MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 160 MA4

CONTINUOUS DUTY

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

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

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**	**25,9**	**28,0**	**28,0**	**28,0**	**27,4**	**29,4**	**31,4**	**33,6**	**34,0**
		kW	***20,7***	***22,4***	***22,4***	***22,4***	***21,9***	***23,5***	***25,1***	***26,9***	***27,2***
EFFICIENCY [%] @ 0,8 p.f.		**4/4**	87,0	88,2	87,7	87,3	86,9	87,4	87,9	88,4	89,2
		3/4	89,1	89,6	89,2	89,2	89,0	89,4	89,7	90,1	90,4
		2/4	90,2	90,4	89,9	90,0	90,3	90,4	90,4	90,6	90,9
EFFICIENCY [%] @ 1 p.f.		**4/4**	89,5	90,5	90,2	89,8	89,5	89,8	90,3	90,7	91,4
		3/4	91,3	91,7	91,4	91,4	91,2	91,5	91,8	92,1	92,4
		2/4	92,2	92,4	92,0	92,0	92,2	92,3	92,4	92,5	92,7
SHORT CIRCUIT RATIO		SCR	0,52	0,53	0,57	0,64	0,41	0,45	0,48	0,49	0,52
REACTANCES [%]											
Direct axis synchronous		Xd	259	253	235	209	256	295	281	275	256
Quadrature axis synchronous		Xq	146	142	132	117	185	165	158	155	144
Direct axis transient		X'd	24,0	23,4	21,7	19,3	30,4	27,3	26,0	25,5	23,7
Direct axis subtransient		X"d	10,5	10,2	9,5	8,4	13,3	11,9	11,3	11,1	10,3
Quadrature axis subtransient		X"q	13,7	13,4	12,4	11,1	17,4	15,6	14,9	14,6	13,6
Negative sequence		X_2	12,1	11,8	11,0	9,8	15,4	13,7	13,1	12,8	11,9
Zero sequence		X_0	2,2	2,1	2,0	1,7	2,7	2,4	2,3	2,3	2,1
TIME CONSTANTS [s]											
Open circuit		T'do	0,5								
Transient		T'd	0,04								
Subtransient		T"d	0,008								
Armature		T_a	0,005								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6310 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,16
Weight [kg]	Refer to B34 construction	178
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,11 / 0,14
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	0,35
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

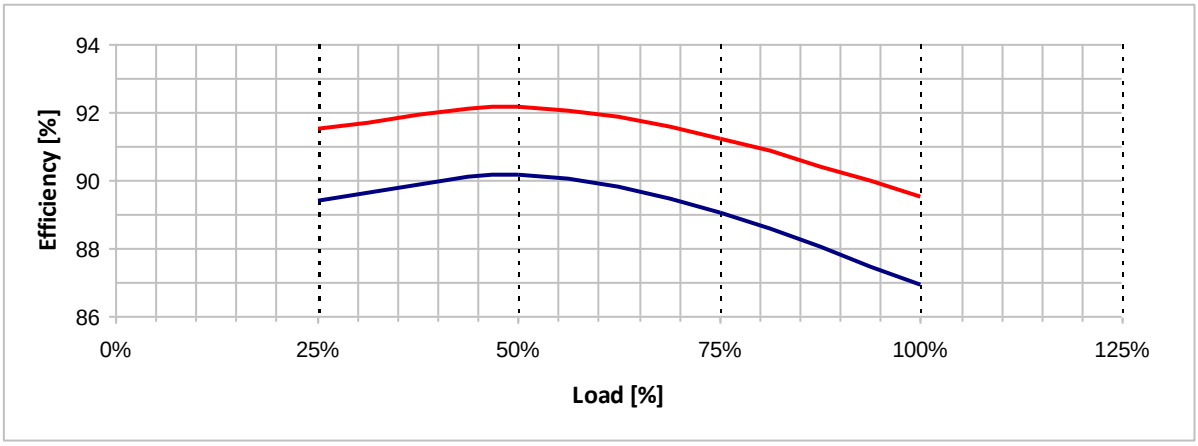
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 MA4

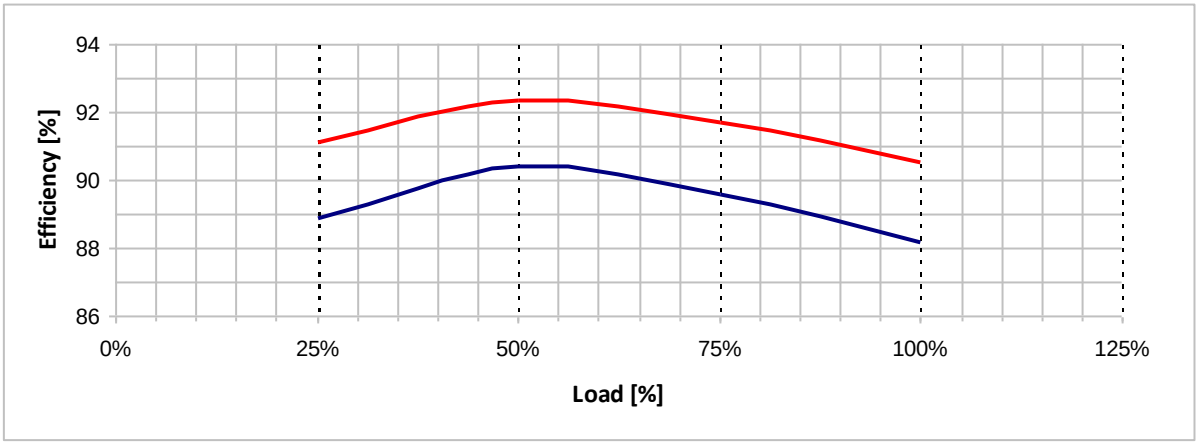
Typical efficiency curves

50 Hz - 1500 rpm

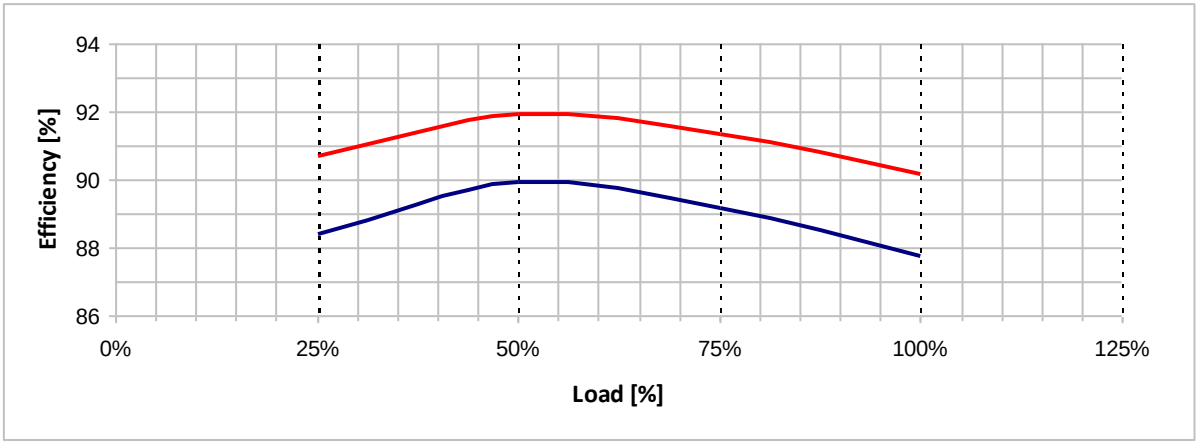
380 V



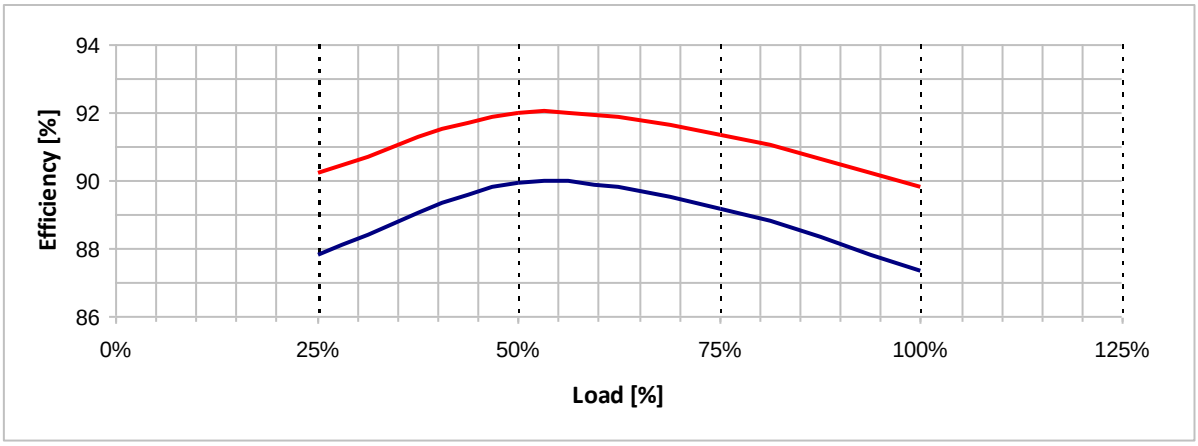
400 V



415 V



440 V



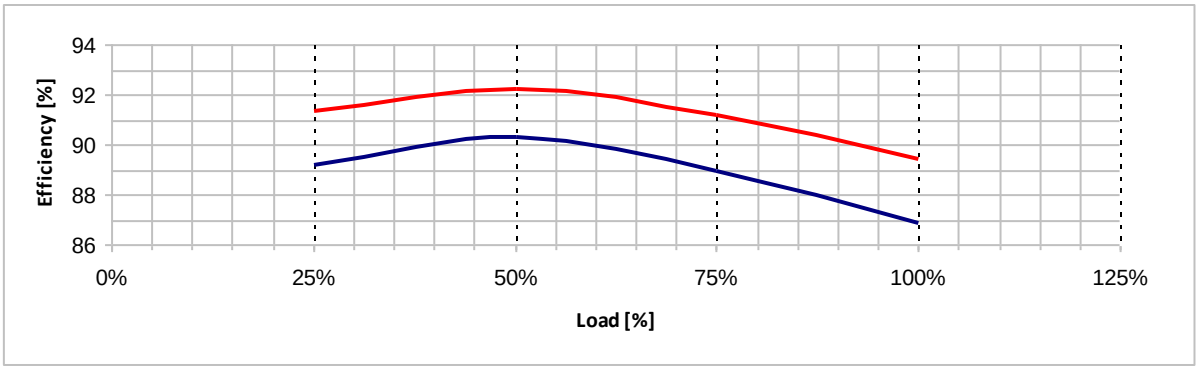
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 MA4

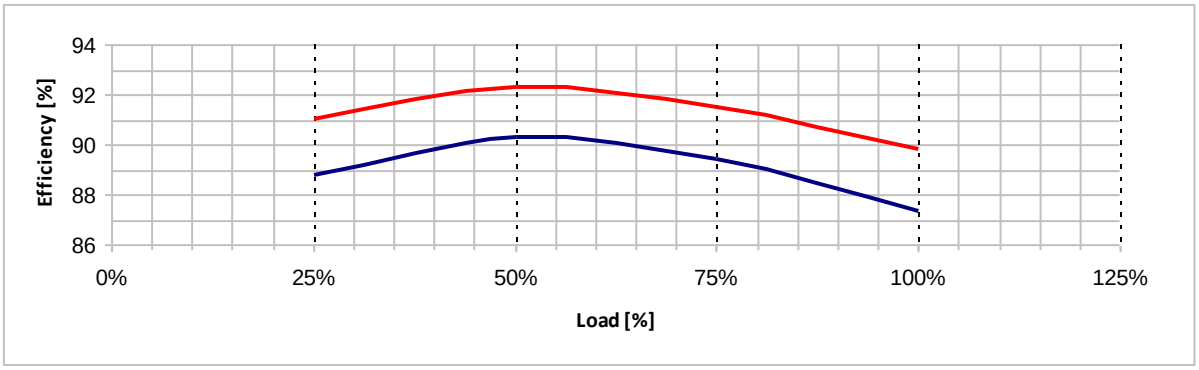
Typical efficiency curves

60 Hz - 1800 rpm

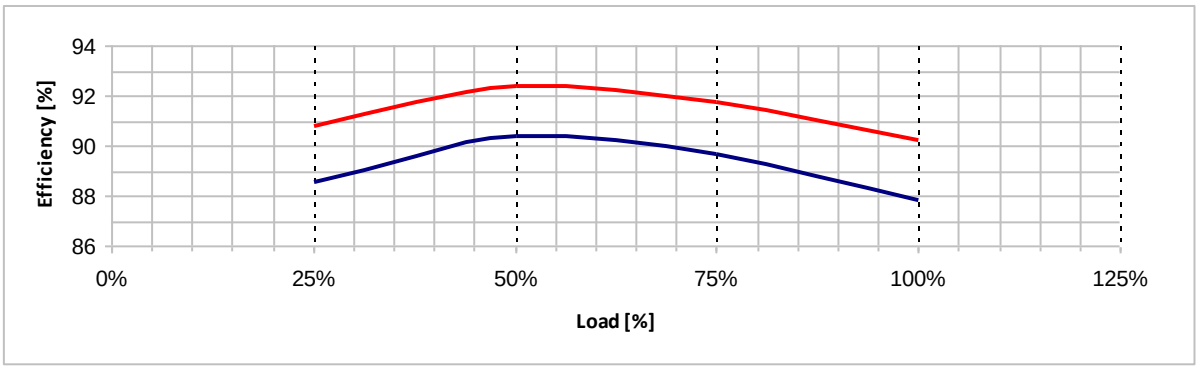
380 V



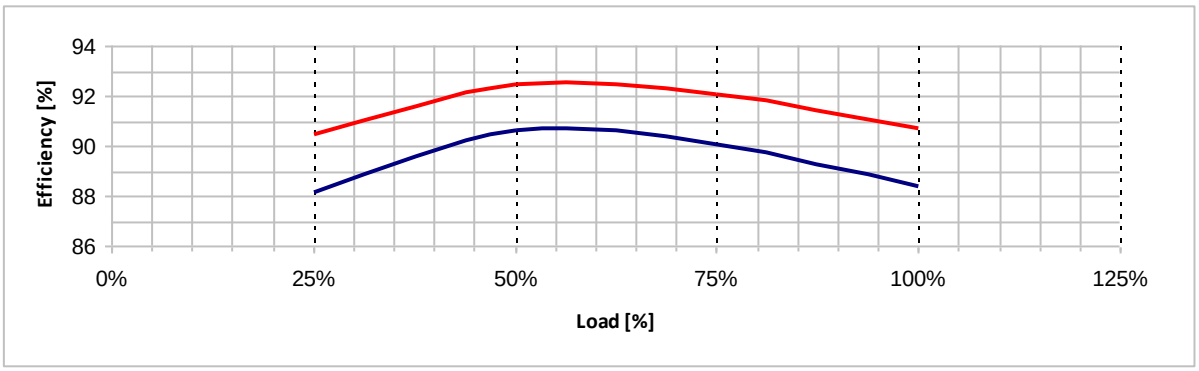
416 V



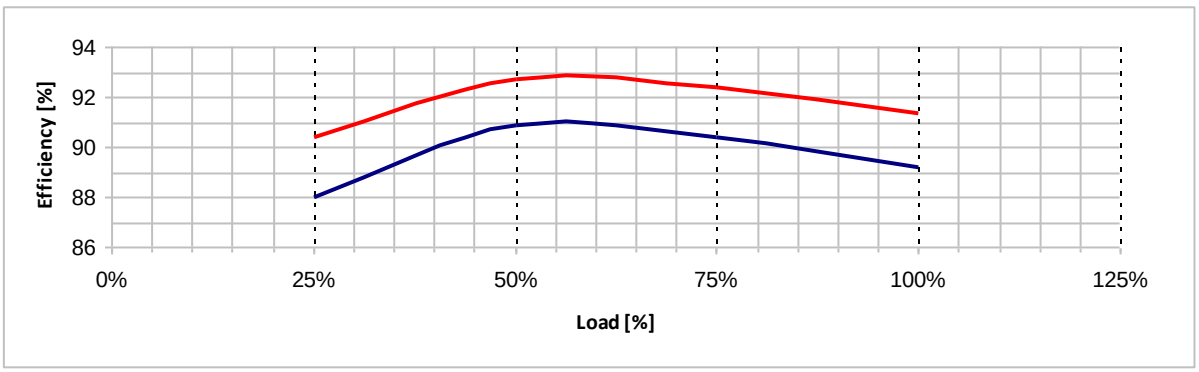
440 V



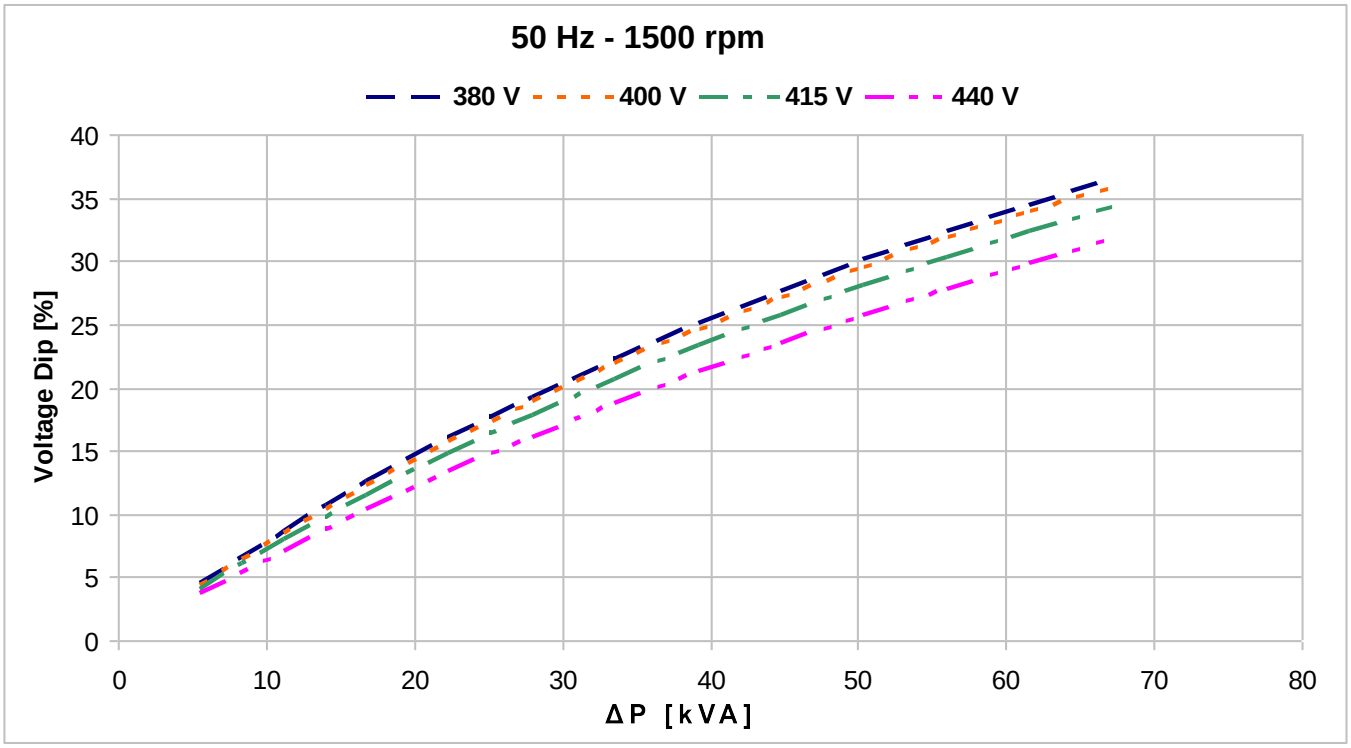
460 V

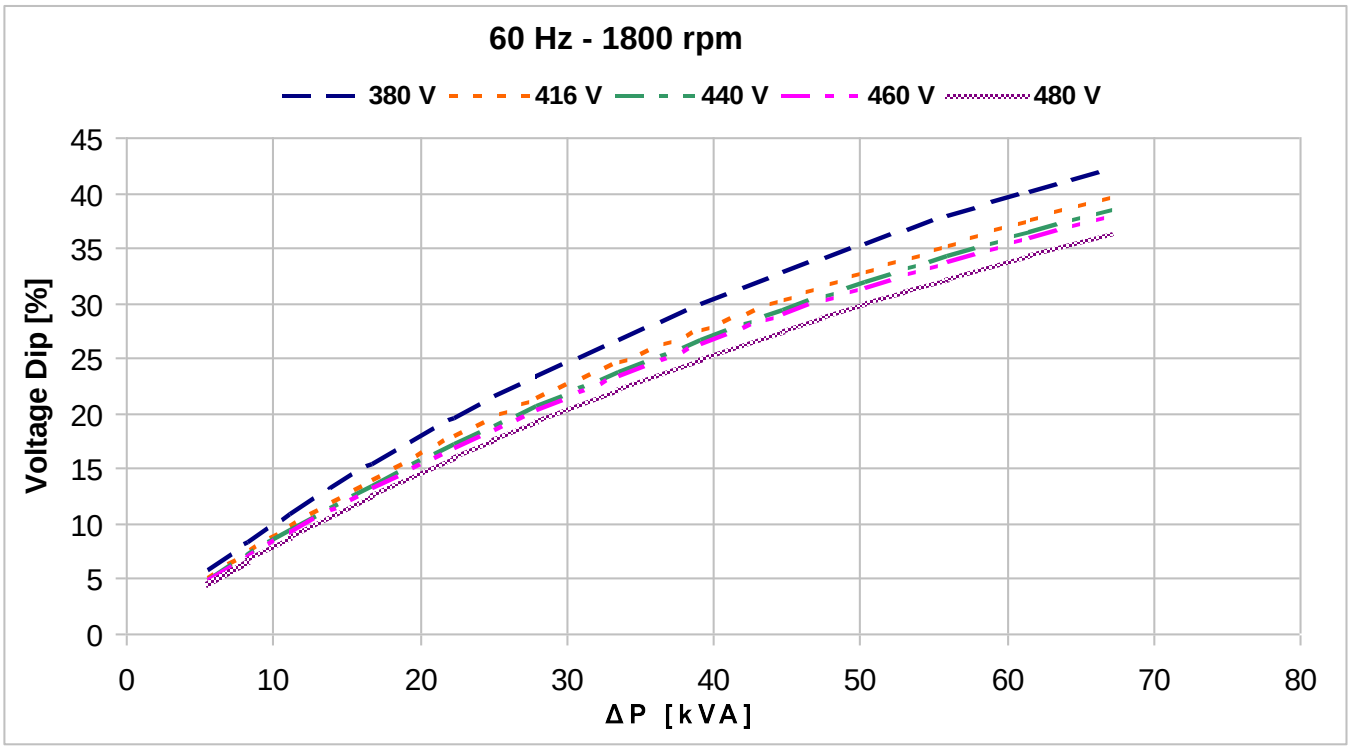


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 160 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**	**30,9**	**32,0**	**32,0**	**32,0**	**31,8**	**33,8**	**36,9**	**40,0**	**40,0**
			kW	***24,7***	***25,6***	***25,6***	***25,6***	***25,4***	***27,0***	***29,5***	***32,0***	***32,0***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	87,4	88,3	87,9	87,7	87,1	87,8	88,3	88,8	89,1
			3/4	89,2	89,8	89,4	89,3	89,1	89,4	89,8	90,3	90,7
			2/4	90,3	90,6	89,9	90,1	90,3	90,4	90,6	90,8	90,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	89,9	90,6	90,3	90,1	89,7	90,2	90,6	91,0	91,3
			3/4	91,4	91,9	91,5	91,5	91,2	91,5	91,9	92,3	92,6
			2/4	92,2	92,5	92,0	92,1	92,2	92,4	92,5	92,7	92,8
SHORT CIRCUIT RATIO			SCR	0,44	0,47	0,51	0,57	0,36	0,40	0,41	0,41	0,45
REACTANCES [%]												
Direct axis synchronous			Xd	293	274	255	226	285	321	313	311	285
Quadrature axis synchronous			Xq	164	153	142	126	202	179	175	174	159
Direct axis transient			X'd	26,7	25,0	23,2	20,7	33,0	29,3	28,6	28,4	26,0
Direct axis subtransient			X"d	11,4	10,7	9,9	8,8	14,1	12,5	12,2	12,1	11,1
Quadrature axis subtransient			X"q	15,2	14,2	13,2	11,7	18,8	16,6	16,2	16,1	14,8
Negative sequence			X_2	13,4	12,5	11,6	10,3	16,5	14,6	14,3	14,2	13,0
Zero sequence			X_0	2,5	2,3	2,1	1,9	3,0	2,7	2,6	2,6	2,4
TIME CONSTANTS [s]												
Open circuit			T'do	0,5								
Transient			T'd	0,05								
Subtransient			T"d	0,007								
Armature			T_a	0,005								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6310 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,17
Weight [kg]	Refer to B34 construction	188
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,11 / 0,14
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	0,3
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	-
Voltage regulation accuracy	± 1 % 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.

MarelliGenerators®

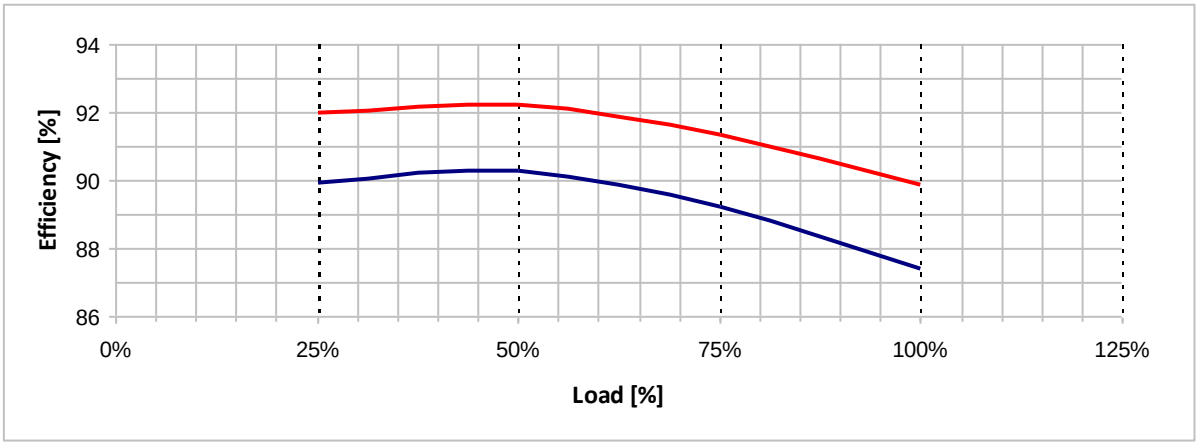
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 MB4

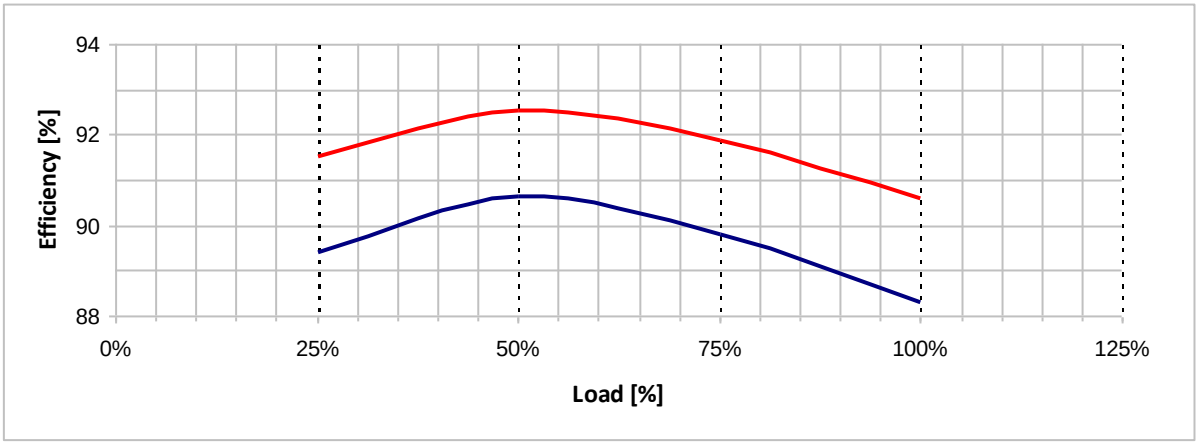
Typical efficiency curves

50 Hz - 1500 rpm

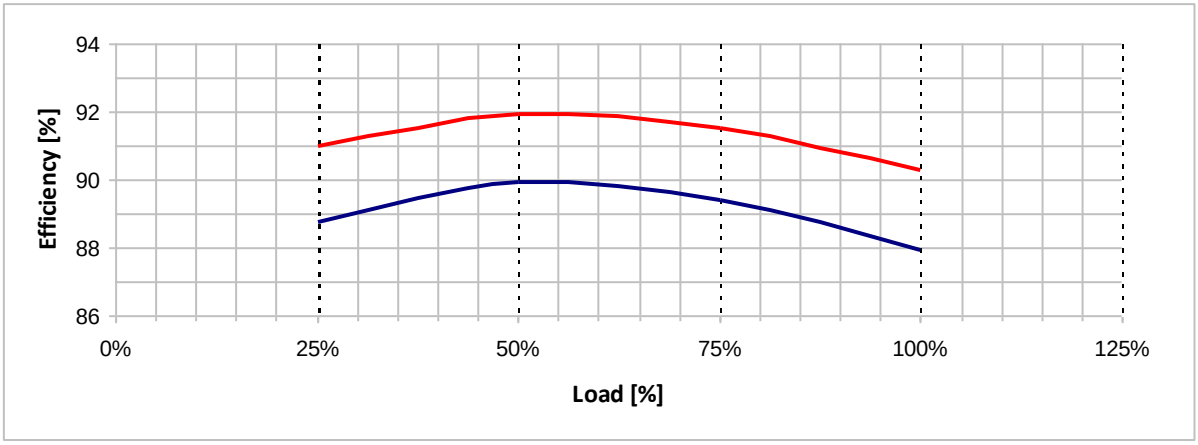
380 V



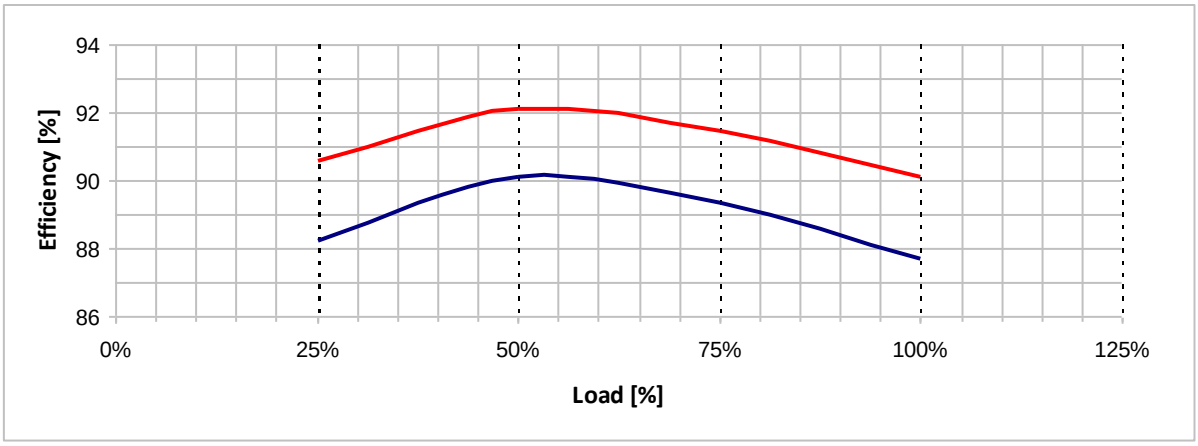
400 V



415 V



440 V



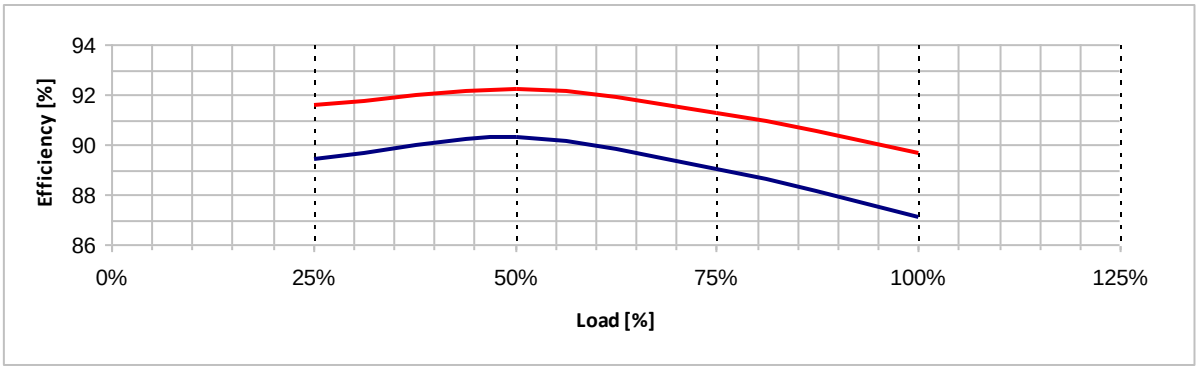
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 MB4

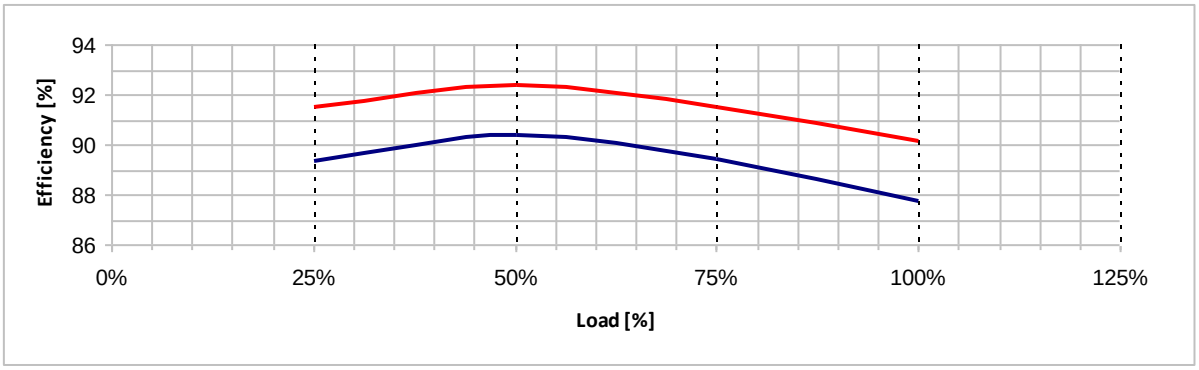
Typical efficiency curves

60 Hz - 1800 rpm

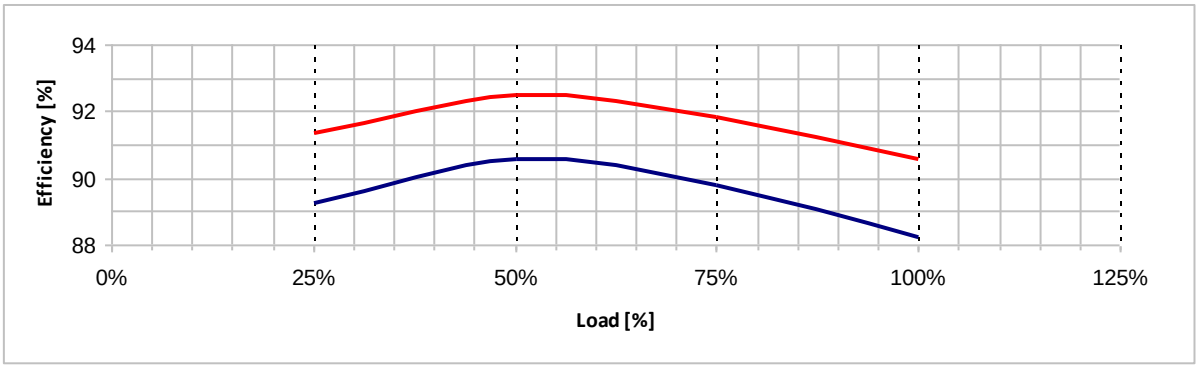
380 V



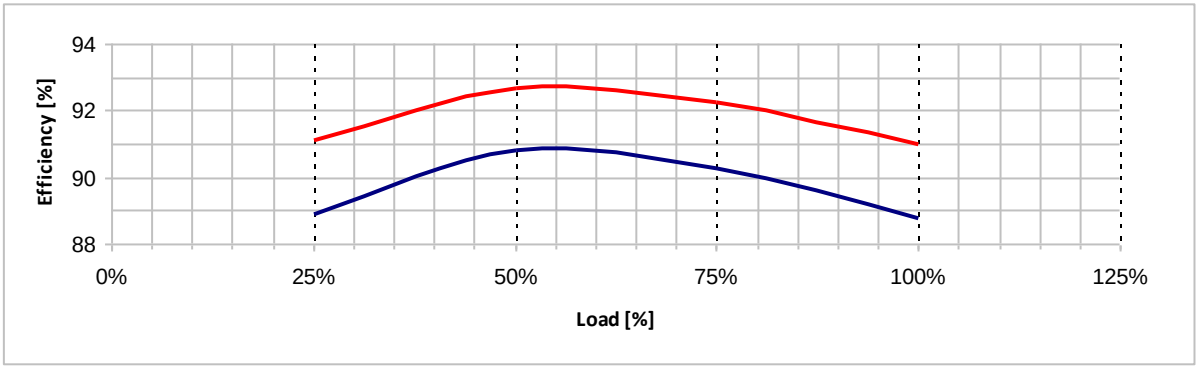
416 V



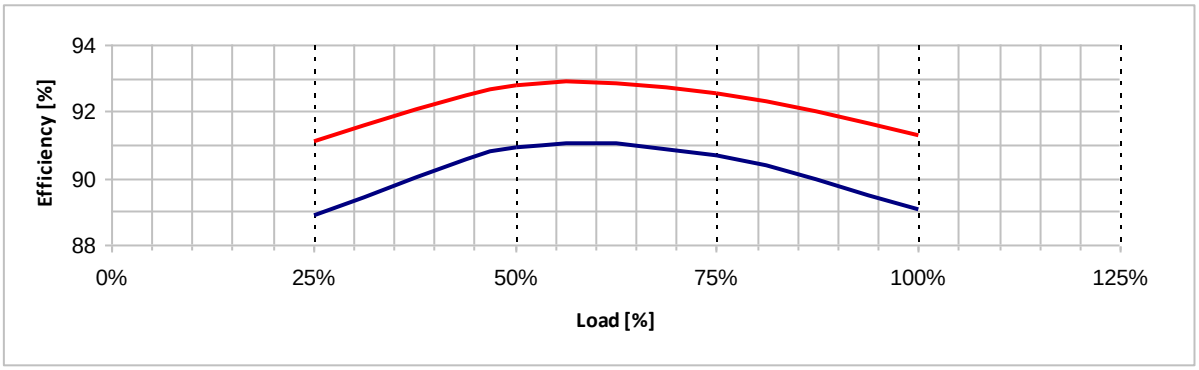
440 V



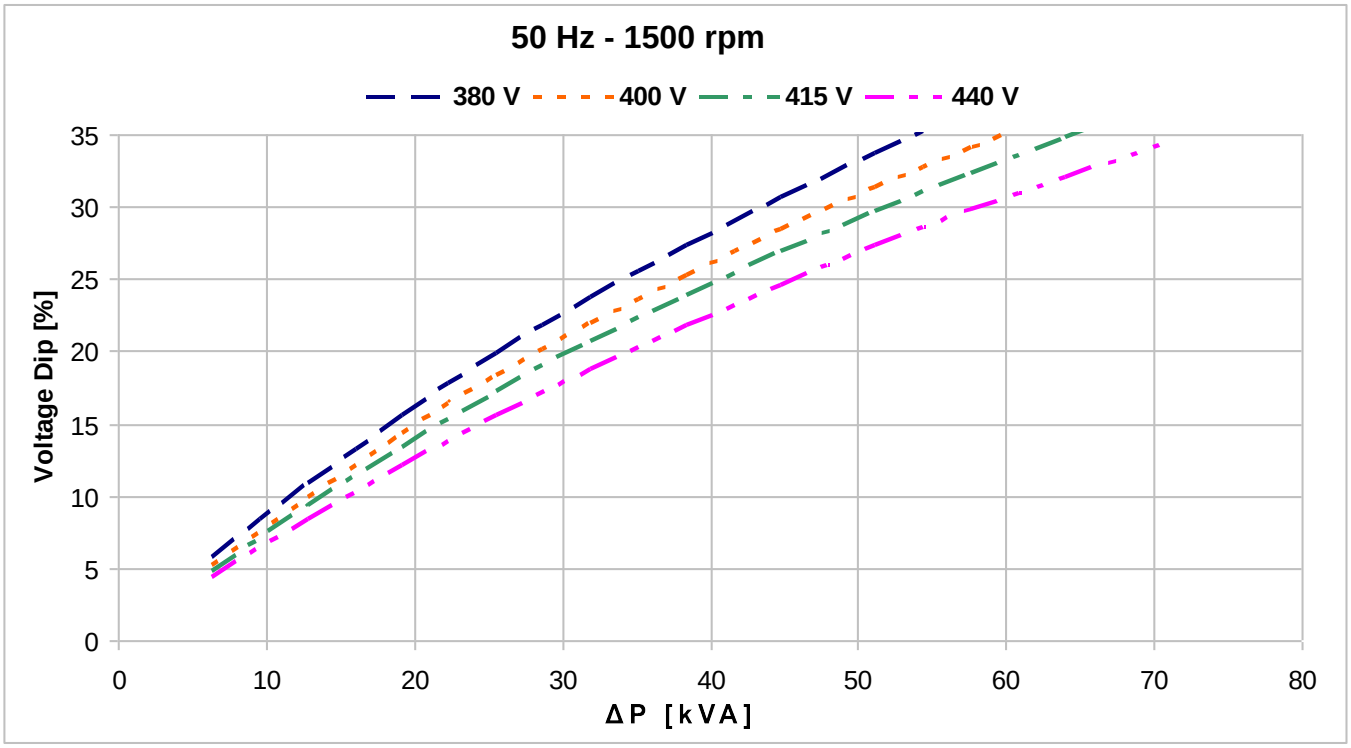
460 V

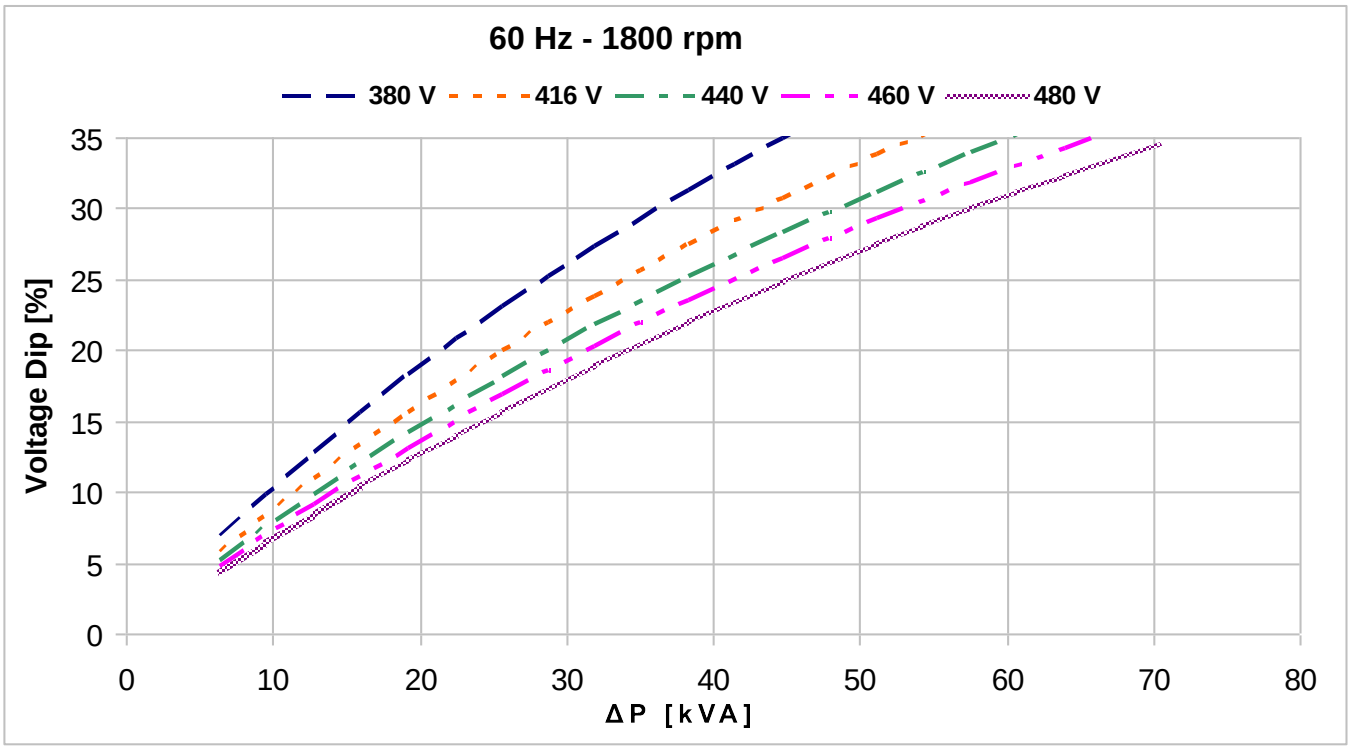


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 160 MB 4

4 POLES

STAND BY DUTY (163/27)

