MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MB4

CONTINUOUS DUTY

4 poles
50 Hz - 1500 rpm / 60 Hz - 1800 rpm

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**M0**
TEMPERATURE RISE	**H**		Number of leads	**12**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY			**Hz**	**50 Hz**				**60 Hz**				
VOLTAGE	Connections	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
		Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING POWER			**kVA**	**450**	**450**	**450**	**430**	**460**	**480**	**520**	**540**	**550**
			kW	***360***	***360***	***360***	***344***	***368***	***384***	***416***	***432***	***440***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	93,9	94,0	94,1	94,3	94,1	94,4	94,5	94,7	94,8
			3/4	94,6	94,6	94,7	94,7	94,5	94,8	94,9	95,0	95,0
			2/4	94,9	94,7	94,8	94,7	94,6	94,8	94,9	95,0	94,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	95,2	95,3	95,3	95,5	95,3	95,6	95,7	95,8	95,9
			3/4	95,7	95,7	95,8	95,8	95,7	95,9	96,0	96,0	96,1
			2/4	96,0	95,8	95,9	95,8	95,7	95,9	96,0	96,1	96,0
SHORT CIRCUIT RATIO			SCR	0,36	0,4	0,43	0,51	0,29	0,34	0,35	0,37	0,39
REACTANCES [%]												
Direct axis synchronous			Xd	366	330	307	261	336	391	378	359	336
Quadrature axis synchronous			Xq	204	184	171	145	250	218	211	200	187
Direct axis transient			X'd	33,1	29,9	27,8	23,6	40,6	35,4	34,3	32,6	30,5
Direct axis subtransient			X"d	14,3	12,9	12,0	10,2	17,5	15,3	14,8	14,0	13,1
Quadrature axis subtransient			X"q	16,6	15,0	13,9	11,8	20,4	17,8	17,2	16,3	15,3
Negative sequence			X_2	15,5	14,0	13,0	11,1	19,0	16,6	16,0	15,2	14,3
Zero sequence			X_0	3,5	3,2	3,0	2,5	4,3	3,8	3,7	3,5	3,3
TIME CONSTANTS [s]												
Open circuit			T'do	2,07								
Transient			T'd	0,187								
Subtransient			T"d	0,014								
Armature			T_a	0,018								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6319 C3 / With grease nipple
N-end bearing/Lubrication		6315 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	5,68
Weight [kg]	Refer to B34 construction	1200
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,83 / 1,00
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,007
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% - At no load

