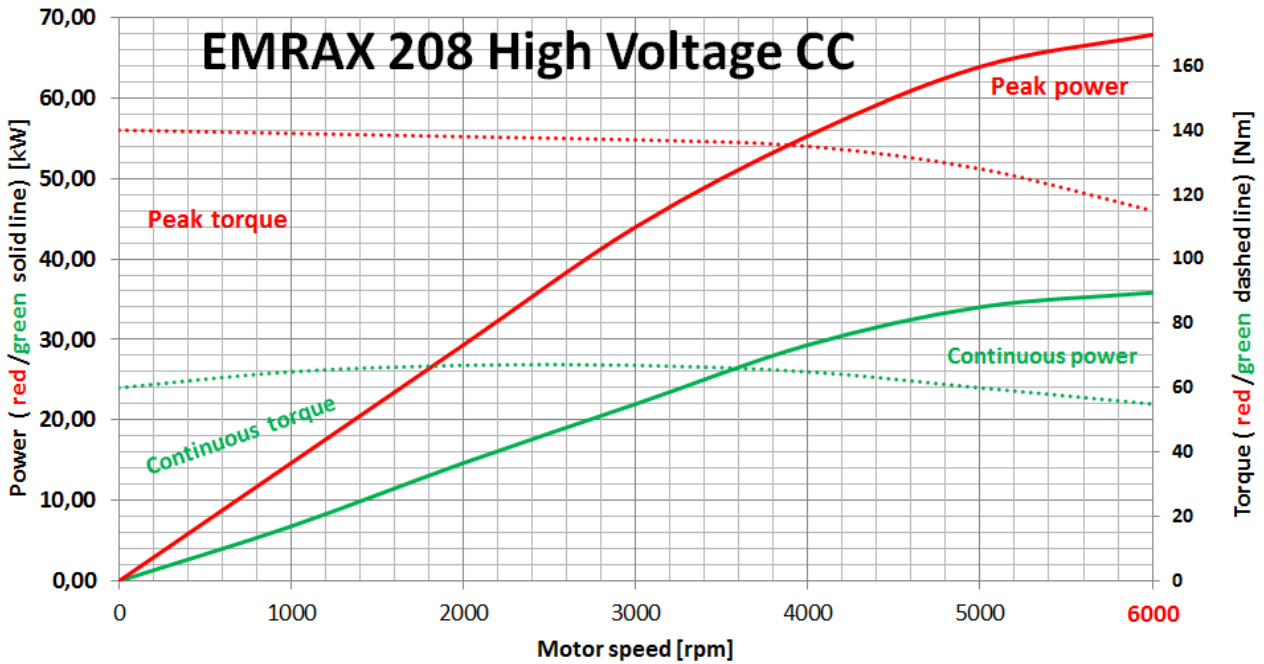


EMRAX 208 Technical Data Table (dynamometer test data)