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

AMBIENT TEMPERATURE	**27℃**	**WINDING DATA**	
TEMPERATURE RISE	**163K**	Winding code	**M0**
INSULATION CLASS	**H**	Number of leads	**12**
POWER FACTOR	**0,8**	Winding pitch	**2/3**

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**34,0**	**35,2**	**35,2**	**35,2**	**35,0**	**37,2**	**40,6**	**44,0**	**44,0**
		kW	***27,2***	***28,2***	***28,2***	***28,2***	***28,0***	***29,8***	***32,5***	***35,2***	***35,2***
EFFICIENCY (%) @ 0,8 p.f.		4/4	86,5	87,7	87,2	87,0	86,3	87,0	87,7	88,0	88,2
EFFICIENCY (%) @ 1,0 p.f.		4/4	89,1	90,1	89,7	89,5	89,0	89,5	90,1	90,4	90,5
SHORT CIRCUIT RATIO			0,40	0,43	0,46	0,52	0,32	0,36	0,37	0,38	0,41
REACTANCES (%)											
Direct axis synchronous		xd	325	300	280	250	400	355	345	340	315
Quadrature axis synchronous		xq	180	170	155	140	225	195	195	190	175
Direct axis transient		x'd	29,4	27,5	25,5	22,7	36,4	32,2	31,5	31,2	28,6
Direct axis subtransient		x"d	12,6	11,8	10,9	9,7	15,6	13,8	13,5	13,3	12,3
Quadrature axis subtransient		x"q	16,7	15,6	14,5	12,9	20,7	18,3	17,9	17,7	16,3
Negative sequence		x_2	14,7	13,8	12,8	11,4	18,2	16,1	15,7	15,6	14,3
Zero sequence		x_0	2,7	2,5	2,4	2,1	3,3	3,0	2,9	2,9	2,6

TIME CONSTANTS [s]

Open circuit (T'do)	0,5	Subtransient (T"d)	0,007
Transient (T'd)	0,05	Armature (Ta)	0,005

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6310 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Weight (IM B34) [kg]	188
Inertia (J) (IM B34) [kgm^2]	0,170
Overspeed [min $^{-1}$]	2250
Method of cooling	IC 01
Cooling air required [m ^{3}/s] @ 50/60 Hz	0,11 / 0,14
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 ℃ - Star series	0,3
Overloads	-
3-phase short circuit current	-
Voltage regulation accuracy	+/- 1 % (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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SA4

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**	**16,2**	**17,0**	**17,0**	**17,0**	**17,0**	**18,3**	**19,4**	**19,7**	**21,0**
			kW	***13,0***	***13,6***	***13,6***	***13,6***	***13,6***	***14,6***	***15,5***	***15,8***	***16,8***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	84,1	85,6	85,4	84,6	83,1	84,3	84,9	85,7	86,4
			3/4	86,4	87,1	86,9	86,5	85,6	86,5	86,7	87,4	87,8
			2/4	87,5	87,6	87,7	87,6	87,4	87,7	88,0	88,0	88,4
EFFICIENCY [%] @ 1 p.f.			**4/4**	87,1	88,4	88,2	87,5	86,3	87,3	87,8	88,4	89,0
			3/4	89,0	89,7	89,5	89,1	88,4	89,1	89,3	89,8	90,2
			2/4	90,0	90,1	90,1	90,1	89,9	90,1	90,4	90,4	90,7
SHORT CIRCUIT RATIO			SCR	0,45	0,47	0,51	0,57	0,35	0,39	0,42	0,45	0,46
REACTANCES [%]												
Direct axis synchronous			Xd	288	273	254	226	281	326	309	287	281
Quadrature axis synchronous			Xq	162	153	142	126	203	183	173	161	158
Direct axis transient			X'd	28,8	27,3	25,4	22,6	36,3	32,6	30,9	28,7	28,1
Direct axis subtransient			X"d	13,8	13,1	12,2	10,8	17,4	15,6	14,8	13,8	13,5
Quadrature axis subtransient			X"q	17,0	16,1	15,0	13,3	21,4	19,2	18,2	16,9	16,6
Negative sequence			X_2	15,4	14,6	13,6	12,1	19,4	17,4	16,5	15,4	15,0
Zero sequence			X_0	2,9	2,7	2,5	2,2	3,6	3,2	3,1	2,8	2,8
TIME CONSTANTS [s]												
Open circuit			T'do	0,4								
Transient			T'd	0,04								
Subtransient			T"d	0,008								
Armature			T_a	0,004								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6310 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,109
Weight [kg]	Refer to B34 construction	129
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,11 / 0,14
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	0,94
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

MarelliGenerators®

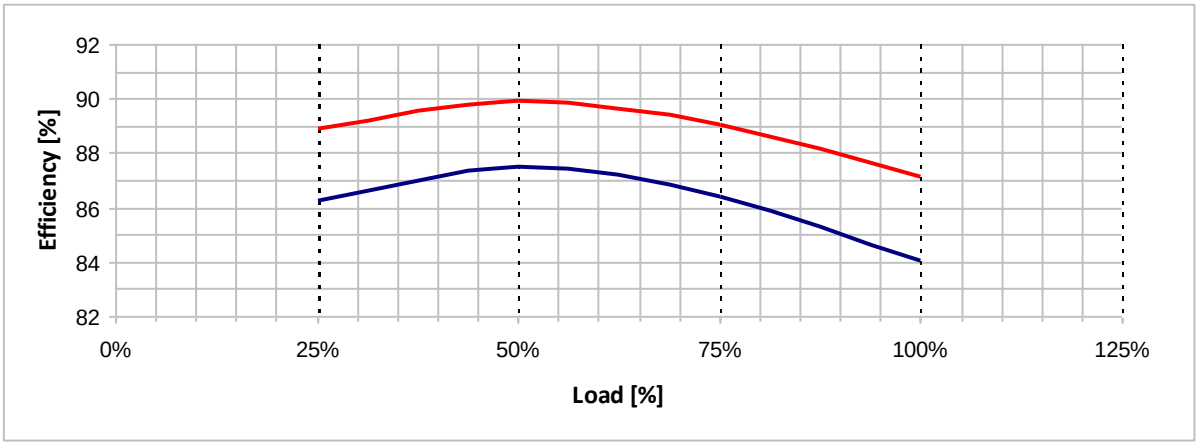
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SA4

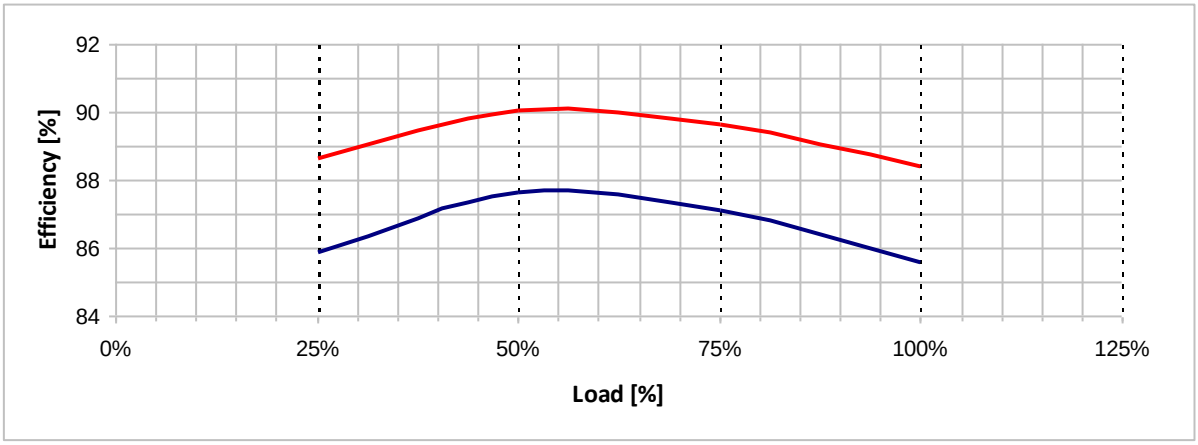
Typical efficiency curves

50 Hz - 1500 rpm

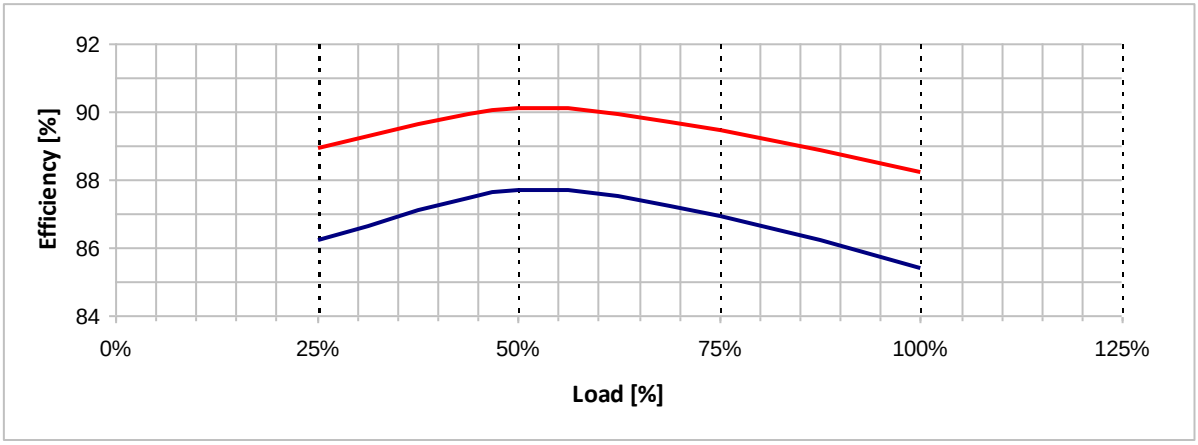
380 V



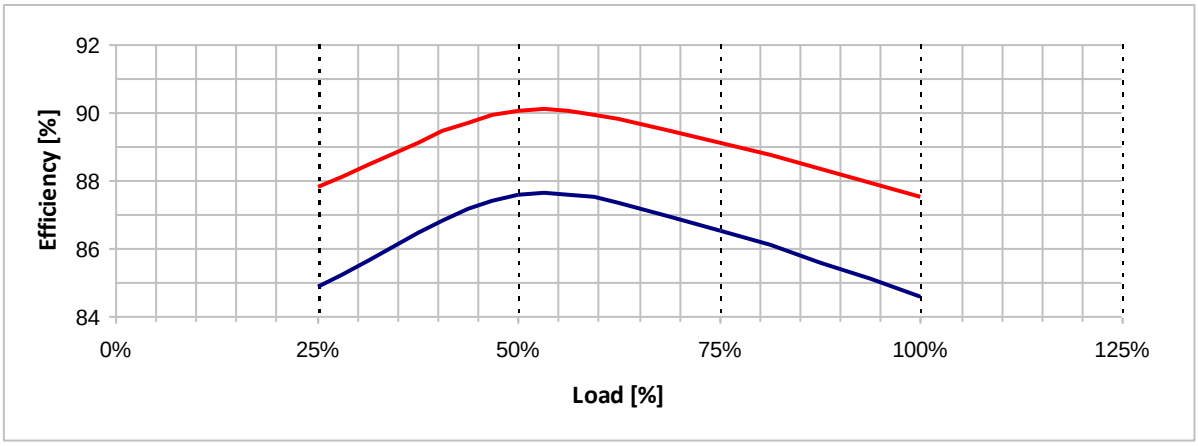
400 V



415 V



440 V



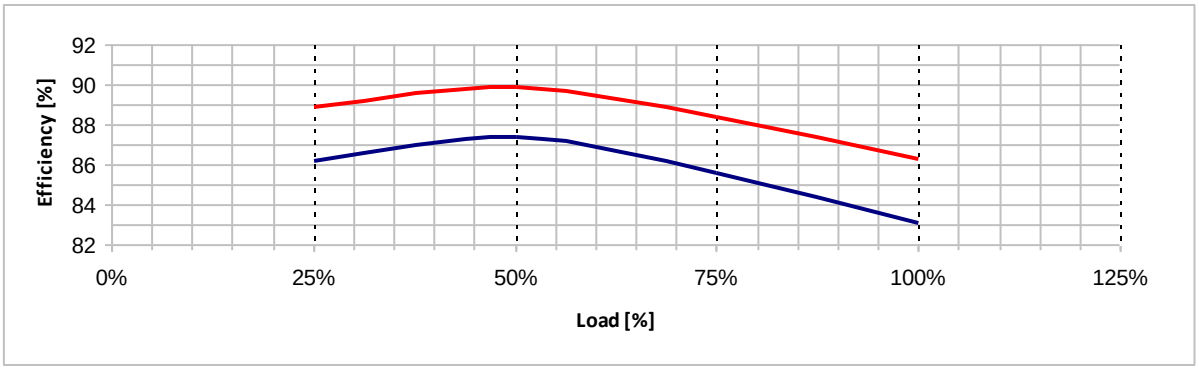
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SA4

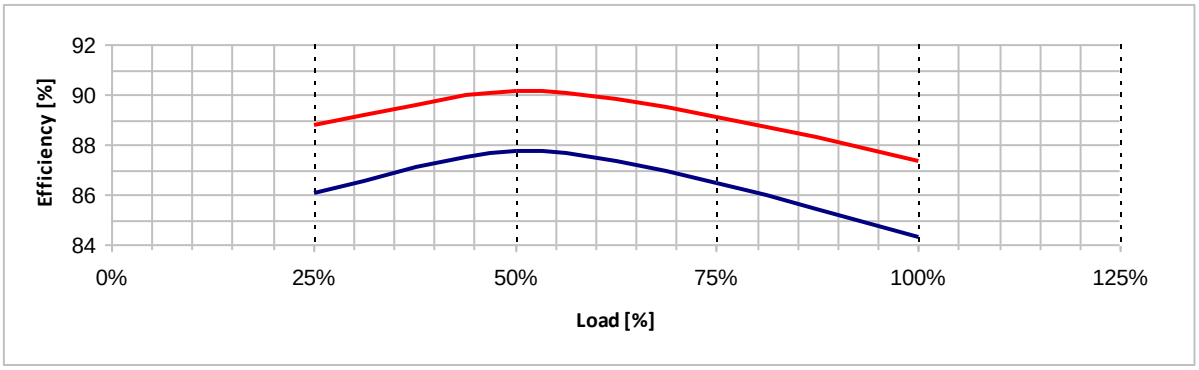
Typical efficiency curves

60 Hz - 1800 rpm

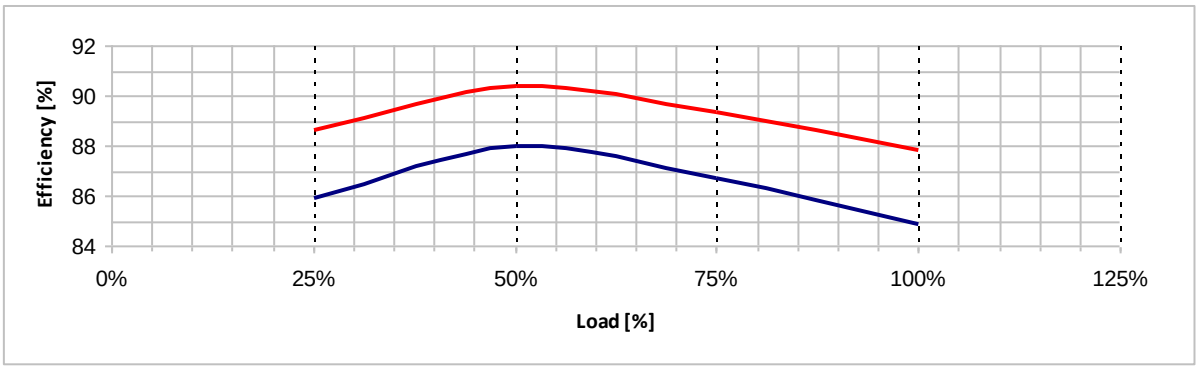
380 V



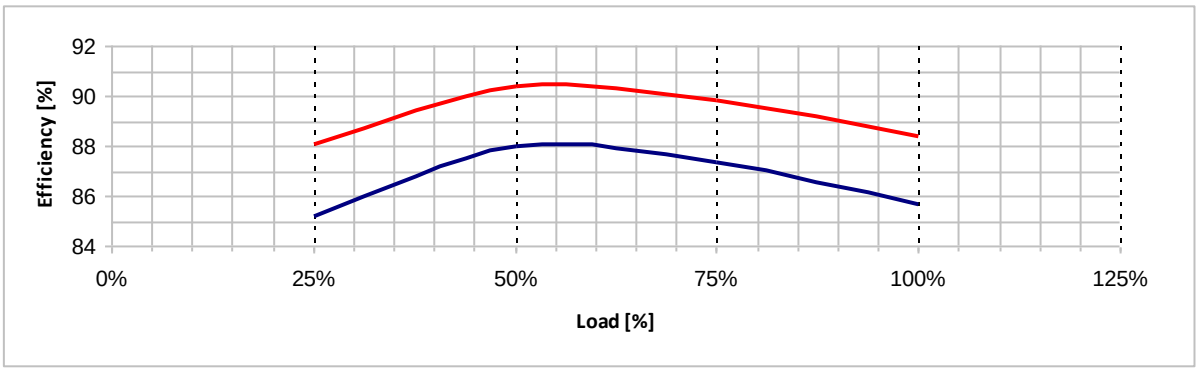
416 V



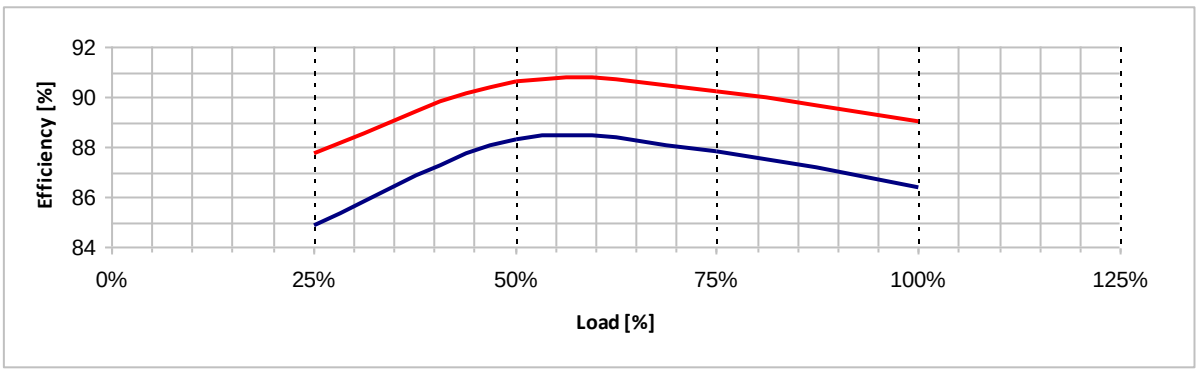
440 V



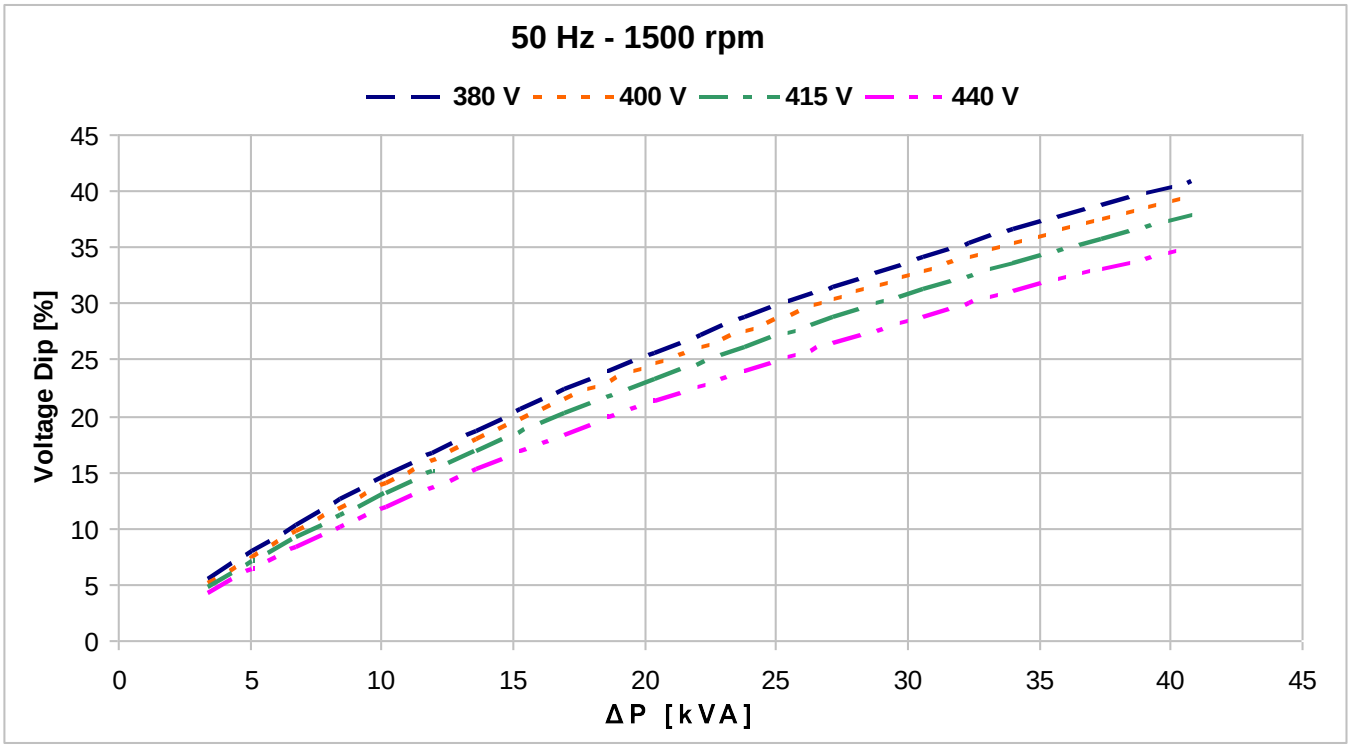
460 V

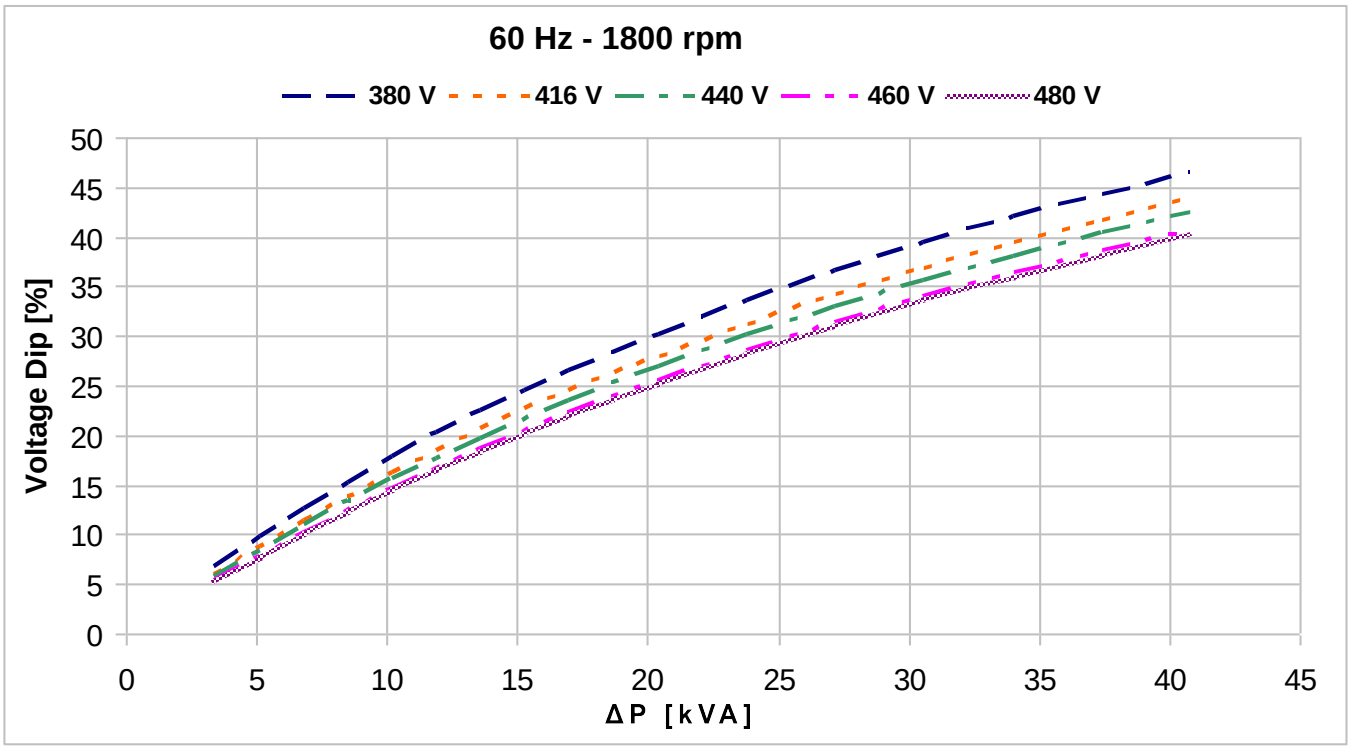


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SC4

CONTINUOUS DUTY

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

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

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**	**21,9**	**23,0**	**23,0**	**23,0**	**25,4**	**27,1**	**27,7**	**30,0**	**30,0**
			kW	***17,5***	***18,4***	***18,4***	***18,4***	***20,3***	***21,7***	***22,2***	***24,0***	***24,0***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	86,2	87,5	87,1	86,8	85,8	86,4	86,9	87,7	88,3
			3/4	88,4	88,9	88,9	88,7	88,3	88,6	89,0	89,5	89,9
			2/4	89,5	89,4	89,3	89,3	89,4	89,6	90,0	90,0	90,2
EFFICIENCY [%] @ 1 p.f.			**4/4**	88,9	90,0	89,6	89,4	88,6	89,0	89,5	90,1	90,6
			3/4	90,7	91,1	91,1	91,0	90,6	90,9	91,2	91,6	91,9
			2/4	91,6	91,5	91,4	91,4	91,5	91,7	92,0	92,0	92,2
SHORT CIRCUIT RATIO			SCR	0,43	0,45	0,48	0,54	0,31	0,34	0,38	0,38	0,41
REACTANCES [%]												
Direct axis synchronous			Xd	303	287	267	237	312	375	343	340	312
Quadrature axis synchronous			Xq	170	161	150	133	236	210	192	191	175
Direct axis transient			X'd	29,2	27,7	25,7	22,9	40,7	36,2	33,1	32,8	30,1
Direct axis subtransient			X"d	13,4	12,7	11,8	10,5	18,6	16,6	15,2	15,0	13,8
Quadrature axis subtransient			X"q	17,0	16,1	15,0	13,3	23,6	21,0	19,2	19,1	17,5
Negative sequence			X_2	15,2	14,4	13,4	11,9	21,1	18,8	17,2	17,0	15,7
Zero sequence			X_0	2,7	2,6	2,4	2,1	3,8	3,4	3,1	3,1	2,8
TIME CONSTANTS [s]												
Open circuit			T'do	0,4								
Transient			T'd	0,04								
Subtransient			T"d	0,005								
Armature			T_a	0,005								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6310 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,135
Weight [kg]	Refer to B34 construction	150
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,11 / 0,14
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	0,57
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

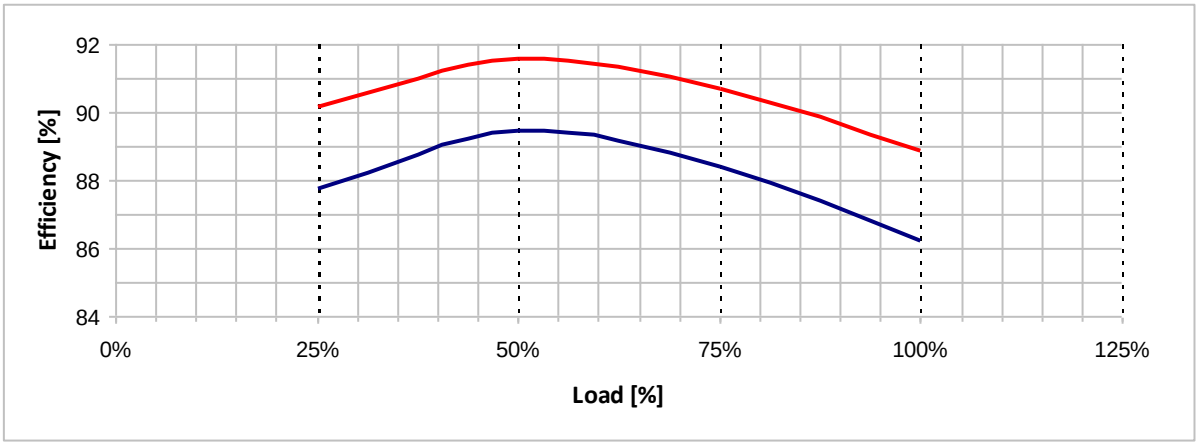
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SC4

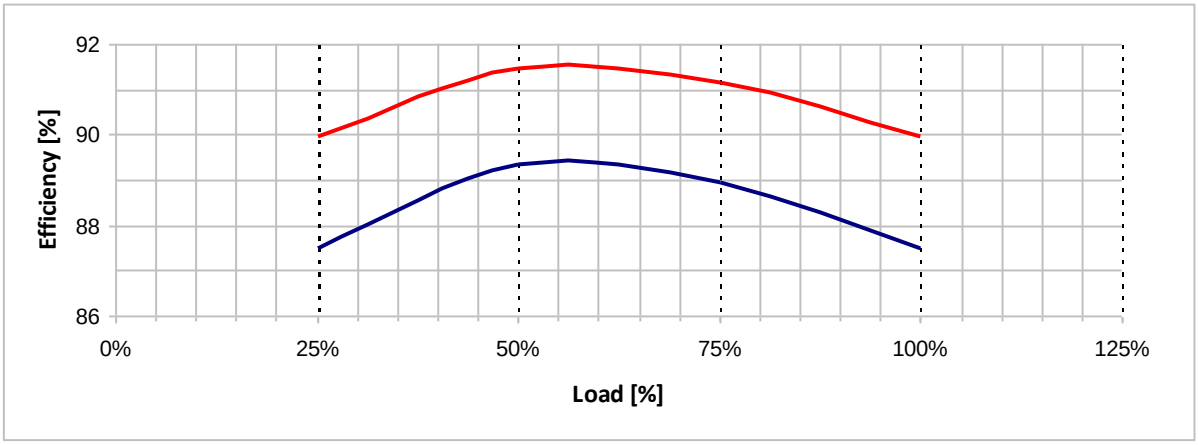
Typical efficiency curves

50 Hz - 1500 rpm

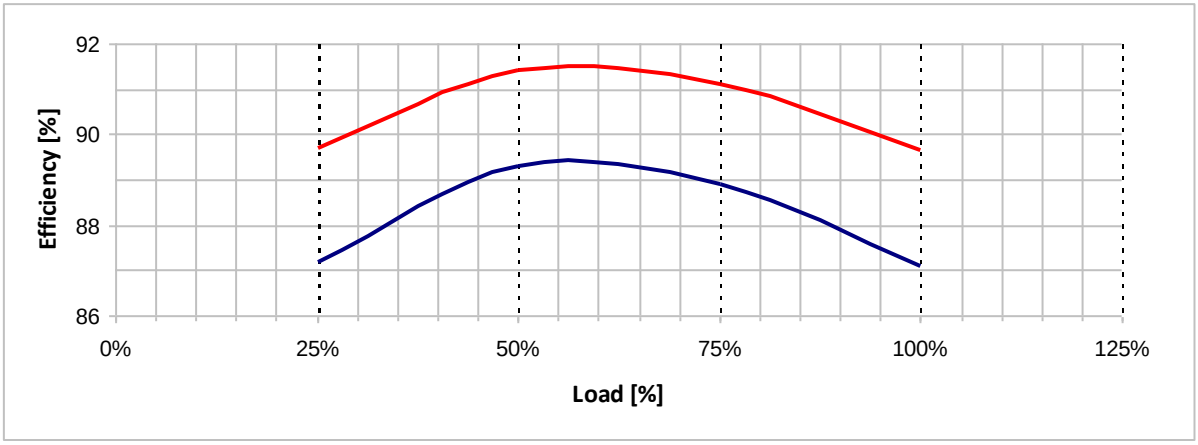
380 V



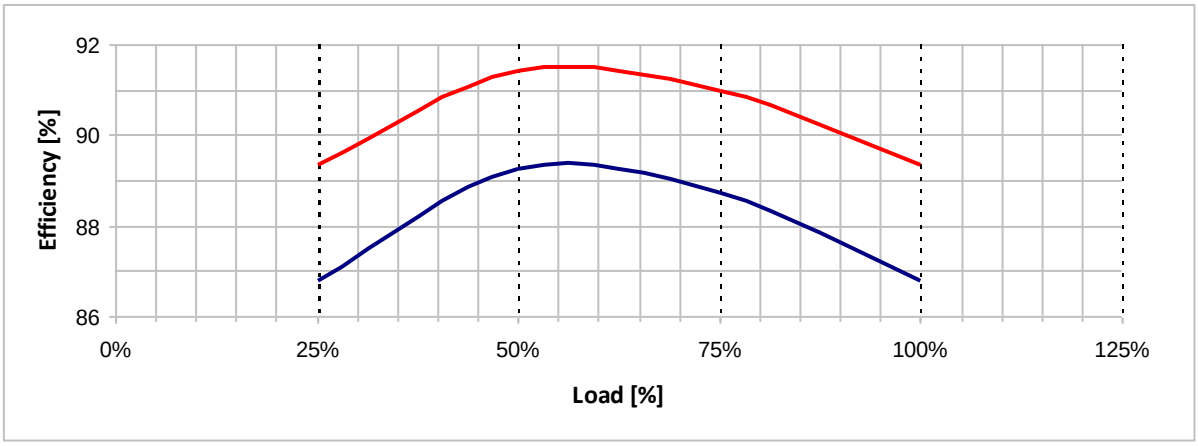
400 V



415 V



440 V



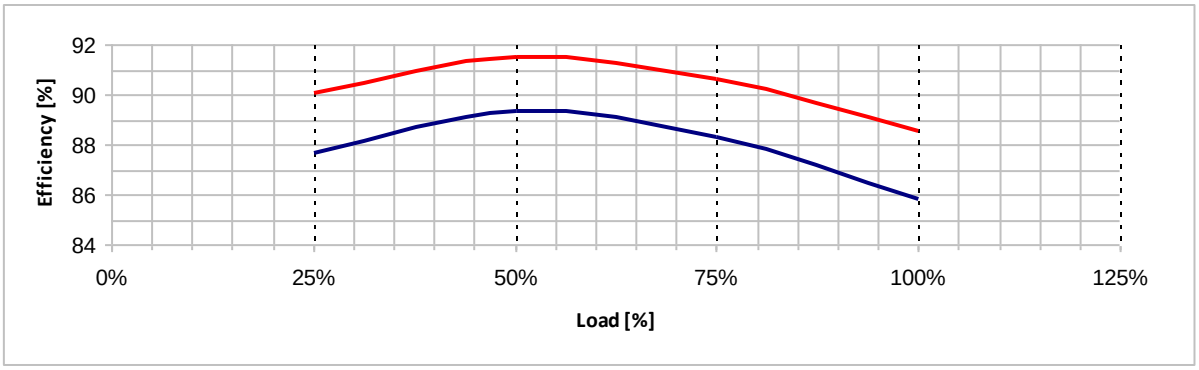
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SC4

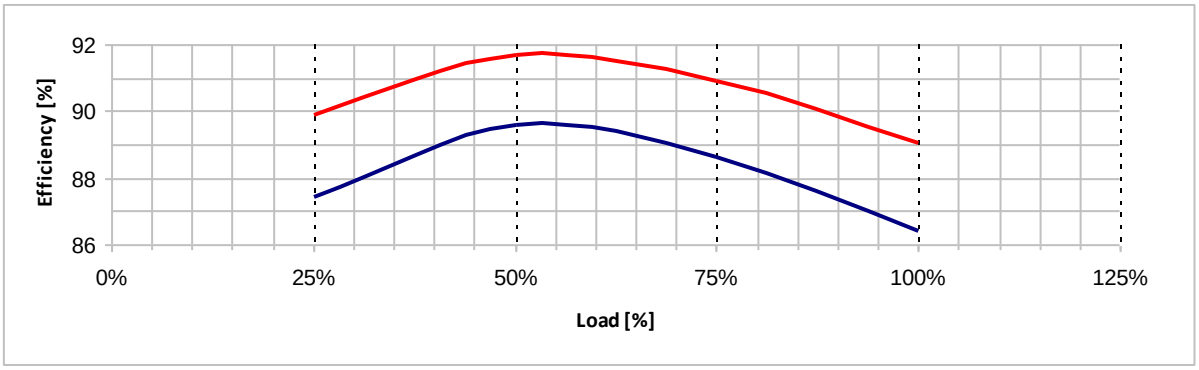
Typical efficiency curves

60 Hz - 1800 rpm

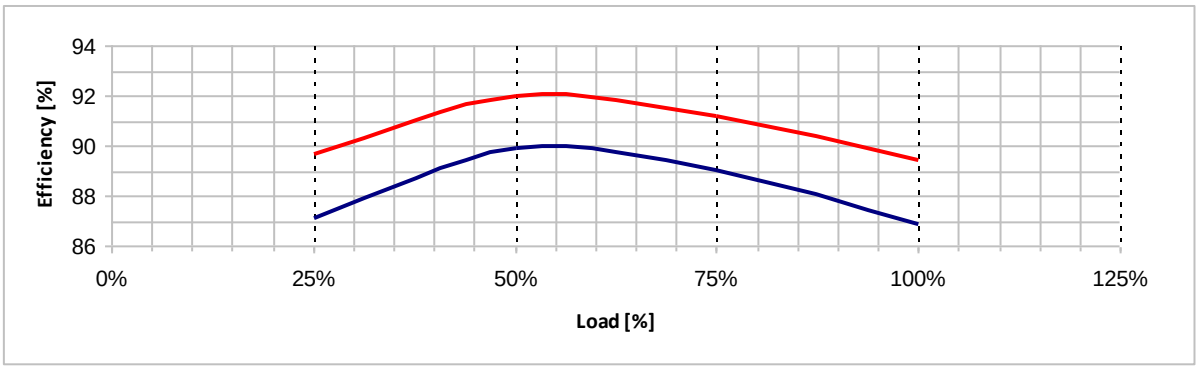
380 V



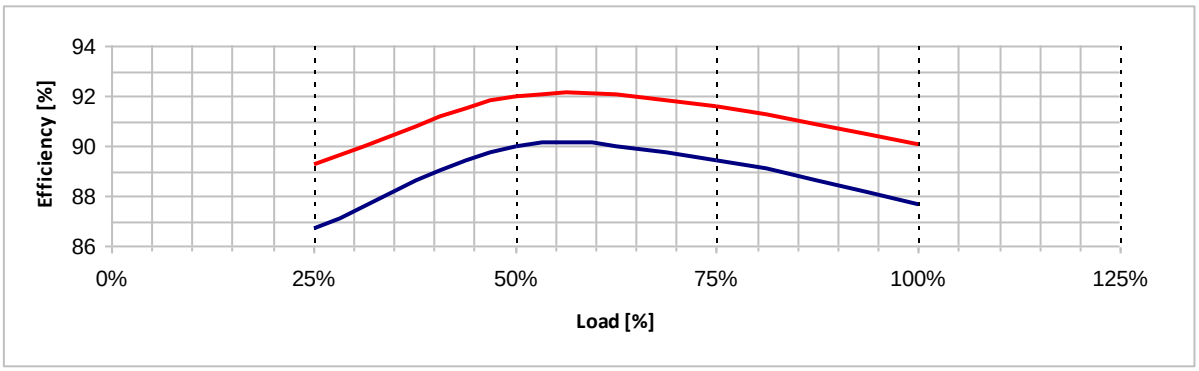
416 V



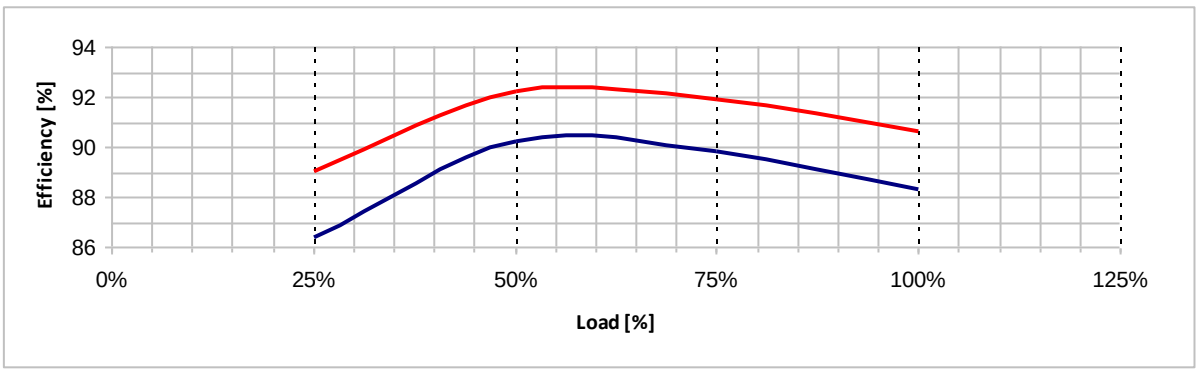
440 V



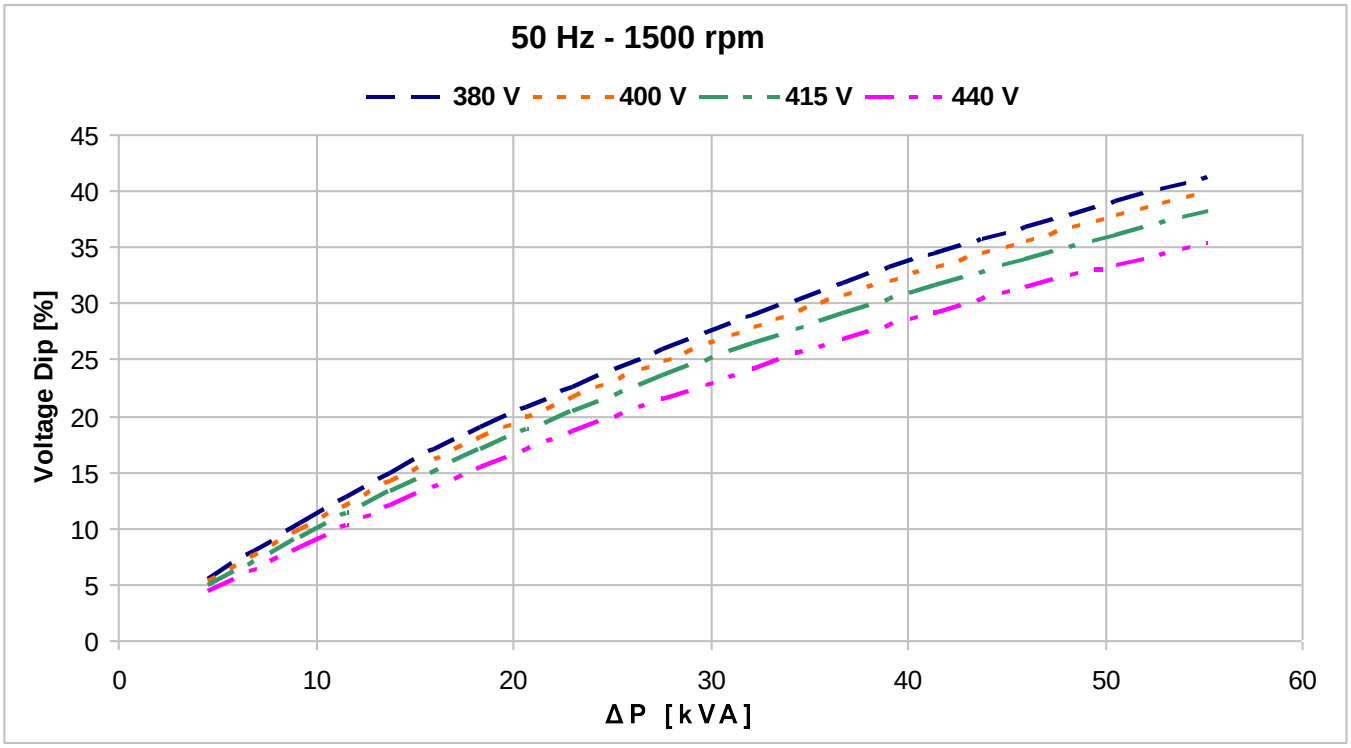
460 V

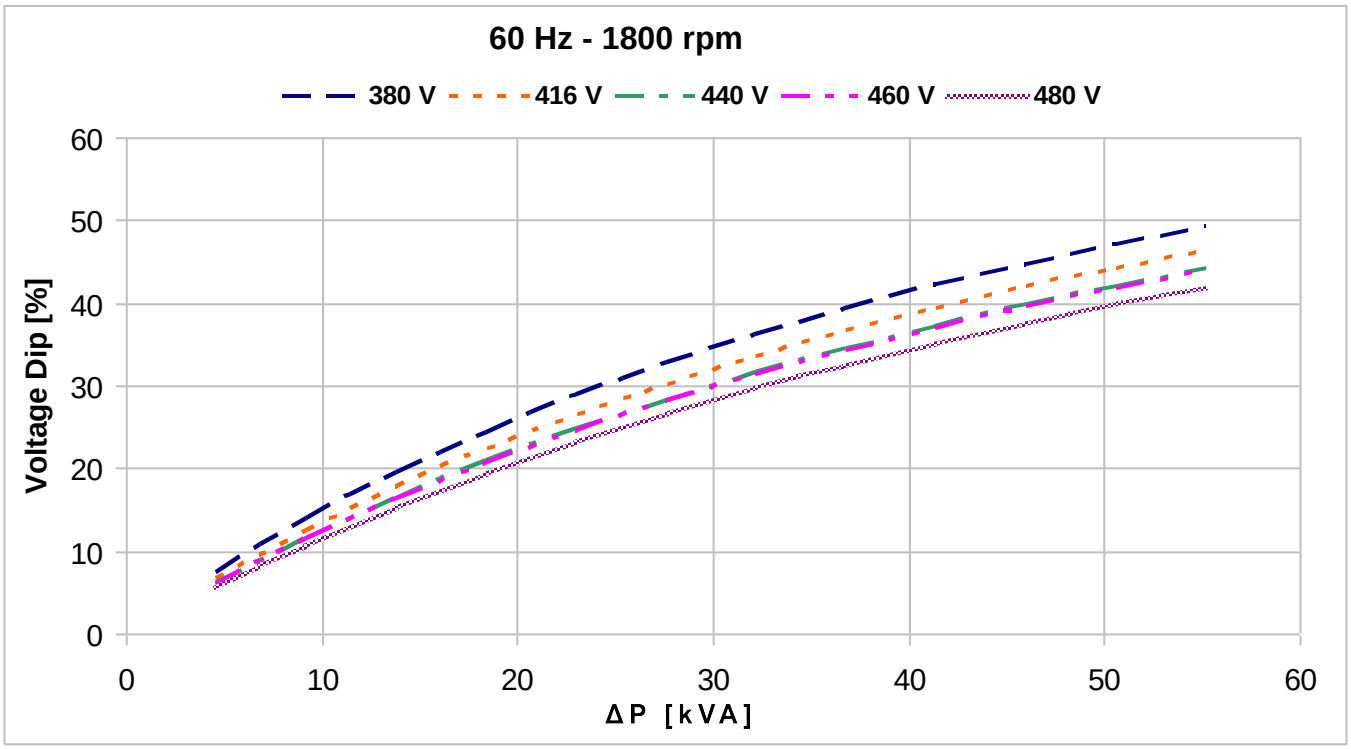


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SB4

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**	**19,0**	**20,0**	**20,0**	**20,0**	**20,3**	**21,8**	**23,1**	**23,4**	**25,0**
			kW	***15,2***	***16,0***	***16,0***	***16,0***	***16,2***	***17,4***	***18,5***	***18,7***	***20,0***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	86,1	87,4	87,0	86,7	85,7	86,3	86,8	87,6	88,2
			3/4	88,3	88,8	88,8	88,6	88,2	88,5	88,9	89,4	89,8
			2/4	89,4	89,3	89,2	89,2	89,3	89,5	89,9	89,9	90,1
EFFICIENCY [%] @ 1 p.f.			**4/4**	88,8	89,9	89,6	89,3	88,5	89,0	89,4	90,0	90,5
			3/4	90,7	91,1	91,0	90,9	90,5	90,8	91,1	91,5	91,8
			2/4	91,5	91,4	91,4	91,3	91,4	91,6	91,9	92,0	92,1
SHORT CIRCUIT RATIO			SCR	0,44	0,46	0,50	0,56	0,34	0,38	0,40	0,43	0,44
REACTANCES [%]												
Direct axis synchronous			Xd	307	292	271	241	304	353	334	310	304
Quadrature axis synchronous			Xq	173	164	152	136	221	198	188	174	171
Direct axis transient			X'd	30,3	28,8	26,8	23,8	38,9	34,8	33,0	30,6	30,0
Direct axis subtransient			X"d	14,3	13,6	12,6	11,2	18,4	16,4	15,6	14,4	14,2
Quadrature axis subtransient			X"q	17,8	16,9	15,7	14,0	22,8	20,4	19,4	17,9	17,6
Negative sequence			X_2	16,0	15,2	14,1	12,6	20,5	18,4	17,4	16,1	15,8
Zero sequence			X_0	2,9	2,8	2,6	2,3	3,8	3,4	3,2	3,0	2,9
TIME CONSTANTS [s]												
Open circuit			T'do	0,4								
Transient			T'd	0,04								
Subtransient			T"d	0,008								
Armature			T_a	0,004								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6310 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,124
Weight [kg]	Refer to B34 construction	140
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,11 / 0,14
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	0,79
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

