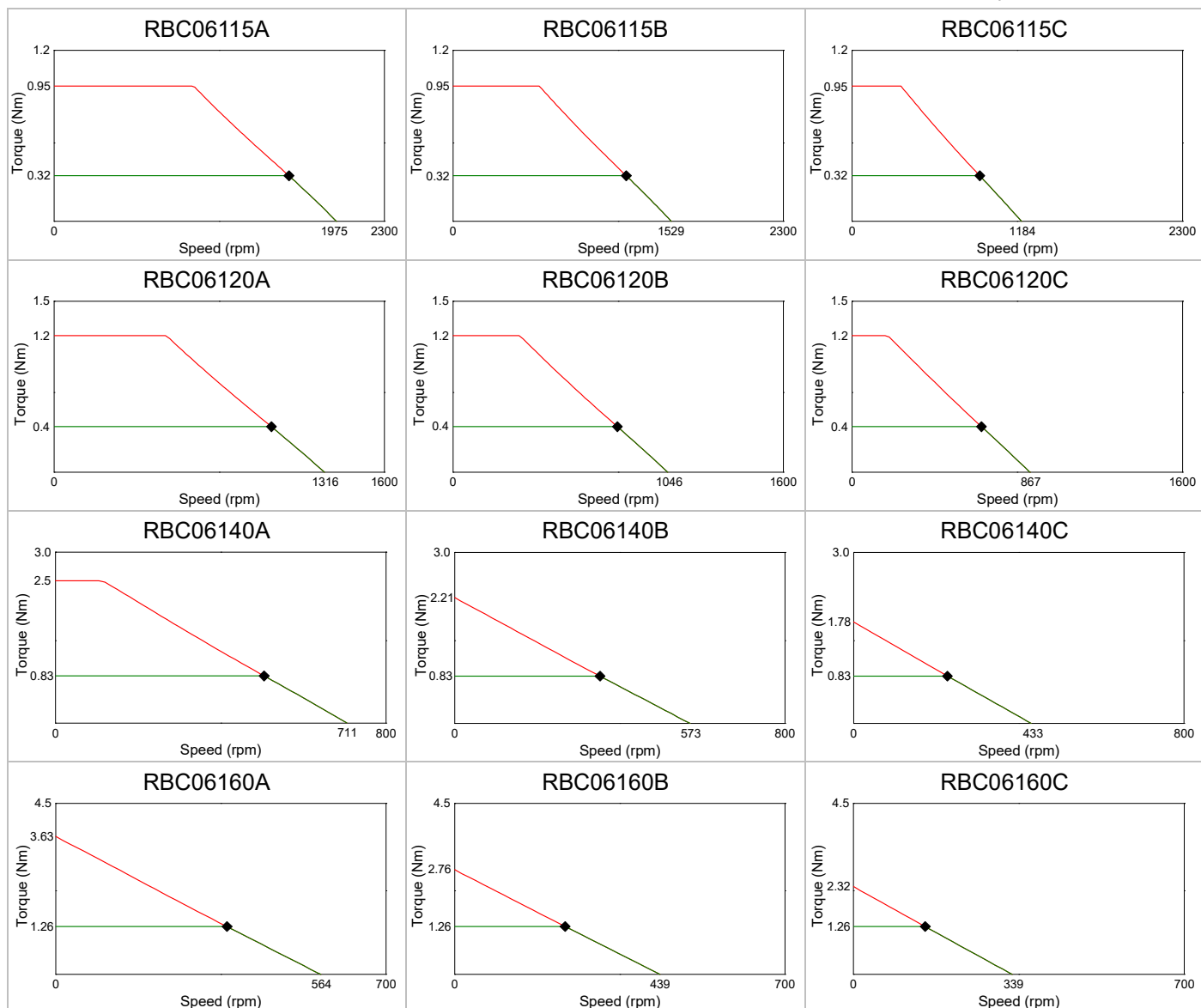
Model	STACK LENGTH (mm)	
	STATOR	ROTOR
RBC06115	15.05	15.75
RBC06120	20.30	21.00
RBC06140	40.25	40.95
RBC06160	60.20	60.90