STANDARDS

IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

THREE PHASE SYNCRONOUS GENERATOR

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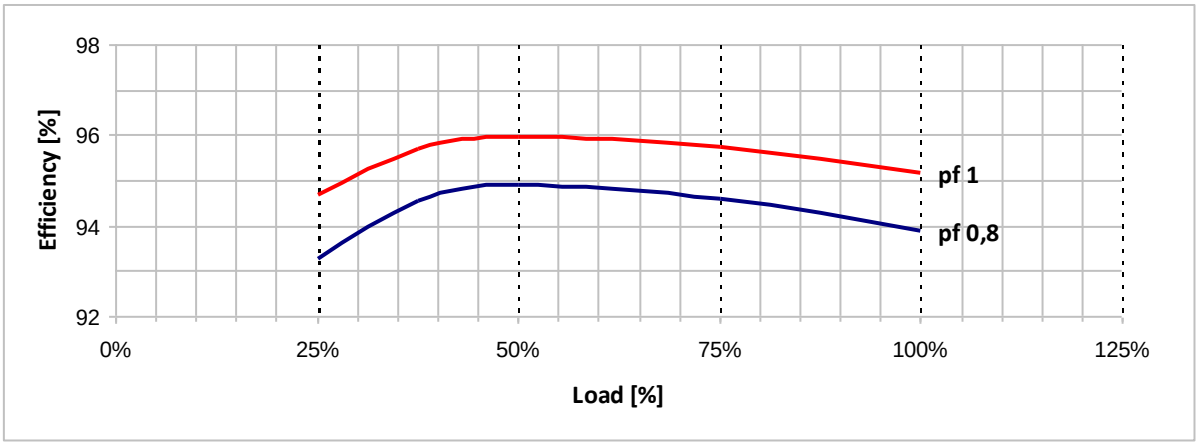
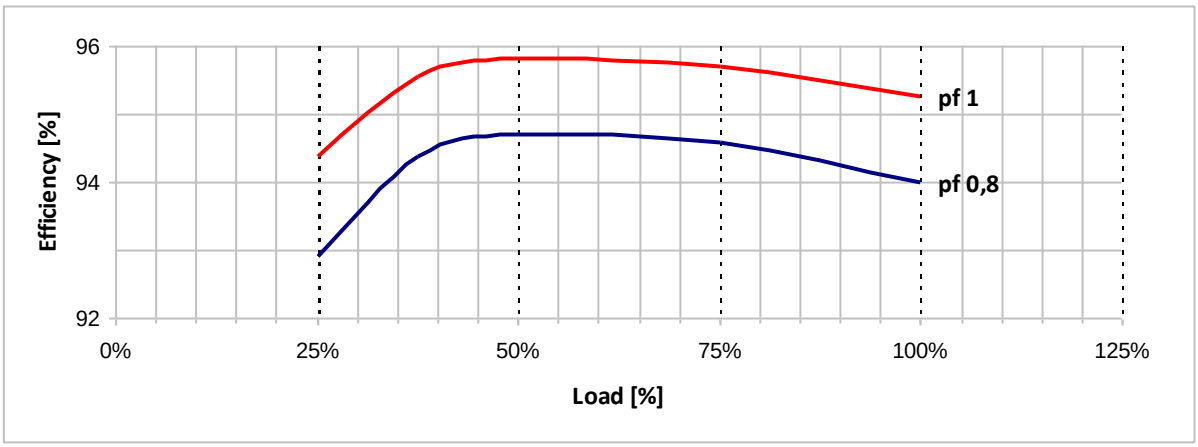
Typical efficiency curves