MarelliGenerators®

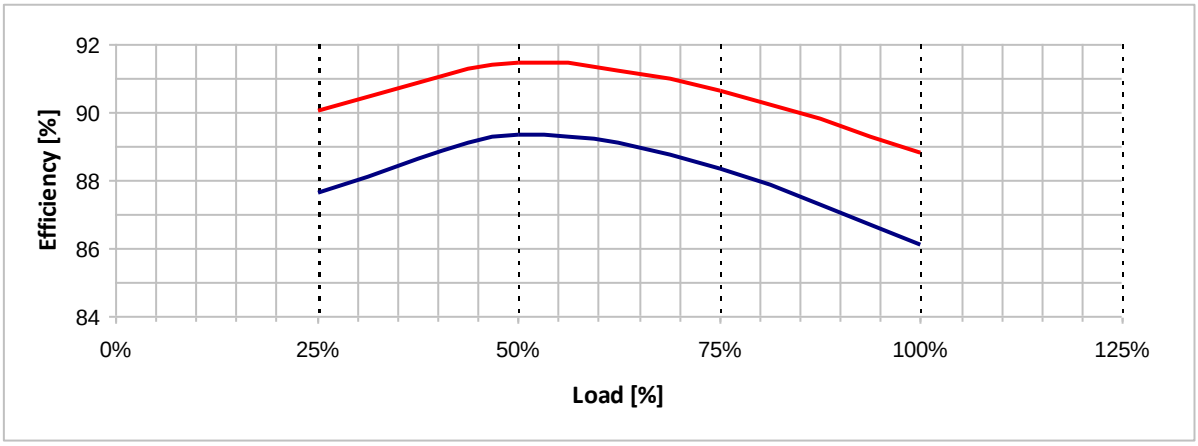
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SB4

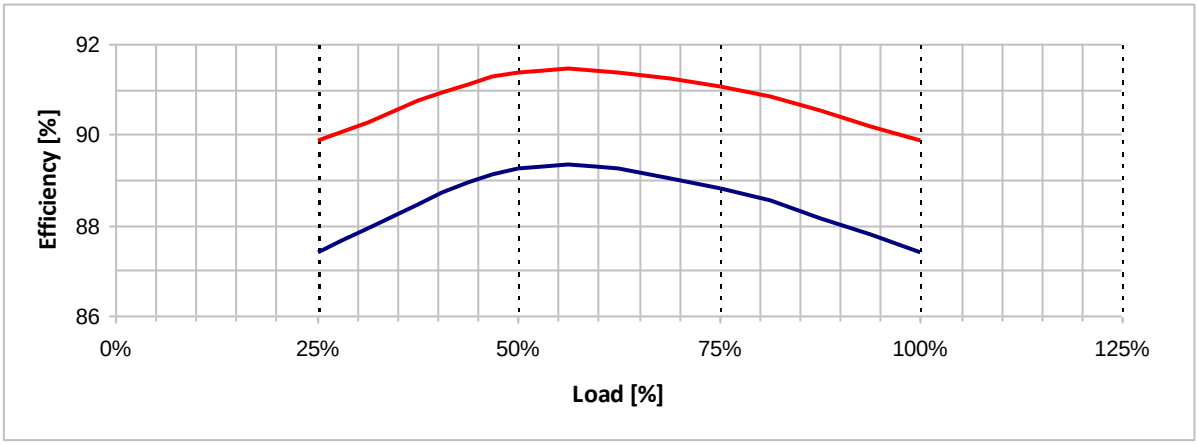
Typical efficiency curves

50 Hz - 1500 rpm

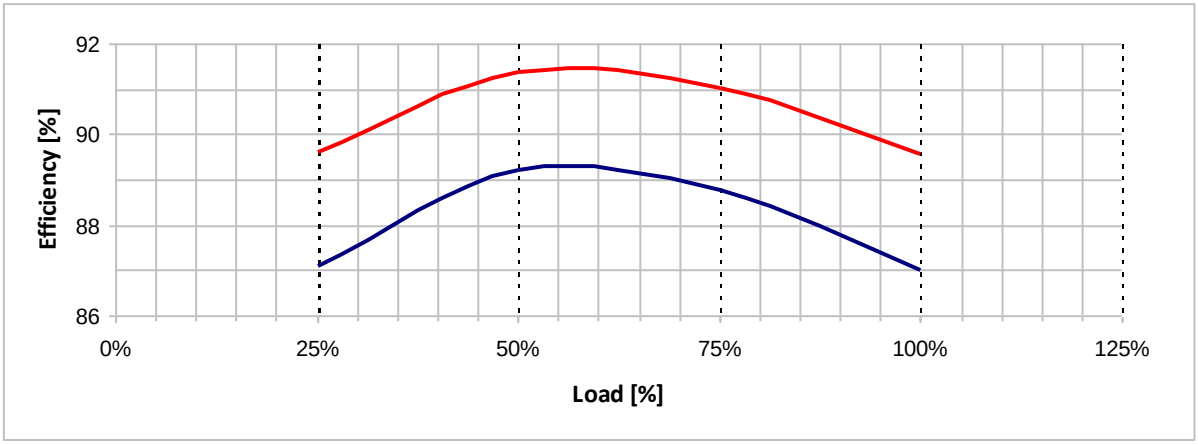
380 V



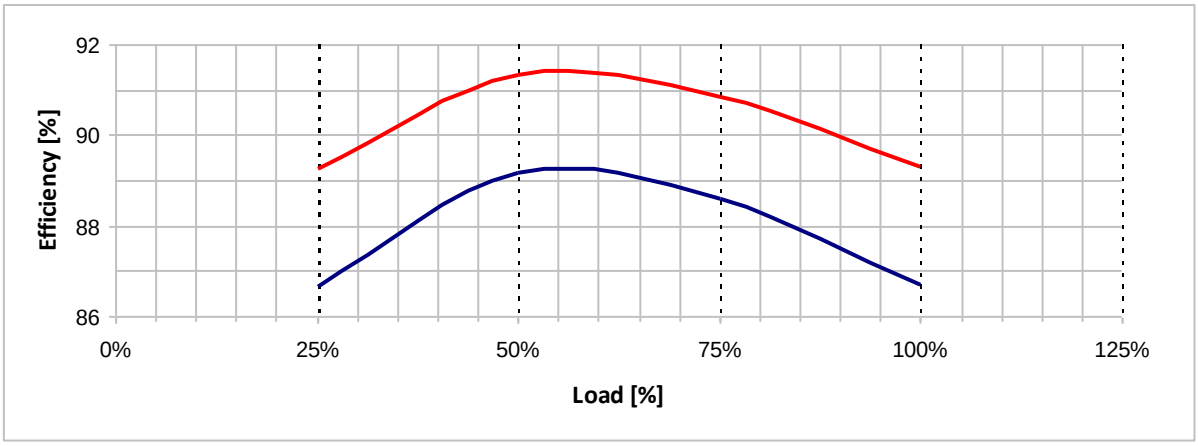
400 V



415 V



440 V



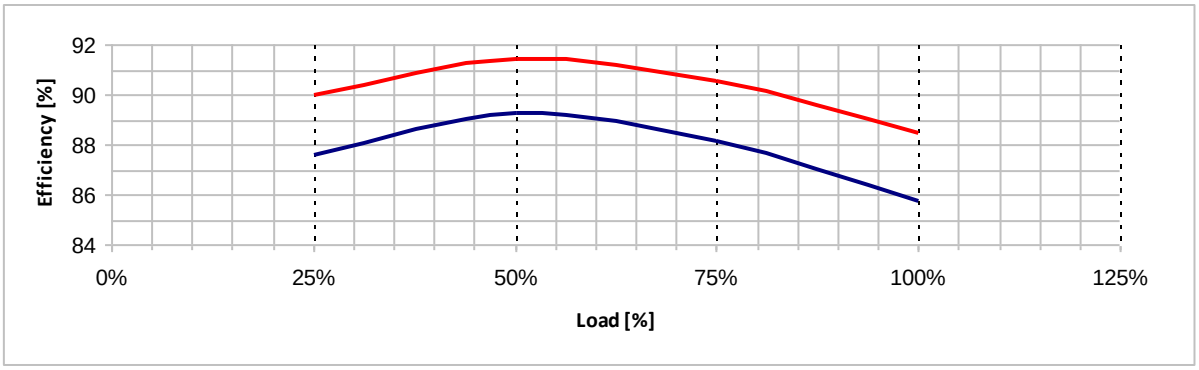
THREE PHASE SYNCRONOUS GENERATOR

MJB 160 SB4

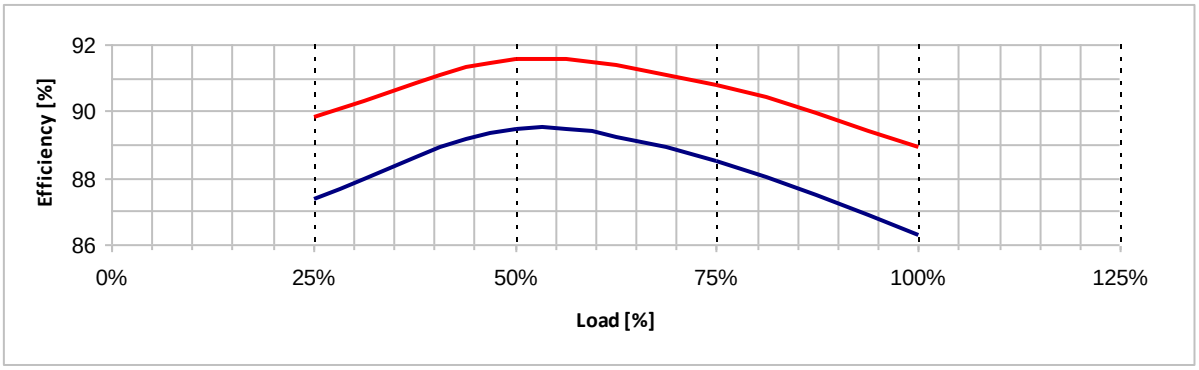
Typical efficiency curves

60 Hz - 1800 rpm

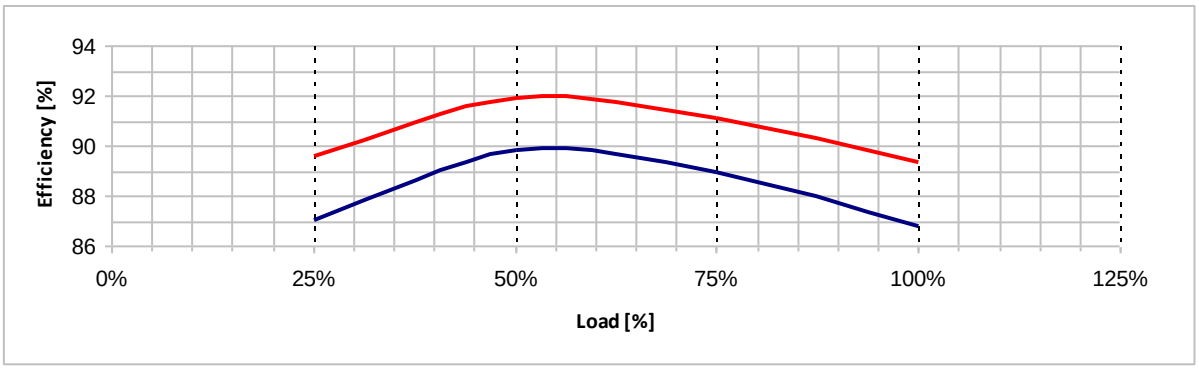
380 V



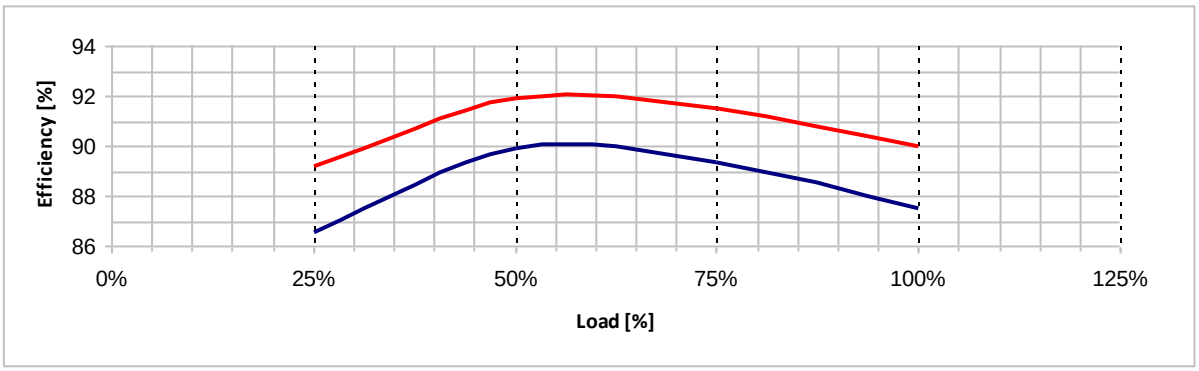
416 V



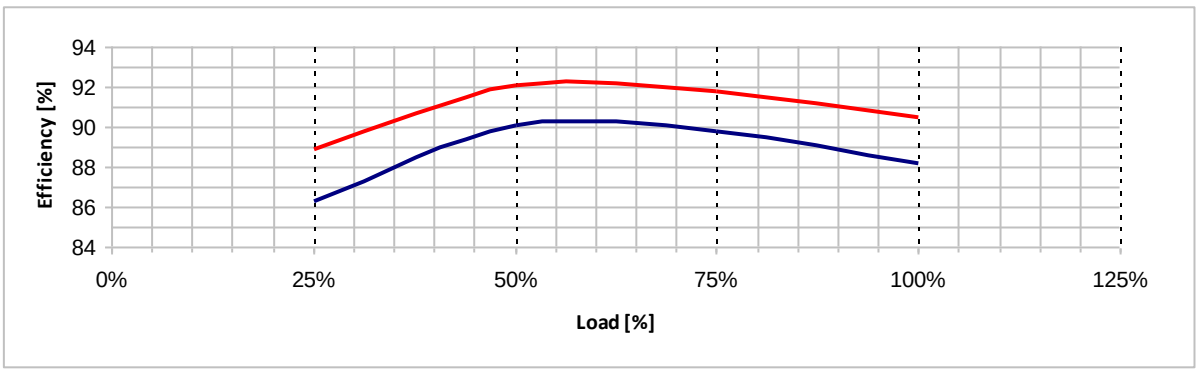
440 V



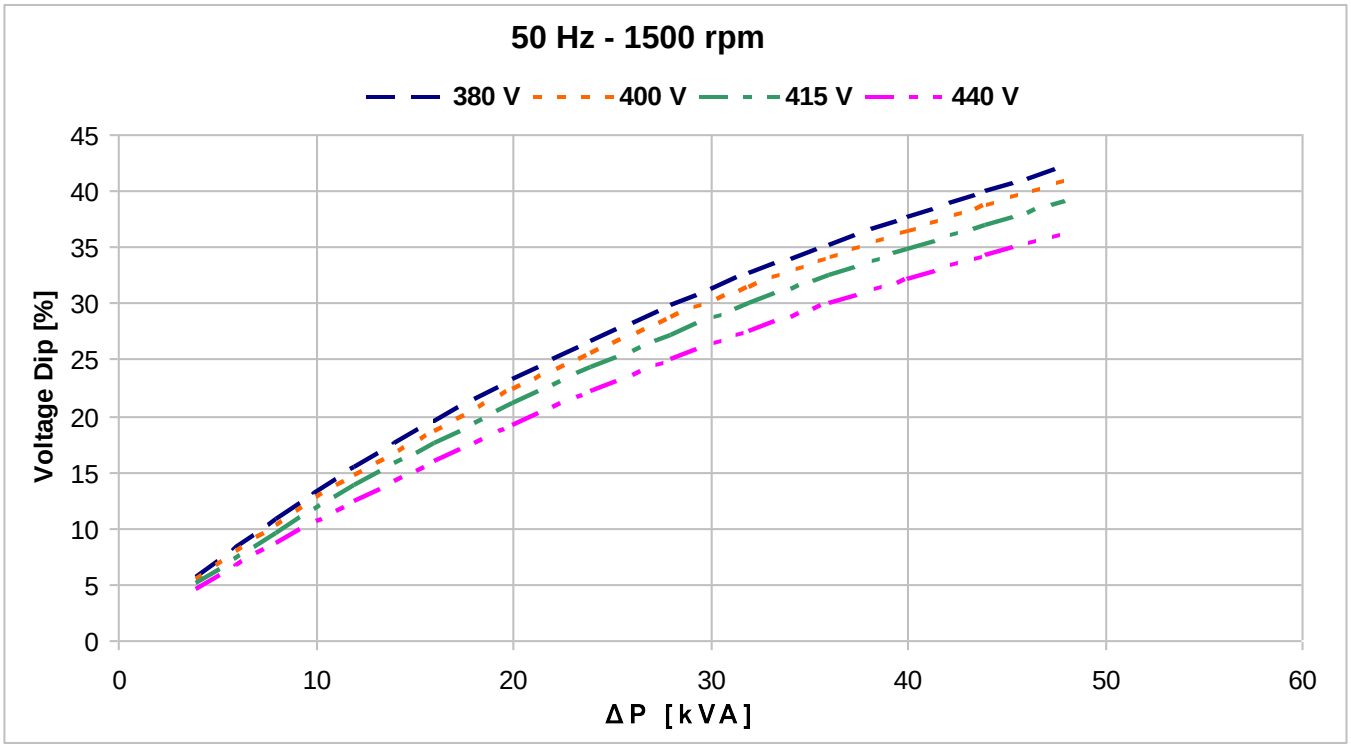
460 V

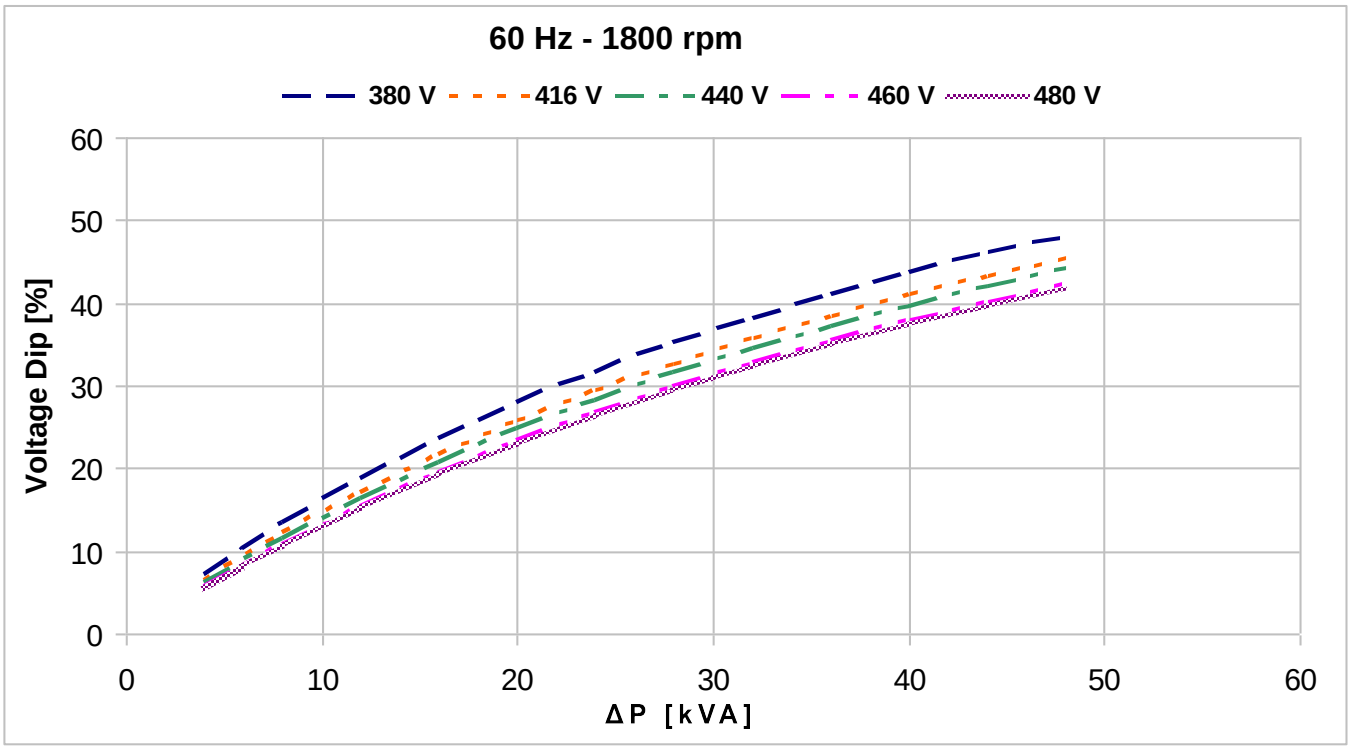


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 200 MA4

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**	**61,5**	**62,0**	**62,0**	**62,0**	**62,9**	**68,3**	**70,2**	**76,0**	**76,0**
			kW	***49,2***	***49,6***	***49,6***	***49,6***	***50,3***	***54,6***	***56,2***	***60,8***	***60,8***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	89,7	90,1	90,1	89,7	89,0	89,9	90,2	90,6	90,7
			3/4	91,0	91,2	91,1	90,6	90,4	91,0	91,2	91,5	91,6
			2/4	91,8	91,7	91,5	91,1	91,2	91,6	91,7	92,0	91,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	91,8	92,1	92,1	91,7	91,2	91,9	92,2	92,5	92,6
			3/4	92,8	93,0	92,9	92,5	92,4	92,8	93,0	93,2	93,3
			2/4	93,4	93,4	93,3	92,9	93,0	93,3	93,4	93,6	93,6
SHORT CIRCUIT RATIO			SCR	0,34	0,37	0,40	0,45	0,27	0,30	0,33	0,33	0,36
REACTANCES [%]												
Direct axis synchronous			Xd	393	358	333	296	366	438	402	398	366
Quadrature axis synchronous			Xq	219	199	185	164	268	243	223	221	203
Direct axis transient			X'd	34,2	31,1	28,9	25,7	42,0	38,0	34,9	34,6	31,8
Direct axis subtransient			X"d	13,7	12,5	11,6	10,3	16,9	15,3	14,0	13,9	12,8
Quadrature axis subtransient			X"q	18,0	16,4	15,2	13,6	22,1	20,0	18,4	18,2	16,8
Negative sequence			X_2	15,9	14,5	13,5	12,0	19,6	17,7	16,3	16,1	14,8
Zero sequence			X_0	3,4	3,1	2,9	2,6	4,2	3,8	3,5	3,4	3,2
TIME CONSTANTS [s]												
Open circuit			T'do	0,7								
Transient			T'd	0,06								
Subtransient			T"d	0,01								
Armature			T_a	0,007								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6313 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,361
Weight [kg]	Refer to B34 construction	264
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,21 / 0,25
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	0,13
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

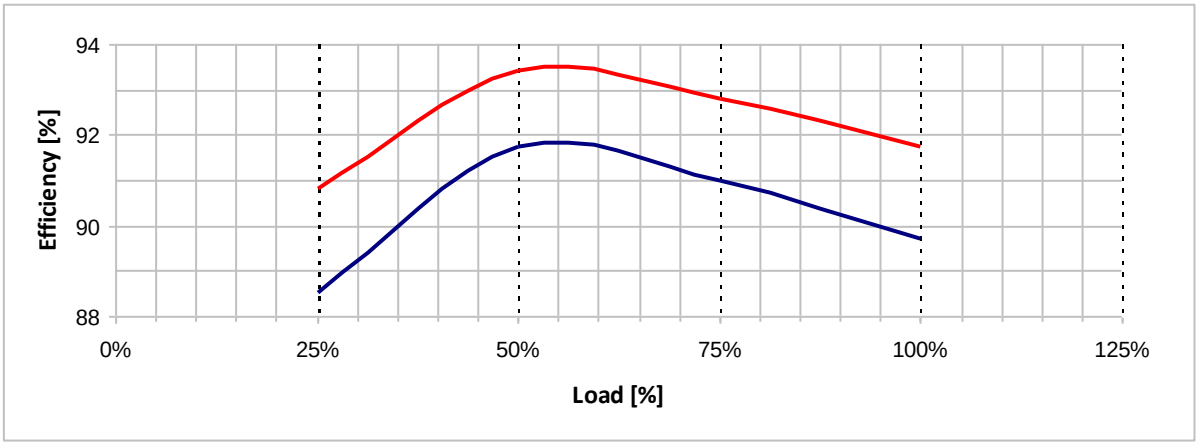
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 MA4

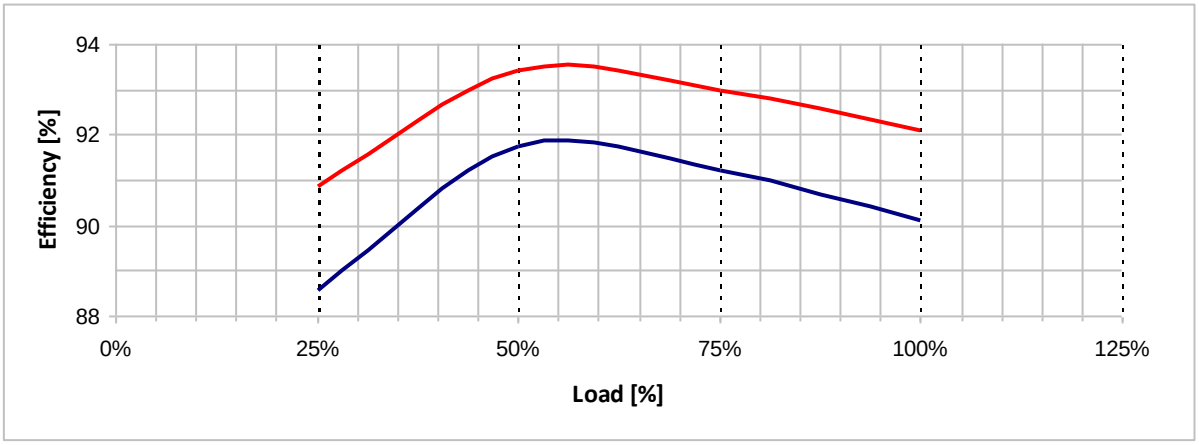
Typical efficiency curves

50 Hz - 1500 rpm

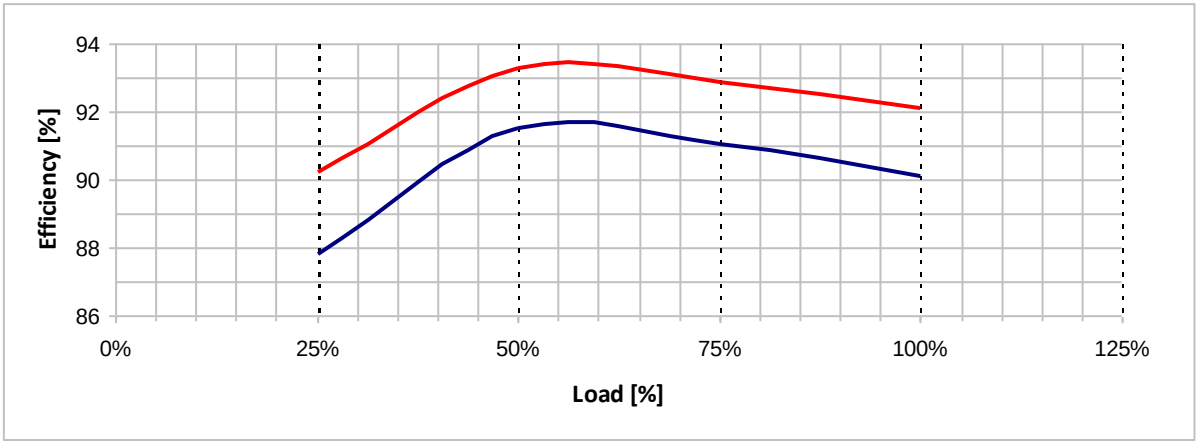
380 V



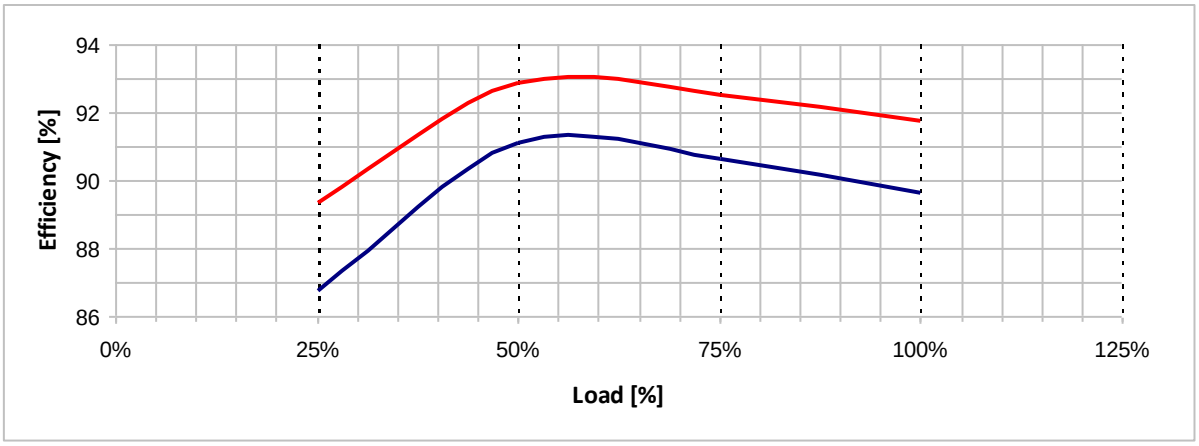
400 V



415 V



440 V



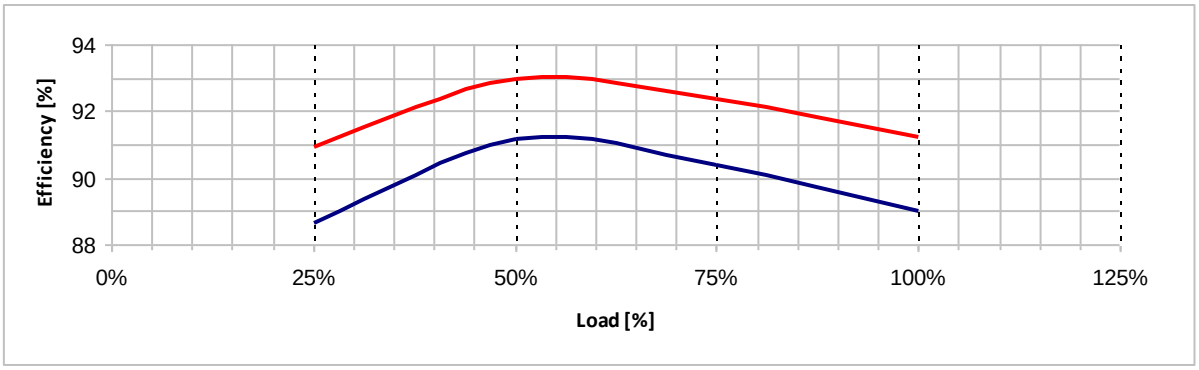
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 MA4

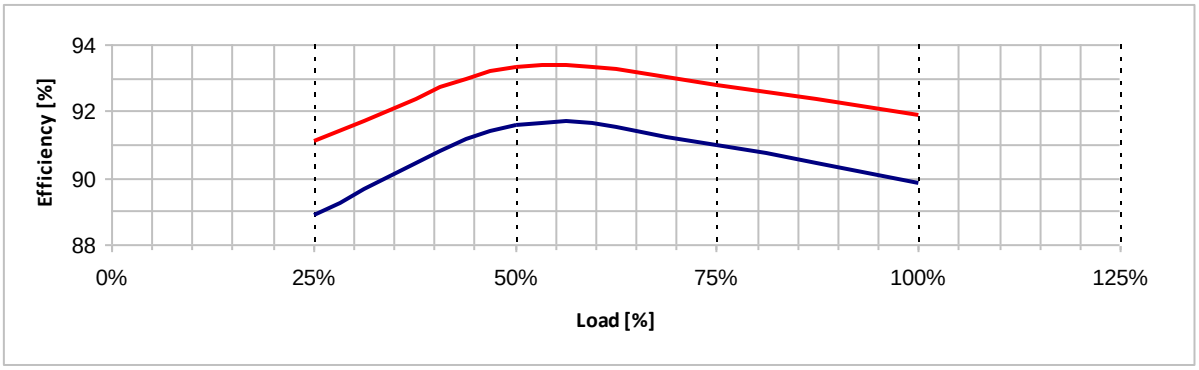
Typical efficiency curves

60 Hz - 1800 rpm

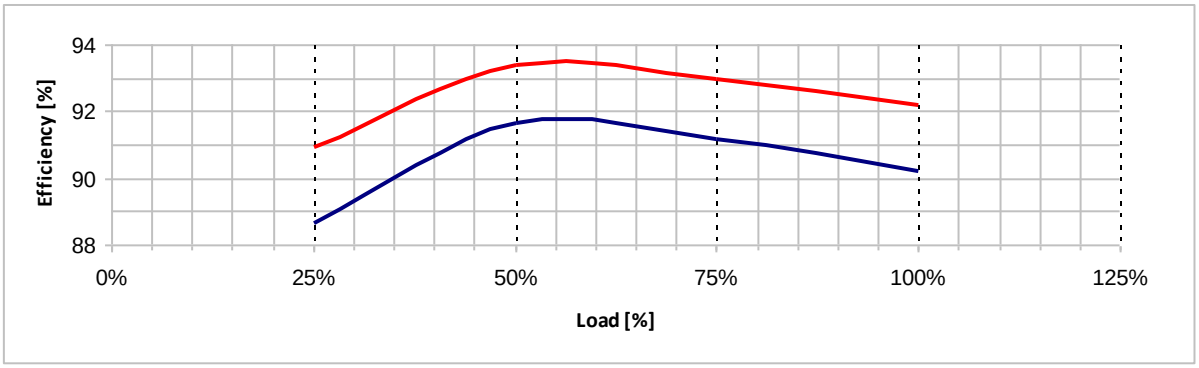
380 V



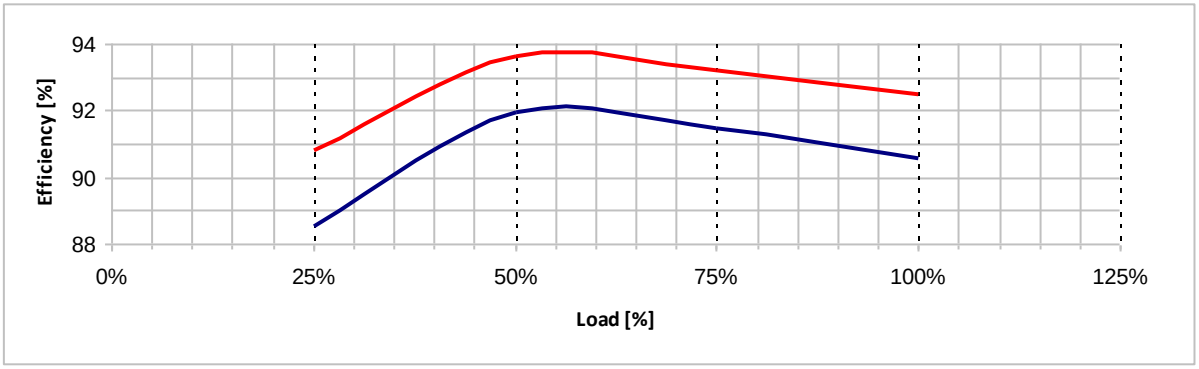
416 V



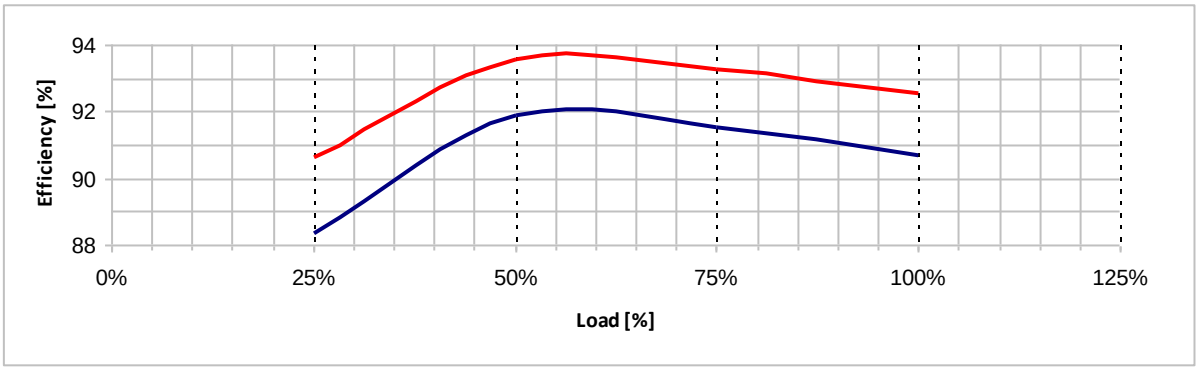
440 V



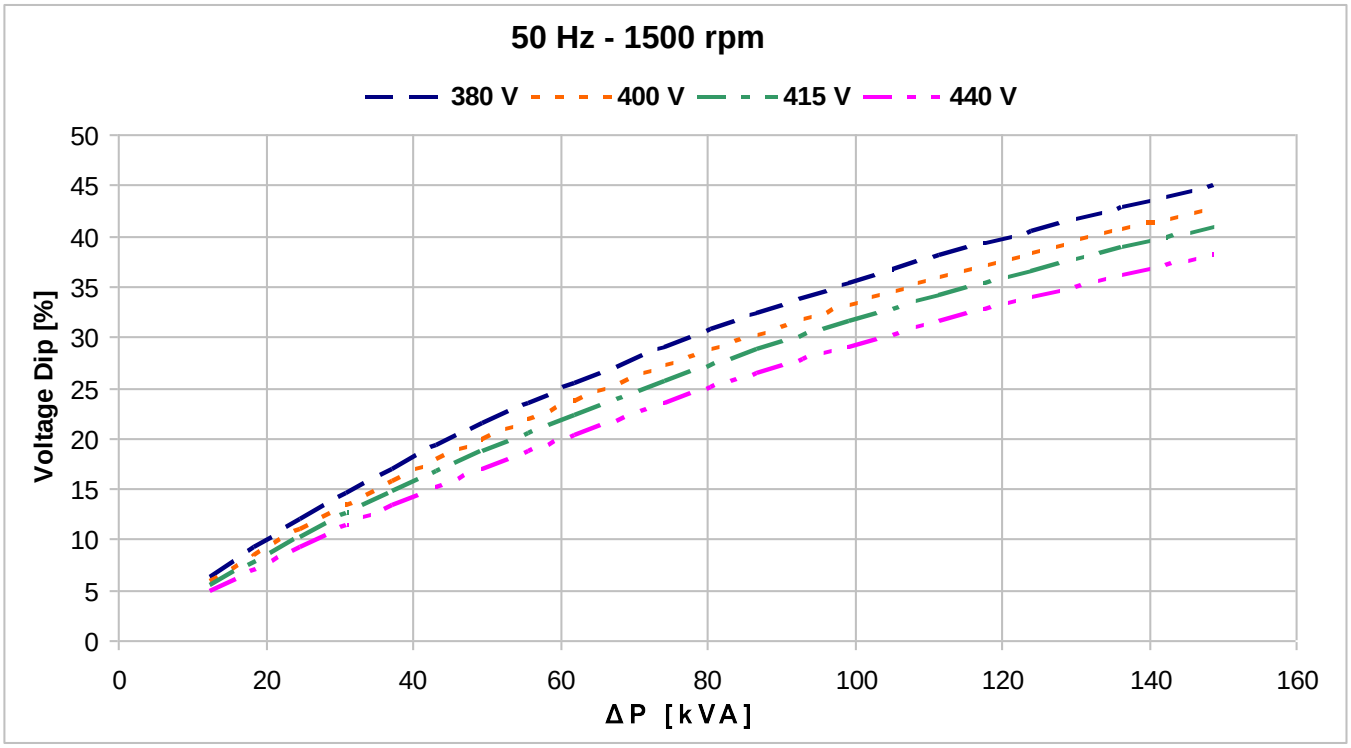
460 V

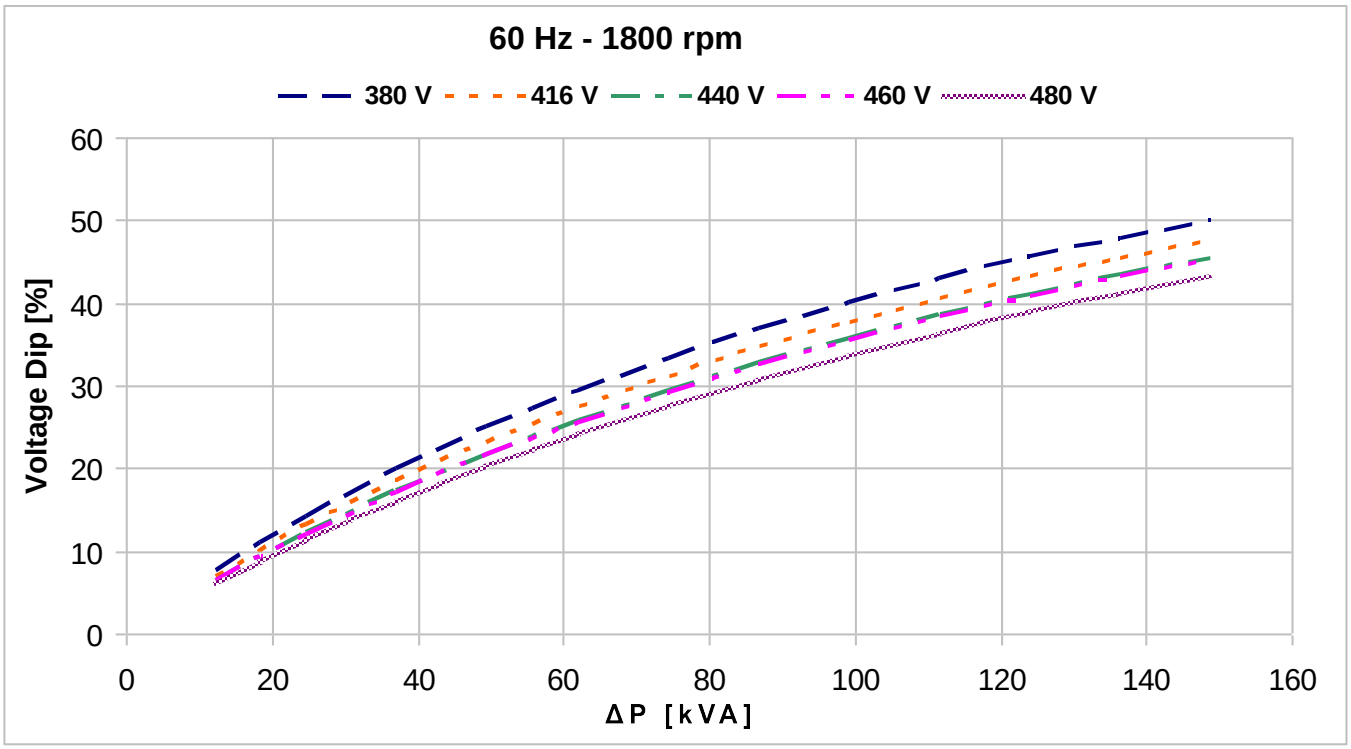


480 V



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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 200 MB 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**68,5**	**72,0**	**72,0**	**72,0**	**77,5**	**83,5**	**87,0**	**87,0**	**87,0**
		kW	***54,8***	***57,6***	***57,6***	***57,6***	***62,0***	***66,8***	***69,6***	***69,6***	***69,6***
EFFICIENCY (%) @ 0,8 p.f.		4/4	89,9	90,5	90,4	89,8	89,3	90,0	90,5	90,8	90,9
		3/4	91,1	91,4	91,1	90,6	90,6	91,0	91,3	91,5	91,6
		2/4	91,7	91,7	91,4	90,9	91,2	91,4	91,7	91,8	91,7
EFFICIENCY (%) @ 1,0 p.f.		4/4	91,9	92,4	92,3	91,8	91,5	92,0	92,4	92,6	92,8
		3/4	92,9	93,2	92,9	92,5	92,5	92,8	93,1	93,2	93,3
		2/4	93,4	93,4	93,1	92,7	93,0	93,2	93,4	93,5	93,4
SHORT CIRCUIT RATIO			0,40	0,42	0,45	0,51	0,29	0,33	0,35	0,38	0,42
REACTANCES (%)											
Direct axis synchronous		xd	280	265	245	220	380	340	320	290	265
Quadrature axis synchronous		xq	155	145	135	120	210	185	175	160	145
Direct axis transient		x'd	22,5	21,3	19,8	17,6	30,5	27,4	25,5	23,4	21,4
Direct axis subtransient		x"d	11,1	10,5	9,8	8,7	15,0	13,5	12,6	11,5	10,6
Quadrature axis subtransient		x"q	13,3	12,6	11,7	10,4	18,0	16,2	15,1	13,8	12,7
Negative sequence		x_2	12,1	11,5	10,7	9,5	16,5	14,8	13,8	12,6	11,6
Zero sequence		x_0	2,3	2,2	2,0	1,8	3,1	2,8	2,6	2,4	2,2

