



Product series	TM4 SUMO LD
System model number(s)	SUMO LD HV800-3P-L-94R
Motor model number(s)	LSM110E-HV-03R
Motor Control Unit model number(s)	CO150-HV-23

Standard system performance specifications

Standard system performance specifications	Value
Peak torque value (CAN Torque Request value)	950 Nm
Peak power value	250 kW
Normal operating speed range	0 - 8600 RPM
Derating speed range	8600 - 8900 RPM
Overspeed speed range	8900 - 9000 RPM

Note: The values given above represent the standard performances to be expected of the system described in this specification document.

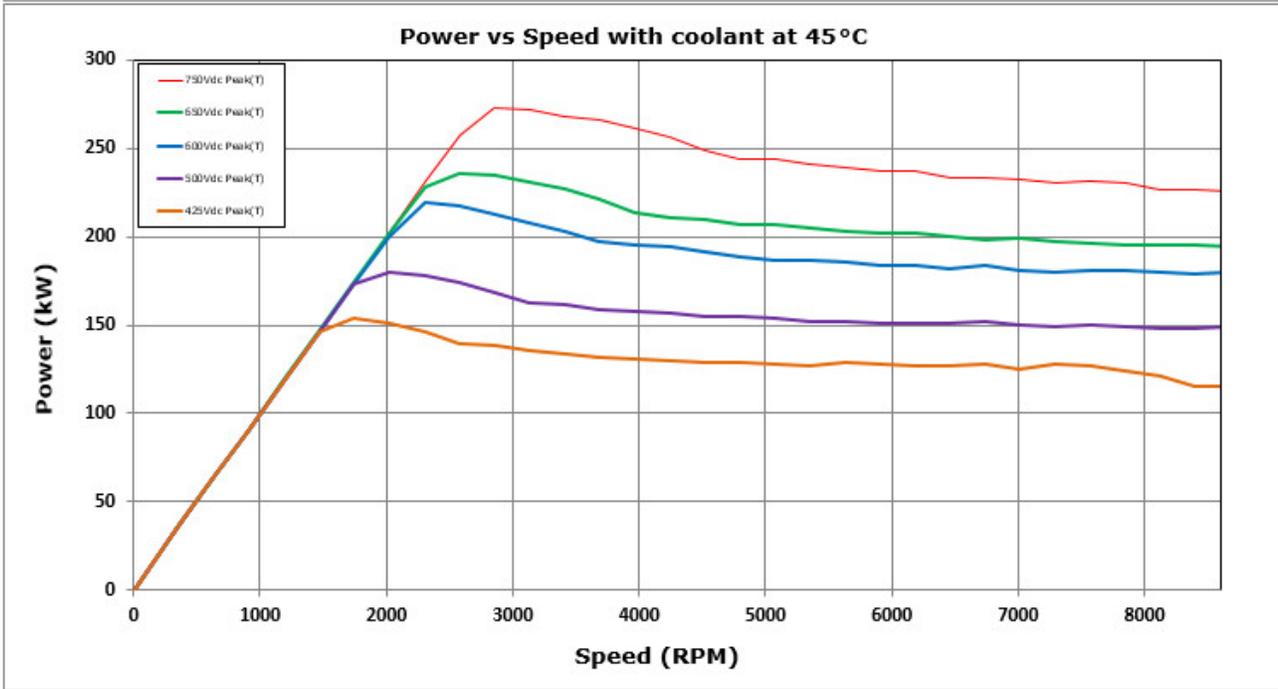
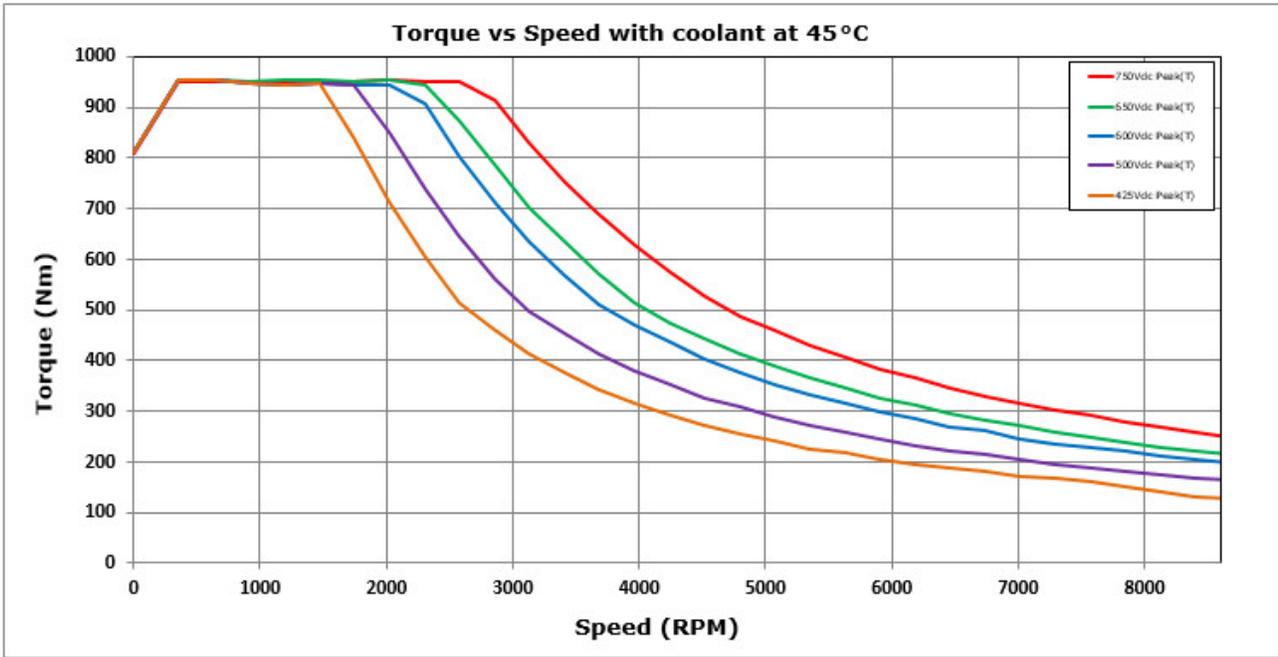
Theoretical system specifications (see Performance graphs)