Performance Data (24VDC)

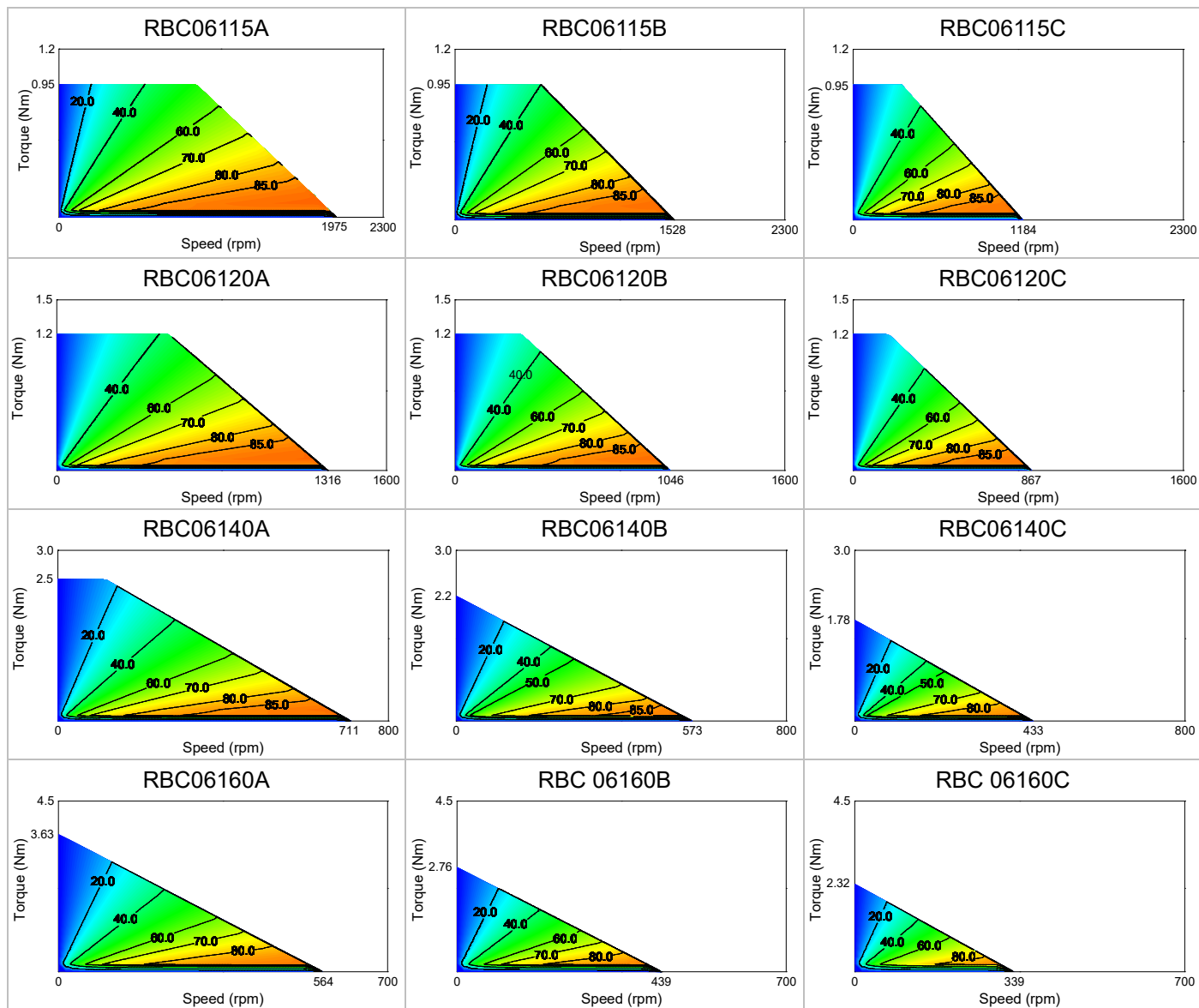
Model		RBC061											
Stack Length		15			20			40			60		
Winding		A	B	C	A	B	C	A	B	C	A	B	C
Rated Power	W	55	40	30	44	33	26	44	31	20	48	31	20
Rated Torque	Nm	0.32	0.32	0.32	0.40	0.40	0.40	0.83	0.83	0.83	1.26	1.26	1.26
Rated Speed	rpm	1636	1207	889	1053	796	627	505	352	227	363	234	152
Rated Current	A _{rms}	2.42	1.88	1.45	2.02	1.61	1.33	2.27	1.82	1.38	2.72	2.12	1.63
Rated Efficiency	%	83.5	79.7	75.7	80.5	76.7	72.9	71.7	61.9	52.7	64.9	53.7	45.2
Peak Torque	Nm	0.95	0.95	0.95	1.20	1.20	1.20	2.50	2.21	1.78	3.63	2.76	2.32
Max. Speed	rpm	1975	1529	1184	1316	1046	867	711	573	433	564	439	339
Peak Current	A _{rms}	7.34	5.68	4.40	6.17	4.90	4.06	6.94	4.91	2.98	7.98	4.68	3.03
Max. Power (MP)	W	97	62	40	70	47	33	54	32	20	52	31	20
Torque at MP	Nm	0.94	0.80	0.66	1.04	0.89	0.75	1.50	1.09	0.90	1.76	1.41	1.17
Speed at MP	rpm	980	740	580	640	500	420	345	285	210	285	210	165