TIME CONSTANTS [s]

Open circuit (T'do)	0,76	Subtransient (T"d)	0,01
Transient (T'd)	0,062	Armature (Ta)	0,012

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6313 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Weight (IM B34) [kg]	300
Inertia (J) (IM B34) [kgm^2]	0,426
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,21 / 0,25
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,1
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

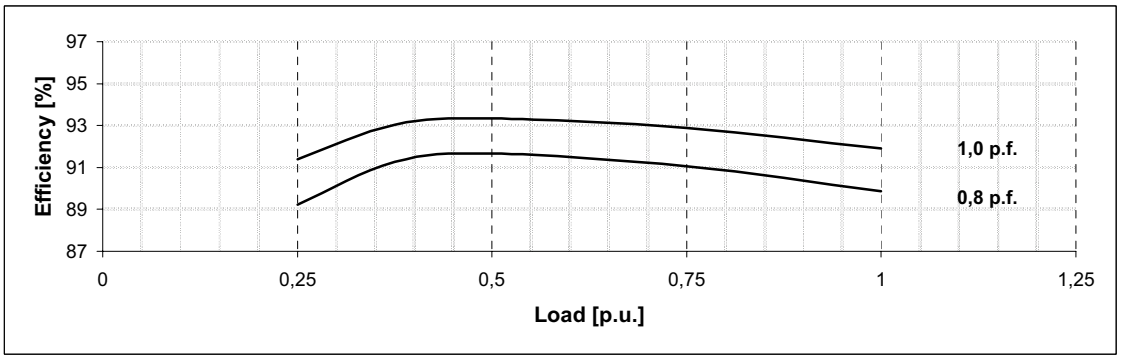
STANDARDS

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

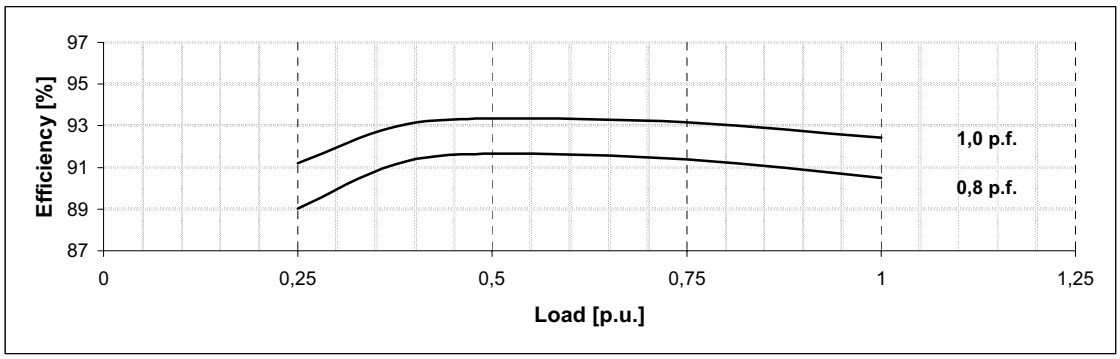
Typical efficiency curves

50 Hz - 1500 min^{-1}

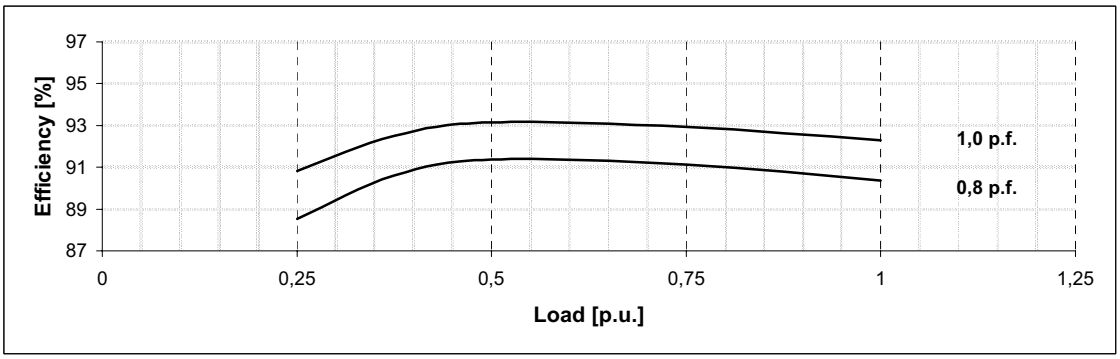
380 V



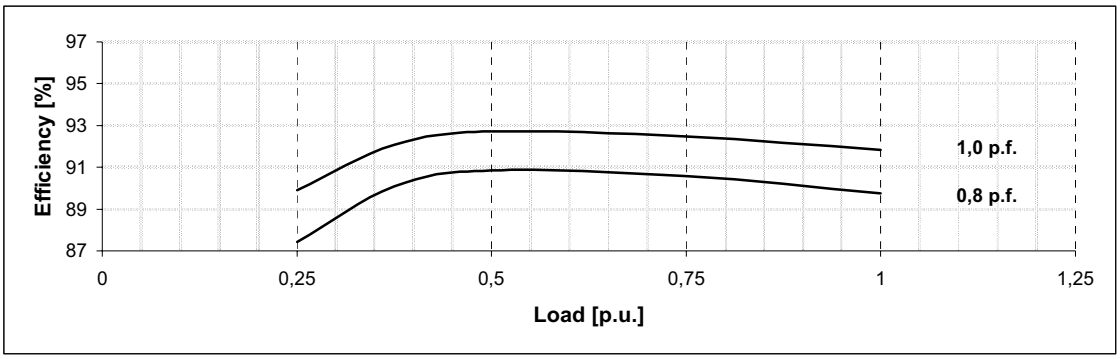
400 V



415 V



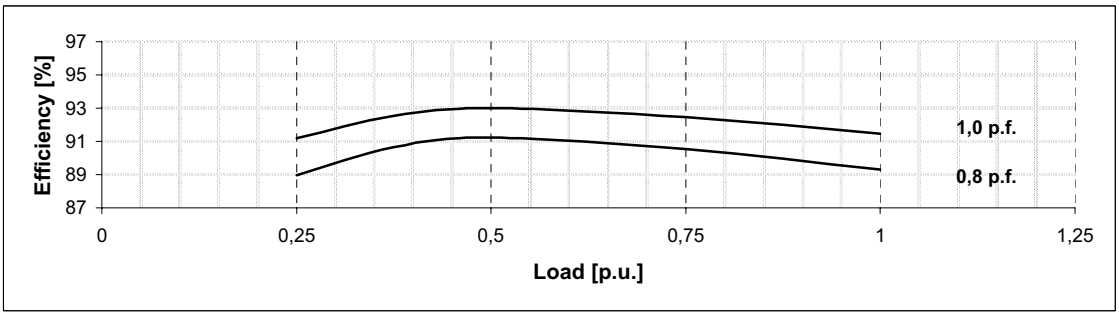
440 V



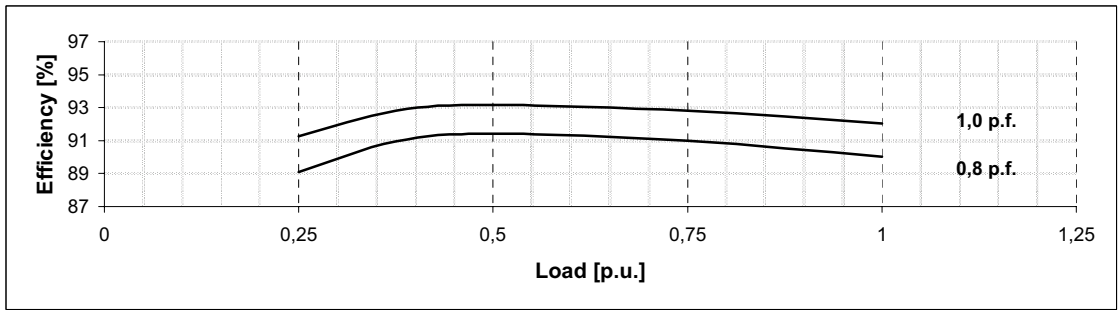
Typical efficiency curves

60 Hz - 1800 min^{-1}

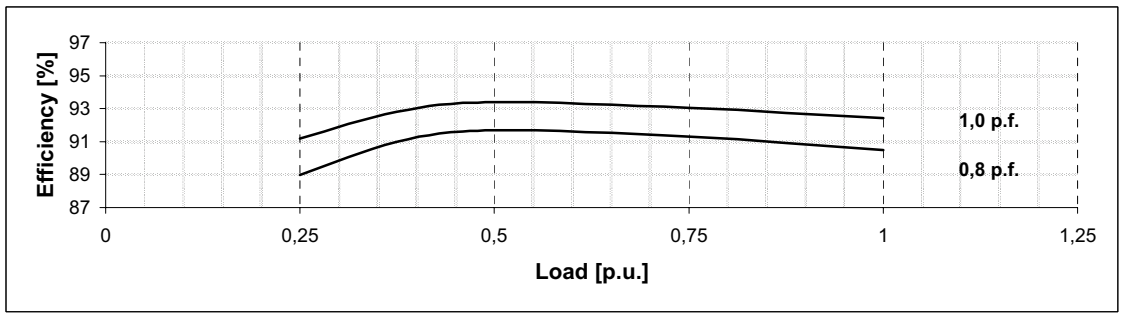
380 V



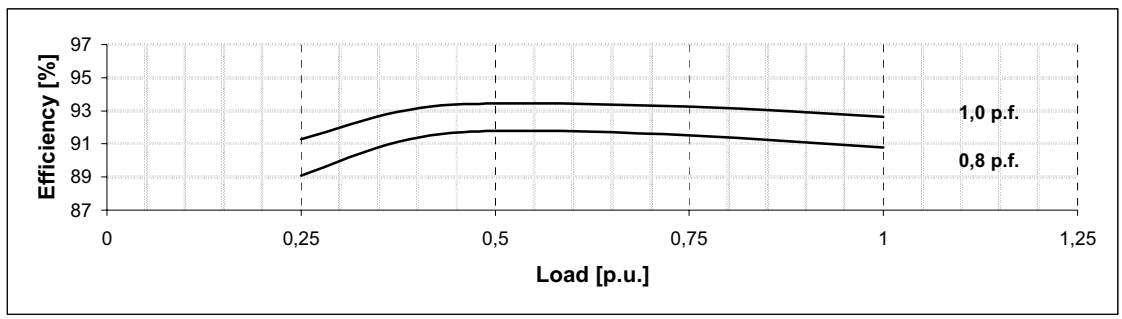
416 V



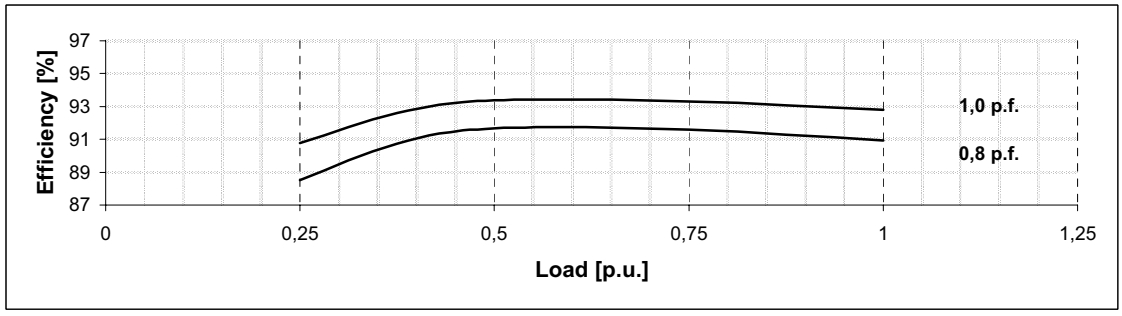
440 V



460 V

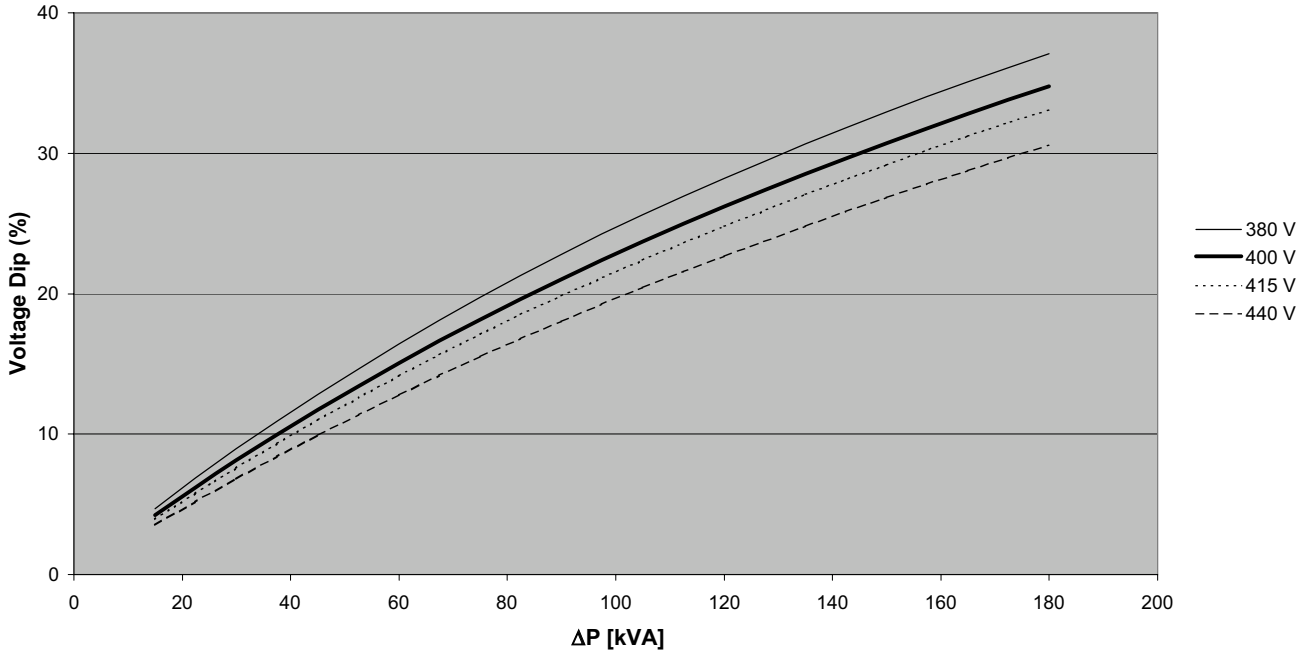


480 V

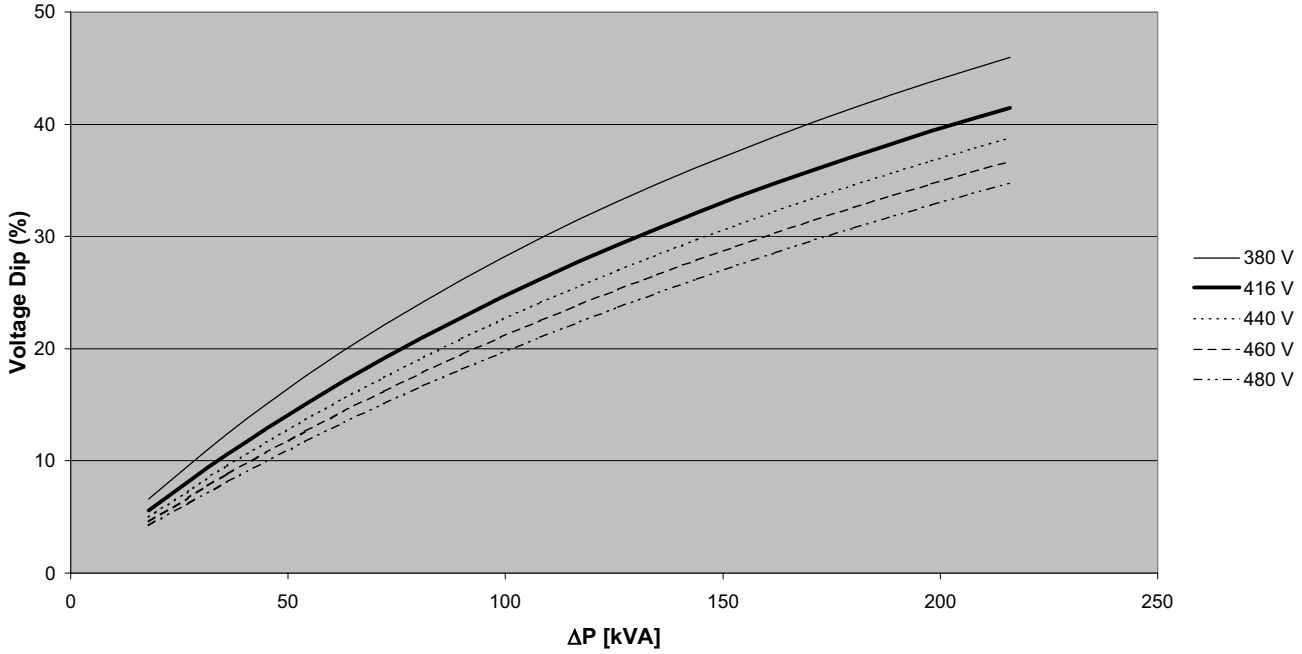


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

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

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SA4

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**	**42,0**	**42,0**	**42,0**	**42,0**	**42,5**	**44,9**	**47,1**	**51,0**	**51,0**
			kW	***33,6***	***33,6***	***33,6***	***33,6***	***34,0***	***35,9***	***37,7***	***40,8***	***40,8***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	87,7	88,5	88,5	88,0	87,3	88,4	88,9	89,3	89,5
			3/4	89,5	89,8	89,7	89,2	89,0	89,9	90,2	90,6	90,6
			2/4	90,4	90,5	90,4	89,9	90,2	90,8	90,9	91,2	91,3
EFFICIENCY [%] @ 1 p.f.			**4/4**	90,1	90,8	90,7	90,3	89,8	90,7	91,1	91,5	91,6
			3/4	91,6	91,9	91,8	91,4	91,2	91,9	92,1	92,5	92,5
			2/4	92,4	92,4	92,3	91,9	92,2	92,6	92,7	93,0	93,1
SHORT CIRCUIT RATIO			SCR	0,34	0,38	0,41	0,46	0,28	0,32	0,34	0,34	0,38
REACTANCES [%]												
Direct axis synchronous			Xd	382	345	321	285	349	409	384	380	349
Quadrature axis synchronous			Xq	214	193	179	160	260	229	215	213	195
Direct axis transient			X'd	34,9	31,5	29,3	26,0	42,4	37,4	35,0	34,7	31,9
Direct axis subtransient			X"d	15,1	13,6	12,6	11,2	18,3	16,1	15,1	15,0	13,8
Quadrature axis subtransient			X"q	18,9	17,1	15,9	14,1	23,0	20,3	19,0	18,8	17,3
Negative sequence			X_2	17,0	15,3	14,2	12,6	20,6	18,1	17,0	16,9	15,5
Zero sequence			X_0	3,5	3,2	3,0	2,6	4,3	3,8	3,6	3,5	3,2
TIME CONSTANTS [s]												
Open circuit			T'do	0,7								
Transient			T'd	0,06								
Subtransient			T"d	0,01								
Armature			T_a	0,006								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6313 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,275
Weight [kg]	Refer to B34 construction	219
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,21 / 0,25
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	0,23
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with auxiliary winding
Voltage regulation accuracy	± 1 % 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.

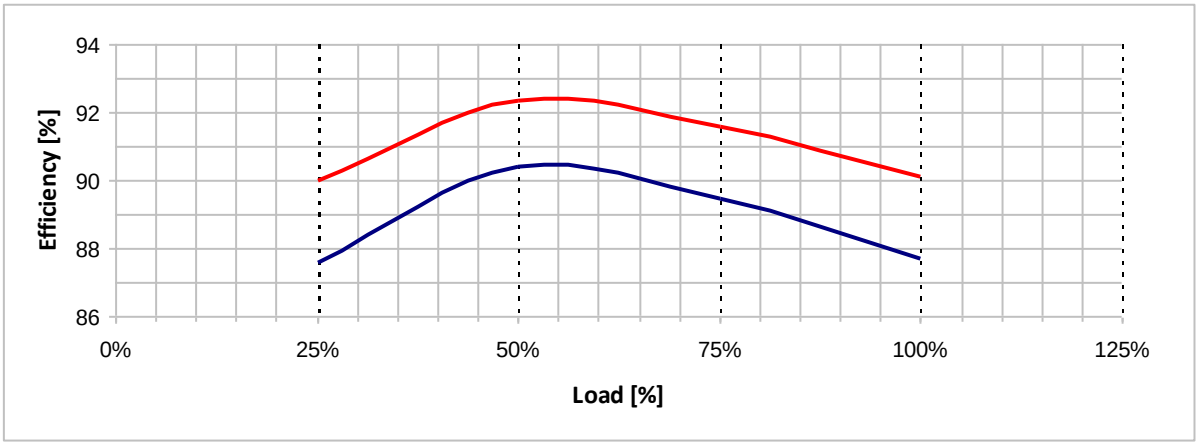
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SA4

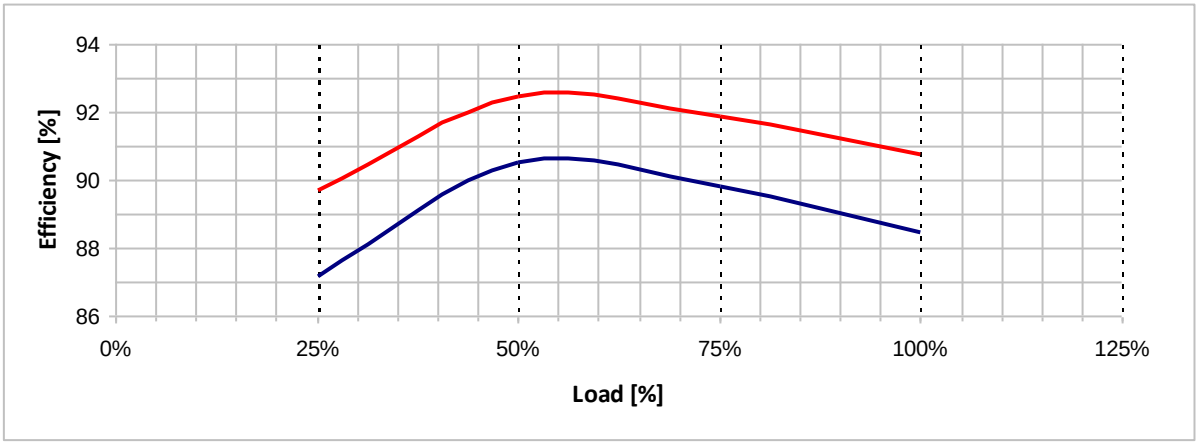
Typical efficiency curves

50 Hz - 1500 rpm

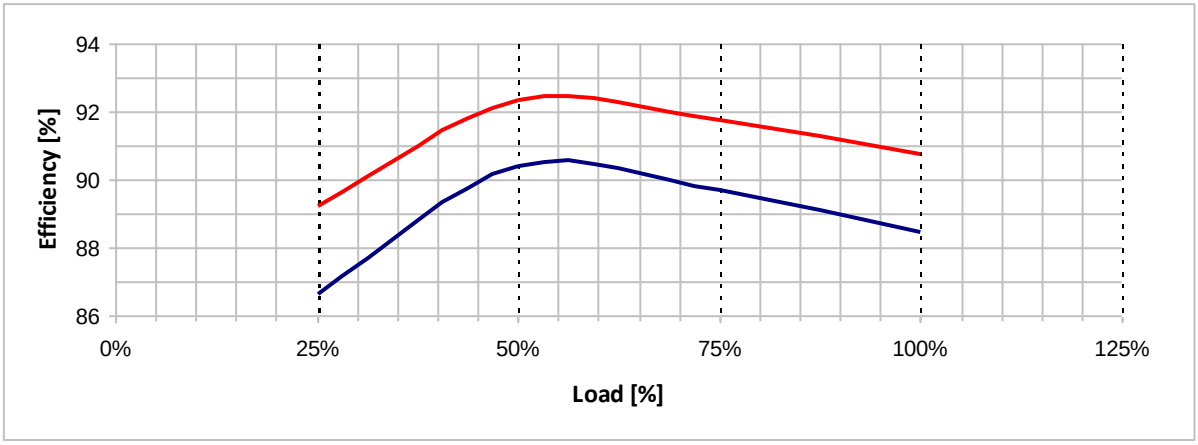
380 V



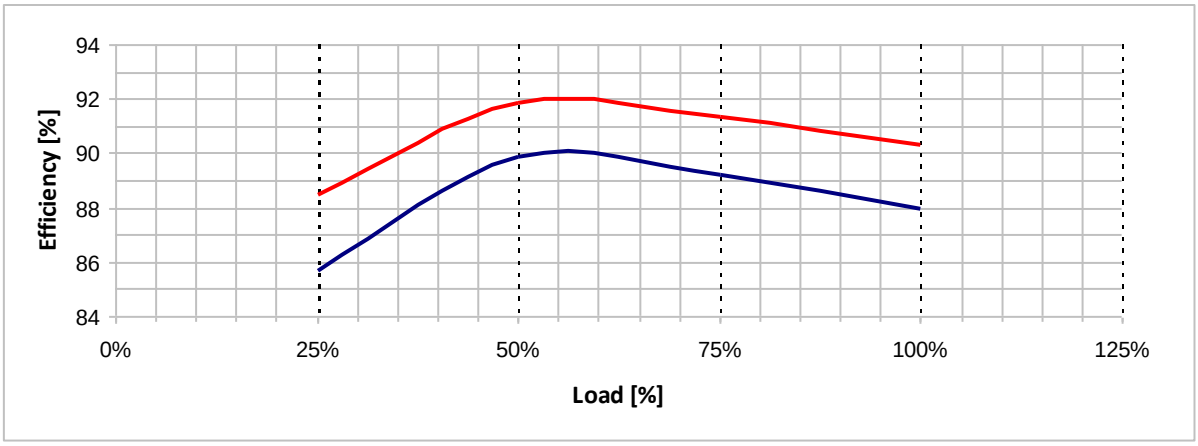
400 V



415 V



440 V



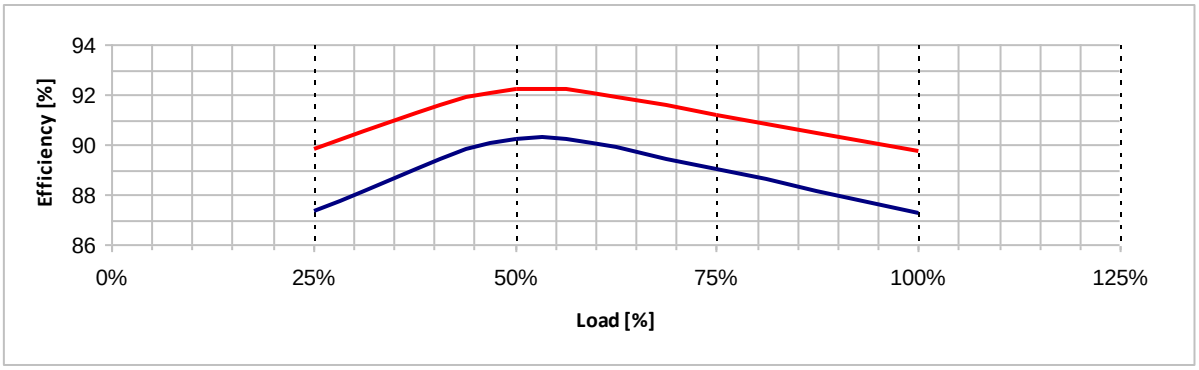
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SA4

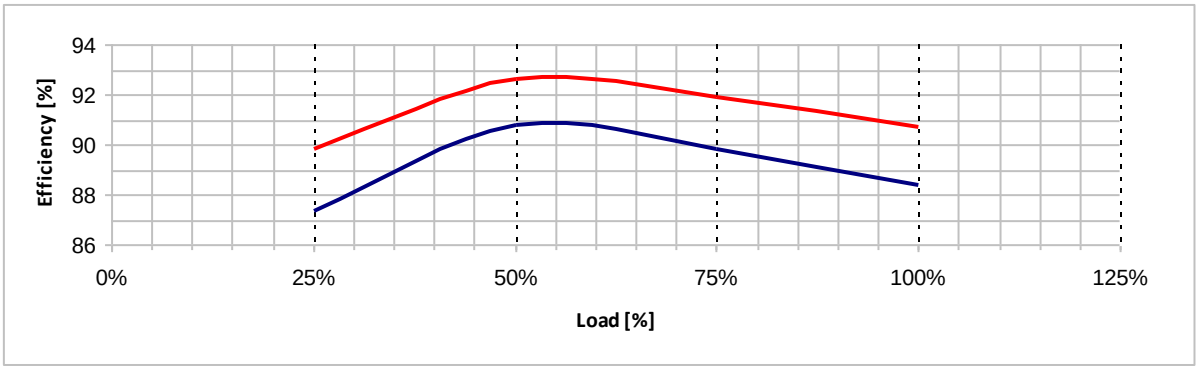
Typical efficiency curves

60 Hz - 1800 rpm

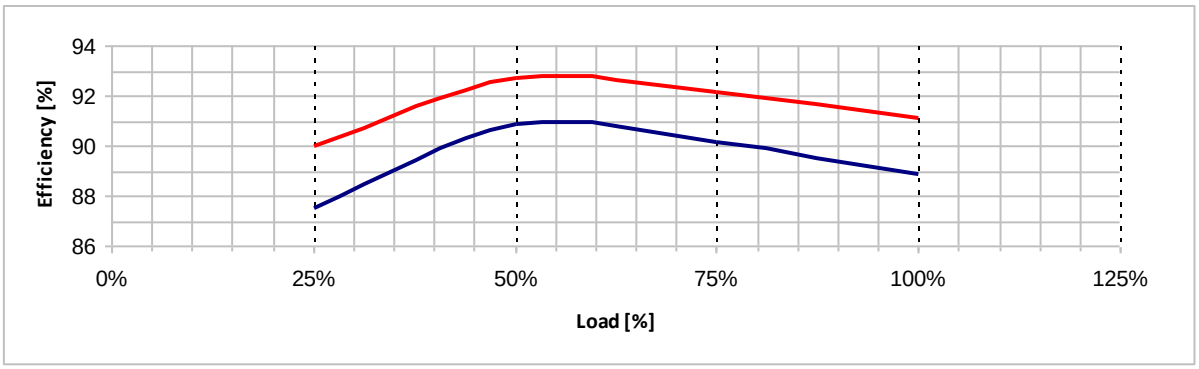
380 V



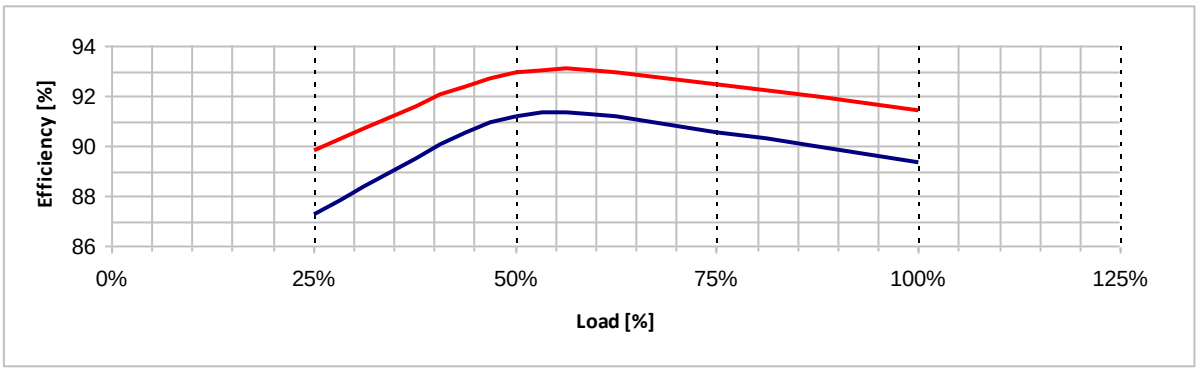
416 V



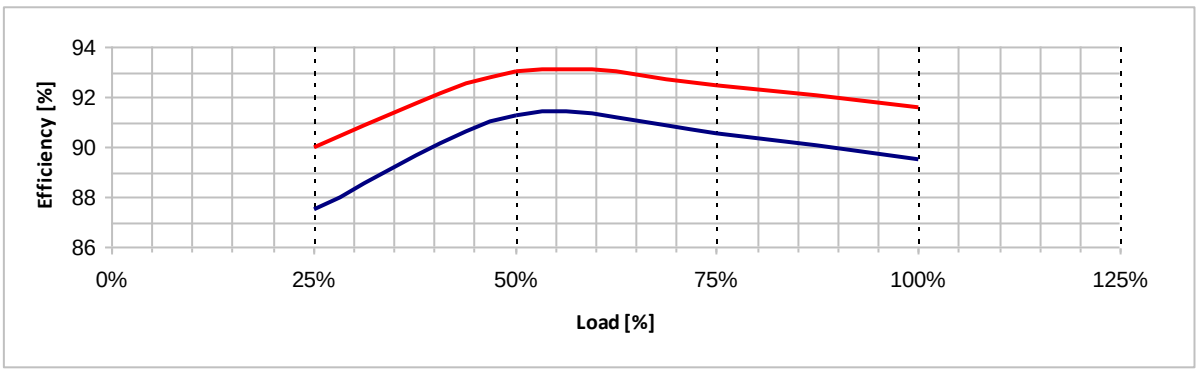
440 V



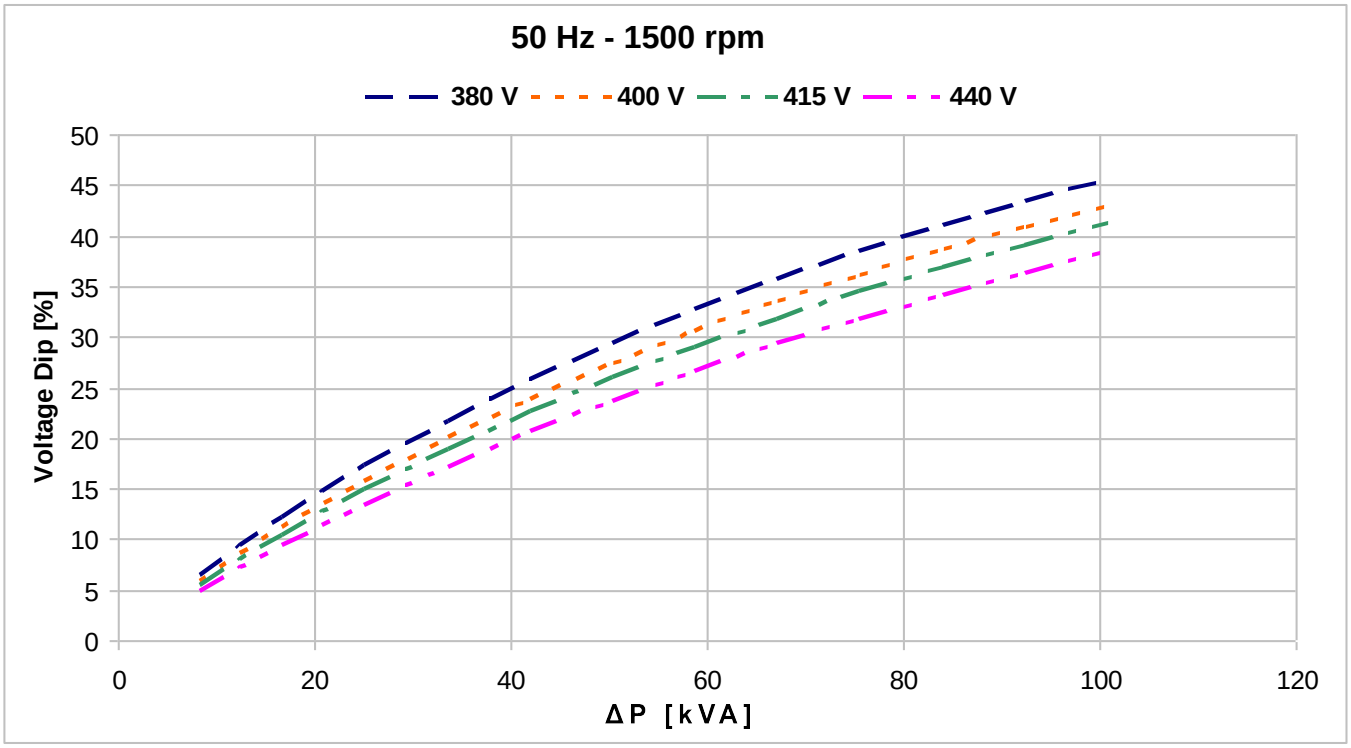
460 V

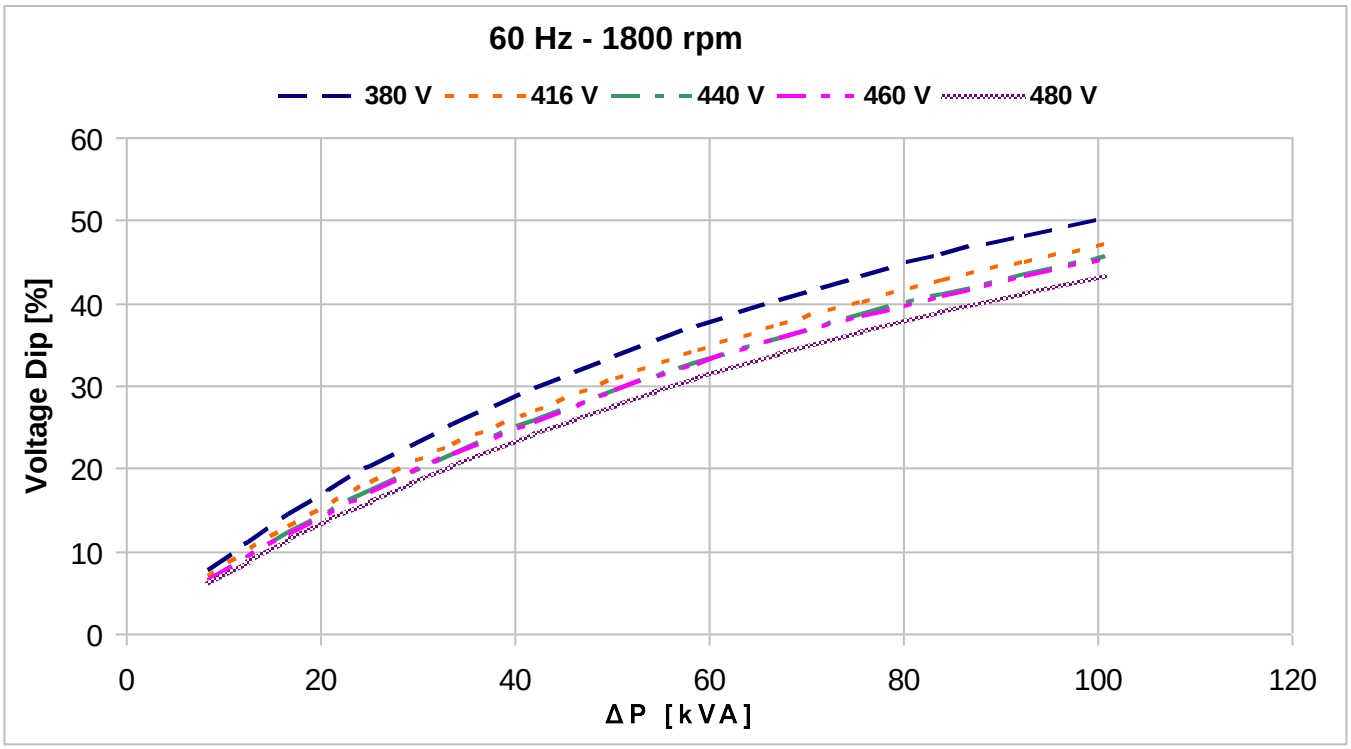


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SB4

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**	**48,5**	**50,0**	**50,0**	**50,0**	**47,5**	**52,6**	**55,4**	**60,0**	**60,0**
			kW	***38,8***	***40,0***	***40,0***	***40,0***	***38,0***	***42,1***	***44,3***	***48,0***	***48,0***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	87,9	88,7	88,7	88,2	87,1	88,3	88,7	89,1	89,3
			3/4	89,8	90,0	90,0	89,5	88,9	89,4	89,8	90,0	90,0
			2/4	90,6	90,6	90,5	90,1	89,9	90,1	90,3	90,5	90,6
EFFICIENCY [%] @ 1 p.f.			**4/4**	90,3	90,9	90,9	90,5	89,6	90,6	90,9	91,3	91,4
			3/4	91,9	92,0	92,0	91,6	91,1	91,5	91,8	92,0	92,0
			2/4	92,5	92,5	92,4	92,1	91,9	92,1	92,3	92,4	92,5
SHORT CIRCUIT RATIO			SCR	0,33	0,35	0,38	0,42	0,28	0,30	0,32	0,32	0,35
REACTANCES [%]												
Direct axis synchronous			Xd	407	379	352	313	379	442	416	413	379
Quadrature axis synchronous			Xq	228	212	197	175	268	247	233	231	212
Direct axis transient			X'd	36,8	34,2	31,8	28,3	43,2	39,9	37,6	37,2	34,2
Direct axis subtransient			X"d	15,6	14,5	13,5	12,0	18,3	16,9	15,9	15,8	14,5
Quadrature axis subtransient			X"q	19,9	18,5	17,2	15,3	23,4	21,6	20,3	20,1	18,5
Negative sequence			X_2	17,7	16,5	15,3	13,6	20,8	19,3	18,1	18,0	16,5
Zero sequence			X_0	3,7	3,4	3,2	2,8	4,3	4,0	3,7	3,7	3,4
TIME CONSTANTS [s]												
Open circuit			T'do	0,7								
Transient			T'd	0,06								
Subtransient			T"d	0,01								
Armature			T_a	0,007								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6313 2RS C3 / Prelubricated
N-end bearing/Lubrication		6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,301
Weight [kg]	Refer to B34 construction	225
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,21 / 0,25
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	0,2
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	-
Voltage regulation accuracy	± 1 % 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.