Characteristics	Theoretical values (650 V _{DC} @ 45°C)	Theoretical values (750 V _{DC} @ 45°C)
Peak torque value ¹	950 Nm	950 Nm
Peak torque value at 0 RPM ¹	813 Nm	813 Nm
Peak power value ¹	250 kW	275 kW
Continuous power value	140 kW	160 kw

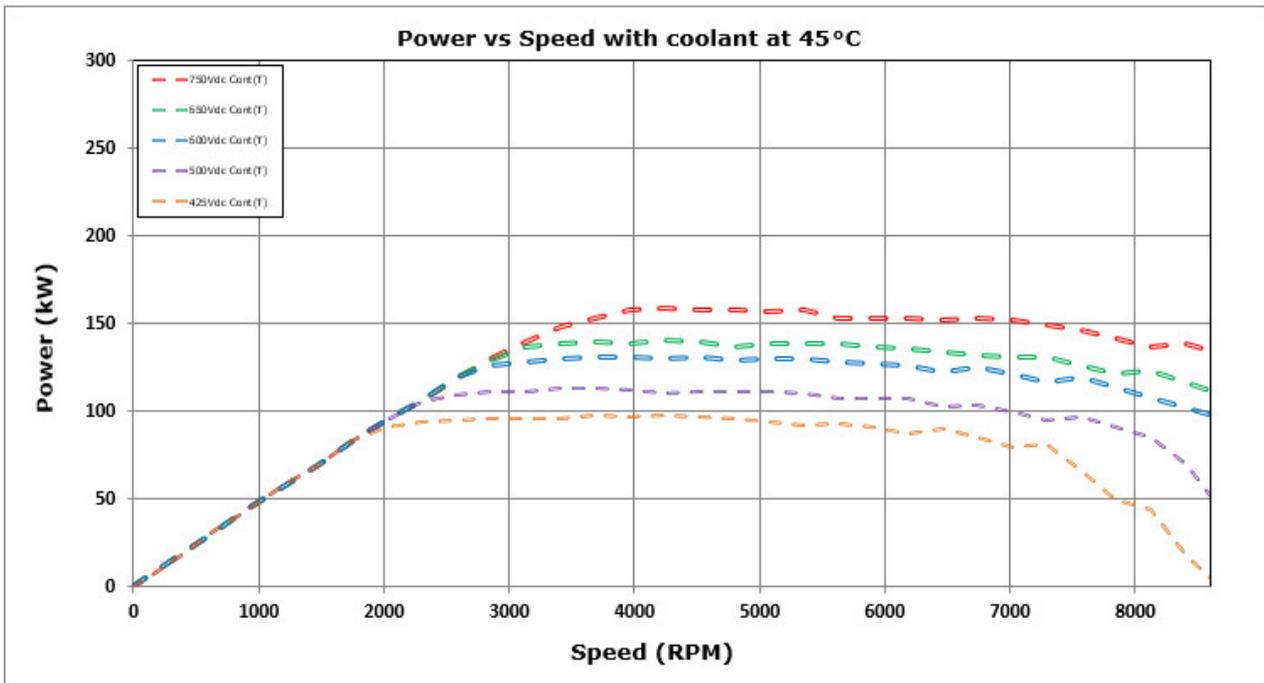
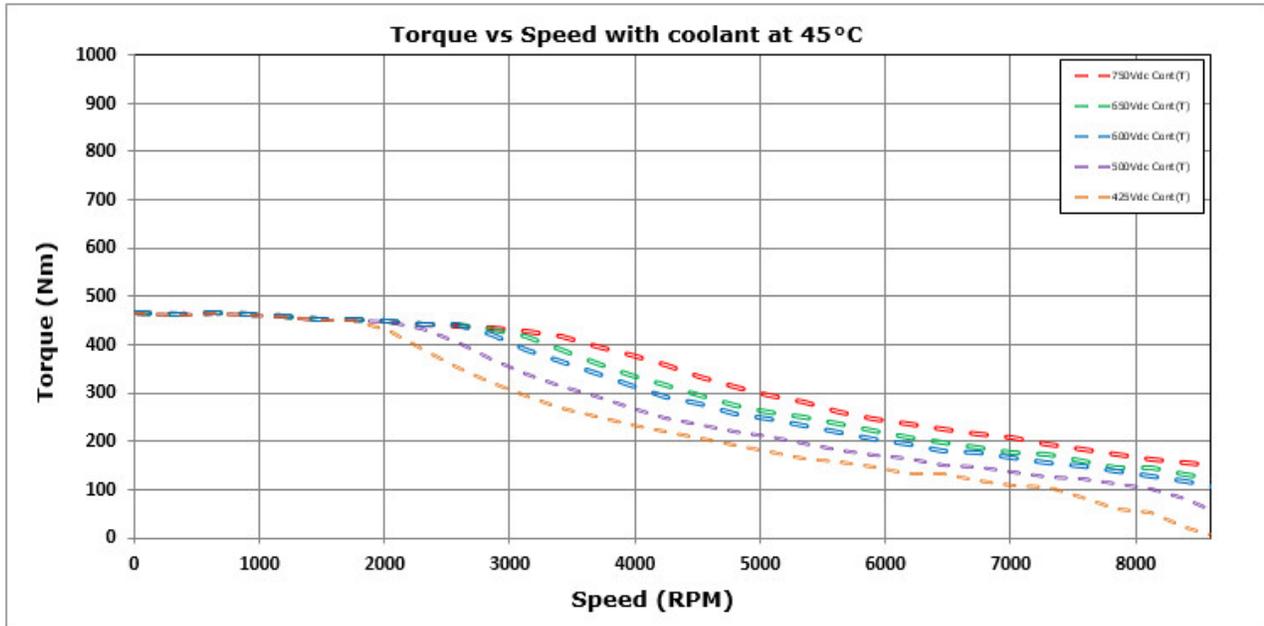
¹ Thermally stable initial condition is 60% of the maximum of motor coil temperature and ambient temperature of 25°C. Performance request versus obtained measured gap depends on operating conditions.