50 Hz - 1500 rpm

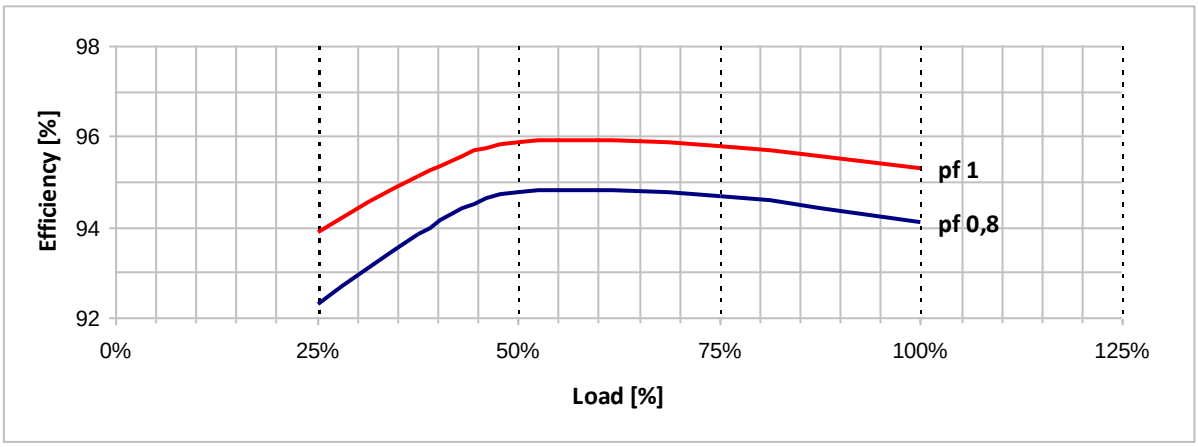
380 V



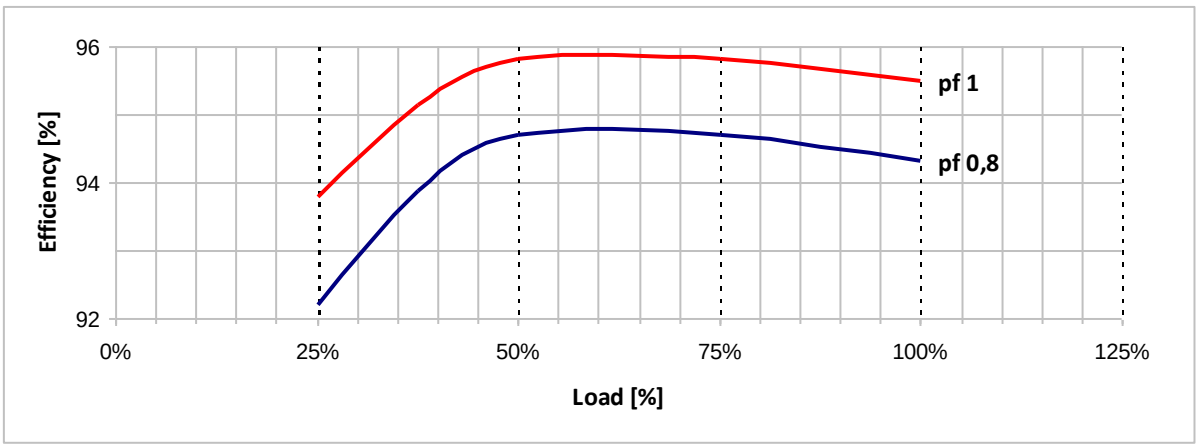
400 V



415 V



440 V



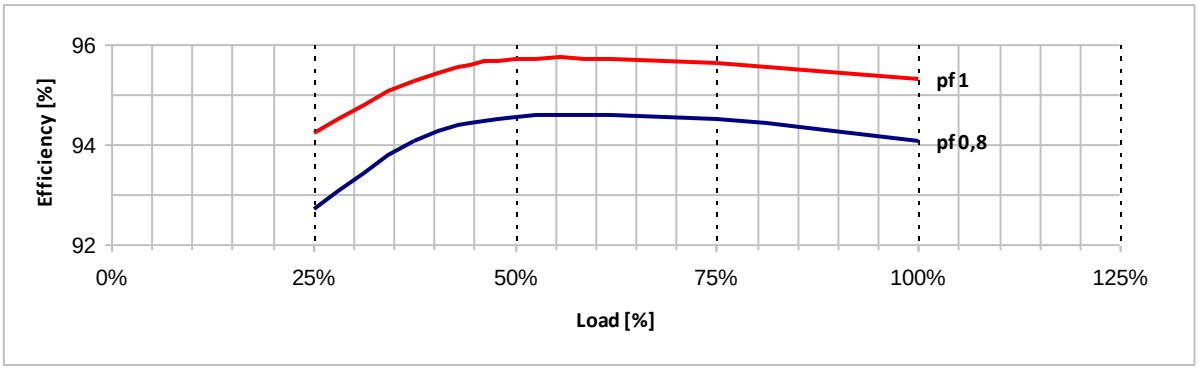
THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MB4