MarelliGenerators®

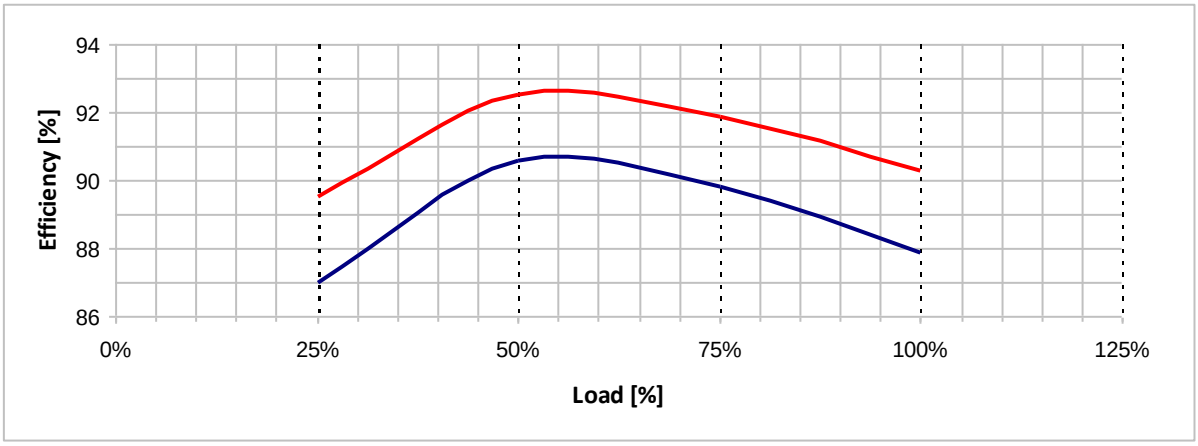
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SB4

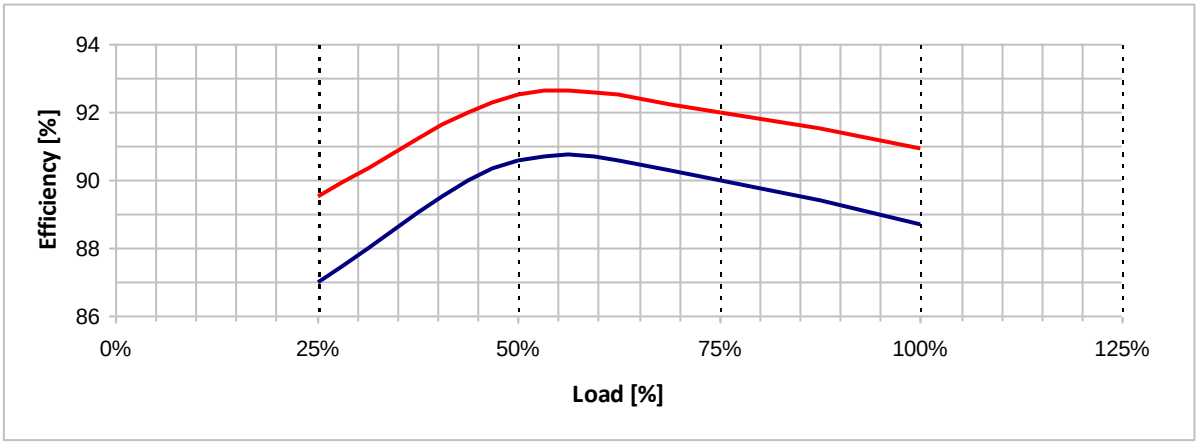
Typical efficiency curves

50 Hz - 1500 rpm

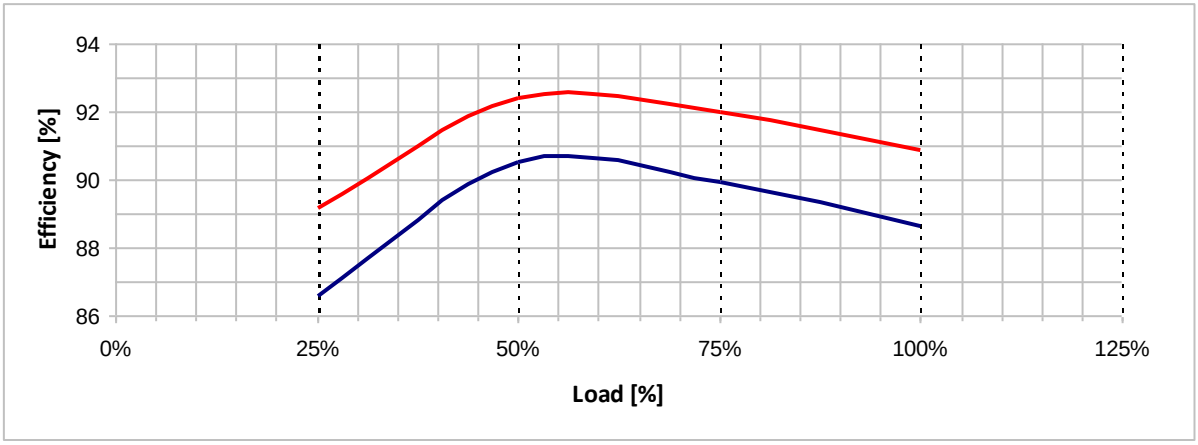
380 V



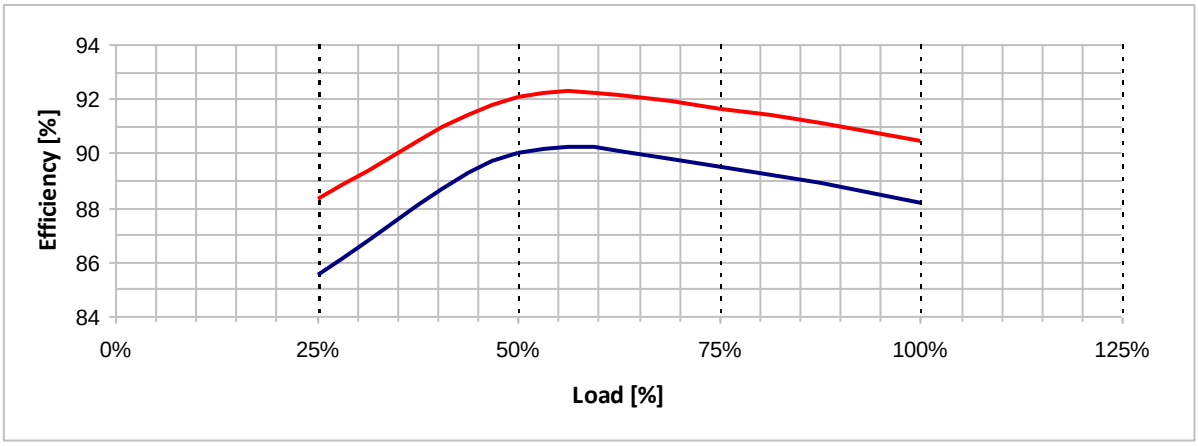
400 V



415 V



440 V



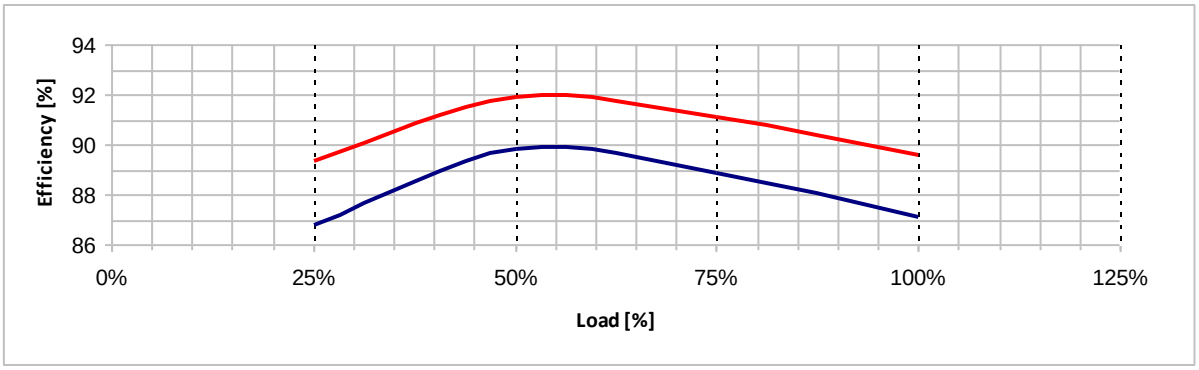
THREE PHASE SYNCRONOUS GENERATOR

MJB 200 SB4

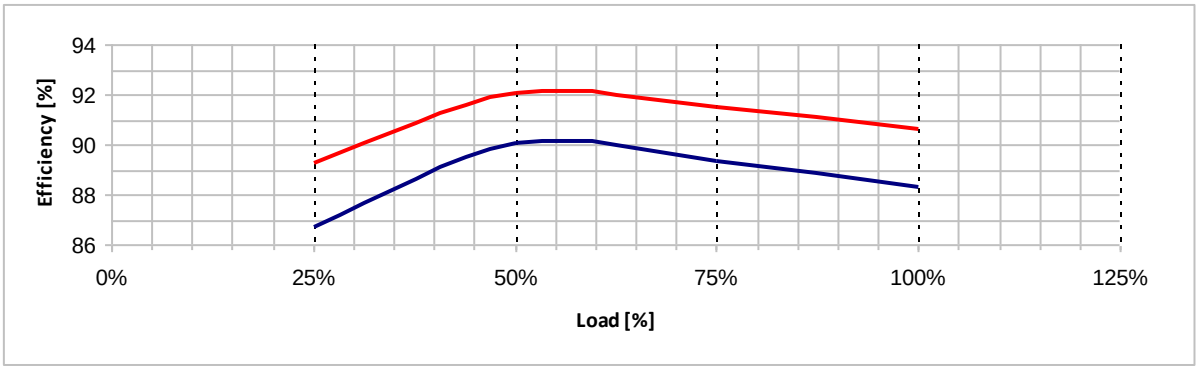
Typical efficiency curves

60 Hz - 1800 rpm

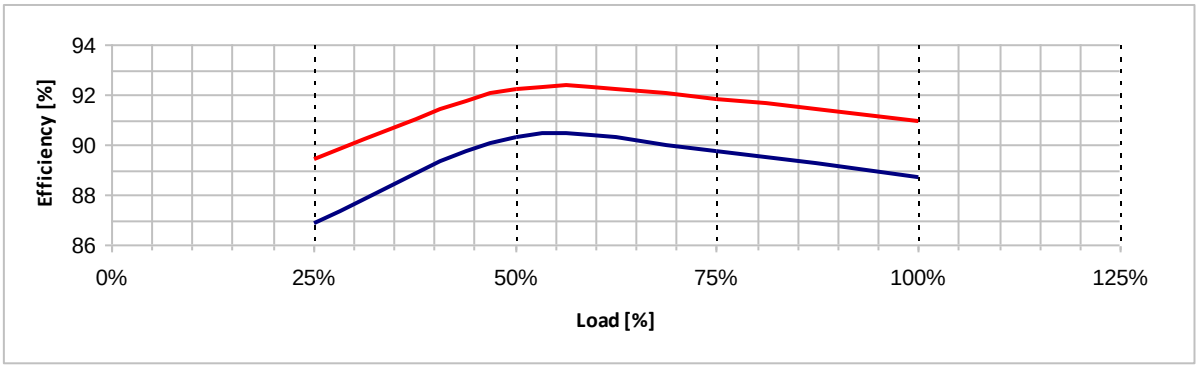
380 V



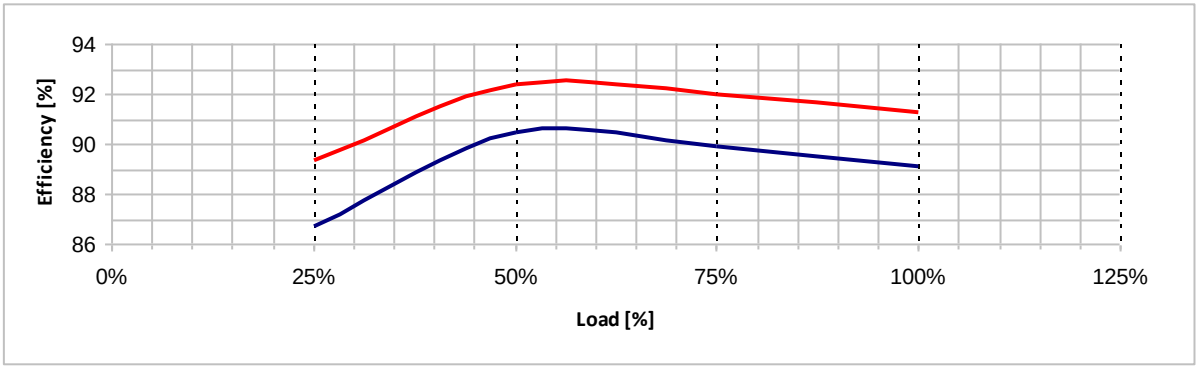
416 V



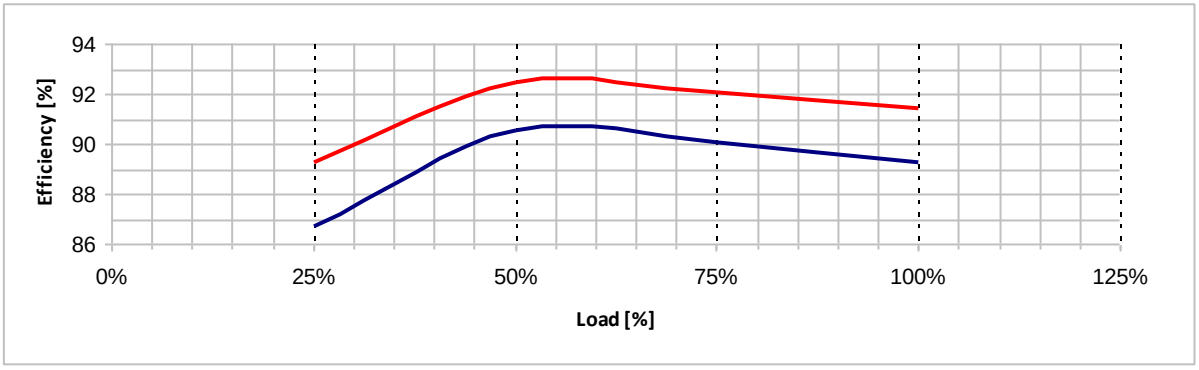
440 V



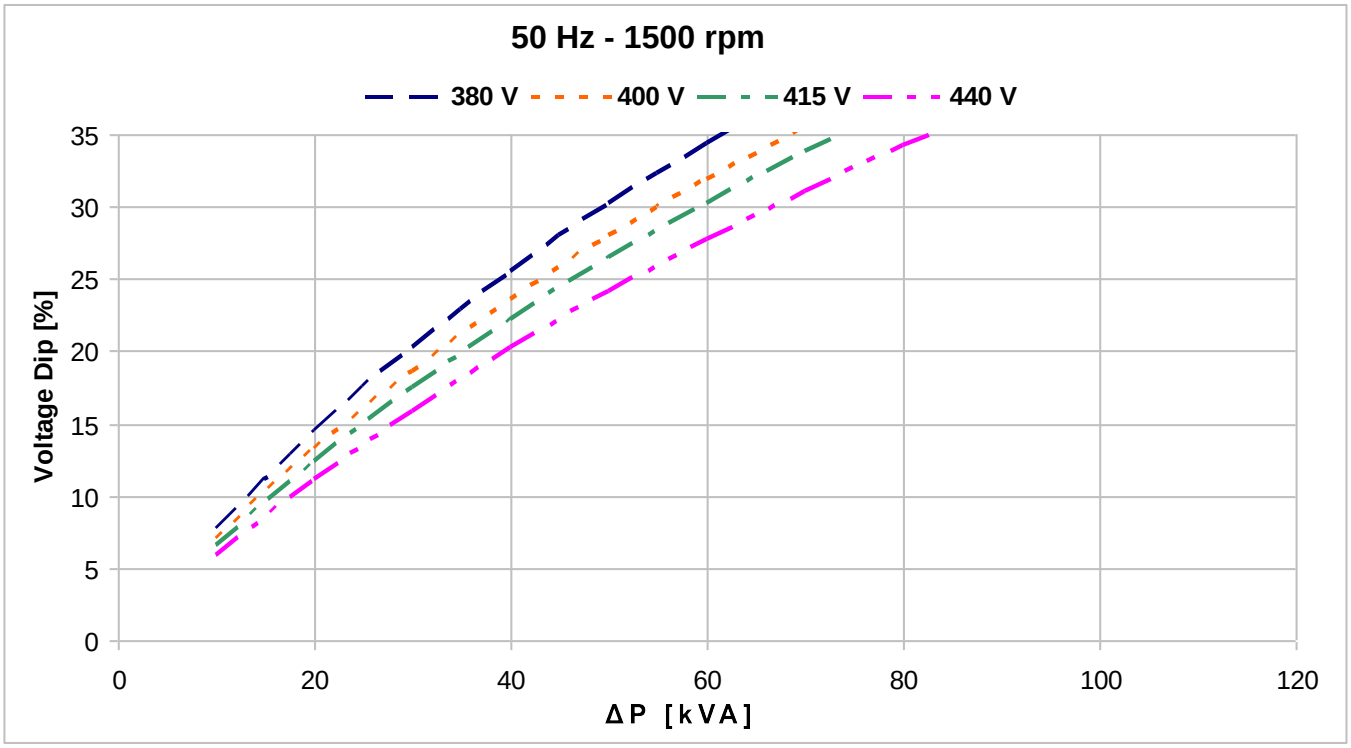
460 V

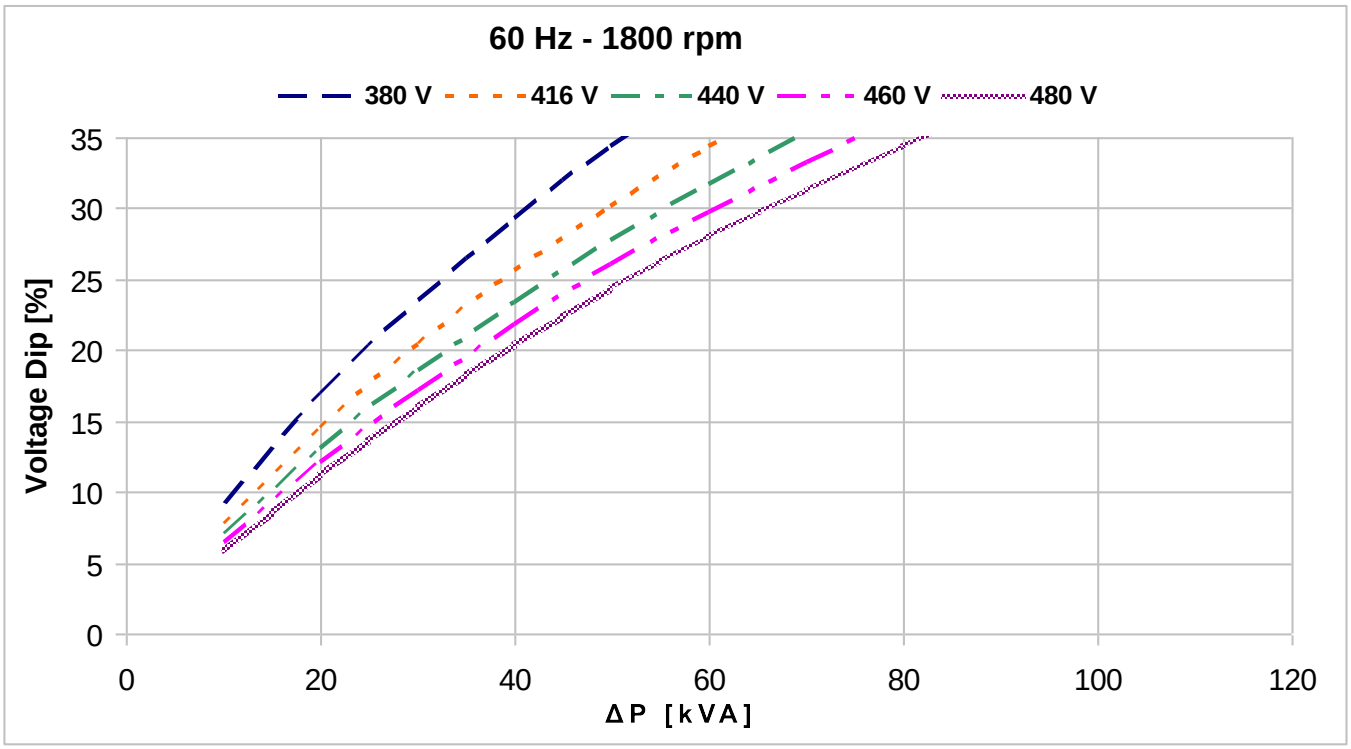


480 V



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.

MarelliGenerators®

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 200 SB 4

4 POLES

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

STAND BY DUTY (163/27)

AMBIENT TEMPERATURE	**27℃**	**WINDING DATA**	
TEMPERATURE RISE	**163K**	Winding code	**M0**
INSULATION CLASS	**H**	Number of leads	**12**
POWER FACTOR	**0,8**	Winding pitch	**2/3**

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**53,0**	**55,0**	**55,0**	**55,0**	**52,3**	**57,8**	**60,8**	**66,0**	**66,0**
		kW	***42,4***	***44,0***	***44,0***	***44,0***	***41,8***	***46,2***	***48,6***	***52,8***	***52,8***
EFFICIENCY (%) @ 0,8 p.f.		4/4	87,0	88,0	88,0	87,5	86,4	88,0	88,2	88,6	89,0
EFFICIENCY (%) @ 1,0 p.f.		4/4	89,5	90,4	90,4	90,0	89,0	90,4	90,5	90,9	91,2
SHORT CIRCUIT RATIO			0,30	0,32	0,34	0,39	0,25	0,27	0,29	0,29	0,32
REACTANCES (%)											
Direct axis synchronous		xd	445	415	385	345	525	485	455	455	415
Quadrature axis synchronous		xq	250	235	215	195	295	270	255	255	235
Direct axis transient		x'd	40,2	37,6	34,9	31,1	47,6	43,9	41,2	41,0	37,6
Direct axis subtransient		x"d	17,0	16,0	14,8	13,2	20,2	18,6	17,5	17,4	16,0
Quadrature axis subtransient		x"q	21,7	20,4	18,9	16,8	25,7	23,7	22,3	22,2	20,4
Negative sequence		x_2	19,4	18,2	16,9	15,0	22,9	21,2	19,9	19,8	18,2
Zero sequence		x_0	4,0	3,7	3,5	3,1	4,7	4,4	4,1	4,1	3,7

TIME CONSTANTS [s]

Open circuit (T'do)	0,7	Subtransient (T"d)	0,010
Transient (T'd)	0,06	Armature (Ta)	0,007

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6313 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Weight (IM B34) [kg]	225
Inertia (J) (IM B34) [kgm^2]	0,301
Overspeed [min $^{-1}$]	2250
Method of cooling	IC 01
Cooling air required [m ^{3}/s] @ 50/60 Hz	0,21 / 0,25
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 ℃ - Star series	0,2
Overloads	-
3-phase short circuit current	-
Voltage regulation accuracy	+/- 1 % (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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 225 LA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**127**	**132**	**132**	**132**	**137**	**148**	**153**	**158**	**158**
		kW	***101***	***106***	***106***	***106***	***110***	***118***	***122***	***127***	***127***
EFFICIENCY (%) @ 0,8 p.f.		4/4	91,9	92,2	91,8	91,7	91,7	92,1	92,5	92,7	93,0
		3/4	92,5	92,6	92,4	92,3	92,7	93,0	93,1	93,3	93,3
		2/4	92,7	92,7	92,6	92,5	93,0	93,2	93,3	93,4	93,3
EFFICIENCY (%) @ 1,0 p.f.		4/4	93,5	93,8	93,4	93,4	93,4	93,8	94,0	94,2	94,4
		3/4	94,0	94,1	94,0	93,9	94,2	94,4	94,5	94,6	94,7
		2/4	94,2	94,2	94,1	94,0	94,4	94,6	94,7	94,8	94,7
SHORT CIRCUIT RATIO			0,39	0,42	0,45	0,51	0,30	0,34	0,37	0,39	0,42
REACTANCES (%)											
Direct axis synchronous		xd	280	265	245	220	365	330	305	290	265
Quadrature axis synchronous		xq	155	145	135	120	200	180	165	160	145
Direct axis transient		x'd	20,5	19,3	17,9	16,0	26,7	24,0	22,2	21,0	19,3
Direct axis subtransient		x"d	10,1	9,5	8,8	7,9	13,1	11,8	10,9	10,3	9,5
Quadrature axis subtransient		x"q	11,3	10,6	9,8	8,8	14,7	13,2	12,2	11,5	10,6
Negative sequence		x_2	10,7	10,1	9,4	8,3	14,0	12,6	11,6	11,0	10,1
Zero sequence		x_0	2,3	2,2	2,0	1,8	3,0	2,7	2,5	2,4	2,2

TIME CONSTANTS [s]

Open circuit (T'do)	1,08	Subtransient (T"d)	0,006
Transient (T'd)	0,087	Armature (Ta)	0,007

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6215 2RS C3 / Prelubricated
N-end bearing/Lubrication	6311 2RS C3 / Prelubricated
Weight (IM B34) [kg]	420
Inertia (J) (IM B34) [kgm^2]	0,924
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,31 / 0,39
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,045
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

STANDARDS

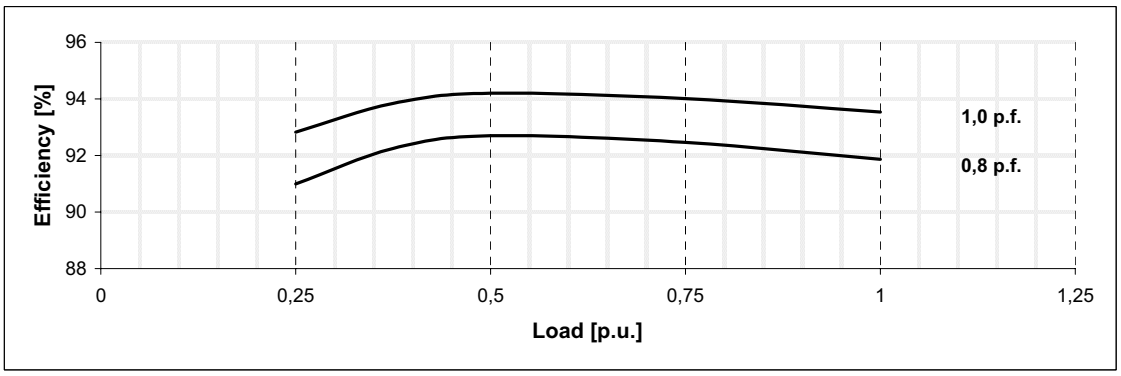
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

MarelliGenerators

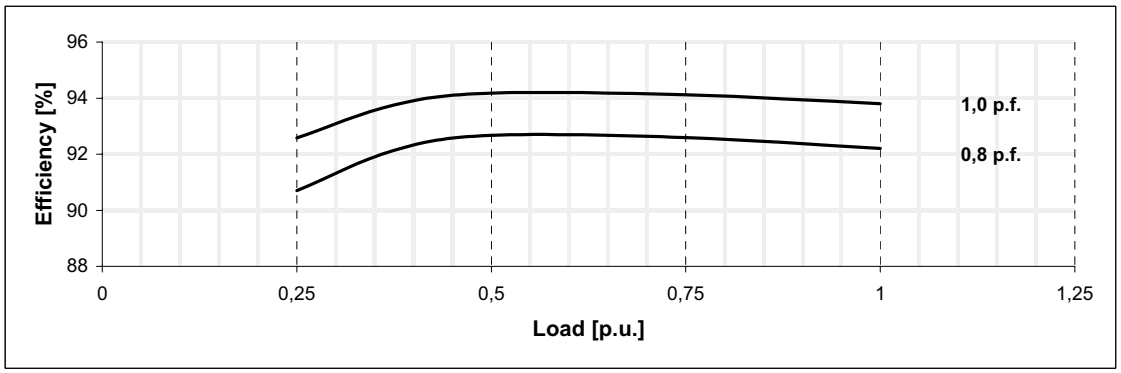
Typical efficiency curves

50 Hz - 1500 min^{-1}

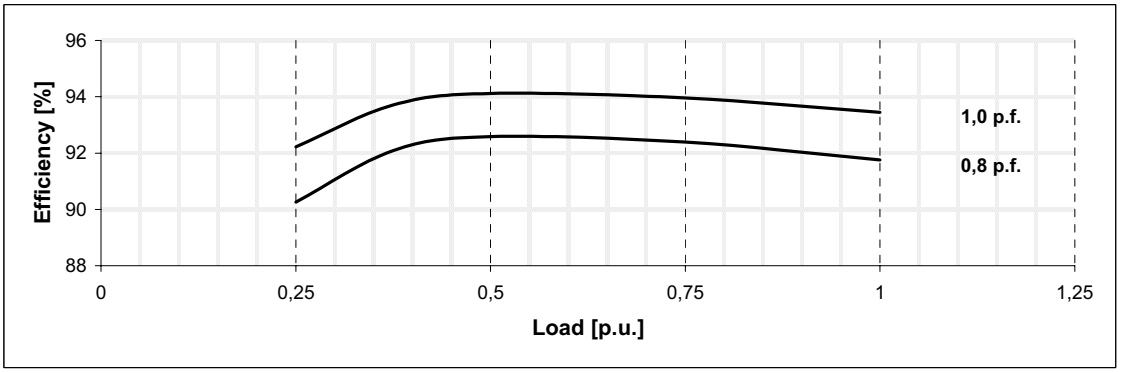
380 V



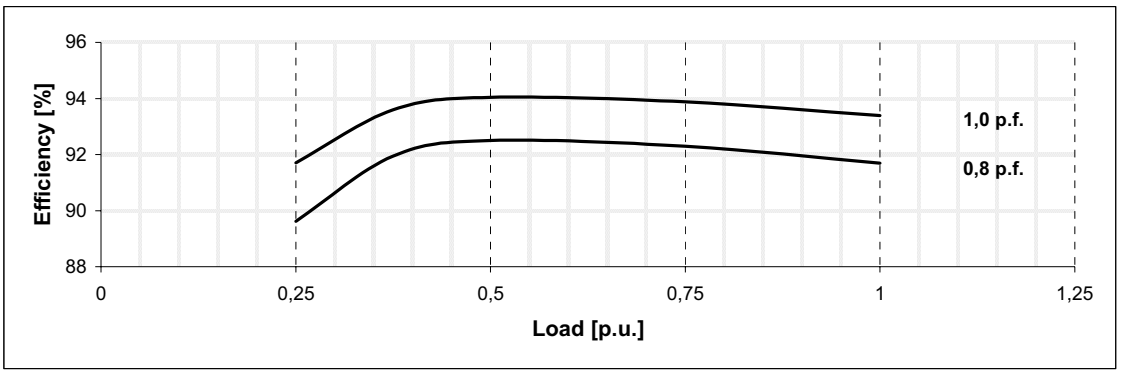
400 V



415 V



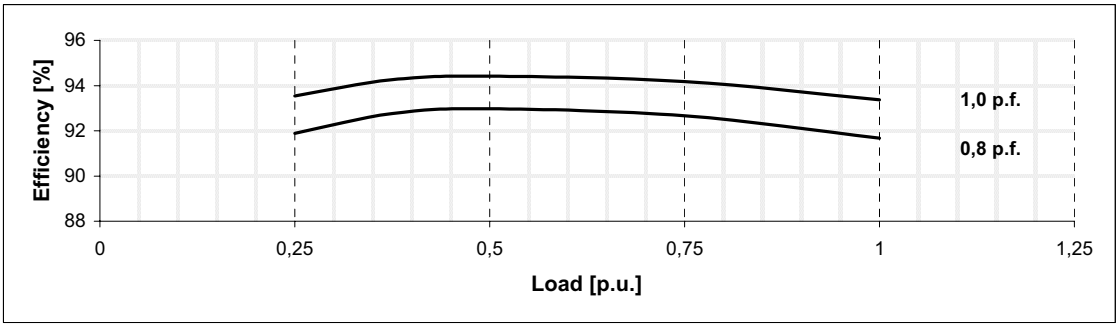
440 V



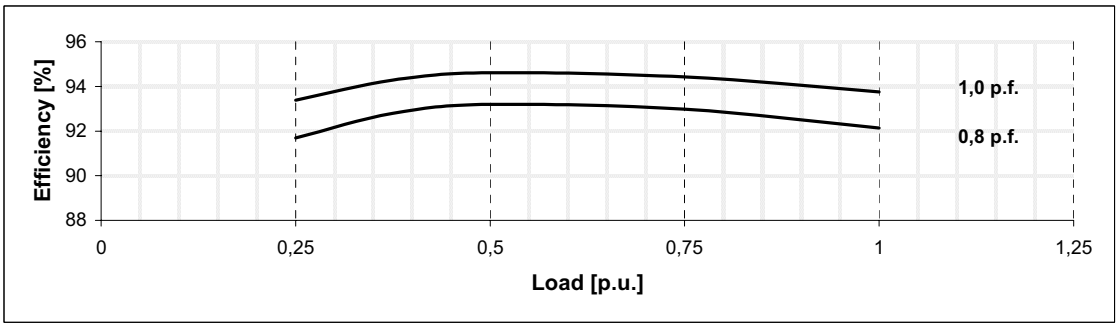
Typical efficiency curves

60 Hz - 1800 min^{-1}

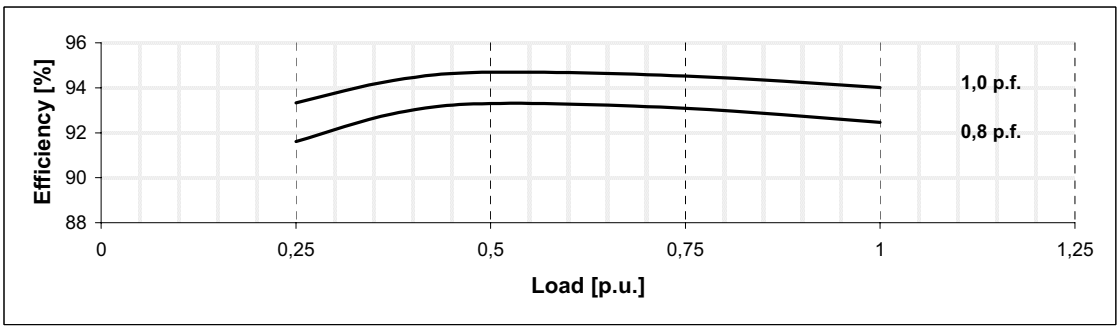
380 V



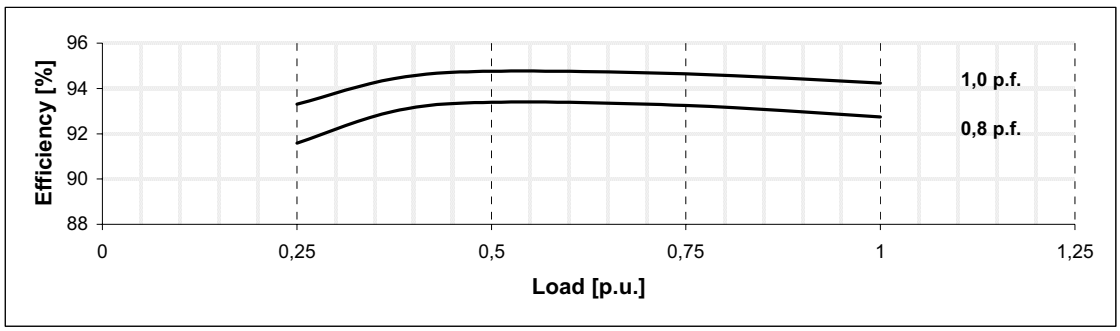
416 V



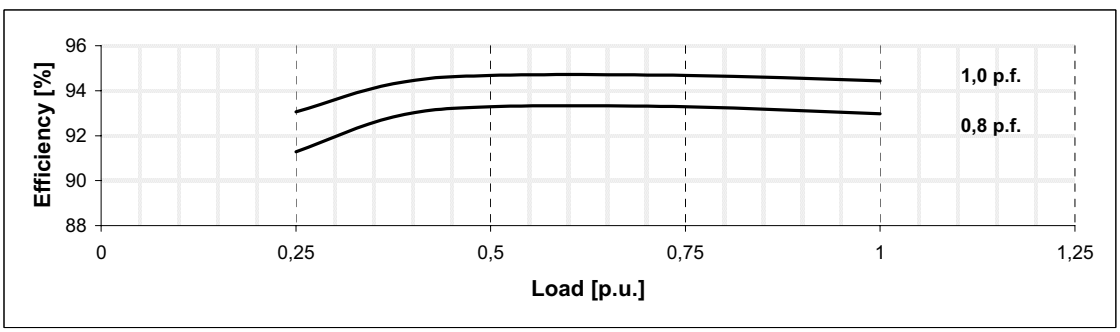
440 V



460 V

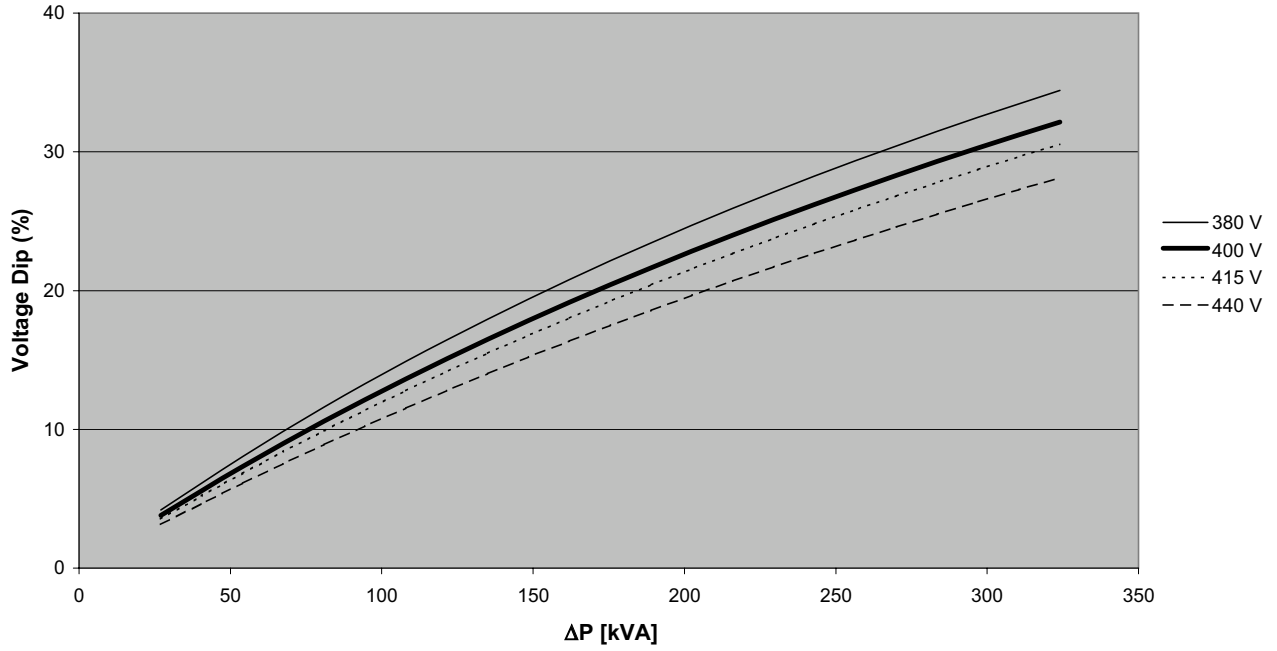


480 V

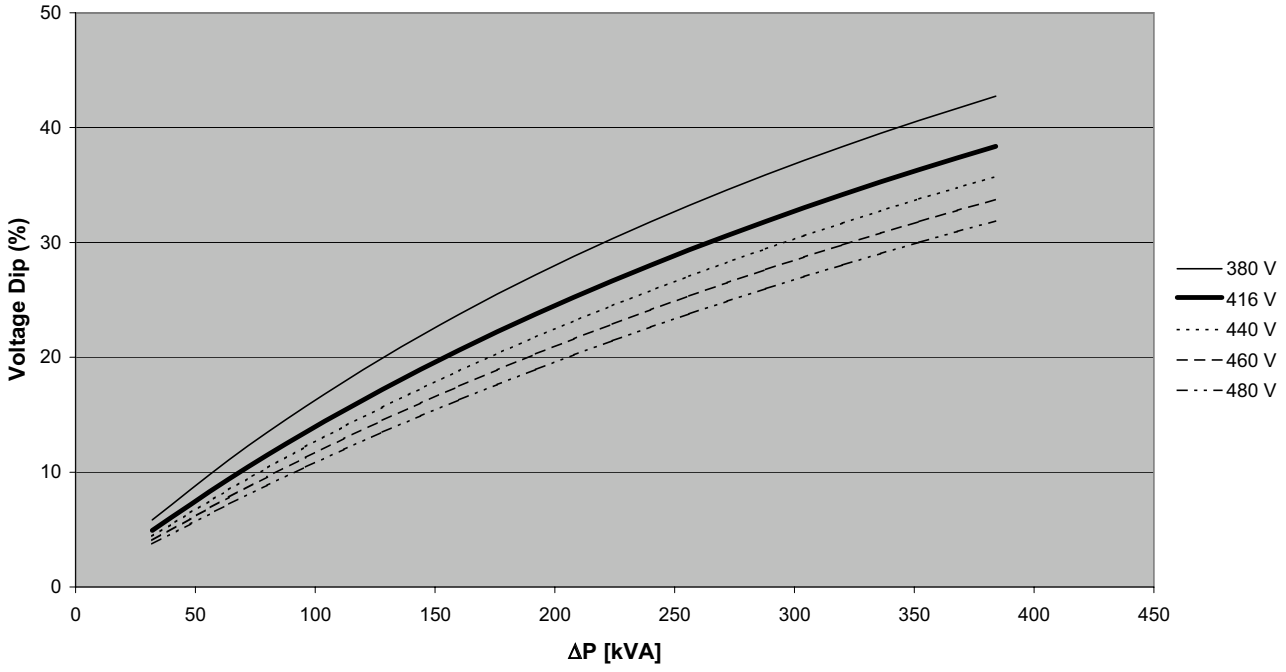


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 225 MA4

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**	**100**	**105**	**105**	**105**	**110**	**121**	**126**	**131**	**131**
			kW	***80,0***	***84,0***	***84,0***	***84,0***	***88,0***	***96,8***	***101***	***105***	***105***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	91,3	91,8	91,7	91,5	91,1	91,4	91,9	92,2	92,6
			3/4	92,1	92,4	92,3	92,2	92,2	92,5	92,7	92,9	93,1
			2/4	92,5	92,6	92,5	92,5	92,6	92,8	93,0	93,1	93,2
EFFICIENCY [%] @ 1 p.f.			**4/4**	93,1	93,5	93,4	93,2	92,9	93,1	93,6	93,8	94,1
			3/4	93,7	93,9	93,8	93,8	93,8	94,0	94,2	94,4	94,5
			2/4	94,0	94,1	94,1	94,0	94,1	94,3	94,5	94,5	94,6
SHORT CIRCUIT RATIO			SCR	0,38	0,4	0,43	0,48	0,29	0,31	0,34	0,35	0,38
REACTANCES [%]												
Direct axis synchronous			Xd	290	275	255	227	286	352	327	311	286
Quadrature axis synchronous			Xq	158	150	139	124	209	192	179	170	156
Direct axis transient			X'd	22,2	21,0	19,5	17,4	29,3	26,8	25,0	23,8	21,8
Direct axis subtransient			X"d	10,4	9,9	9,2	8,2	13,8	12,7	11,8	11,2	10,3
Quadrature axis subtransient			X"q	11,5	10,9	10,1	9,0	15,2	13,9	13,0	12,3	11,3
Negative sequence			X_2	11,0	10,4	9,7	8,6	14,5	13,3	12,4	11,8	10,8
Zero sequence			X_0	2,3	2,2	2,0	1,8	3,1	2,8	2,6	2,5	2,3
TIME CONSTANTS [s]												
Open circuit			T'do	0,95								
Transient			T'd	0,078								
Subtransient			T"d	0,006								
Armature			T_a	0,006								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6215 2RS C3 / Prelubricated
N-end bearing/Lubrication		6311 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,789
Weight [kg]	Refer to B34 construction	390
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,31 / 0,39
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	0,075
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.