² Coolant temperature.

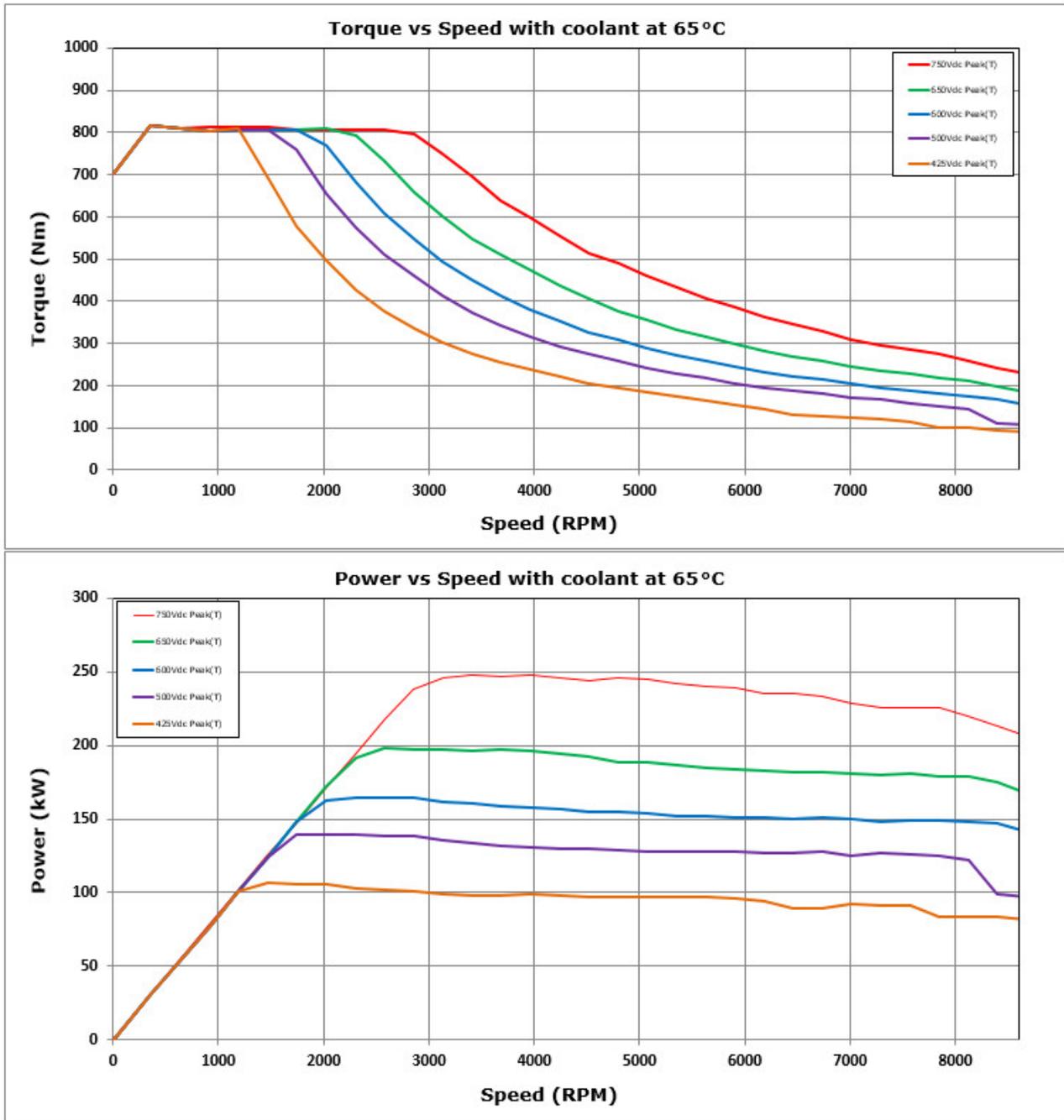
Theoretical peak performance with coolant at 45°C