TN-curve

— Peak Torque — Continuous Torque ◆ Rated Power



Efficiency Map (24VDC)

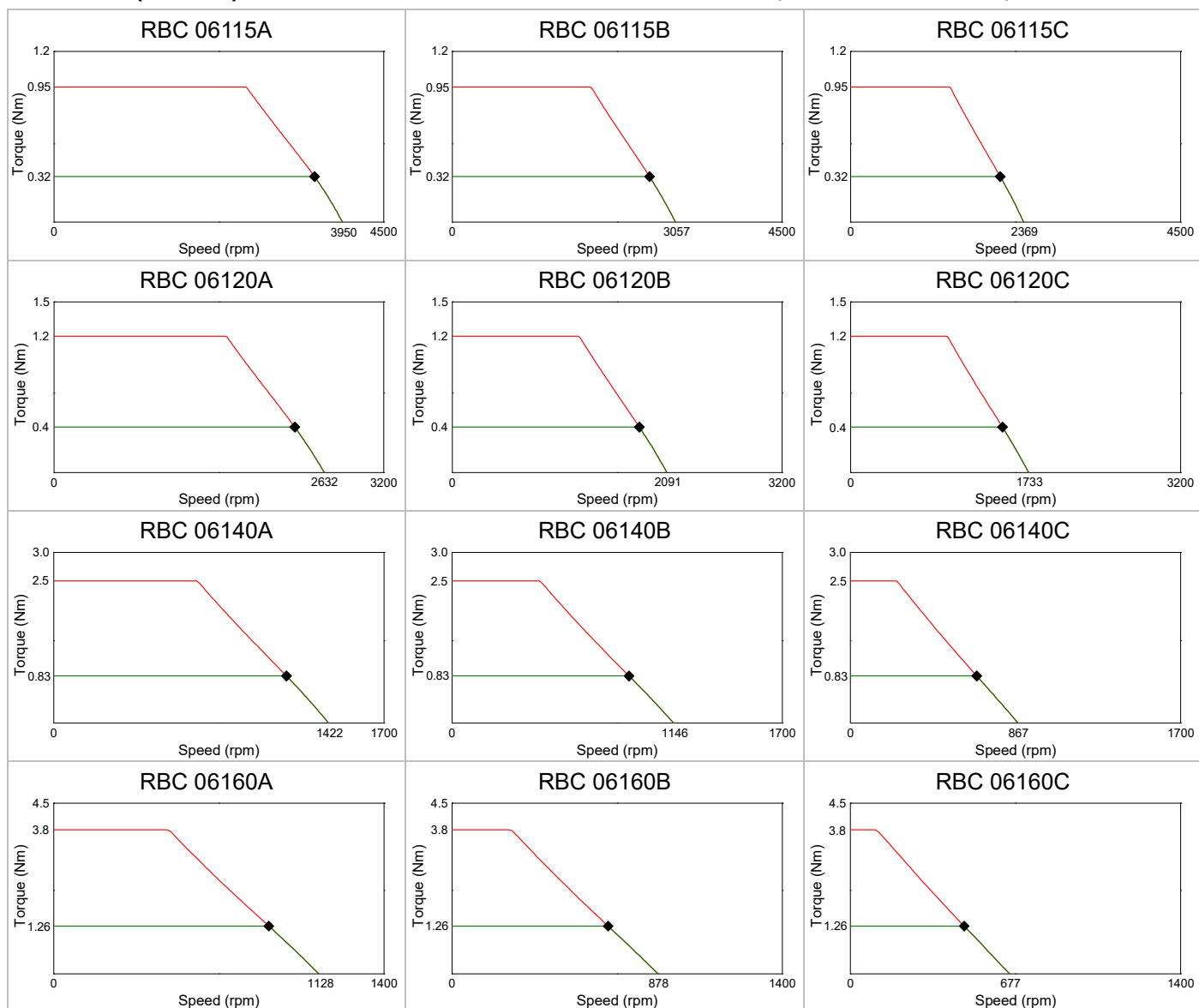


Performance Data (48VDC)

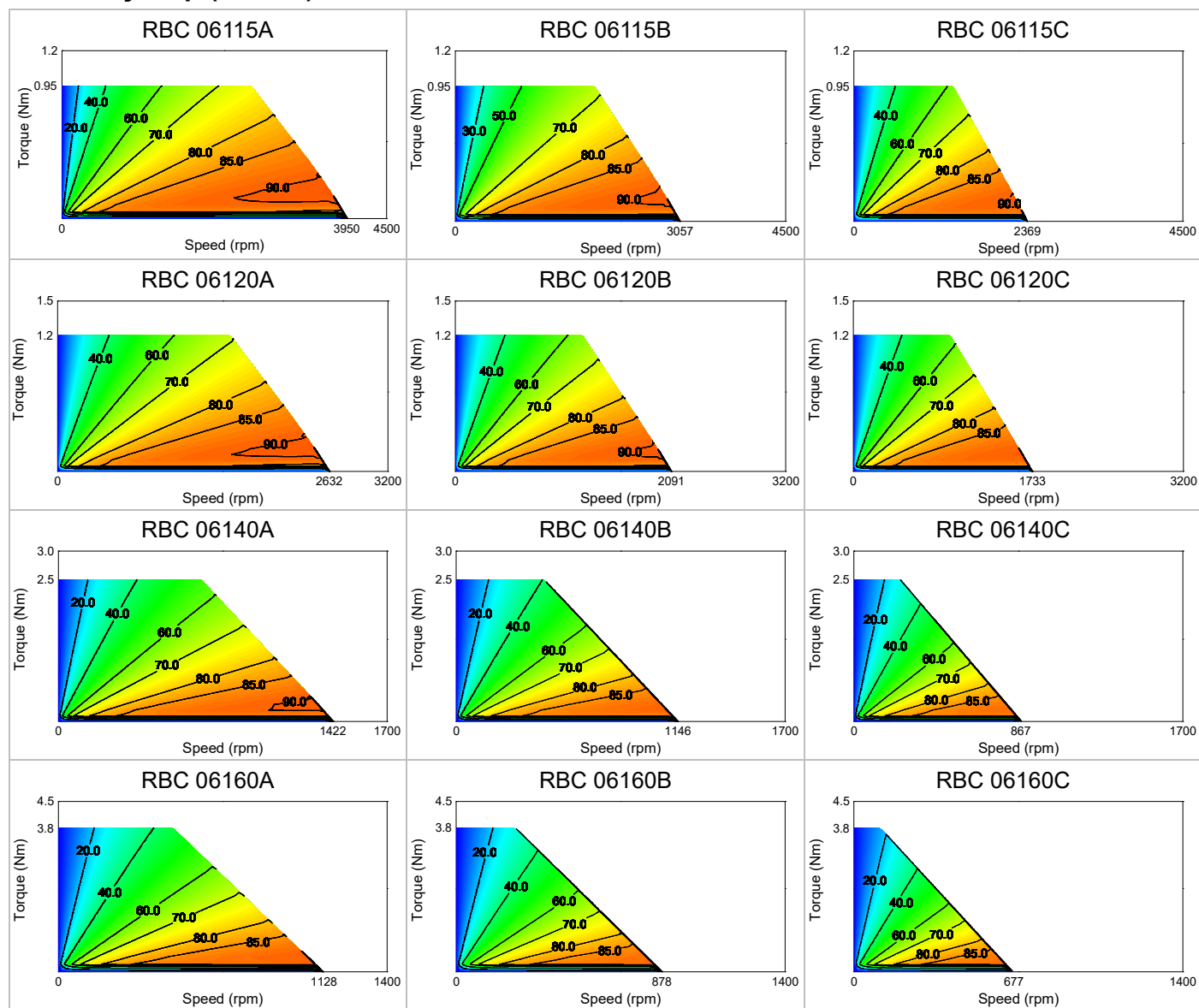
Model		RBC 061											
Stack Length		15			20			40			60		
Winding		A	B	C	A	B	C	A	B	C	A	B	C
Rated Power	W	119	90	68	98	76	62	104	79	56	120	87	64
Rated Torque	Nm	0.32	0.32	0.32	0.40	0.40	0.40	0.83	0.83	0.83	1.26	1.26	1.26
Rated Speed	rpm	3556	2693	2041	2337	1816	1473	1198	911	650	912	662	482
Rated Current	A _{rms}	2.43	1.88	1.46	2.02	1.61	1.33	2.27	1.82	1.38	2.73	2.12	5.03
Rated Efficiency	%	90.1	88.5	86.7	88.9	87.2	85.4	84.9	80.1	75.6	81.6	76.1	45.6
Peak Torque	Nm	0.95	0.95	0.95	1.20	1.20	1.20	2.50	2.50	2.50	3.80	3.80	3.80
Max. Speed	rpm	3950	3057	2369	2632	2091	1733	1422	1146	867	1128	878	677
Peak Current	A _{rms}	7.36	5.69	4.41	6.19	4.91	4.07	6.95	5.60	4.23	8.39	6.52	5.03
Max. Power (MP)	W	261	188	135	210	154	118	193	122	76	196	119	281
Torque at MP	Nm	0.95	0.95	0.95	1.19	1.19	1.20	2.46	2.11	1.74	3.47	2.71	3.80
Speed at MP	rpm	2620	1900	1360	1680	1240	940	750	555	420	540	420	705