MarelliGenerators®

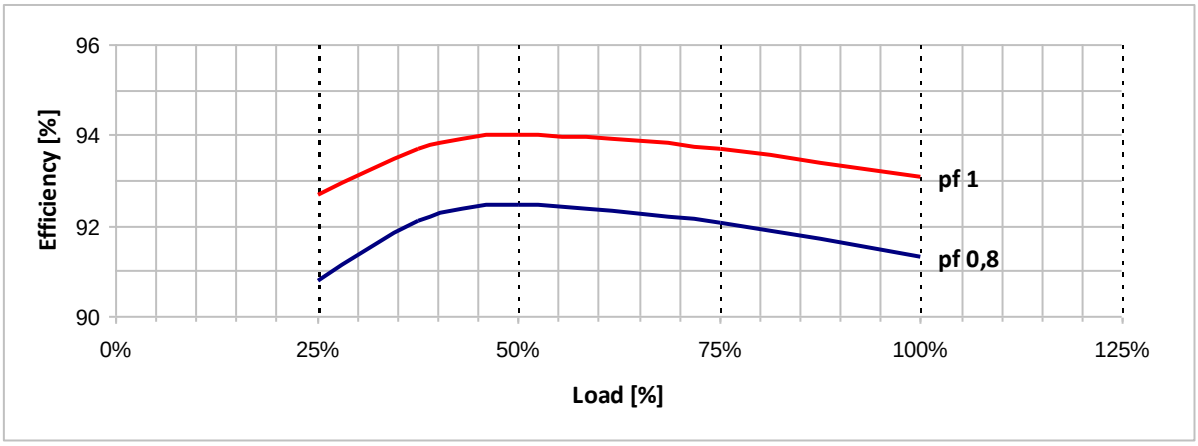
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 MA4

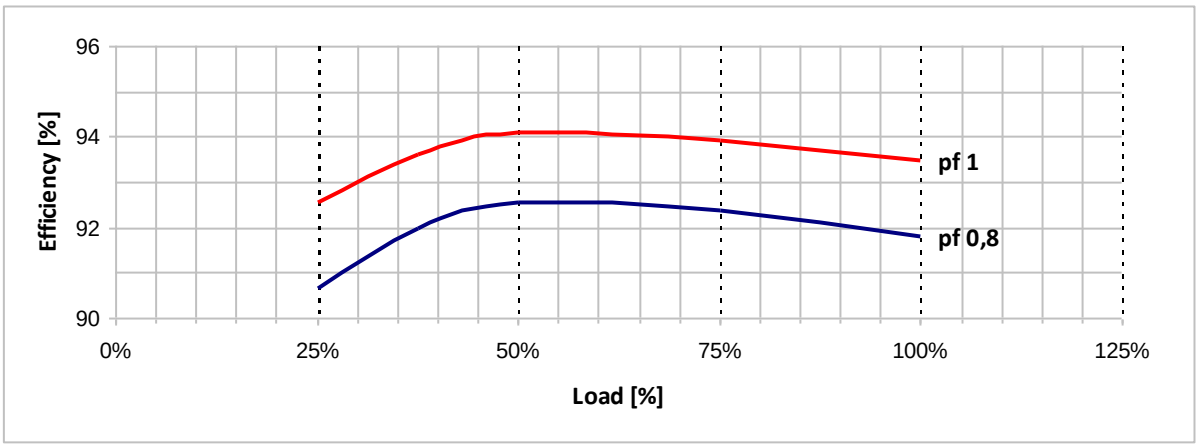
Typical efficiency curves

50 Hz - 1500 rpm

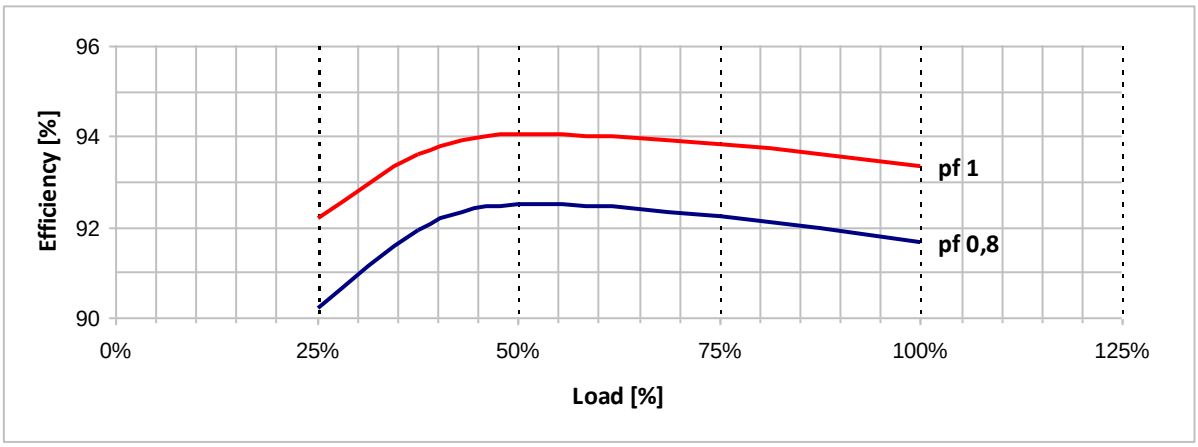
380 V



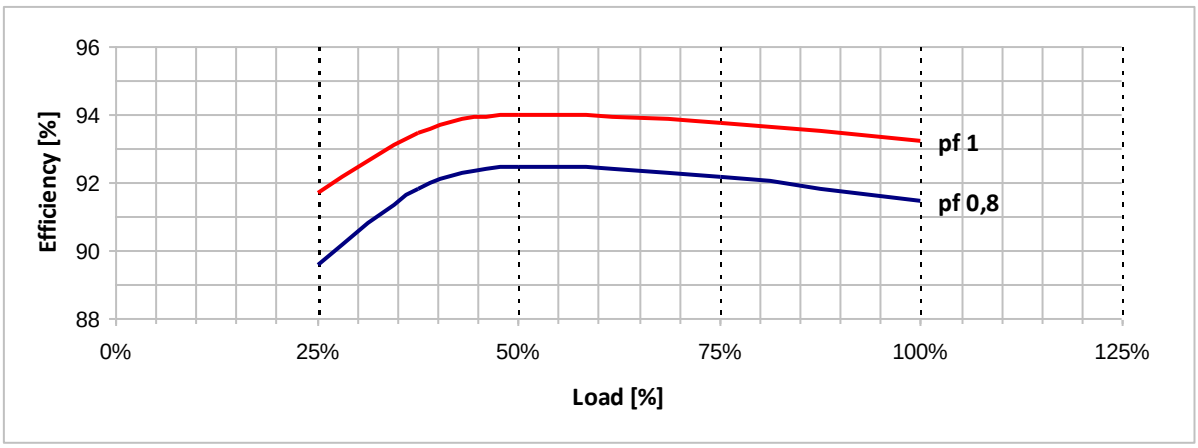
400 V



415 V



440 V



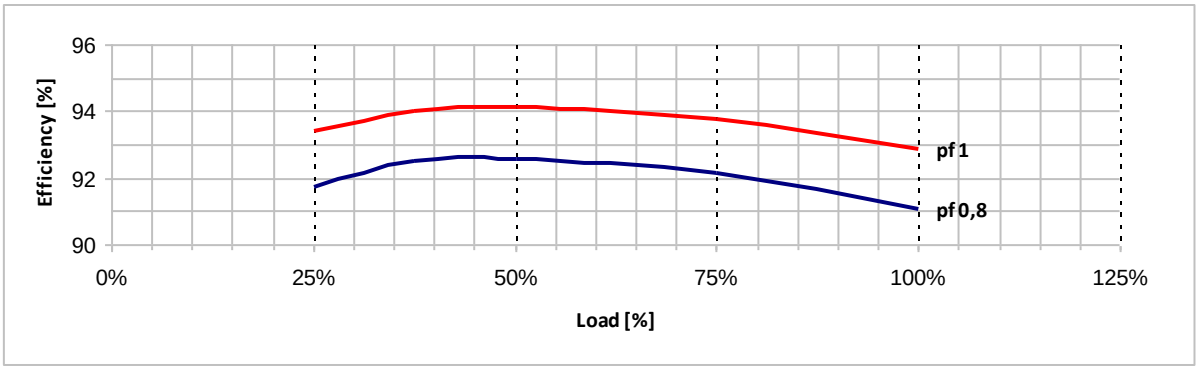
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 MA4

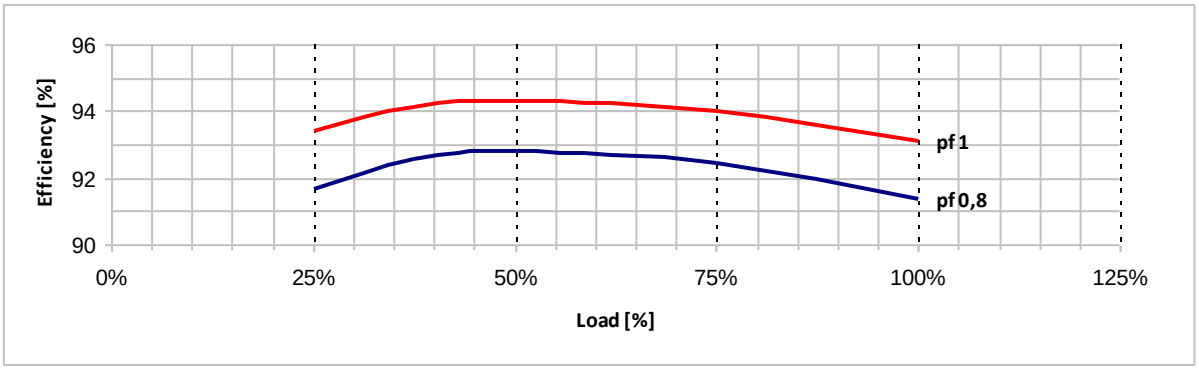
Typical efficiency curves

60 Hz - 1800 rpm

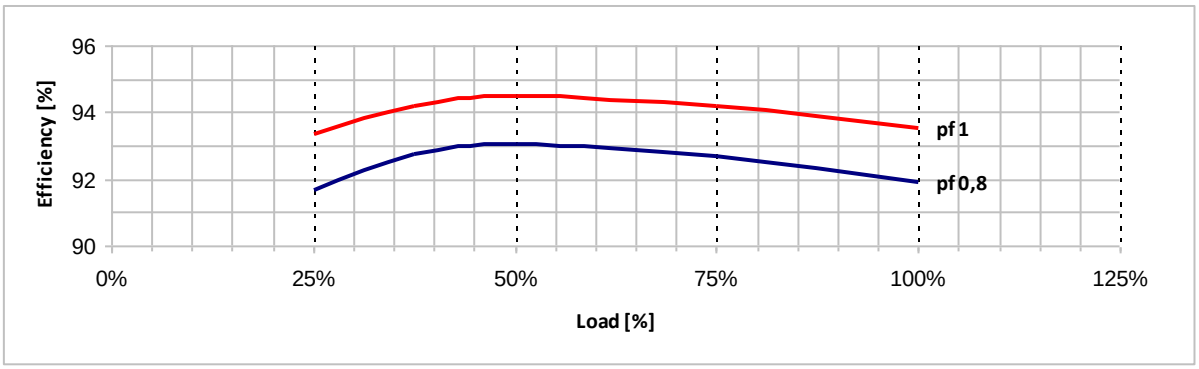
380 V



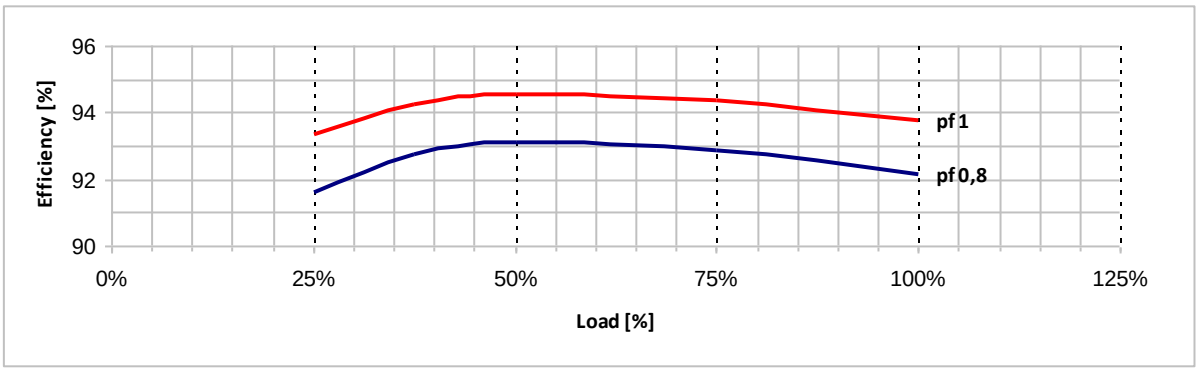
416 V



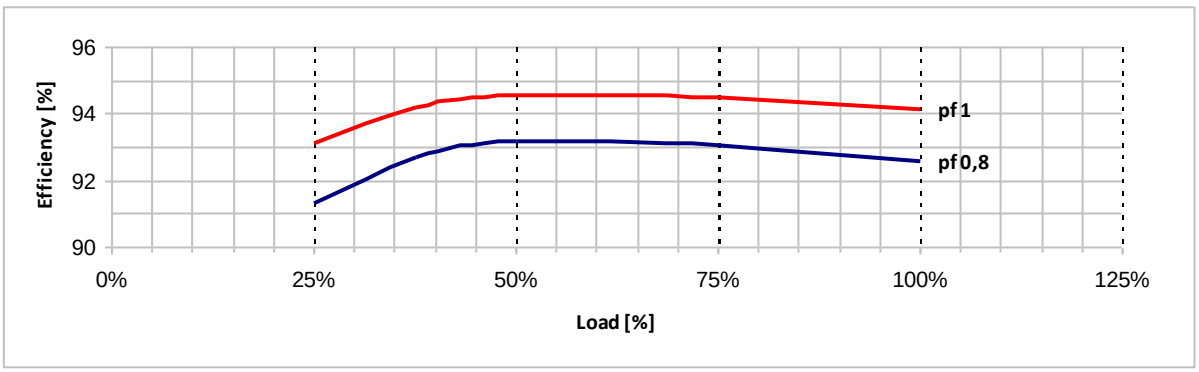
440 V



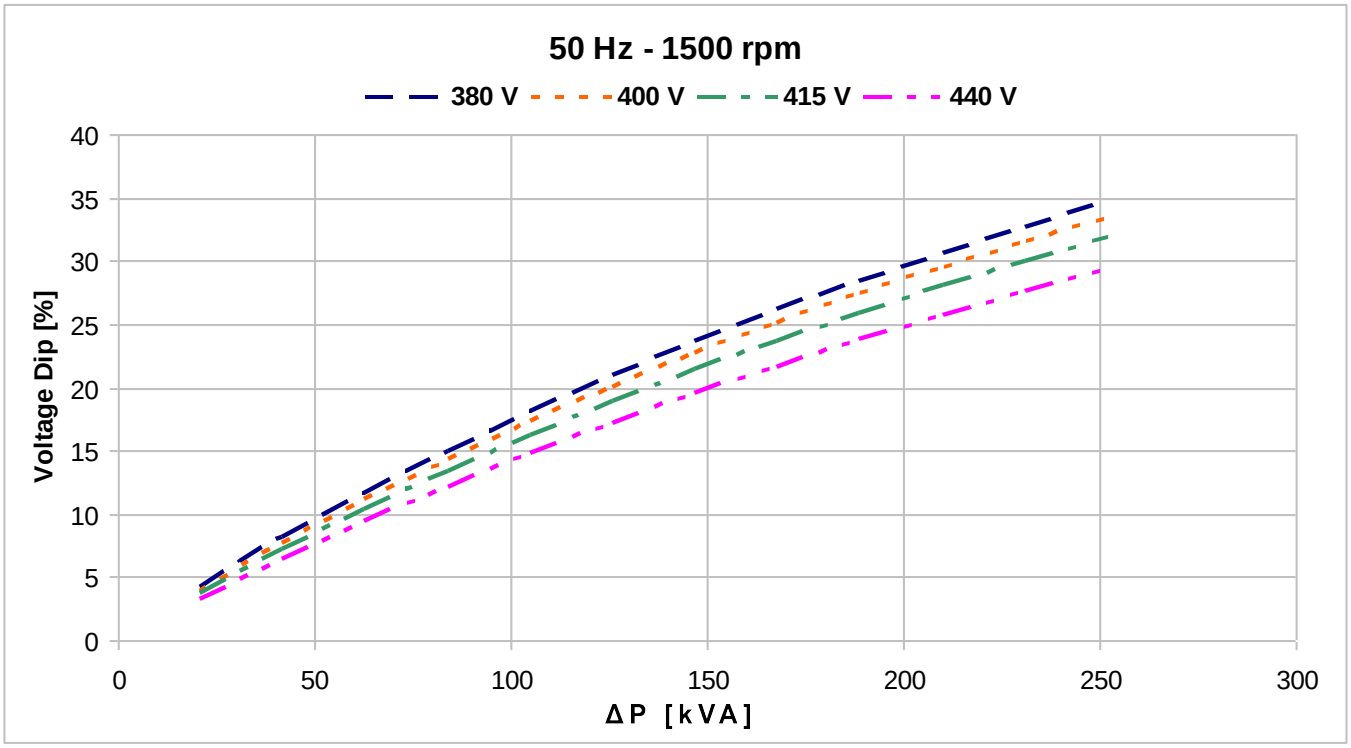
460 V

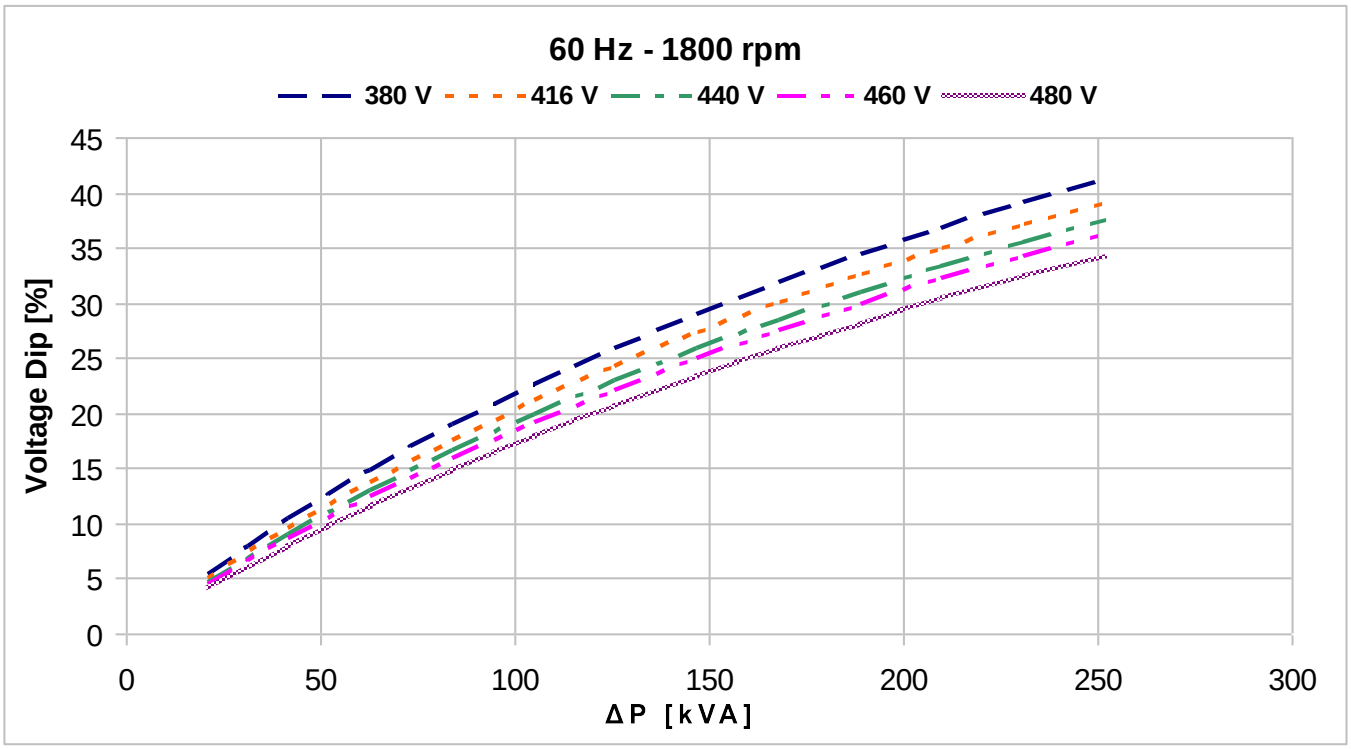


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SA4

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**	**85,0**	**85,0**	**85,0**	**85,0**	**91,0**	**102**	**102**	**108**	**108**
			kW	***68,0***	***68,0***	***68,0***	***68,0***	***72,8***	***81,6***	***81,6***	***86,4***	***86,4***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	90,5	91,0	90,9	90,8	90,2	90,5	91,0	91,2	91,5
			3/4	91,5	91,8	91,8	91,8	91,5	91,7	92,1	92,3	92,5
			2/4	91,9	92,1	92,0	92,1	92,1	92,4	92,8	92,8	92,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	92,4	92,8	92,8	92,7	92,2	92,4	92,8	93,0	93,2
			3/4	93,2	93,5	93,5	93,5	93,2	93,4	93,7	93,9	94,1
			2/4	93,6	93,8	93,6	93,8	93,7	94,0	94,3	94,3	94,4
SHORT CIRCUIT RATIO			SCR	0,34	0,38	0,41	0,46	0,27	0,29	0,32	0,33	0,36
REACTANCES [%]												
Direct axis synchronous			Xd	316	285	265	236	302	379	339	329	302
Quadrature axis synchronous			Xq	177	160	149	132	228	213	190	184	169
Direct axis transient			X'd	24,9	22,5	20,9	18,6	32,0	30,0	26,8	25,9	23,8
Direct axis subtransient			X"d	12,0	10,8	10,0	8,9	15,4	14,4	12,9	12,5	11,4
Quadrature axis subtransient			X"q	13,3	12,0	11,1	9,9	17,1	16,0	14,3	13,8	12,7
Negative sequence			X_2	12,6	11,4	10,6	9,4	16,2	15,2	13,6	13,1	12,1
Zero sequence			X_0	2,8	2,5	2,3	2,1	3,6	3,3	3,0	2,9	2,6
TIME CONSTANTS [s]												
Open circuit			T'do	0,82								
Transient			T'd	0,071								
Subtransient			T"d	0,005								
Armature			T_a	0,005								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6215 2RS C3 / Prelubricated
N-end bearing/Lubrication		6311 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,632
Weight [kg]	Refer to B34 construction	345
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,31 / 0,39
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	0,11
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.

MarelliGenerators®

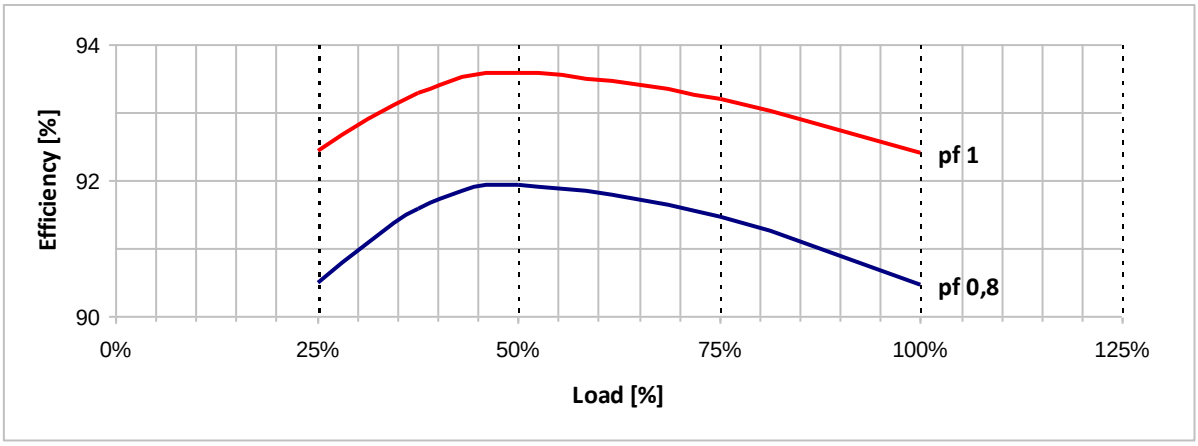
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SA4

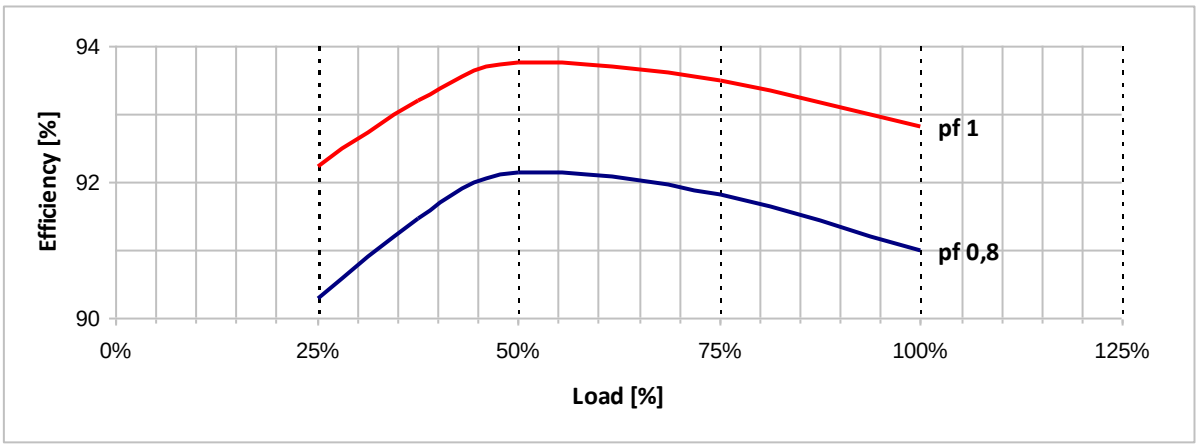
Typical efficiency curves

50 Hz - 1500 rpm

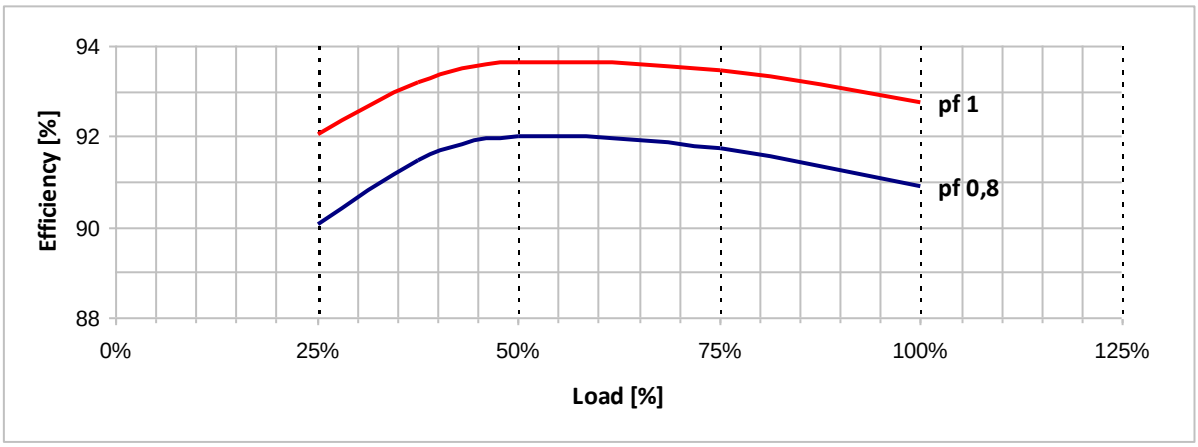
380 V



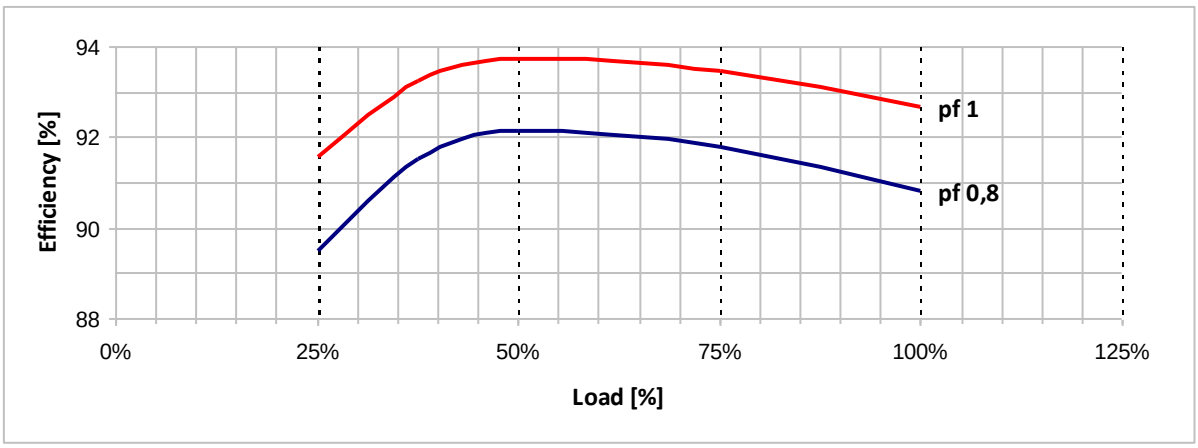
400 V



415 V



440 V



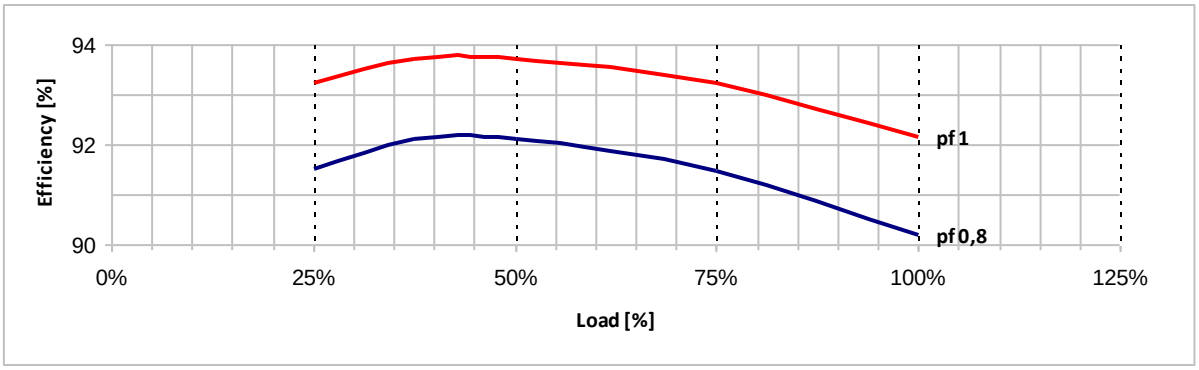
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SA4

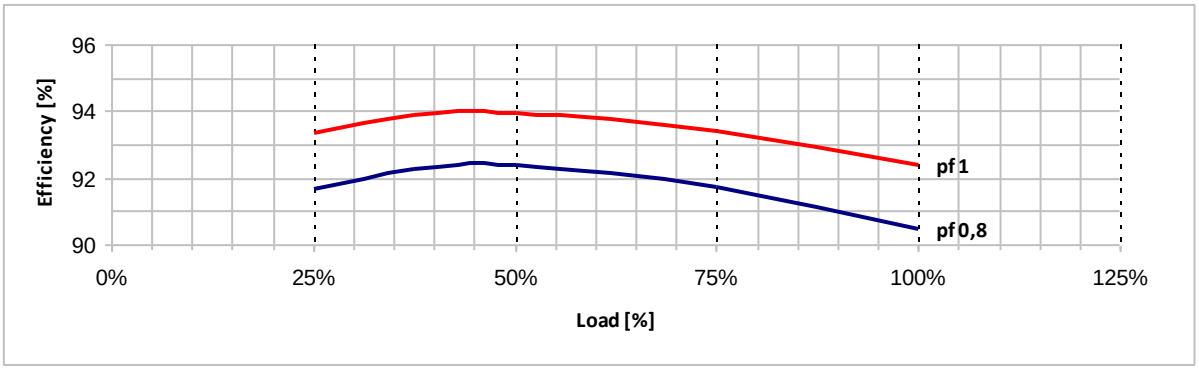
Typical efficiency curves

60 Hz - 1800 rpm

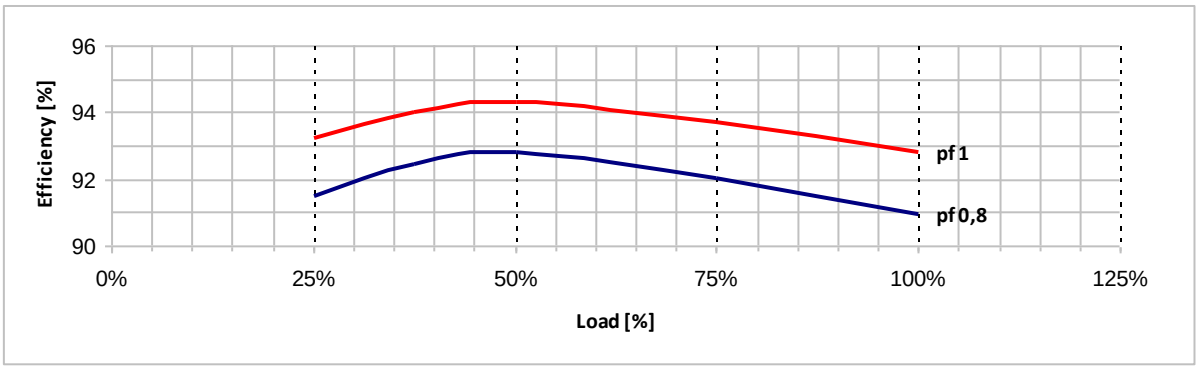
380 V



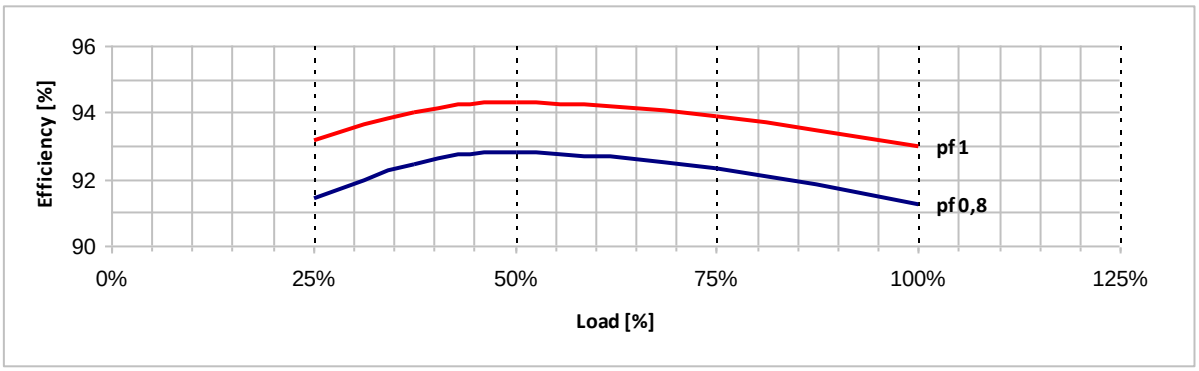
416 V



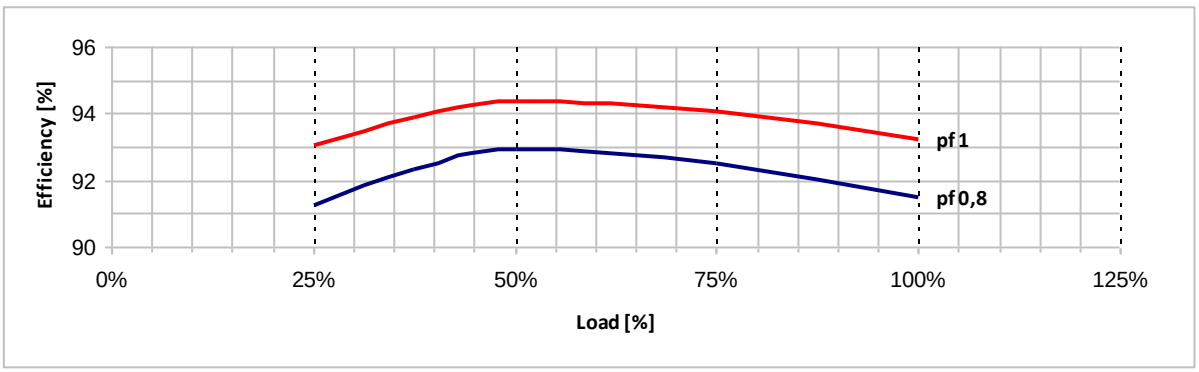
440 V



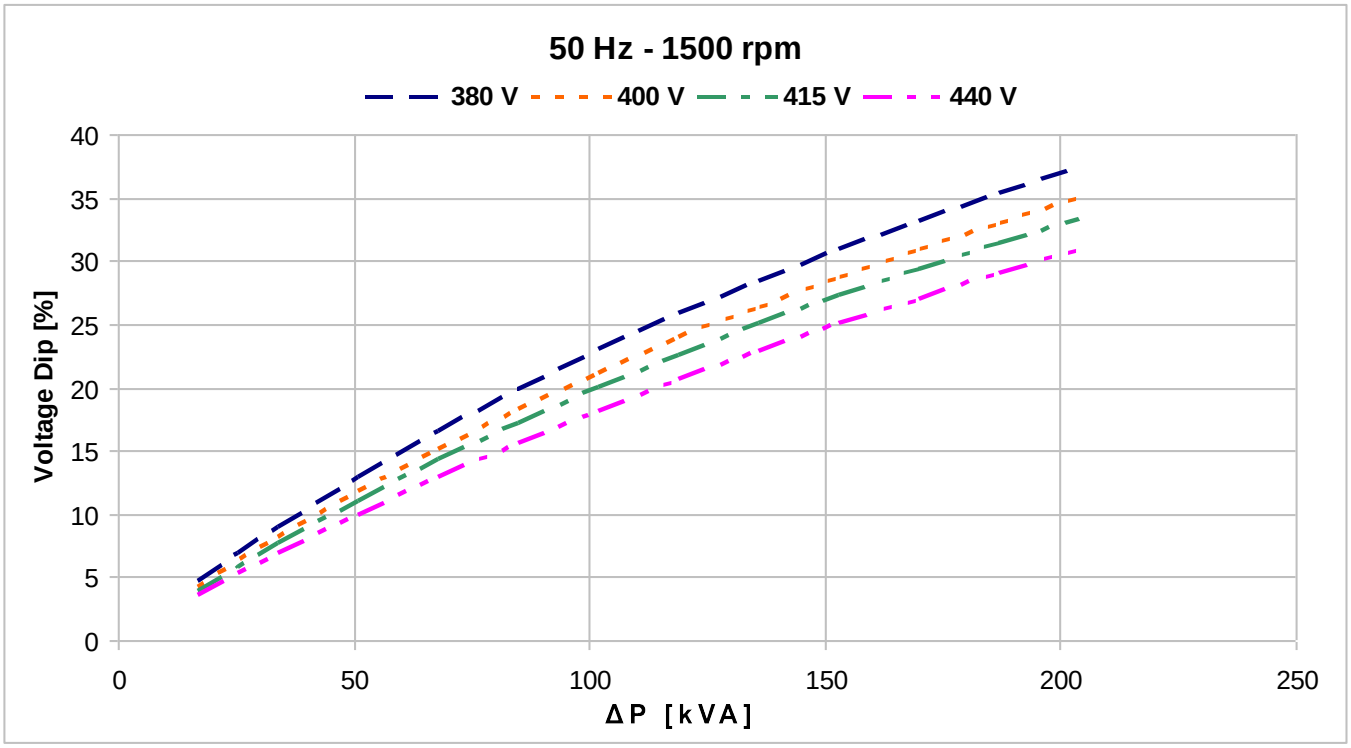
460 V

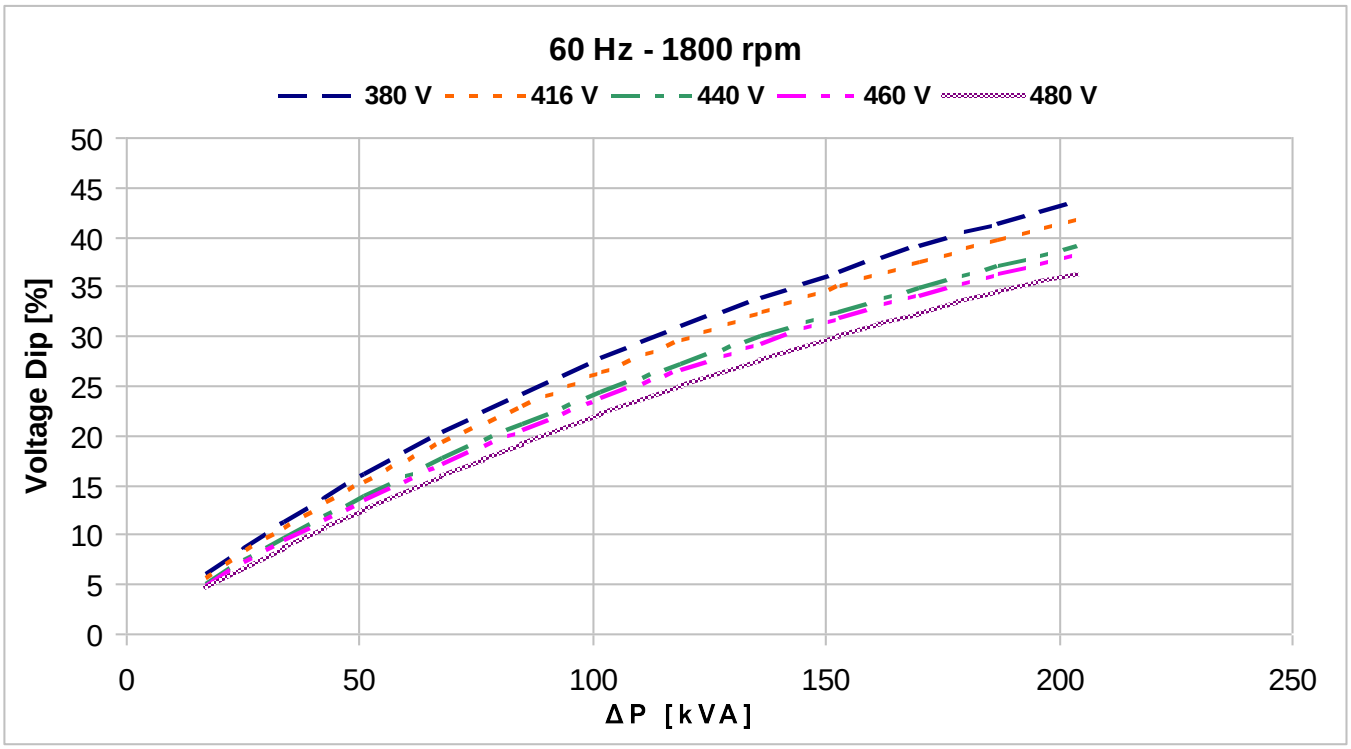


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SB4

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**	**92,0**	**92,0**	**92,0**	**92,0**	**97,0**	**108**	**114**	**114**	**114**
			kW	***73,6***	***73,6***	***73,6***	***73,6***	***77,6***	***86,4***	***91,2***	***91,2***	***91,2***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	91,0	91,5	91,4	91,4	90,9	91,1	91,4	91,8	92,0
			3/4	91,9	92,3	92,2	92,2	92,0	92,3	92,6	92,8	93,0
			2/4	92,3	92,5	92,4	92,5	92,6	92,9	93,1	93,2	93,2
EFFICIENCY [%] @ 1 p.f.			**4/4**	92,8	93,2	93,2	93,1	92,7	92,9	93,2	93,5	93,6
			3/4	93,5	93,8	93,8	93,8	93,6	93,9	94,1	94,3	94,4
			2/4	93,9	94,1	94,0	94,0	94,1	94,4	94,5	94,6	94,6
SHORT CIRCUIT RATIO			SCR	0,35	0,39	0,42	0,47	0,28	0,30	0,32	0,35	0,38
REACTANCES [%]												
Direct axis synchronous			Xd	305	275	255	227	284	358	338	309	284
Quadrature axis synchronous			Xq	166	150	139	124	210	195	184	169	155
Direct axis transient			X'd	23,8	21,5	20,0	17,8	30,1	28,0	26,4	24,2	22,2
Direct axis subtransient			X"d	11,3	10,2	9,5	8,4	14,3	13,3	12,5	11,5	10,5
Quadrature axis subtransient			X"q	12,5	11,3	10,5	9,3	15,8	14,7	13,9	12,7	11,7
Negative sequence			X_2	11,9	10,7	9,9	8,8	15,0	13,9	13,1	12,0	11,0
Zero sequence			X_0	2,5	2,3	2,1	1,9	3,2	3,0	2,8	2,6	2,4
TIME CONSTANTS [s]												
Open circuit			T'do	0,9								
Transient			T'd	0,075								
Subtransient			T"d	0,006								
Armature			T_a	0,006								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6215 2RS C3 / Prelubricated
N-end bearing/Lubrication		6311 2RS C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	0,698
Weight [kg]	Refer to B34 construction	350
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,31 / 0,39
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	0,085
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.