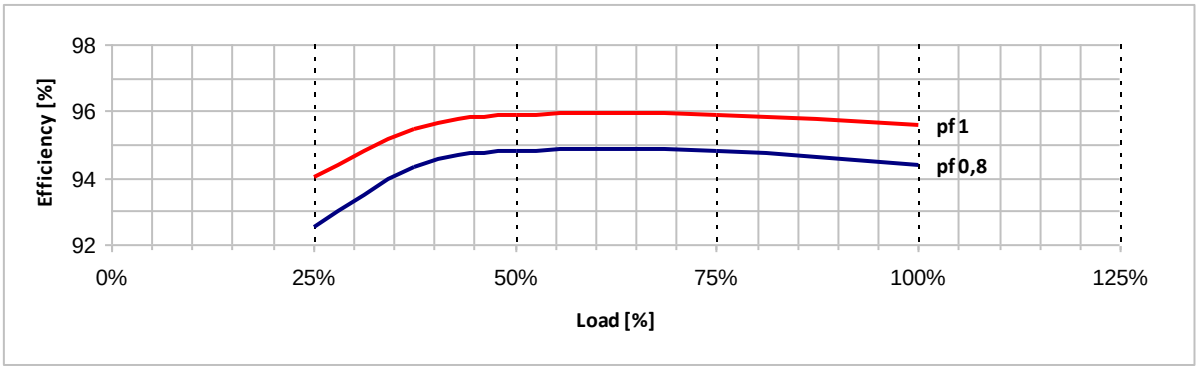
Typical efficiency curves

60 Hz - 1800 rpm

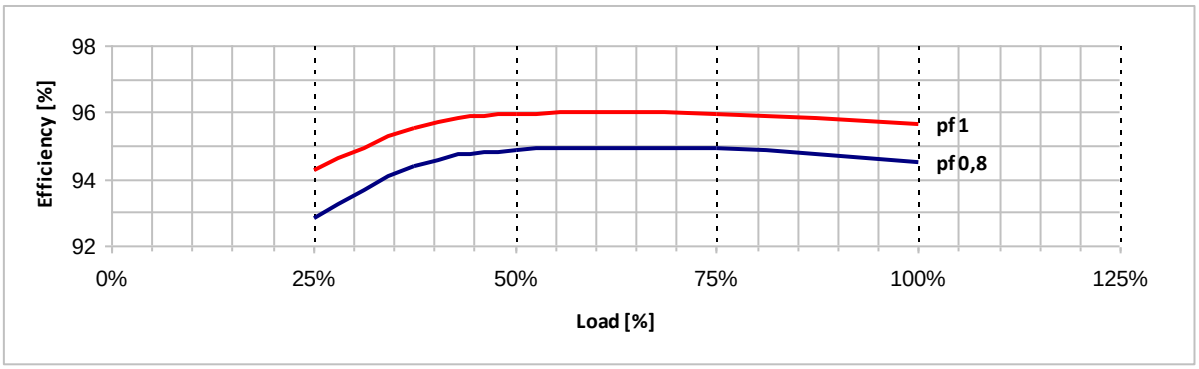
380 V



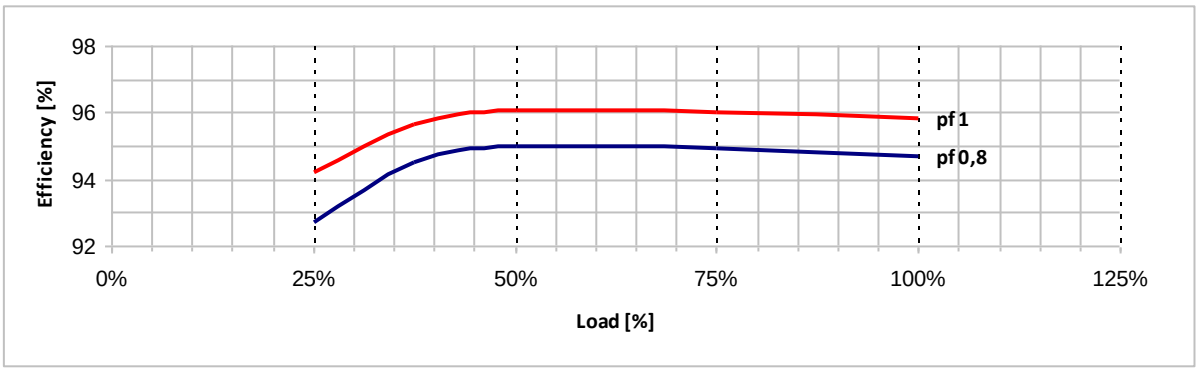
416 V