TN-curve (48VDC)

— Peak Torque — Continuous Torque ◆ Rated Power



Efficiency Map (48VDC)



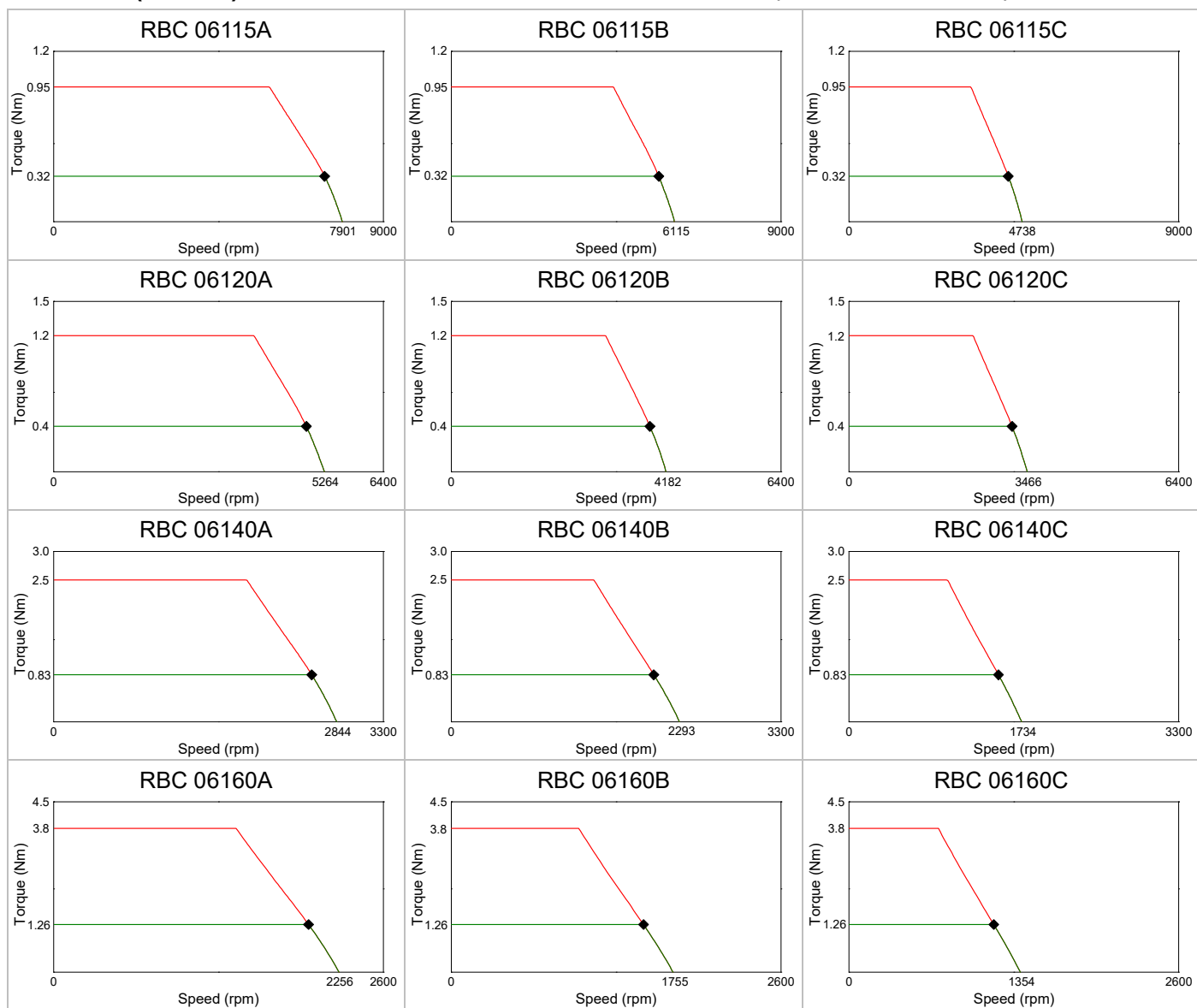
*Only electromagnetic losses except mechanical losses were considered.

Performance Data (96VDC)