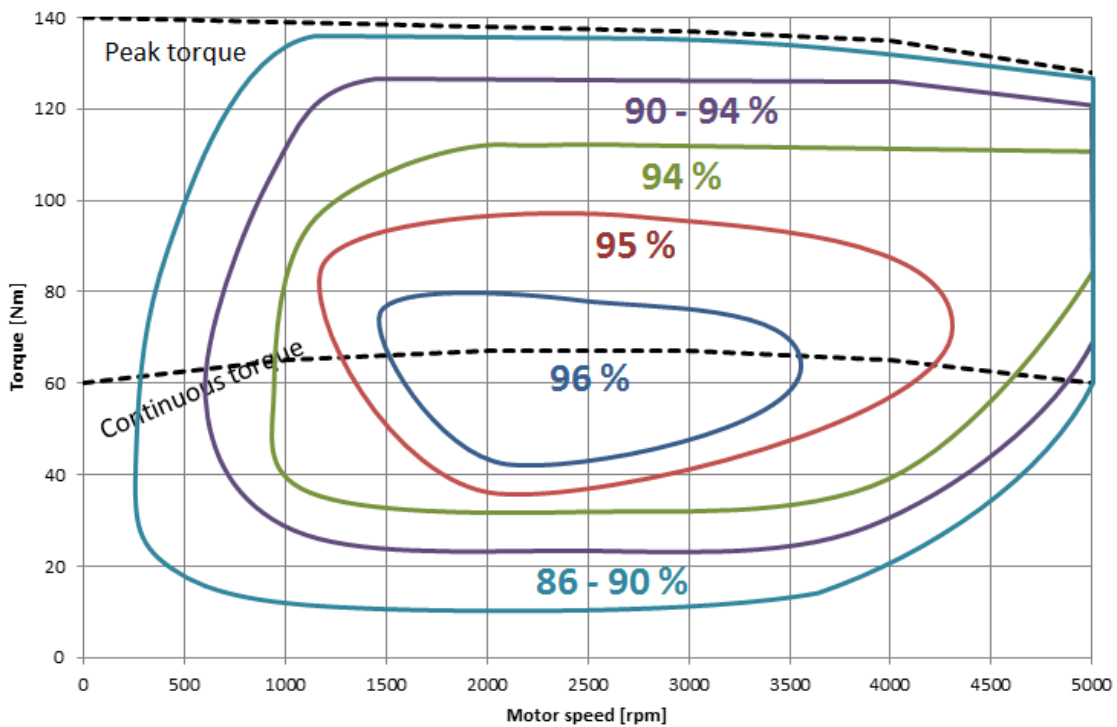
Type Technical data	EMRAX 208 High Voltage			EMRAX 208 Medium Voltage			EMRAX 208 Low Voltage		
	AC	LC	CC	AC	LC	CC	AC	LC	CC
Air cooled = AC Liquid cooled = LC Combined cooled = Air + Liquid cooled = CC									
Ingress protection	IP21	IP65	IP21	IP21	IP65	IP21	IP21	IP65	IP21
Cooling medium specification (Air Flow = AF; Inlet Water/glycol Flow = WF; Ambient Air = AA) If inlet WF temperature and/or AA temperature are lower, then continuous power is higher.	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C
Weight [kg]	9,1	9,4	9,3	9,1	9,4	9,3	9,1	9,4	9,3
Diameter ϕ / width [mm]	208 / 85								
Maximal battery voltage [Vdc] and full load/no load RPM	470 Vdc (5170/7050 RPM)			320 Vdc (5760/7040 RPM)			125 Vdc (6250/7250 RPM)		
Peak motor power at max RPM (few min at cold start / few seconds at hot start) [kW]	80								
Continuous motor power (at 3000-5000 RPM) depends on the motor RPM [kW]	20 - 32	20 - 32	25 - 40	20 - 32	20 - 32	25 - 40	20 - 32	20 - 32	25 - 40
Maximal rotation speed [RPM]	6000 (7000 peak for a few seconds)								
Maximal motor current (for 2 min if cooled as described in Manual) [Arms]	200			320			800		
Continuous motor current [Arms]	100			160			400		
Maximal peak motor torque [Nm]	150								
Continuous motor torque [Nm]	80								
Torque / motor current [Nm/1Aph rms]	0,83			0,54			0,20		
Maximal temperature of the copper windings in the stator and max. temperature of the magnets [°C]	120								
Motor efficiency [%]	92-98%								
Internal phase resistance at 25 °C [m Ω]	12,0			5,7			0,8		
Input phase wire cross-section [mm ²]	10,2			15,2			38		
Wire connection	star								
Induction Ld/Lq [μ H]	125/130			52/56			7,2/7,5		
Controller / motor signal	sine wave								
AC voltage between two phases [Vrms/1RPM]	0,0487			0,0319			0,0117		
Specific idle speed (no load RPM) [RPM/1Vdc]	15			22			58		
Specific load speed (depends on the controller settings) [RPM/1Vdc]	11 – 15			18 – 22			50 – 58		
Magnetic field weakening (for higher RPM at the same power and lower torque) [%]	up to 100								
Magnetic flux – axial [Vs]	0,0393			0,0257			0,095		
Temperature sensor in the motor	kty 81/210								
Number of pole pairs	10								
Rotor Inertia (mass dia=160mm, m=4,0kg) [kg*cm ²]	256								
Bearings (front:back) - SKF/FAG	6206:6206 (for radial forces) or 6206:7206 (for axial-radial forces; for pull mode; e.g. for air propeller) or 6206:3206 (for axial-radial forces; for pull-push mode; »O« orientation, $\alpha=25^\circ$); other bearings are possible (exceptionally)								