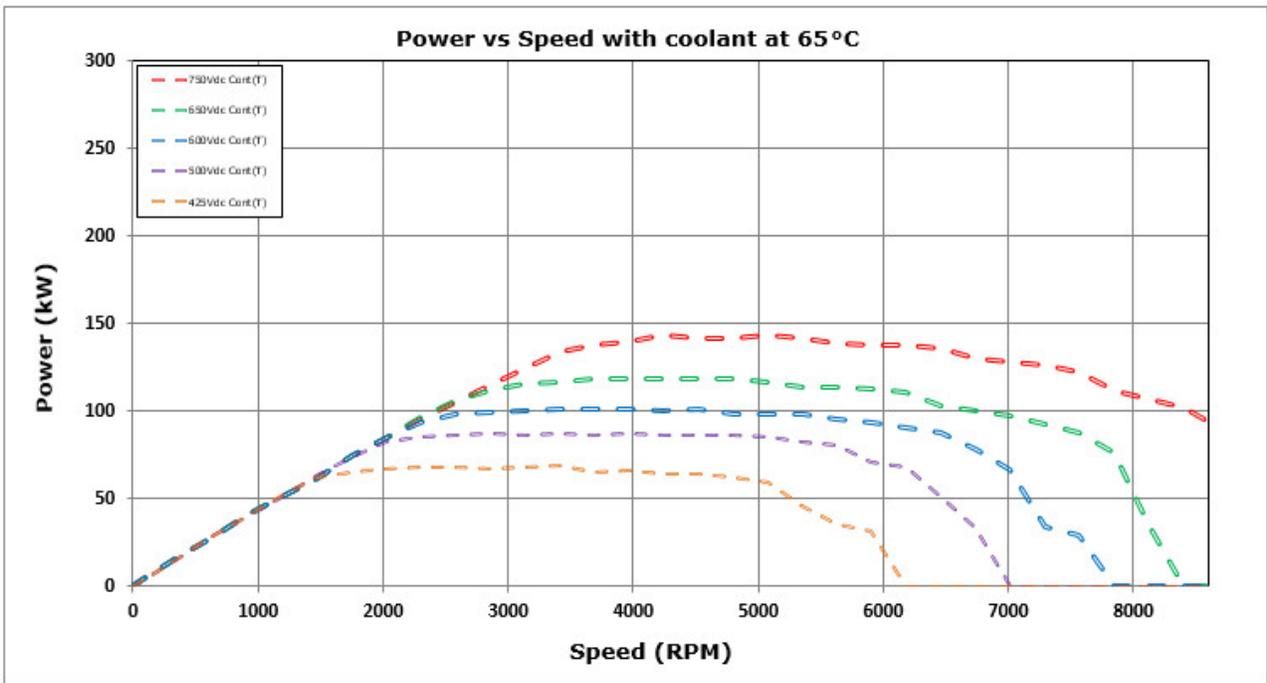
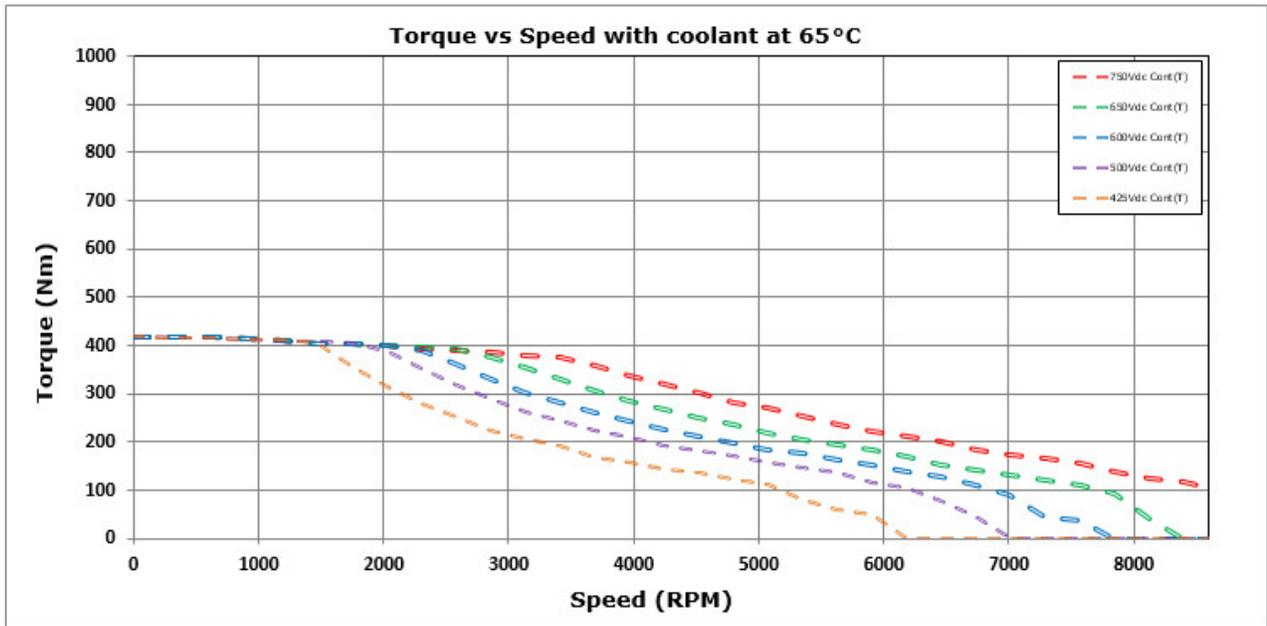
Theoretical continuous performance with coolant at 45°C