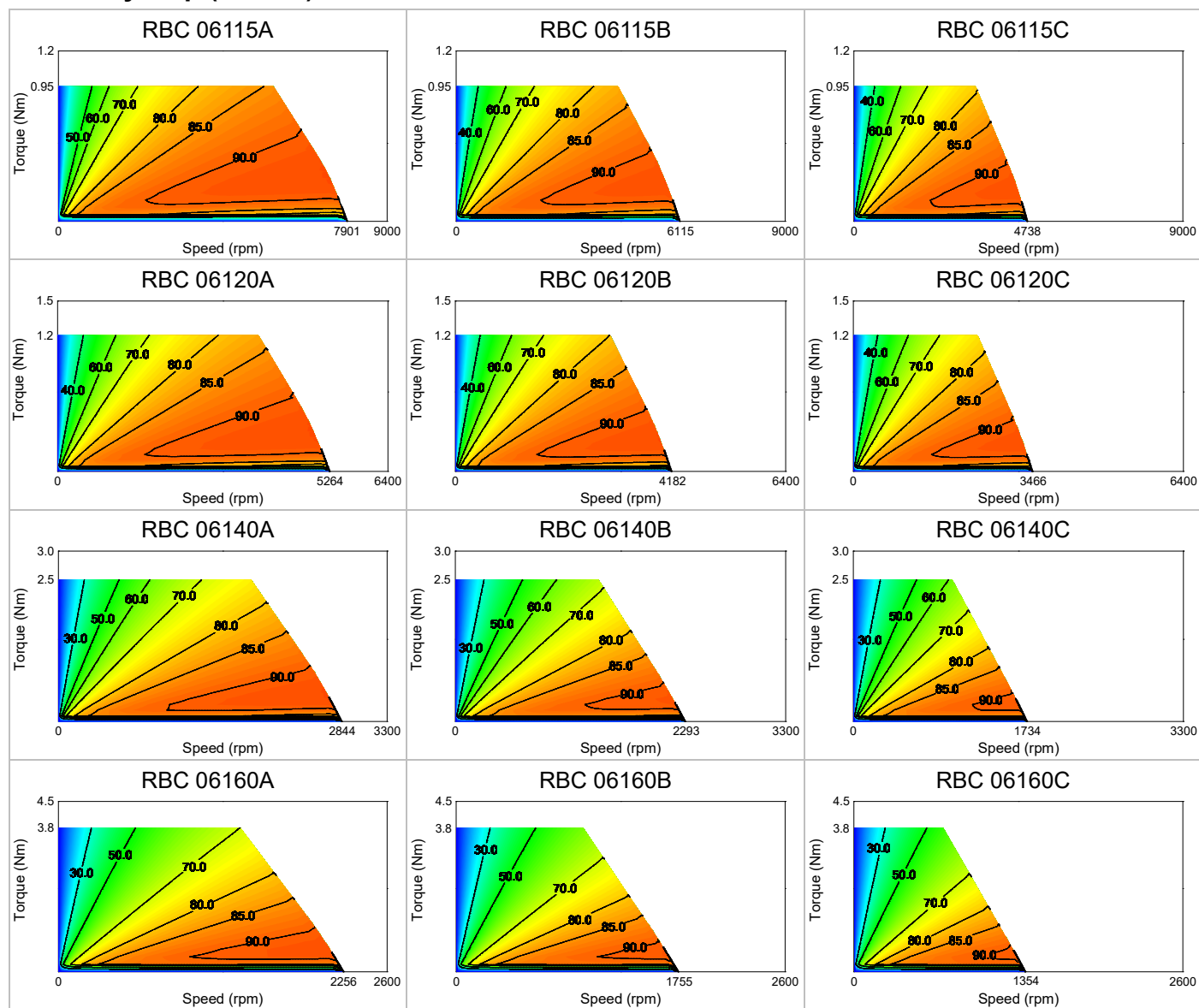
Model		RBC 061											
Stack Length		15			20			40			60		
Winding		A	B	C	A	B	C	A	B	C	A	B	C
Rated Power	W	248	190	146	205	162	133	225	176	130	265	200	151
Rated Torque	Nm	0.32	0.32	0.32	0.40	0.40	0.40	0.83	0.83	0.83	1.26	1.26	1.26
Rated Speed	rpm	7400	5664	4347	4905	3856	3165	2584	2027	1495	2011	1517	1142
Rated Current	A _{rms}	2.43	1.88	1.46	2.02	1.61	1.33	2.26	1.83	1.38	2.73	2.12	1.63
Rated Efficiency	%	92.4	92.0	91.5	92.3	91.8	91.1	91.1	88.8	86.8	89.6	87.1	85.1
Peak Torque	Nm	0.95	0.95	0.95	1.20	1.20	1.20	2.50	2.50	2.50	3.80	3.80	3.80
Max. Speed	rpm	7901	6115	4738	5264	4182	3466	2844	2293	1734	2256	1755	1354
Peak Current	A _{rms}	7.40	5.72	4.42	6.21	4.92	4.08	6.97	5.61	4.24	8.41	6.53	5.03
Max. Power (MP)	W	585	440	330	488	376	302	506	373	258	573	400	281
Torque at MP	Nm	0.95	0.95	0.95	1.20	1.20	1.20	2.50	2.50	2.49	3.80	3.80	3.80
Speed at MP	rpm	5880	4420	3320	3880	3000	2400	1935	1425	990	1440	1005	705

TN-curve (96VDC)

— Peak Torque — Continuous Torque ◆ Rated Power



Efficiency Map (96VDC)



*Only electromagnetic losses except mechanical losses were considered.