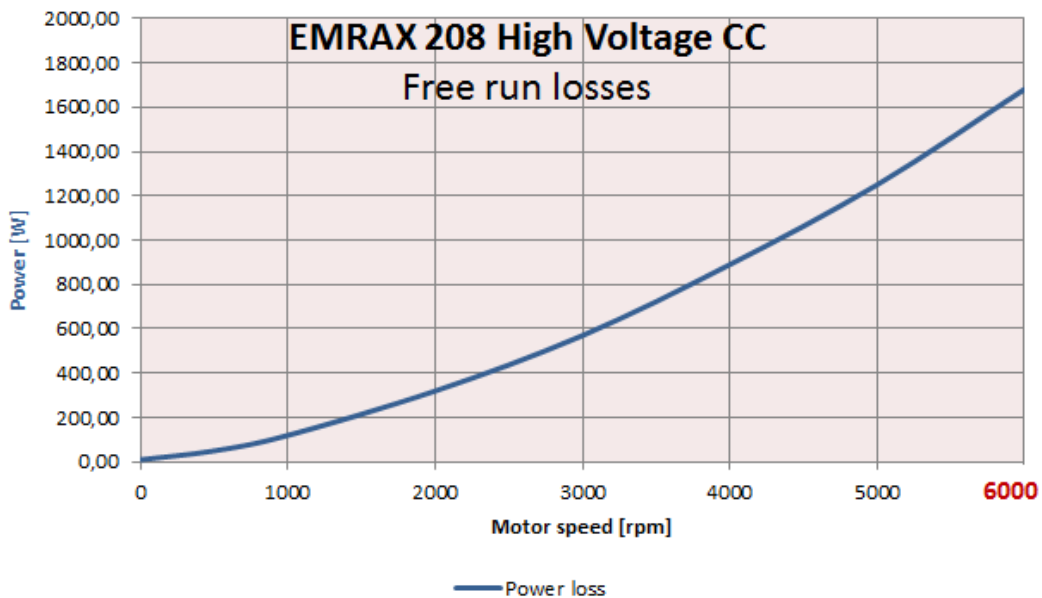
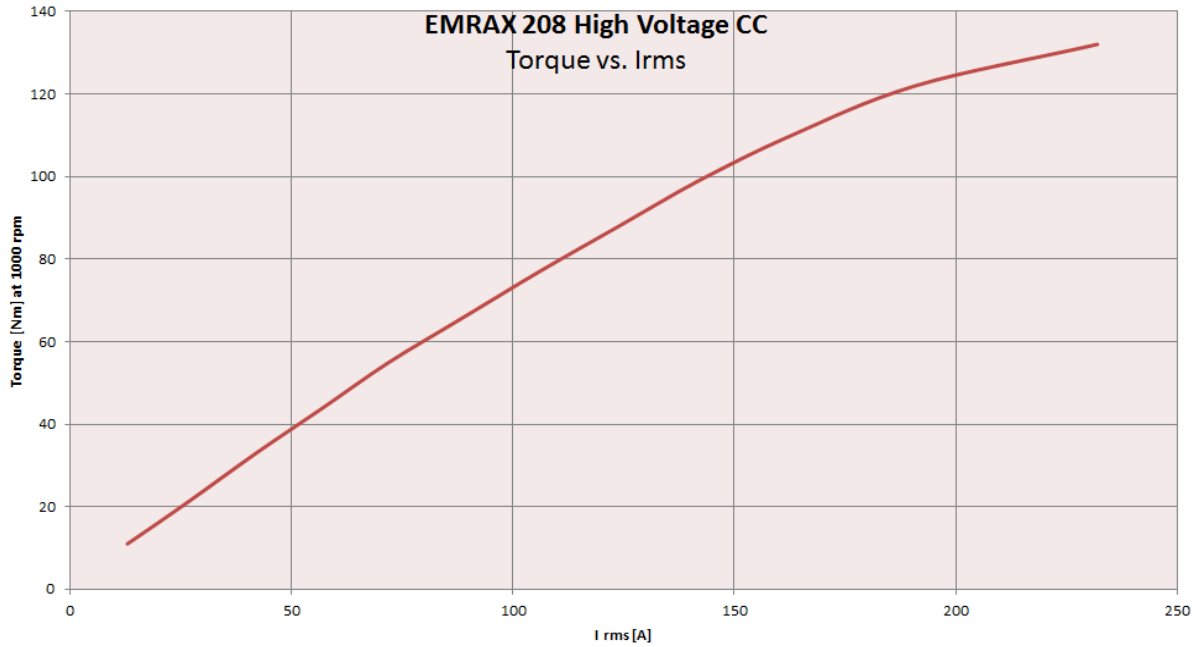
Graphs valid for EMRAX High Voltage Combined Cooled (CC) motor type:



Note 1: for determining peak or continuous power (kW) you should choose motor speed and then read power from chosen power curve (in the left graph side)
 Note 2: for determining peak or continuous torque (Nm) you should choose motor speed and then read torque from chosen torque curve (in the right graph side)

EMRAX 208 High Voltage CC
Efficiency map





Graphs of the EMRAX 208 Medium and Low voltage motor type:

Graphs of EMRAX 208 Low Voltage and EMRAX 208 Medium Voltage are similar to graphs of EMRAX 208 High Voltage. The only differences are the DC voltage and motor current. These two parameters can be read from the Technical data table for the EMRAX 208 Low and Medium Voltage motor.

Low Voltage motor needs 4 x higher motor current and 4 x lower DC voltage for the same power/torque and RPM, compared to EMRAX 208 High Voltage motor.

Medium Voltage motor needs 1.52 x higher motor current and 1/3 lower DC voltage for the same power/torque and RPM, compared to EMRAX 208 High Voltage motor.

Graphs of the EMRAX 208 Liquid cooled (LC) and EMRAX 208 Air Cooled (CC):

Continuous power of the liquid cooled or air cooled motor is 20% lower than continuous power of the combined cooled motor. The peak power is the same. Data is presented in the Technical Data Table.