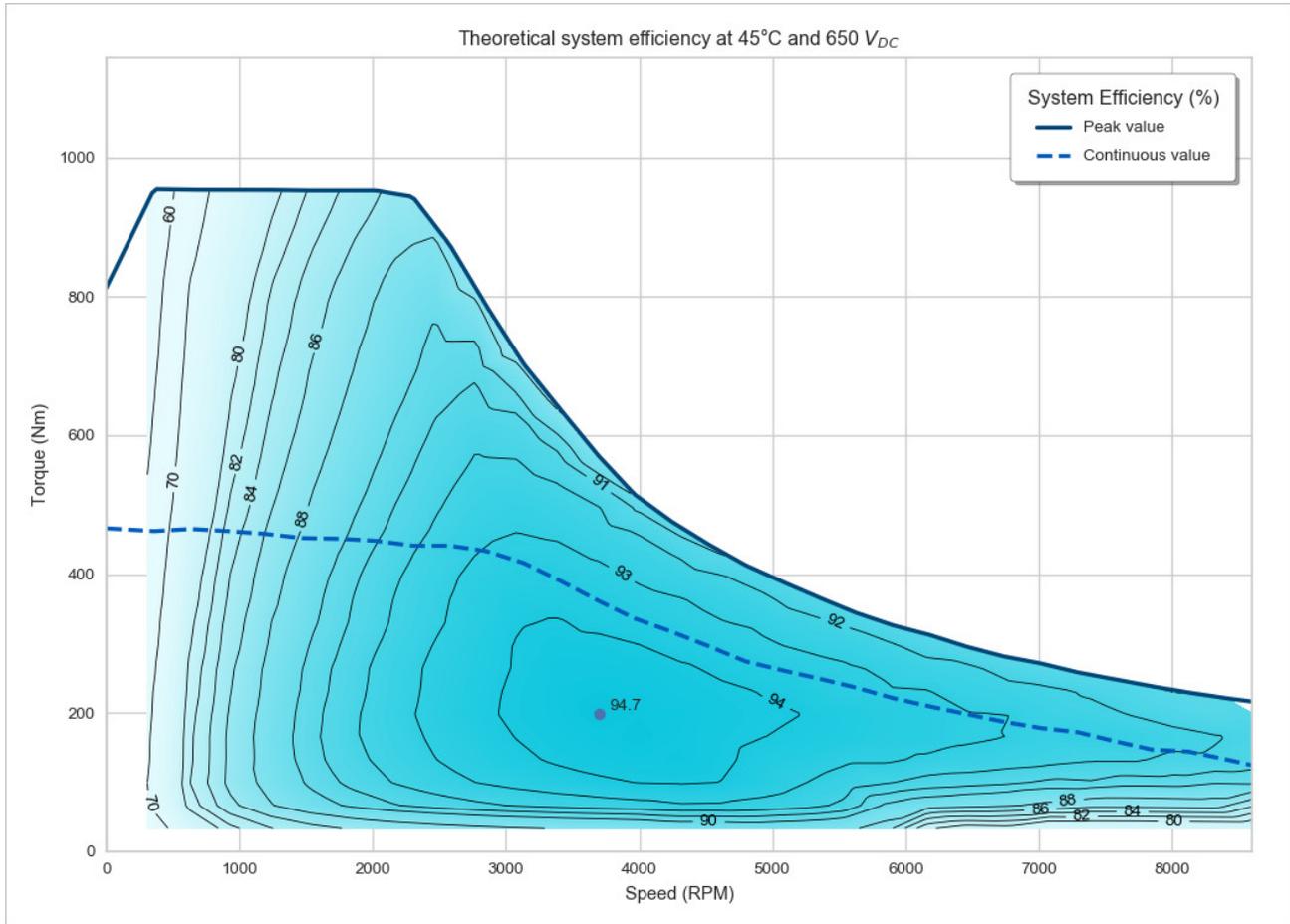
Theoretical peak performance with coolant at 65°C