MarelliGenerators®

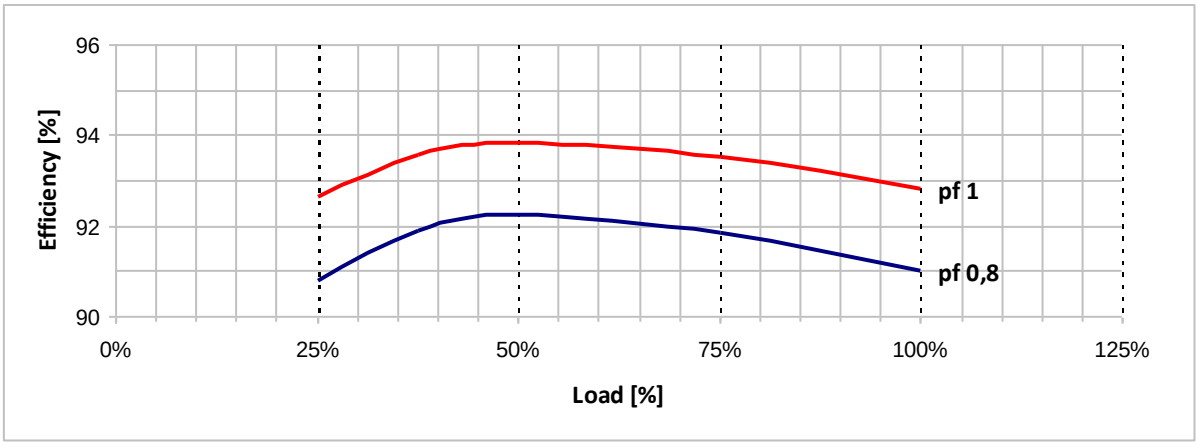
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SB4

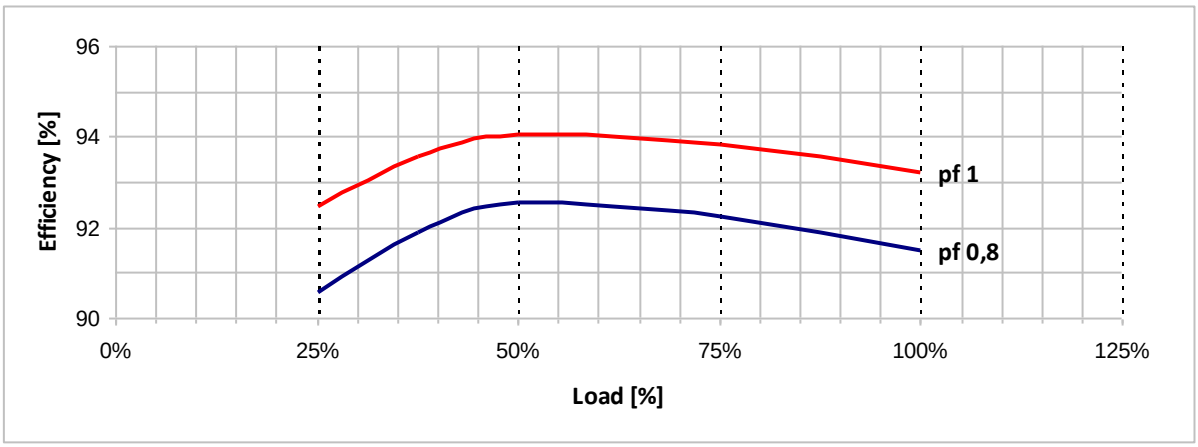
Typical efficiency curves

50 Hz - 1500 rpm

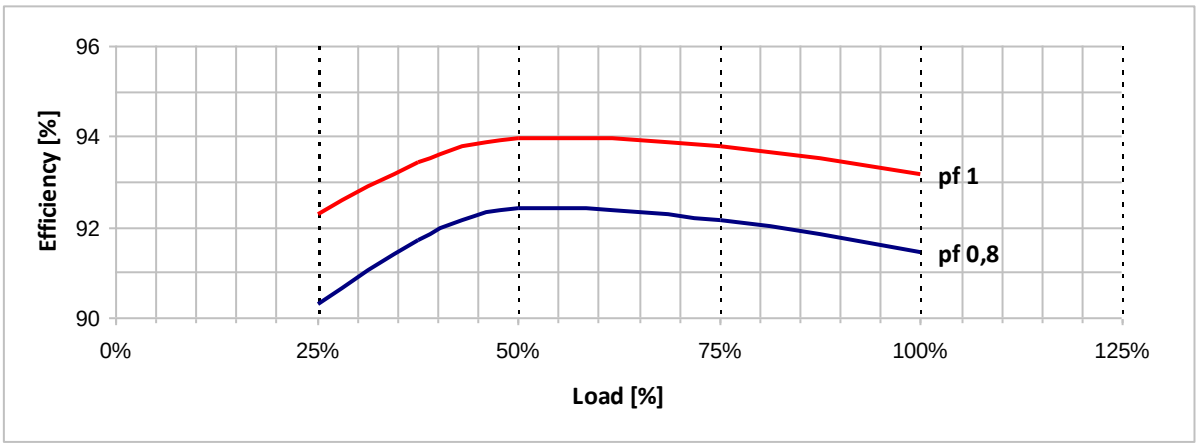
380 V



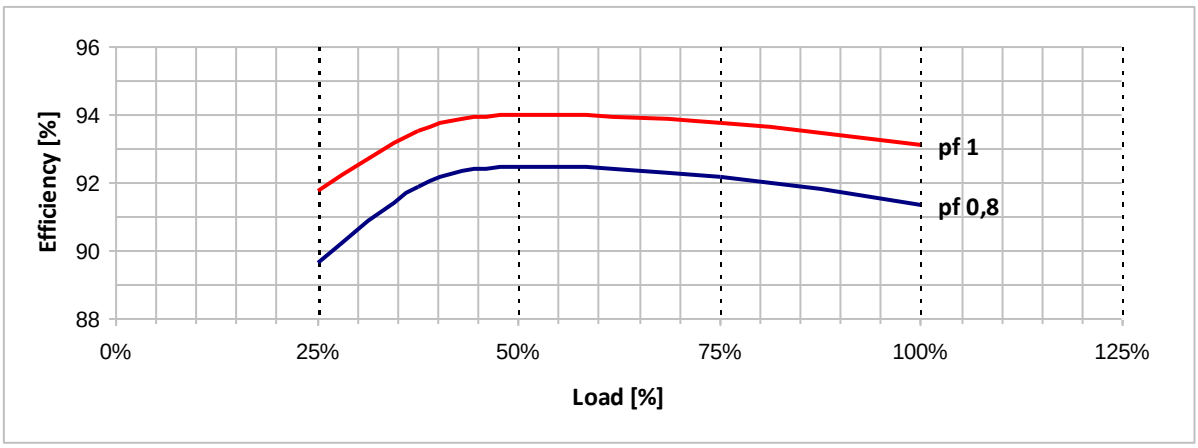
400 V



415 V



440 V



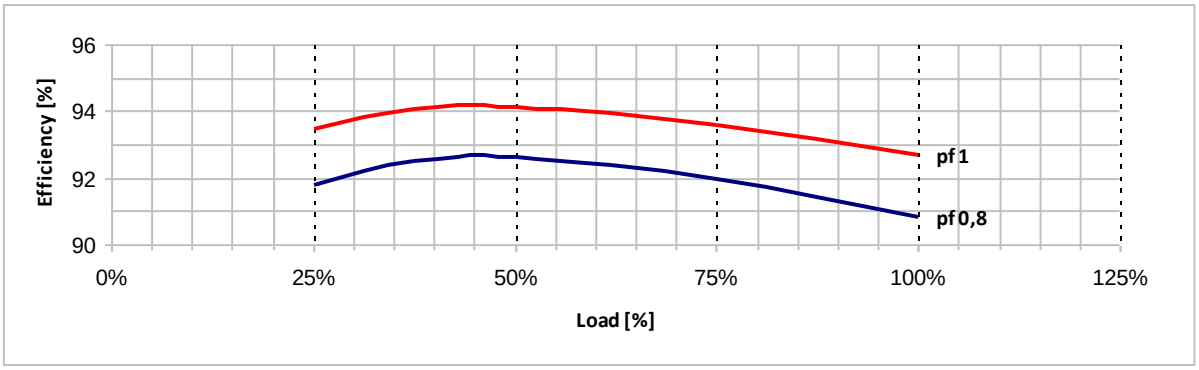
THREE PHASE SYNCRONOUS GENERATOR

MJB 225 SB4

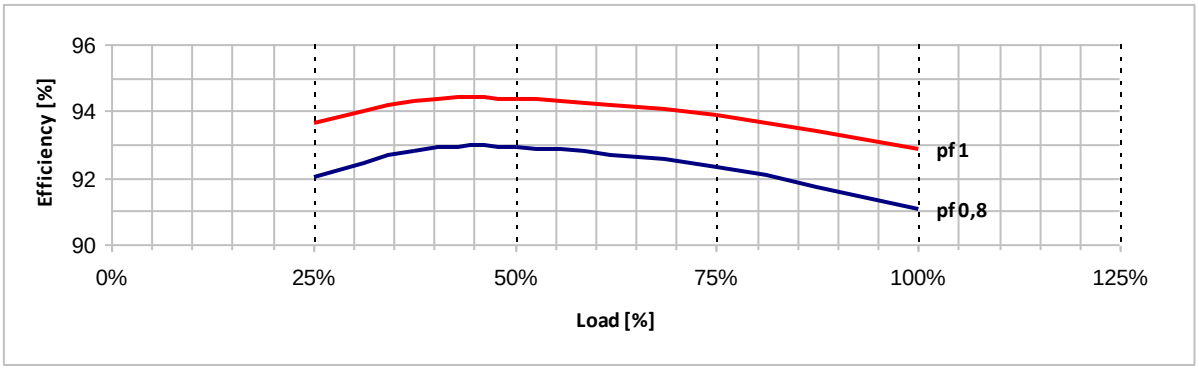
Typical efficiency curves

60 Hz - 1800 rpm

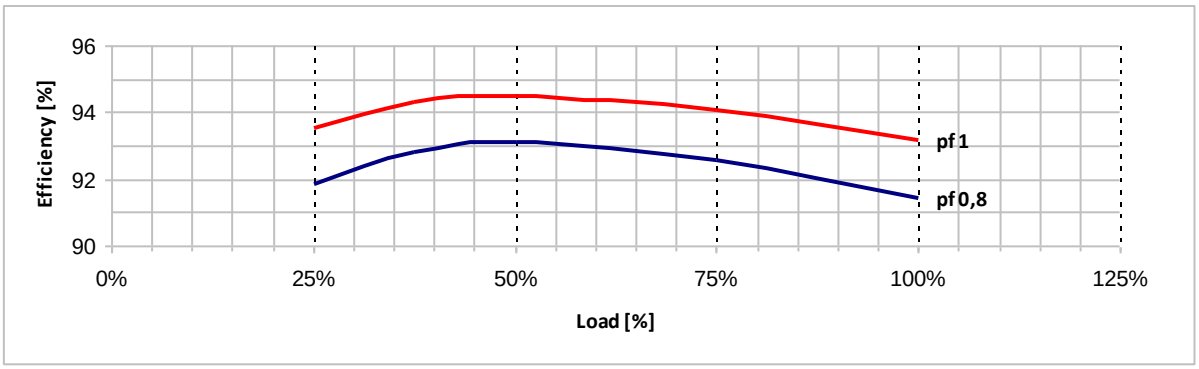
380 V



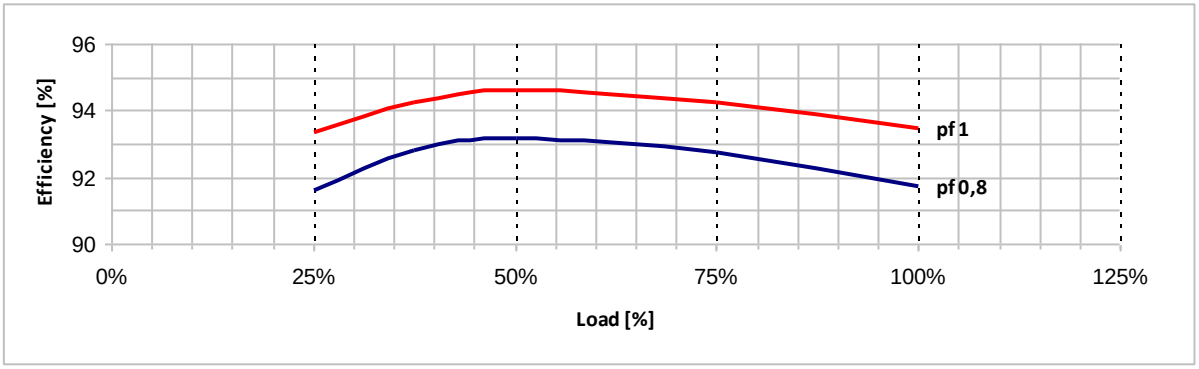
416 V



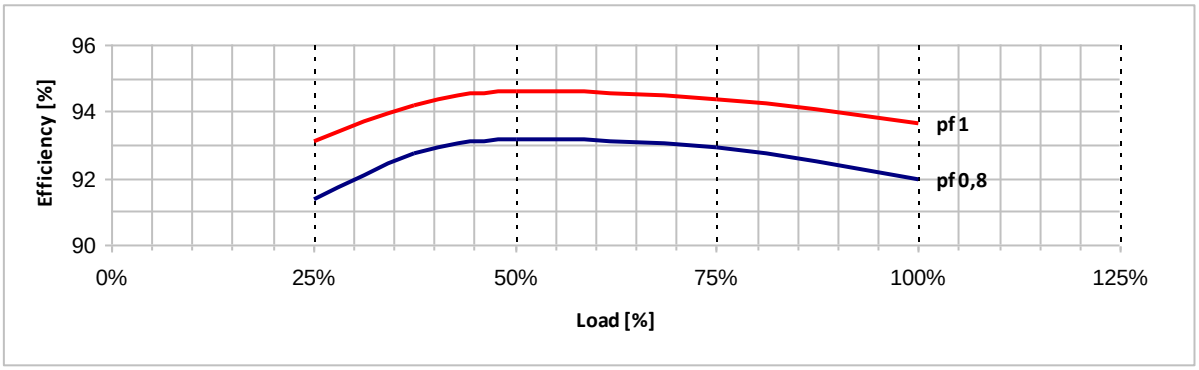
440 V



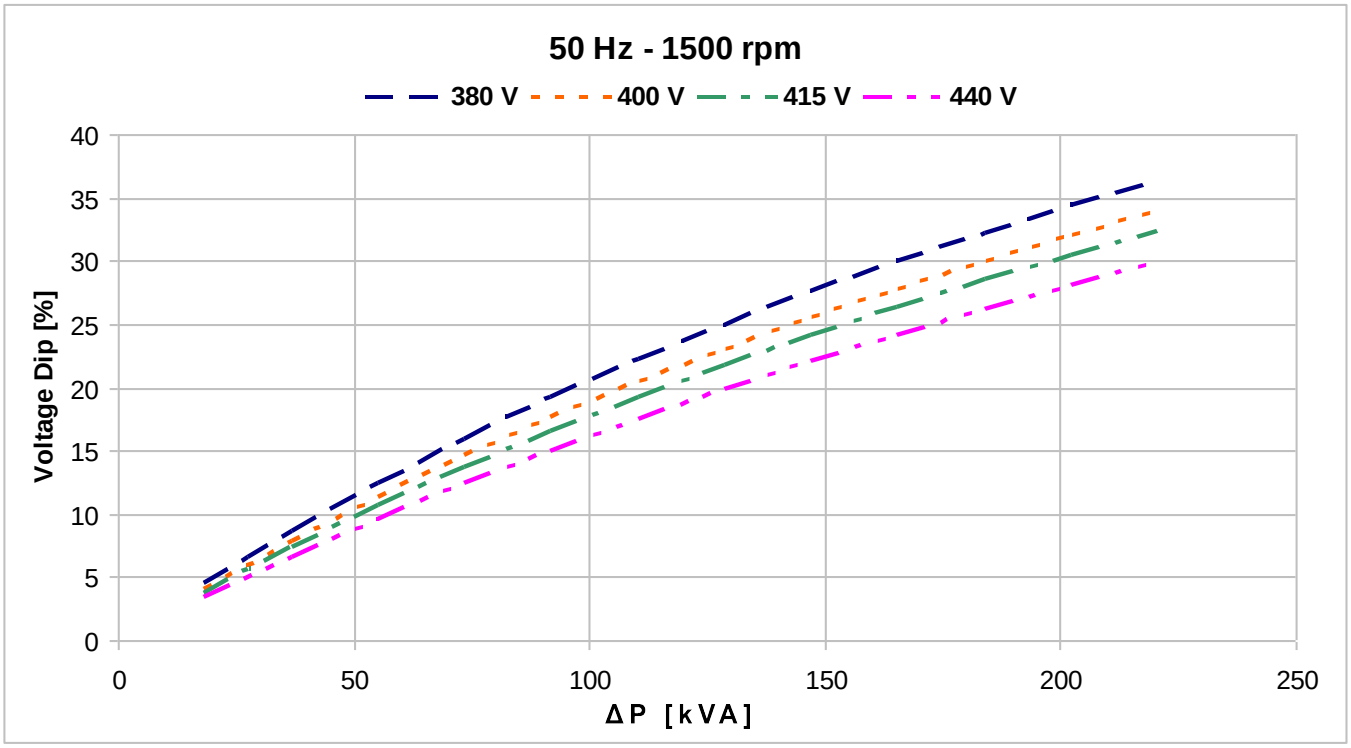
460 V

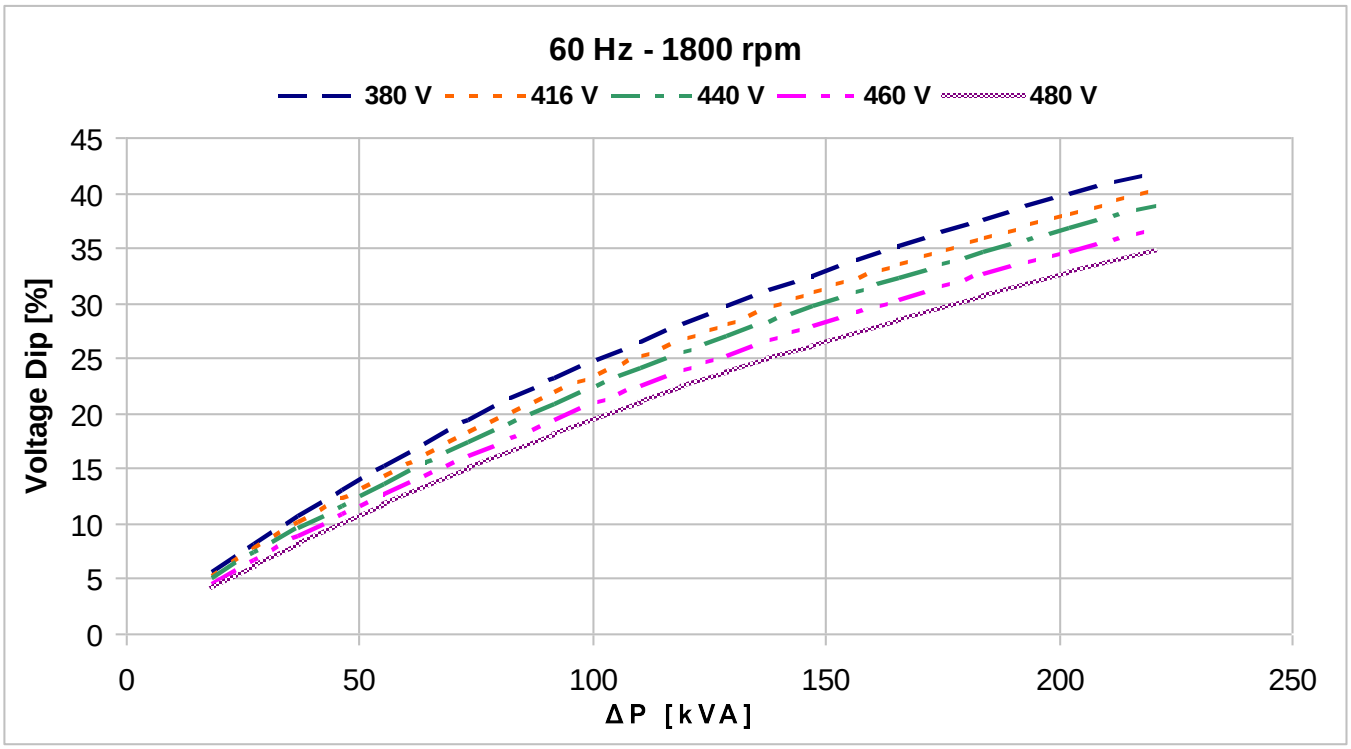


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 250 LA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**220**	**220**	**220**	**210**	**225**	**235**	**245**	**255**	**270**
		kW	***176***	***176***	***176***	***168***	***180***	***188***	***196***	***204***	***216***
EFFICIENCY (%) @ 0,8 p.f.		4/4	92,8	93,2	93,1	93,2	92,7	93,0	93,3	93,4	93,9
		3/4	93,4	93,6	93,5	93,5	93,7	94,0	94,1	94,2	94,4
		2/4	93,6	93,7	93,6	93,5	94,1	94,3	94,4	94,4	94,4
EFFICIENCY (%) @ 1,0 p.f.		4/4	94,3	94,6	94,5	94,6	94,2	94,4	94,7	94,8	95,2
		3/4	94,8	94,9	94,8	94,8	95,0	95,2	95,3	95,4	95,6
		2/4	95,0	95,0	94,9	94,9	95,4	95,5	95,6	95,6	95,6
SHORT CIRCUIT RATIO			0,36	0,40	0,43	0,51	0,29	0,34	0,36	0,38	0,39
REACTANCES (%)											
Direct axis synchronous		xd	340	305	285	240	415	360	335	320	310
Quadrature axis synchronous		xq	165	150	140	120	205	180	165	160	155
Direct axis transient		x'd	26,6	24,0	22,3	18,9	32,6	28,4	26,5	25,2	24,5
Direct axis subtransient		x"d	12,5	11,3	10,5	8,9	15,4	13,4	12,5	11,9	11,6
Quadrature axis subtransient		x"q	14,0	12,6	11,7	9,9	17,1	14,9	13,9	13,3	12,9
Negative sequence		x_2	13,3	12,0	11,1	9,5	16,3	14,2	13,3	12,6	12,3
Zero sequence		x_0	2,7	2,4	2,2	1,9	3,3	2,8	2,7	2,5	2,5

TIME CONSTANTS [s]

Open circuit (T'do)	1,00	Subtransient (T"d)	0,011
Transient (T'd)	0,095	Armature (Ta)	0,013

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6218 2RS C3 / Prelubricated
N-end bearing/Lubrication	6313 2RS C3 / Prelubricated
Weight (IM B34) [kg]	660
Inertia (J) (IM B34) [kgm^2]	1,890
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,42 / 0,52
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,021
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
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.

MarelliGenerators

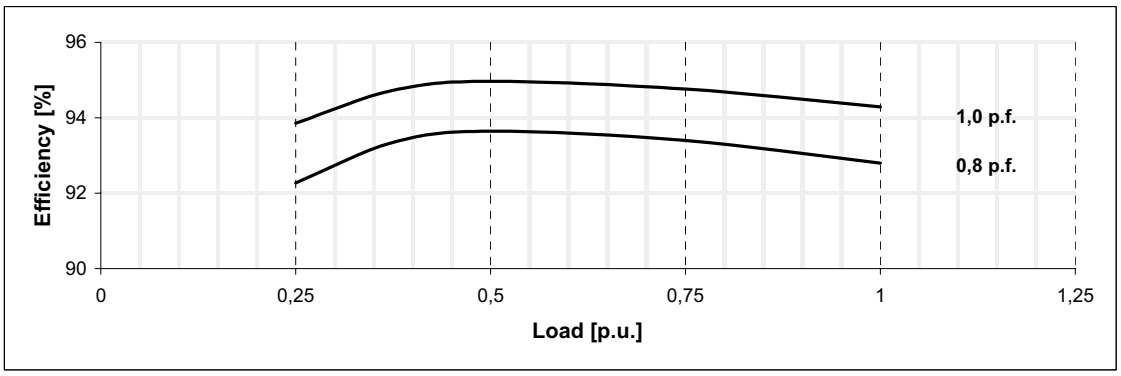
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 250 LA 4

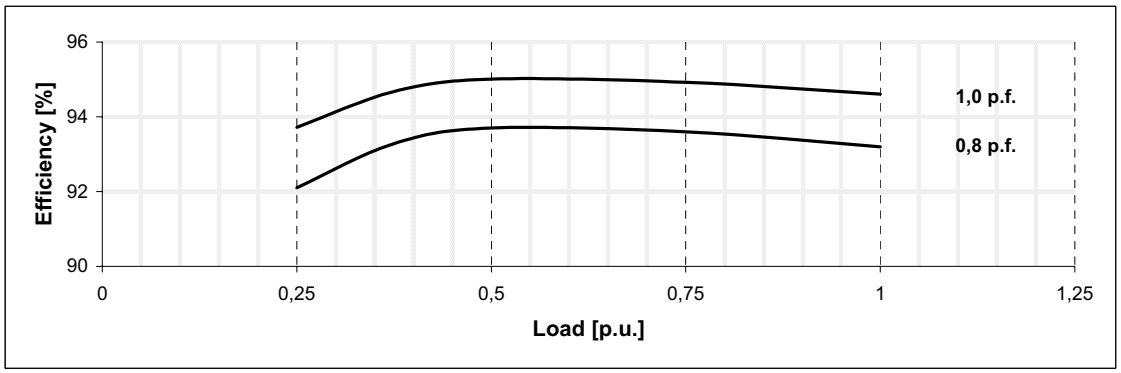
Typical efficiency curves

50 Hz - 1500 min^{-1}

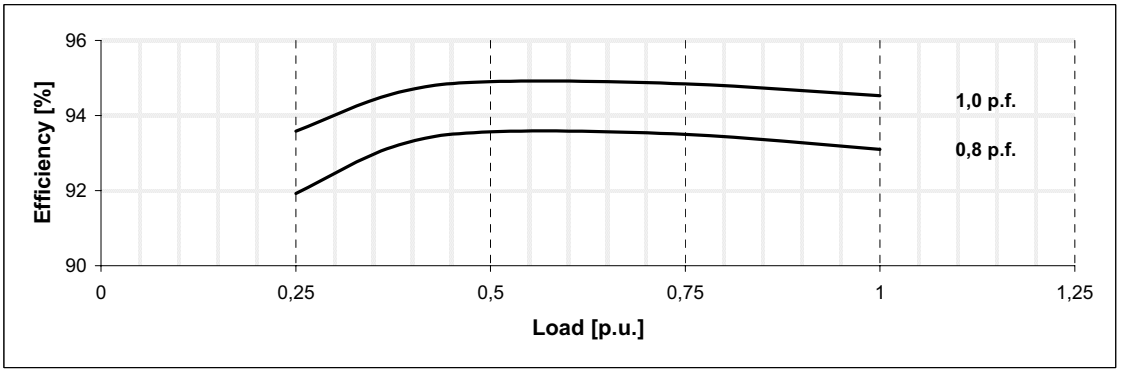
380 V



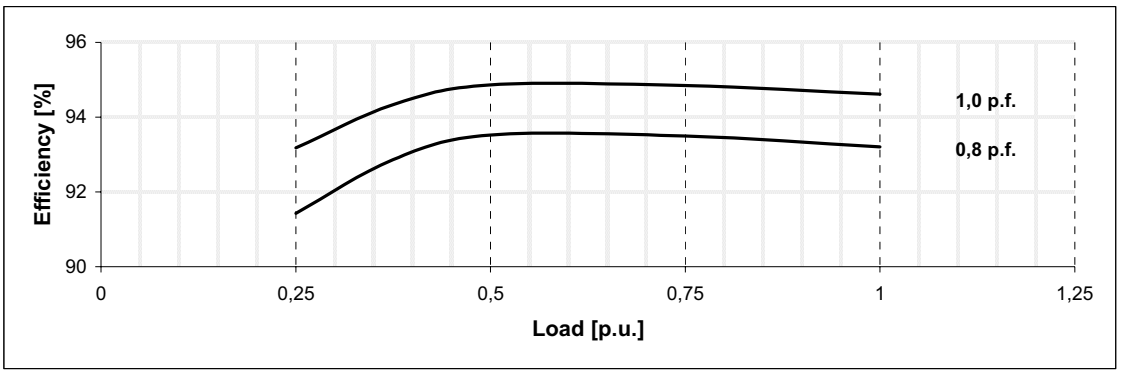
400 V



415 V



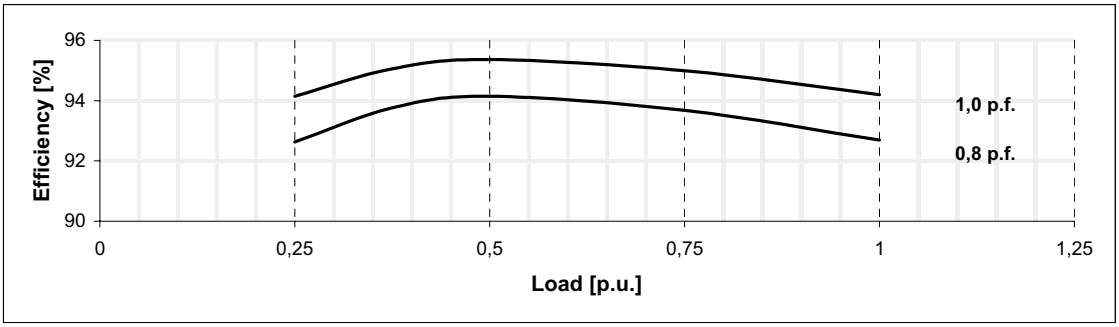
440 V



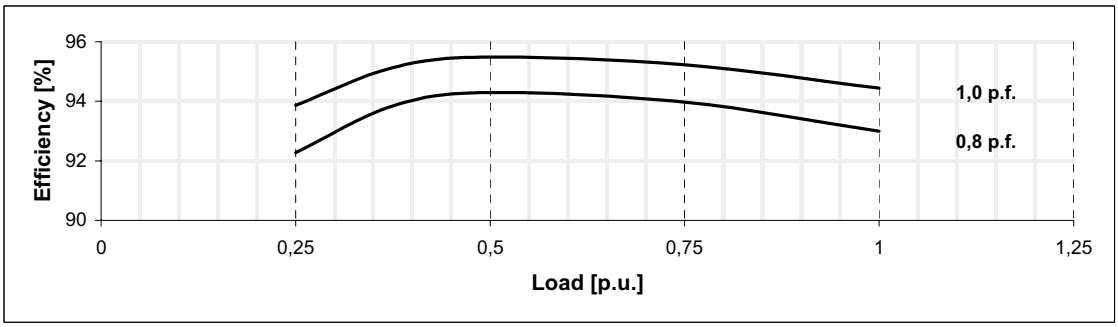
Typical efficiency curves

60 Hz - 1800 min^{-1}

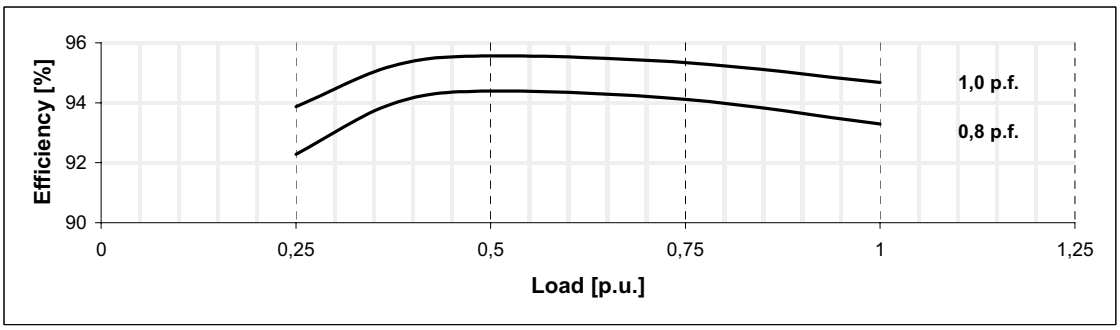
380 V



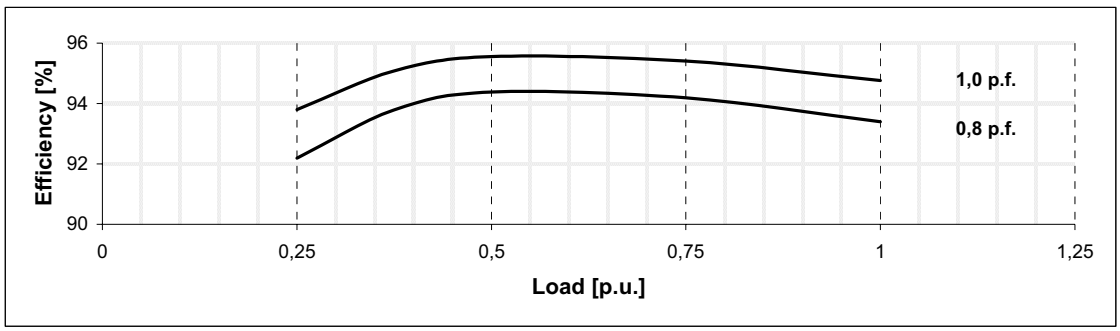
416 V



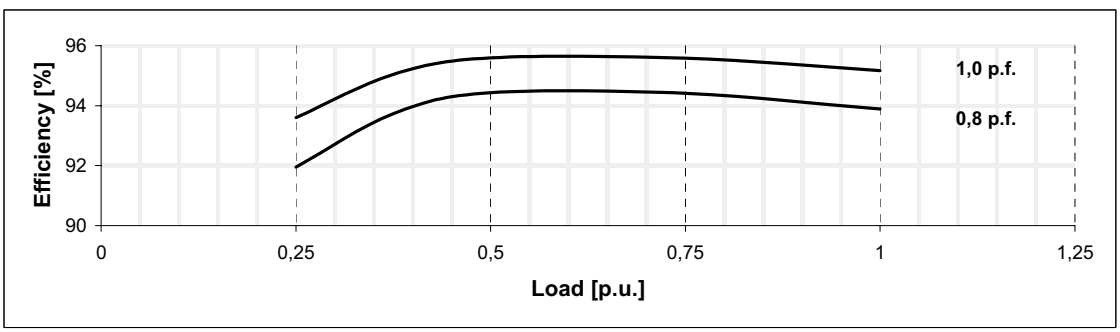
440 V



460 V

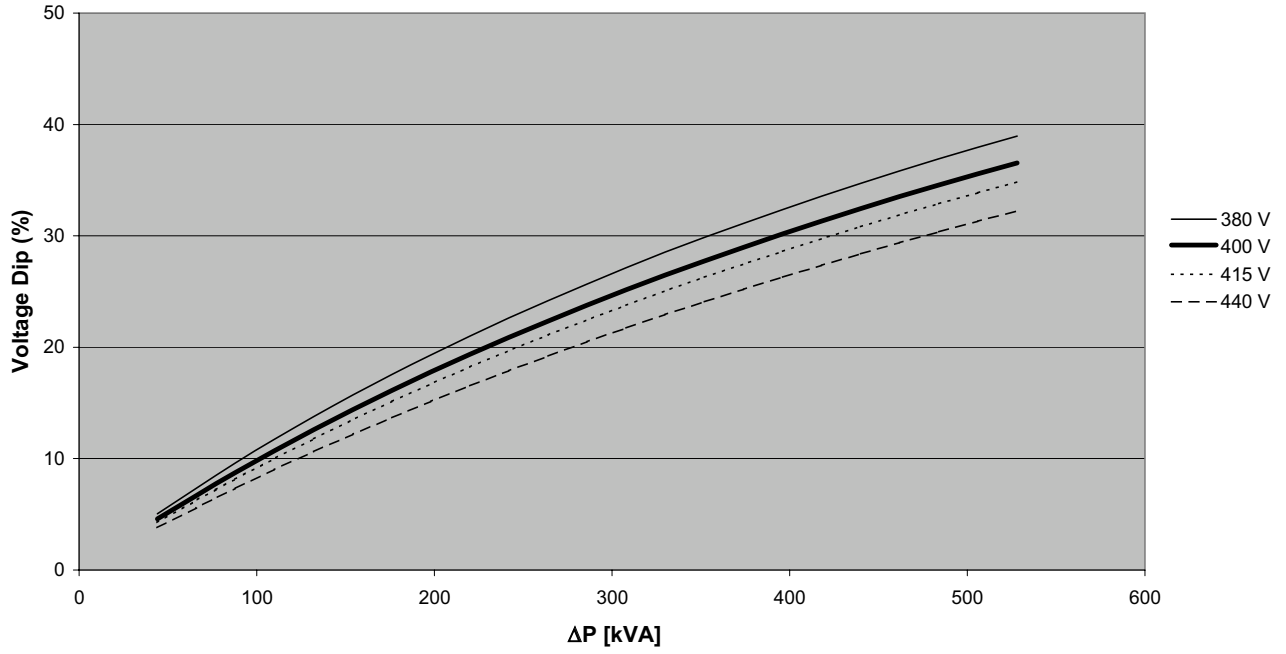


480 V

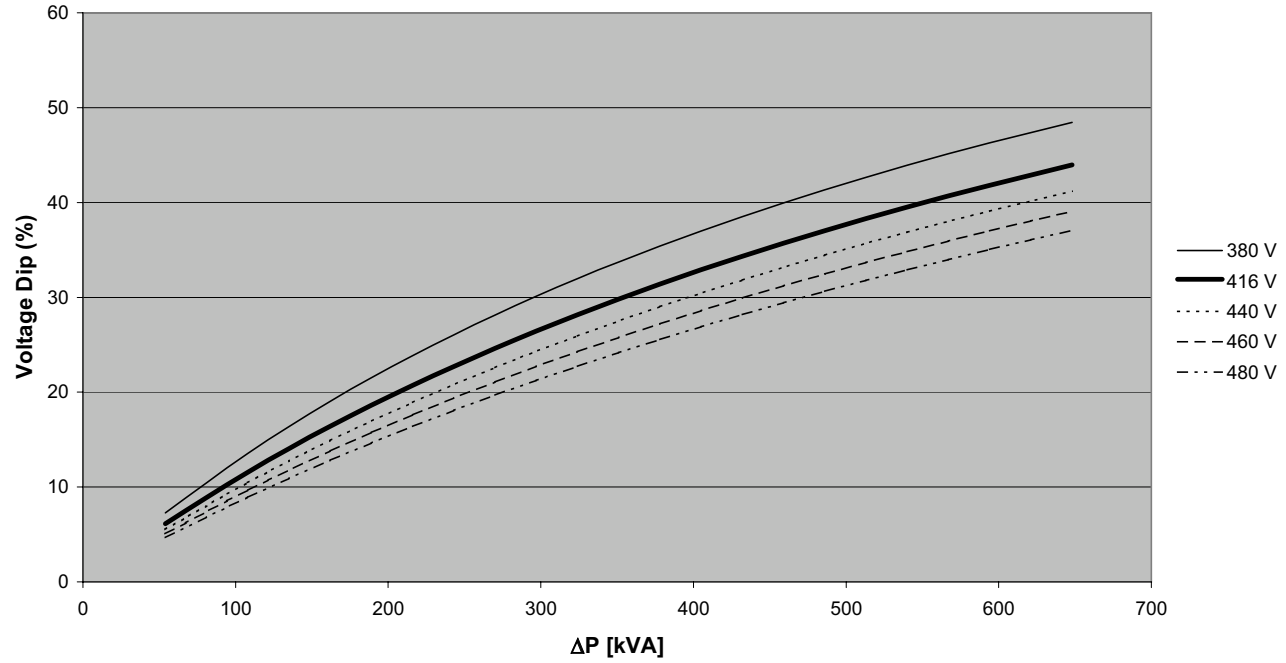


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 250 LB4

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**	**240**	**250**	**235**	**220**	**250**	**260**	**275**	**290**	**300**
			kW	***192***	***200***	***188***	***176***	***200***	***208***	***220***	***232***	***240***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	93,0	93,4	93,3	93,3	93,1	93,6	93,7	93,8	93,9
			3/4	93,4	93,7	93,6	93,5	94,0	94,3	94,4	94,5	94,5
			2/4	93,6	93,7	93,6	93,5	94,3	94,5	94,5	94,5	94,5
EFFICIENCY [%] @ 1 p.f.			**4/4**	94,4	94,8	94,7	94,7	94,5	94,9	95,0	95,1	95,2
			3/4	94,8	95,0	94,9	94,9	95,2	95,5	95,6	95,6	95,6
			2/4	94,9	95,0	94,9	94,9	95,5	95,7	95,6	95,7	95,6
SHORT CIRCUIT RATIO			SCR	0,39	0,42	0,48	0,58	0,32	0,36	0,38	0,40	0,42
REACTANCES [%]												
Direct axis synchronous			Xd	323	304	265	221	304	351	332	320	304
Quadrature axis synchronous			Xq	180	169	148	123	225	195	184	178	169
Direct axis transient			X'd	26,7	25,1	21,9	18,3	33,4	29,0	27,4	26,4	25,1
Direct axis subtransient			X"d	10,2	9,6	8,4	7,0	12,8	11,1	10,5	10,1	9,6
Quadrature axis subtransient			X"q	12,3	11,6	10,1	8,4	15,4	13,4	12,7	12,2	11,6
Negative sequence			X_2	11,3	10,6	9,3	7,7	14,1	12,2	11,6	11,2	10,6
Zero sequence			X_0	2,4	2,3	2,0	1,7	3,0	2,6	2,5	2,4	2,3
TIME CONSTANTS [s]												
Open circuit			T'do	1,25								
Transient			T'd	0,1								
Subtransient			T"d	0,007								
Armature			T_a	0,009								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6218 2RS C3 / Prelubricated
N-end bearing/Lubrication		6313 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	2,06
Weight [kg]	Refer to B34 construction	710
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,42 / 0,52
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	0,016
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.