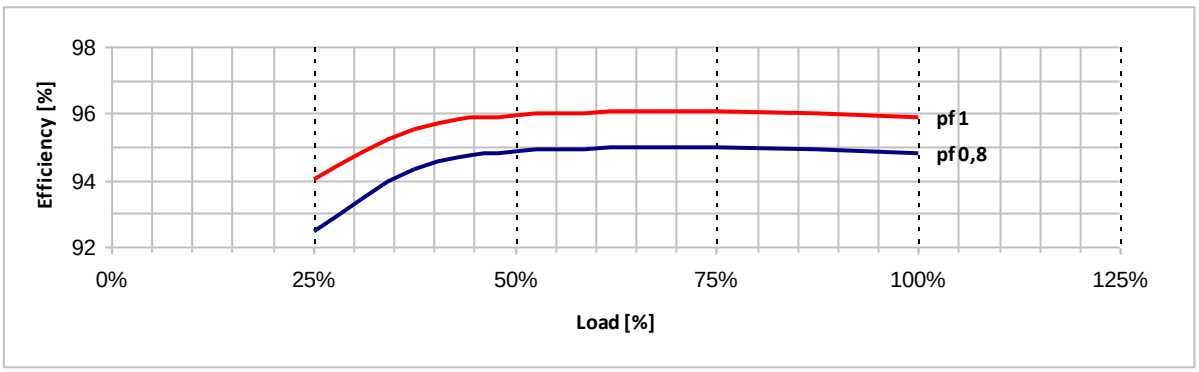
440 V



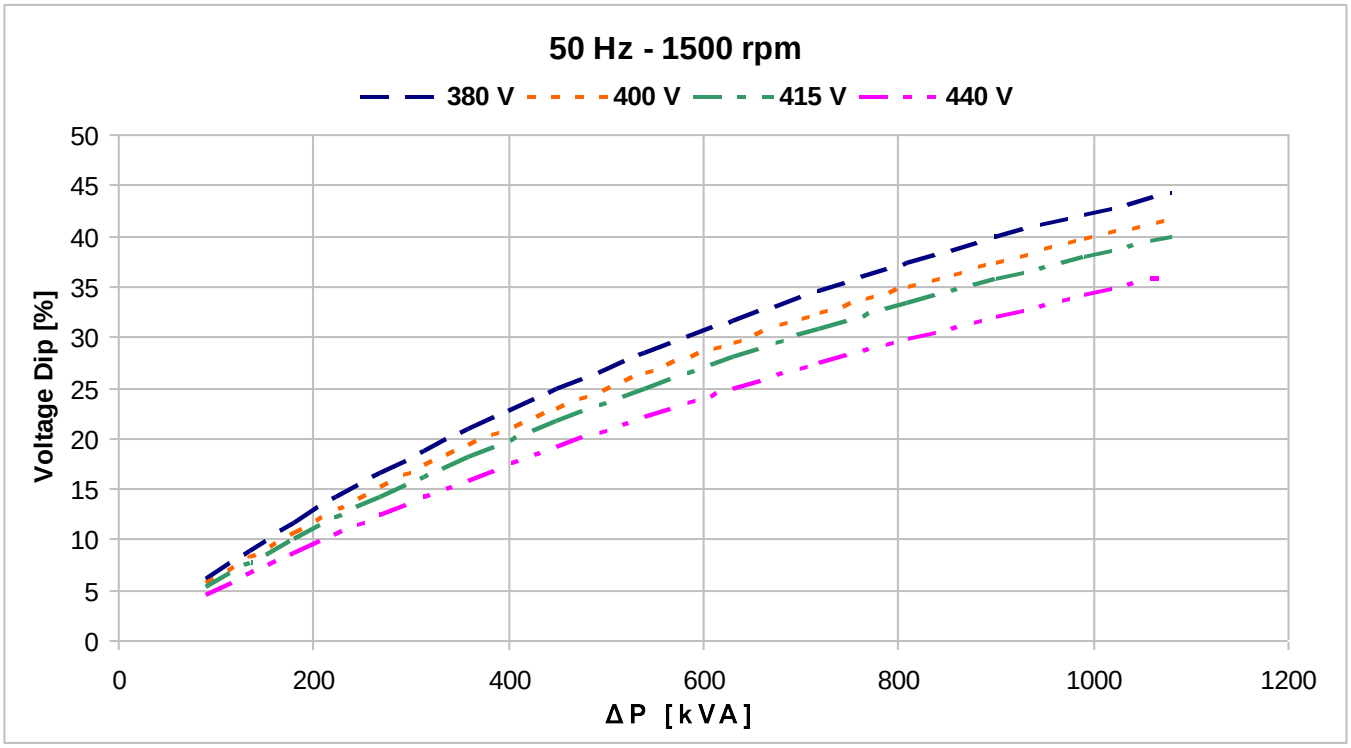
460 V

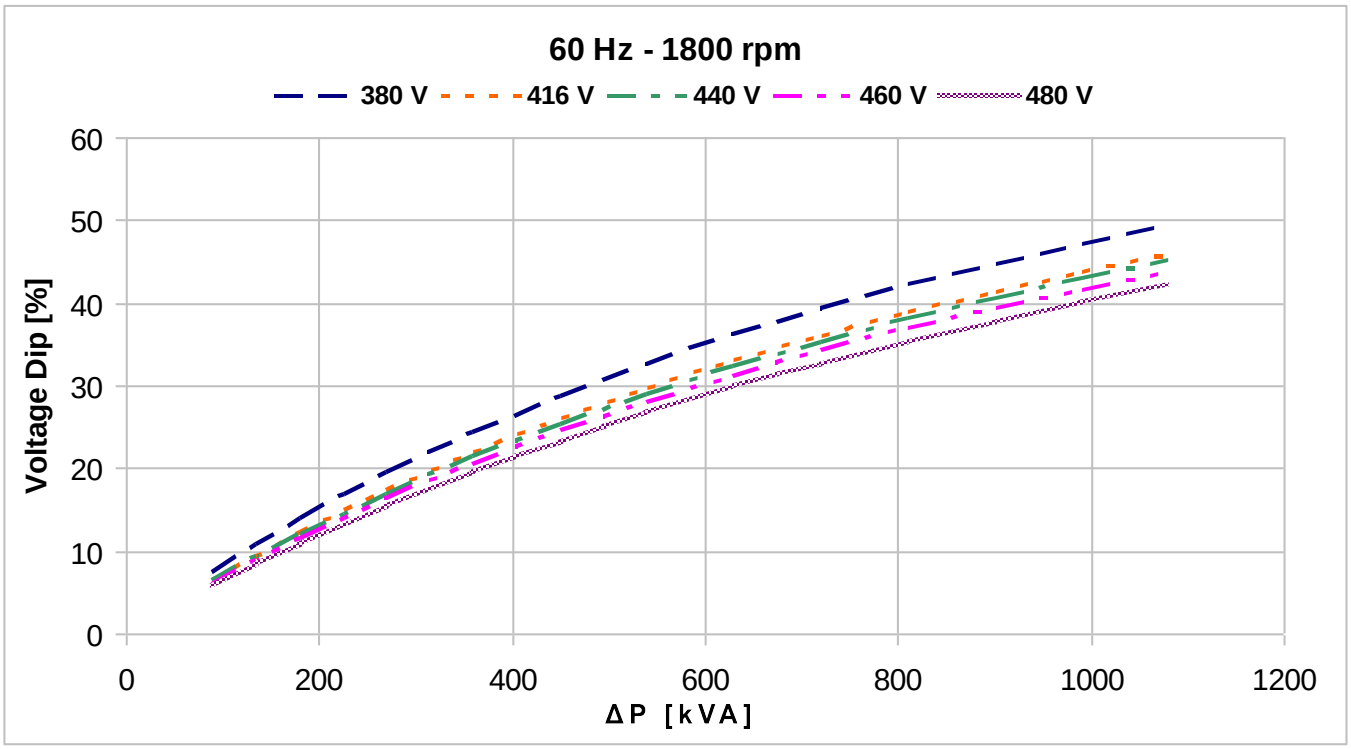


480 V



Locked rotor motor starting curves (*)





$$\Delta P = P_n \times \frac{I_s/I_n}{\cos\varphi_n \times \eta_n}$$

(*): A coefficient of 0,85 must be applied to the voltage dip if the load has a power factor equal or greater than 0,8.