Theoretical continuous performance with coolant at 65°C



Theoretical system efficiency at 45°C and 650 V_{DC}



Electrical specification

Parameters	Values
Traction battery	
Operating voltage	300 - 750 V _{DC}
Maximum non-operating voltage	775 V _{DC}
Maximum continuous current	350 A _{DC}
Auxiliary battery	
Operational range	8 - 32 V _{DC}
Maximum non-operating voltage	36 V _{DC}
Maximum steady state current	4.5 A _{DC} @ 12 V _{DC} ; 3 A _{DC} @ 24 V _{DC}
Maximum inrush current	< 10 A _{DC}
Maximum quiescent current	< 0.6 mA _{DC} @ 12 V _{DC} ; < 1.2 mA _{DC} @ 24 V _{DC}
MCU short-circuit protection	Yes
MCU over current protection	Yes

Coolant specification

Cooling features

Features	Value
Coolant temperature ¹	-40°C to 85°C ^T
Ambient temperature ²	-40°C to 85°C ^T
Storage temperature	-40°C to 85°C ^T
Cooling system	40% deionized water/60% glycol
Motor & MCU maximum allowed working pressure	30 PSI
Motor coolant flow rate	600 L/h (10 l/min)
MCU coolant flow rate	600 L/h (10 l/min)

¹For full system performance, coolant temperature must be equal to/under 65°C.

²For full system performance and ambient temperature over 65°C, coolant temperature must be equal to/under 45°C.

^TTheoretical

Pressure drops and losses

Coolant Temperature (°C)	Flow Rate (L/h)	Flow Rate (L/m)	Pressure Drop Motor (PSI)	Pressure Drop Motor (KPa)	Pressure Loss CO150 (PSI)	Pressure Loss CO150 (kPa)	Pressure Loss System in series (psi)	Pressure Loss System in series (kPa)
65	600	10	1.0	6.8	4.1	28.5	5.1	35.3
	720	12	1.3	9.1	5.7	39.0	7.0	48.1
	840	14	1.7	11.8	7.4	51.1	9.1	62.8
	960	16	2.1	14.7	9.4	64.7	11.5	79.4
	1080	18	2.6	17.9	11.6	80.0	14.2	97.8
	1200	20	3.1	21.3	14.0	96.8	17.1	118.1
-20	600	10	4.2	29.2	6.6	45.2	10.8	74.4
	720	12	5.1	35.1	8.4	57.7	13.5	92.8
	840	14	6.0	41.1	10.3	71.3	16.3	112.4
	960	16	6.8	47.1	12.5	86.1	19.3	133.2
	1080	18	7.7	53.1	14.8	102.0	22.5	155.1
	1200	20	8.6	59.1	17.3	119.1	25.9	178.2