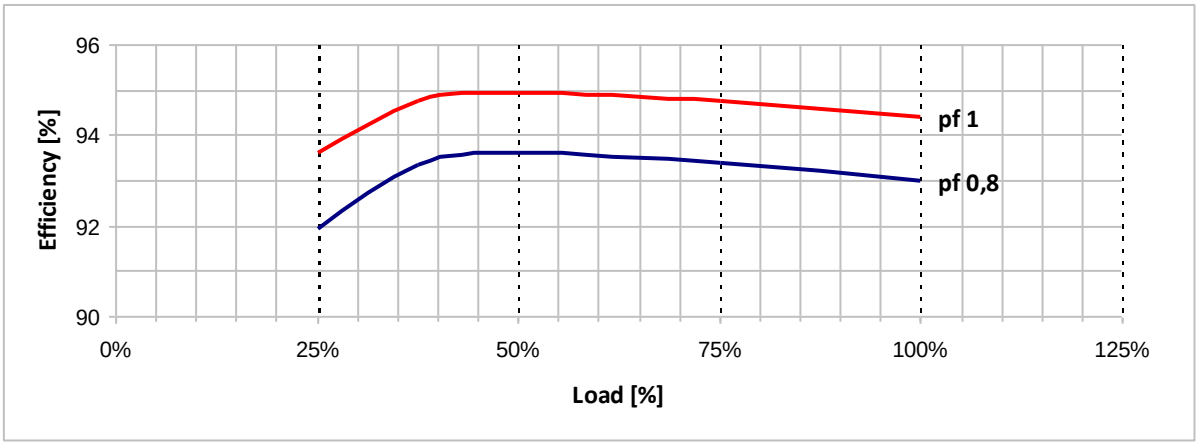
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 LB4

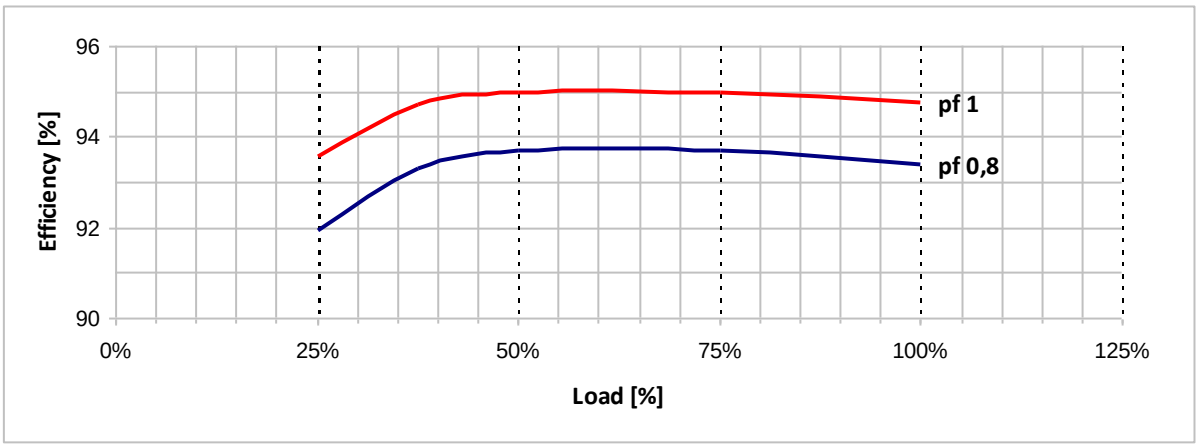
Typical efficiency curves

50 Hz - 1500 rpm

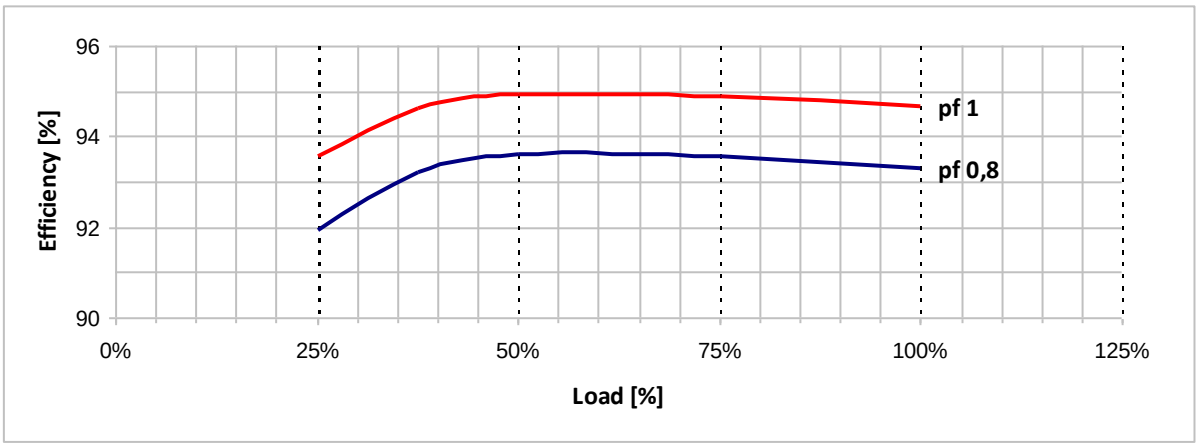
380 V



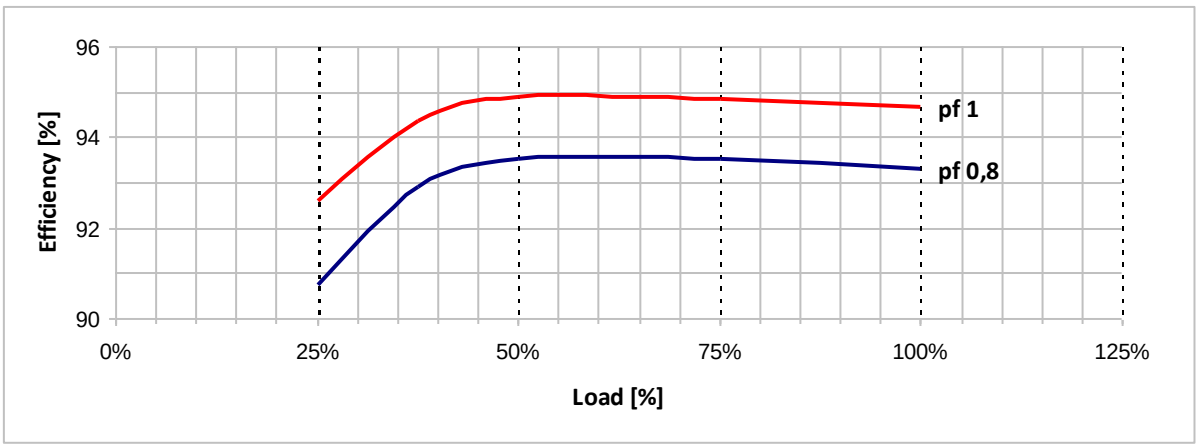
400 V



415 V



440 V



MarelliGenerators®

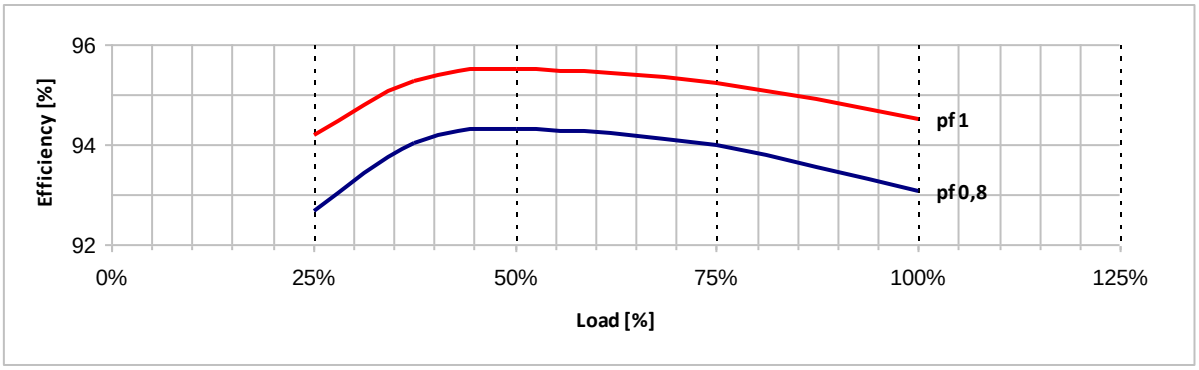
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 LB4

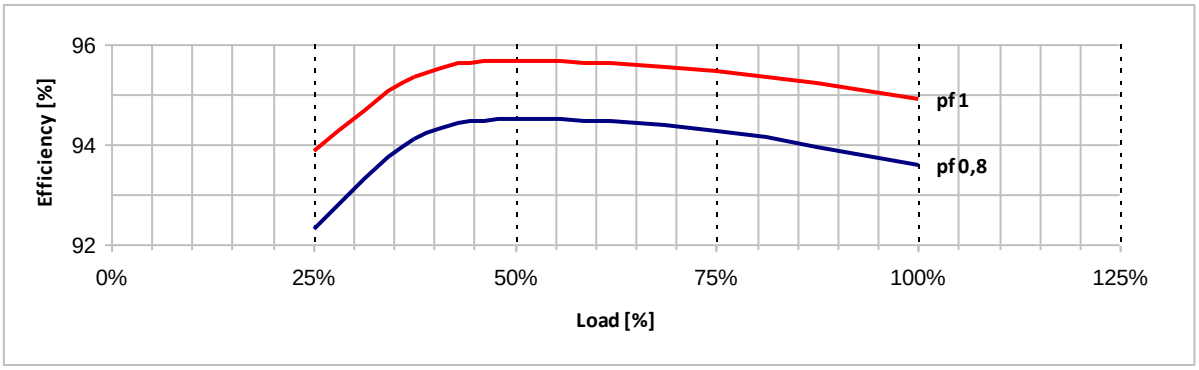
Typical efficiency curves

60 Hz - 1800 rpm

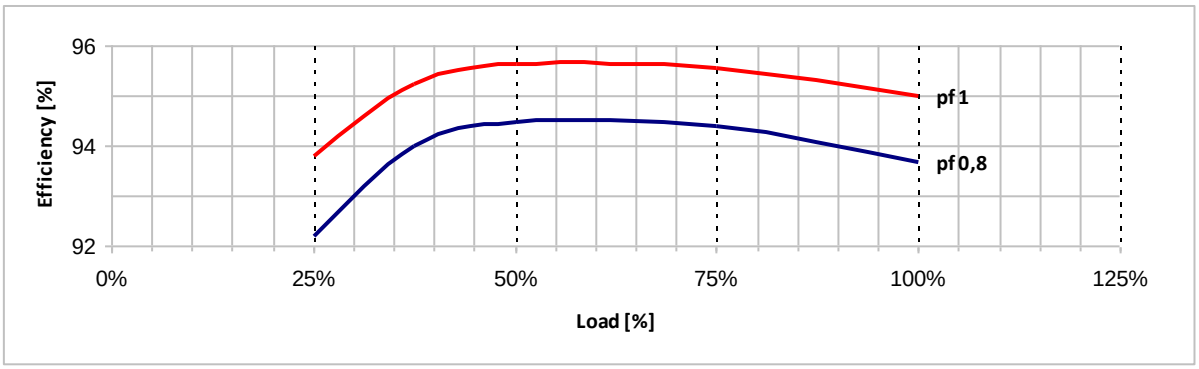
380 V



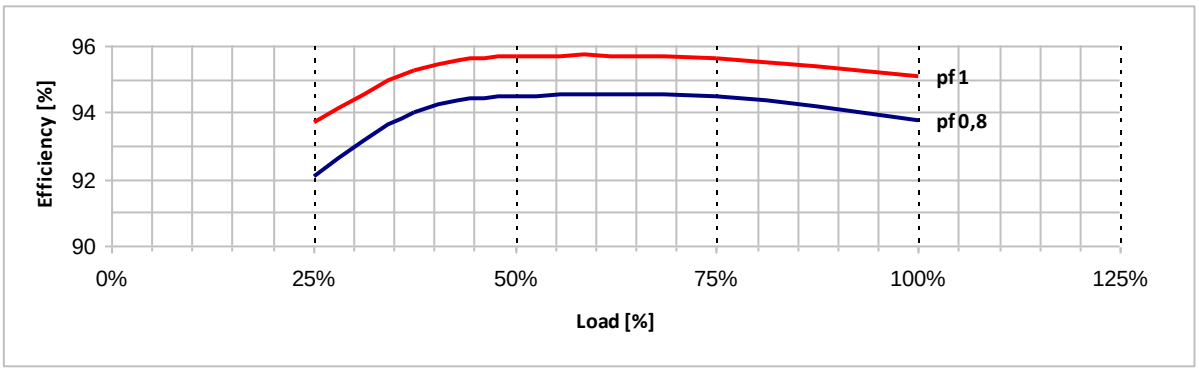
416 V



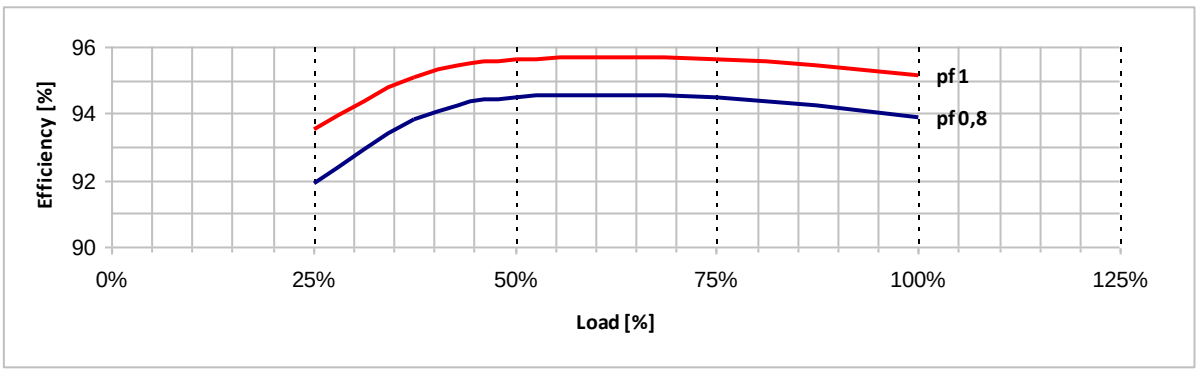
440 V



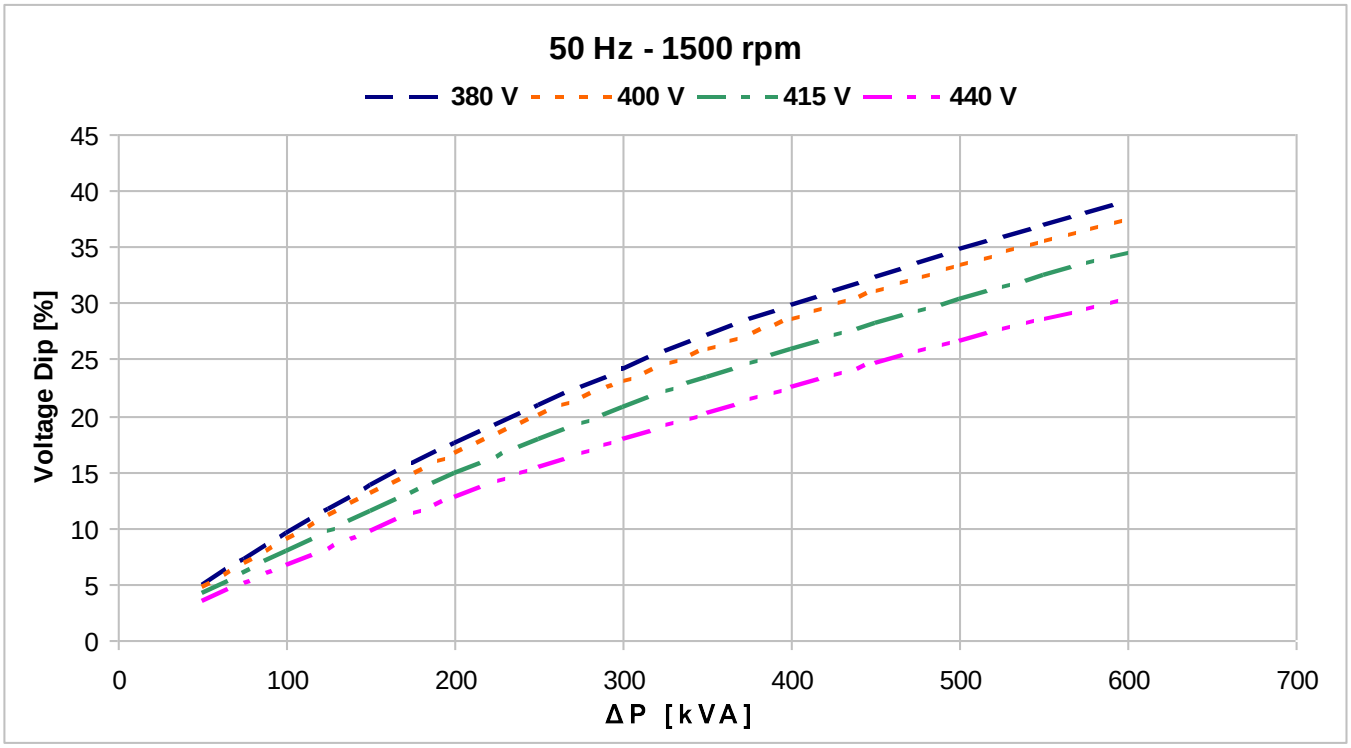
460 V

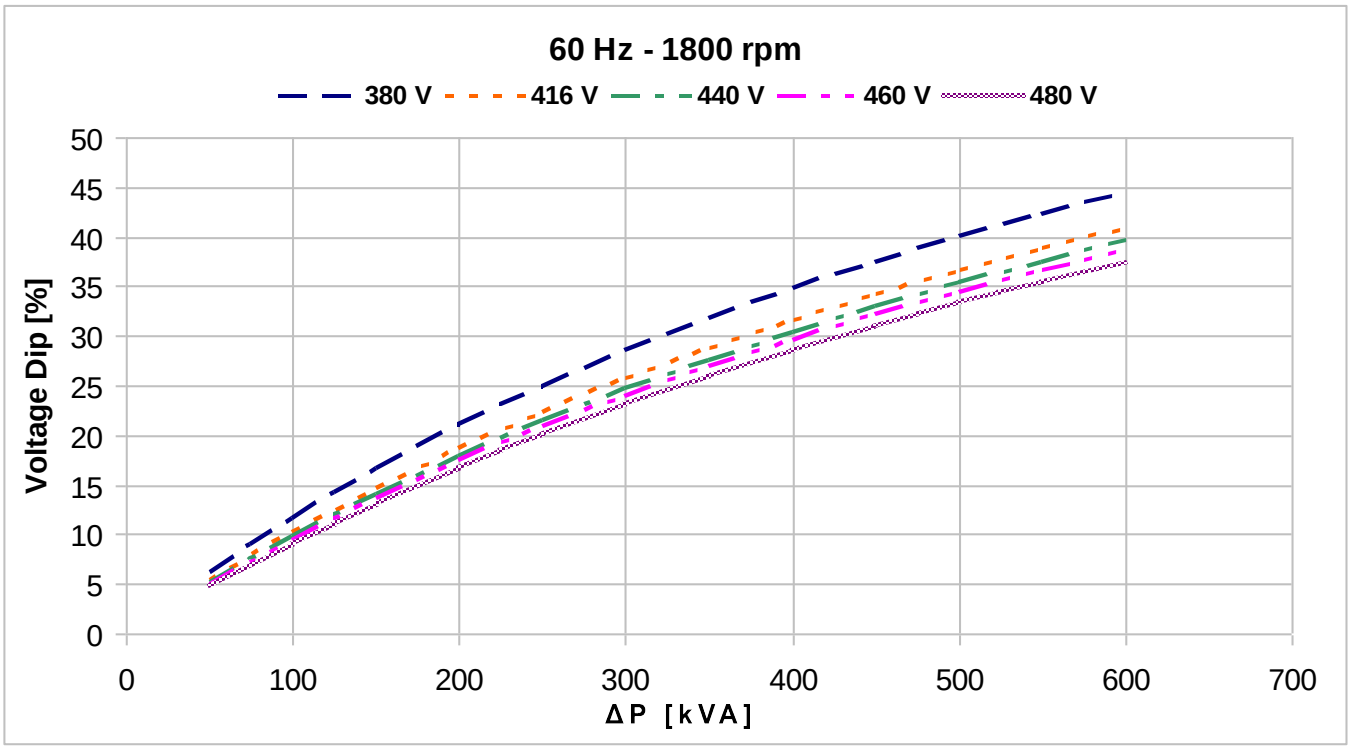


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MA4

CONTINUOUS DUTY

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

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

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**	**165**	**165**	**165**	**165**	**170**	**175**	**185**	**195**	**205**
		kW	***132***	***132***	***132***	***132***	***136***	***140***	***148***	***156***	***164***
EFFICIENCY [%] @ 0,8 p.f.		**4/4**	92,5	92,9	92,8	92,7	91,7	92,2	92,4	92,6	93,6
		3/4	93,0	93,2	93,1	93,0	92,7	93,1	93,1	93,3	93,8
		2/4	93,2	93,1	93,0	92,8	93,1	93,2	93,3	93,4	93,4
EFFICIENCY [%] @ 1 p.f.		**4/4**	94,0	94,4	94,3	94,2	93,4	93,8	94,0	94,1	94,9
		3/4	94,4	94,6	94,5	94,5	94,2	94,5	94,6	94,7	95,1
		2/4	94,6	94,5	94,5	94,3	94,5	94,6	94,7	94,8	94,8
SHORT CIRCUIT RATIO		SCR	0,42	0,47	0,51	0,57	0,34	0,40	0,42	0,44	0,45
REACTANCES [%]											
Direct axis synchronous		Xd	361	326	303	269	338	384	362	350	338
Quadrature axis synchronous		Xq	201	181	168	150	248	213	201	194	187
Direct axis transient		X'd	31,7	28,6	26,6	23,6	39,2	33,7	31,8	30,7	29,6
Direct axis subtransient		X"d	13,3	12,0	11,1	9,9	16,4	14,1	13,3	12,9	12,4
Quadrature axis subtransient		X"q	15,3	13,8	12,8	11,4	18,9	16,2	15,3	14,8	14,3
Negative sequence		X_2	14,3	12,9	12,0	10,7	17,7	15,2	14,3	13,8	13,4
Zero sequence		X_0	3,0	2,8	2,6	2,3	3,8	3,2	3,1	2,9	2,8
TIME CONSTANTS [s]											
Open circuit		T'do	0,95								
Transient		T'd	0,09								
Subtransient		T"d	0,011								
Armature		T_a	0,012								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6218 2RS C3 / Prelubricated
N-end bearing/Lubrication		6313 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	1,41
Weight [kg]	Refer to B34 construction	530
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,42 / 0,52
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	0,032
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.

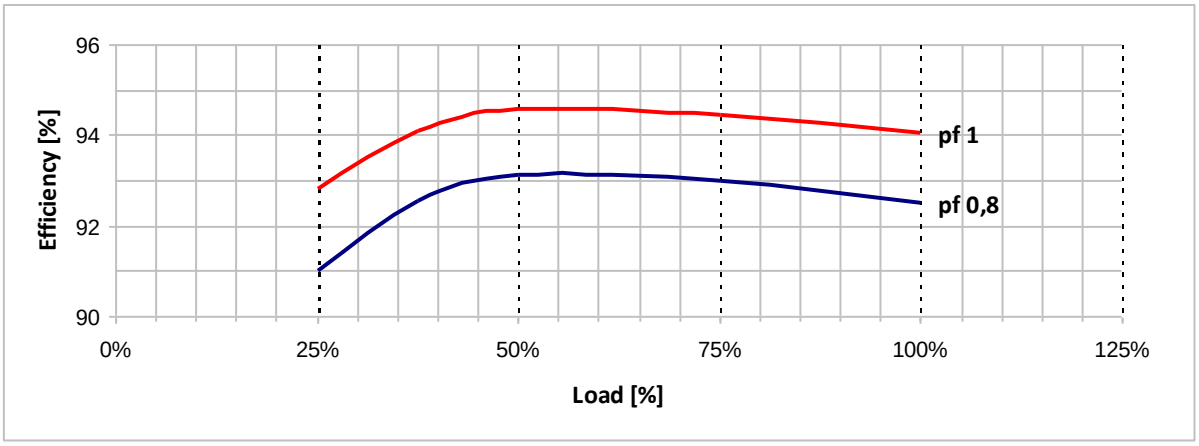
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MA4

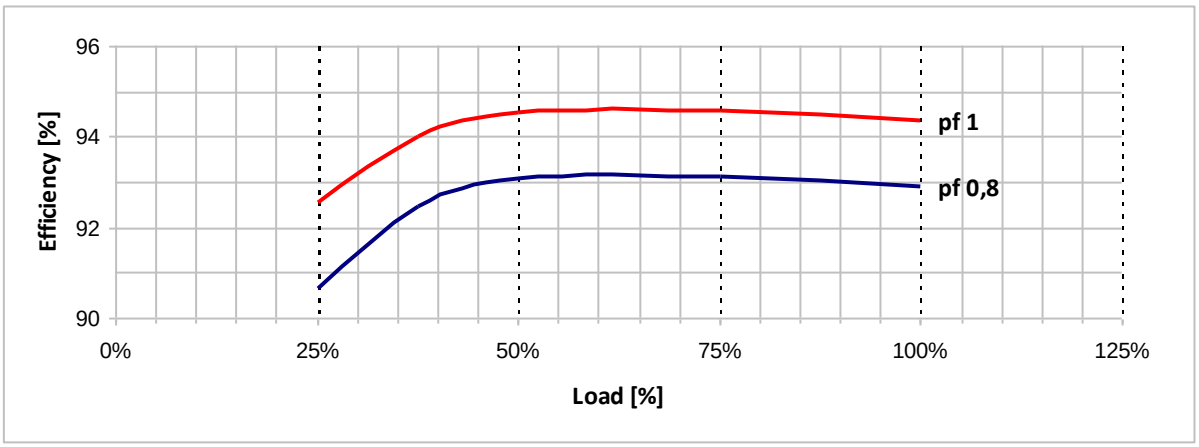
Typical efficiency curves

50 Hz - 1500 rpm

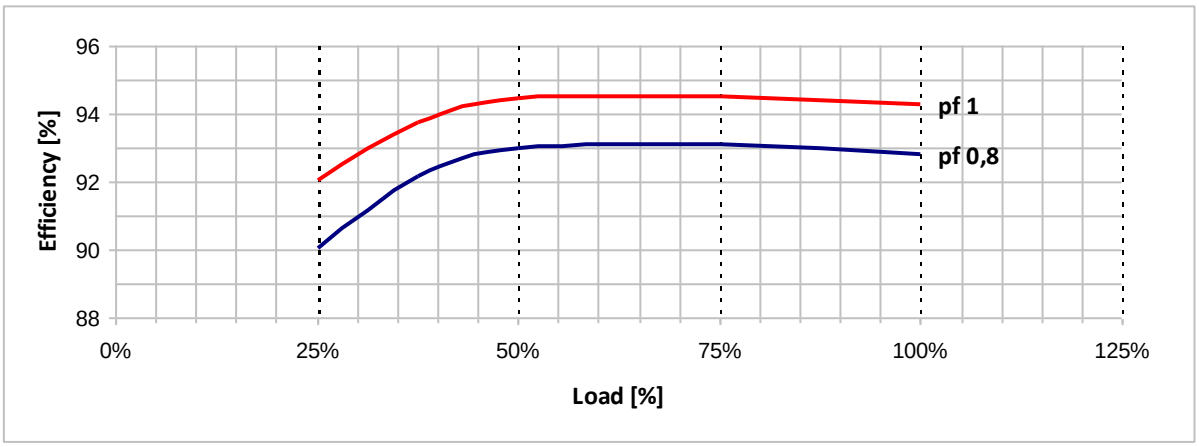
380 V



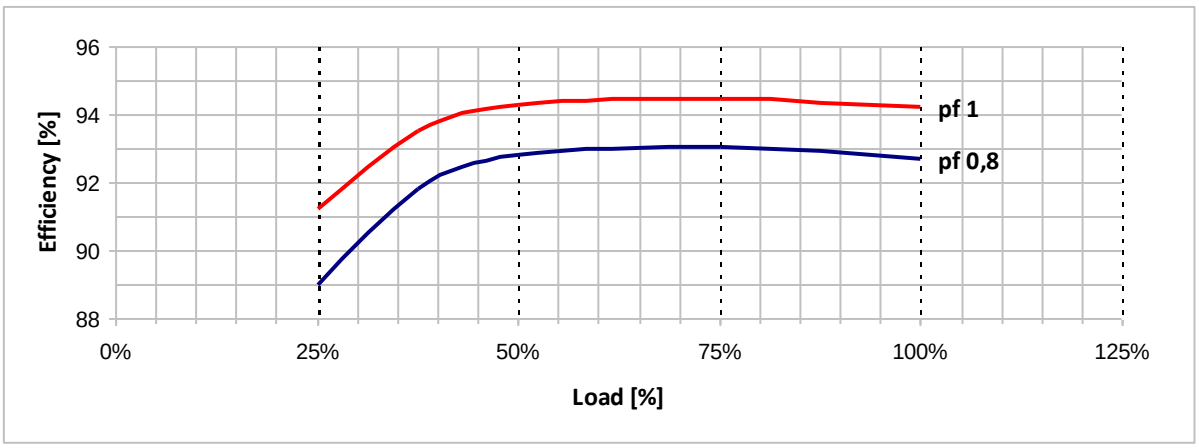
400 V



415 V



440 V



MarelliGenerators®

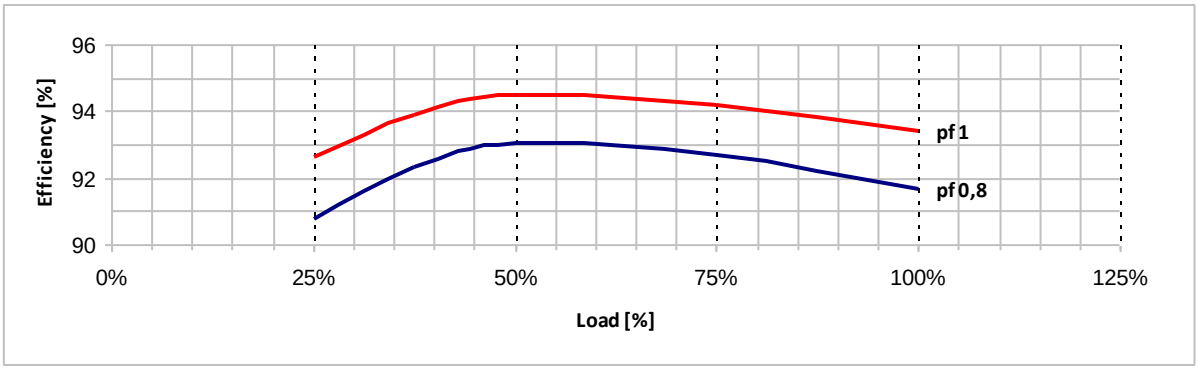
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MA4

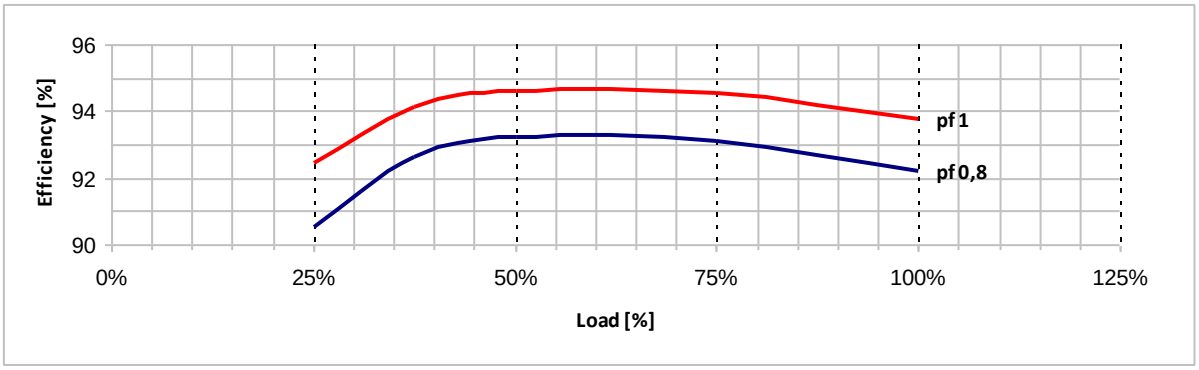
Typical efficiency curves

60 Hz - 1800 rpm

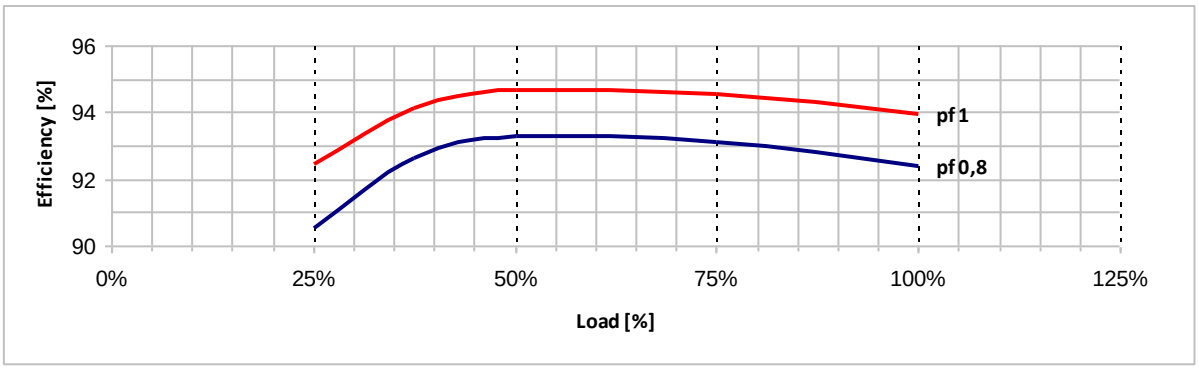
380 V



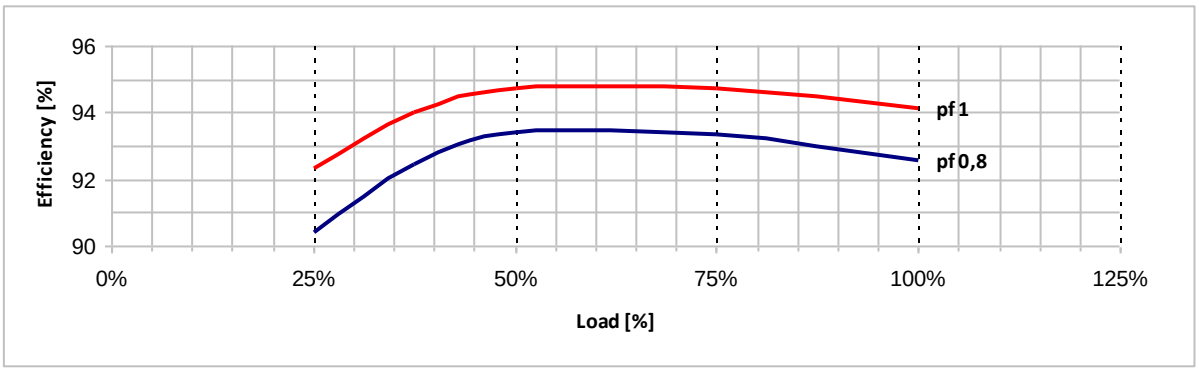
416 V



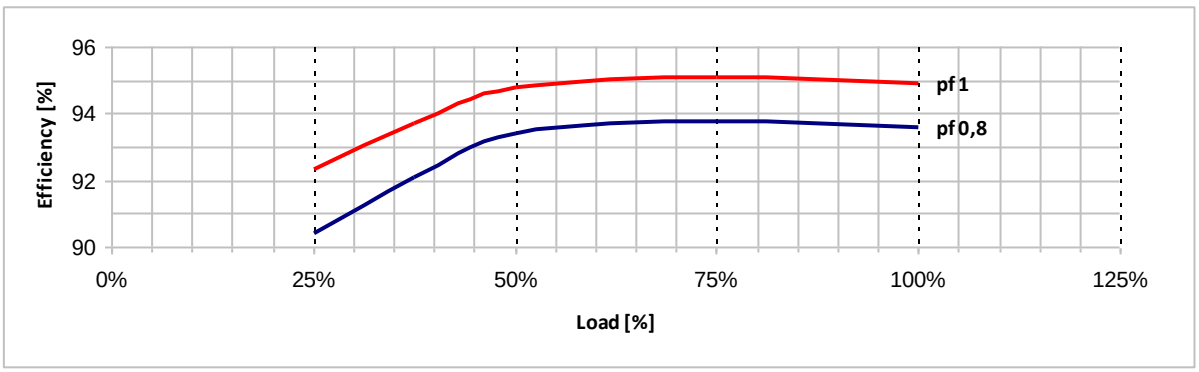
440 V



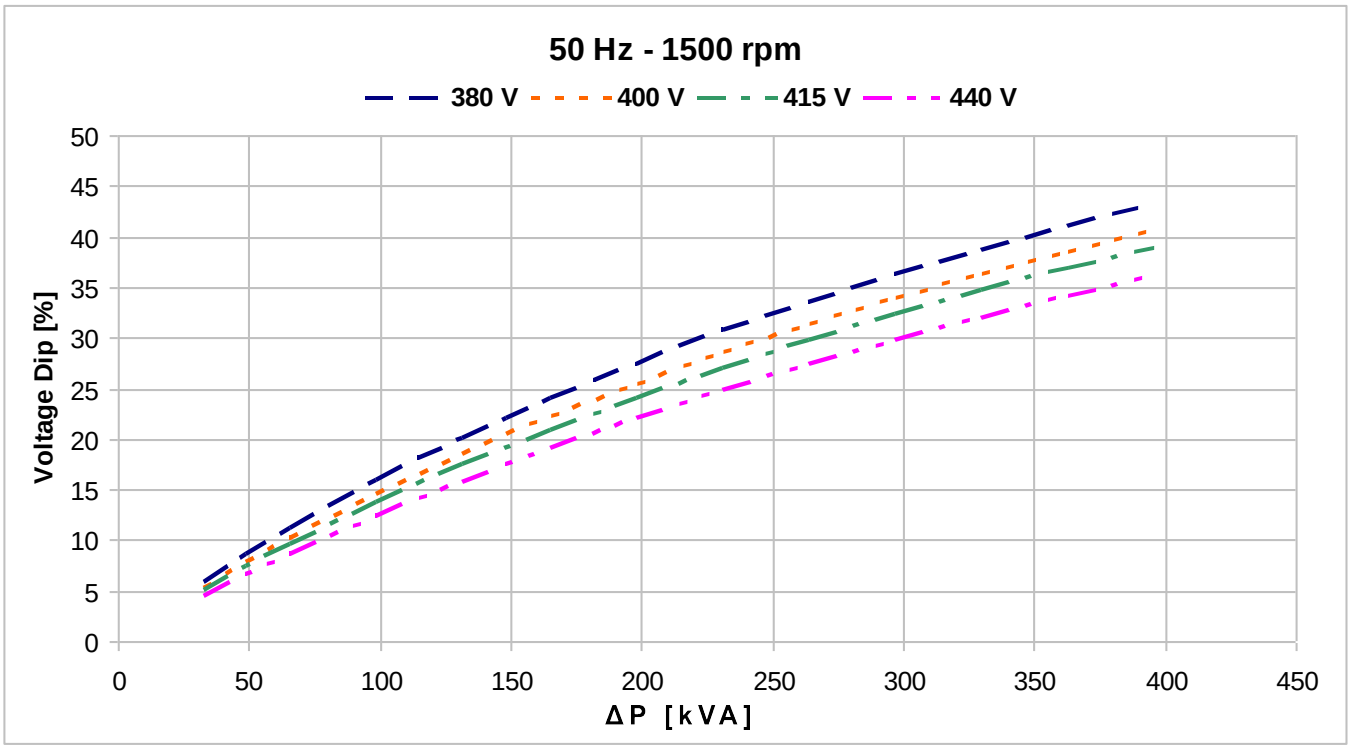
460 V

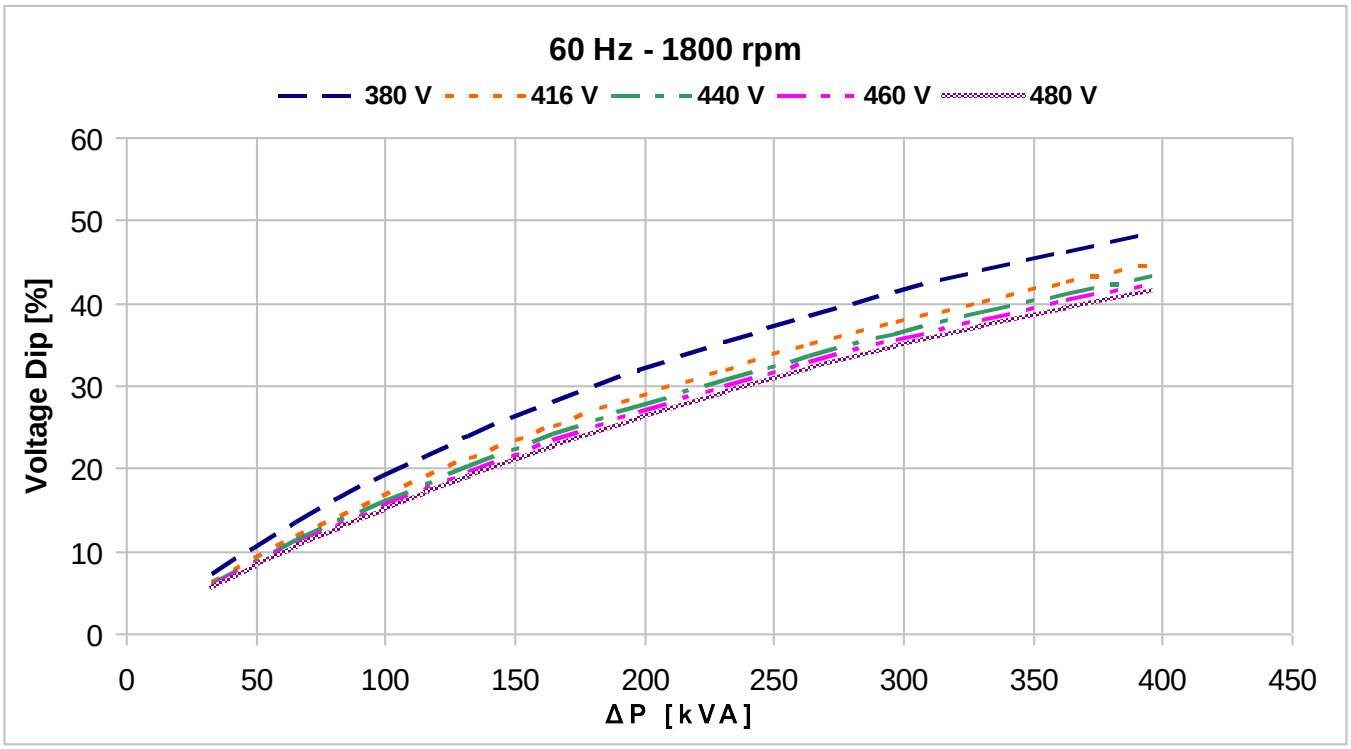


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 250 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**	**185**	**185**	**185**	**185**	**195**	**205**	**215**	**220**	**230**
			kW	***148***	***148***	***148***	***148***	***156***	***164***	***172***	***176***	***184***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	92,6	93,0	92,9	92,9	92,0	92,4	92,6	92,8	93,6
			3/4	93,1	93,2	93,1	93,1	93,0	93,4	93,4	93,6	93,9
			2/4	93,3	93,2	93,1	93,0	93,5	93,7	93,7	93,6	93,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	94,1	94,4	94,4	94,4	93,6	94,0	94,1	94,3	94,9
			3/4	94,5	94,6	94,6	94,5	94,4	94,8	94,8	94,9	95,2
			2/4	94,7	94,6	94,5	94,5	94,8	95,0	95,0	95,0	95,1
SHORT CIRCUIT RATIO			SCR	0,41	0,45	0,48	0,54	0,32	0,37	0,39	0,42	0,43
REACTANCES [%]												
Direct axis synchronous			Xd	372	336	312	278	348	413	387	363	348
Quadrature axis synchronous			Xq	207	187	174	155	262	230	216	202	194
Direct axis transient			X'd	31,8	28,7	26,7	23,7	40,2	35,3	33,1	31,0	29,7
Direct axis subtransient			X"d	12,7	11,5	10,7	9,5	16,1	14,1	13,3	12,4	11,9
Quadrature axis subtransient			X"q	15,1	13,6	12,6	11,2	19,1	16,7	15,7	14,7	14,1
Negative sequence			X_2	14,0	12,6	11,7	10,4	17,7	15,5	14,5	13,6	13,1
Zero sequence			X_0	3,0	2,7	2,5	2,2	3,8	3,3	3,1	2,9	2,8
TIME CONSTANTS [s]												
Open circuit			T'do	0,95								
Transient			T'd	0,09								
Subtransient			T"d	0,011								
Armature			T_a	0,013								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6218 2RS C3 / Prelubricated
N-end bearing/Lubrication		6313 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	1,66
Weight [kg]	Refer to B34 construction	590
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,42 / 0,52
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	0,027
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.

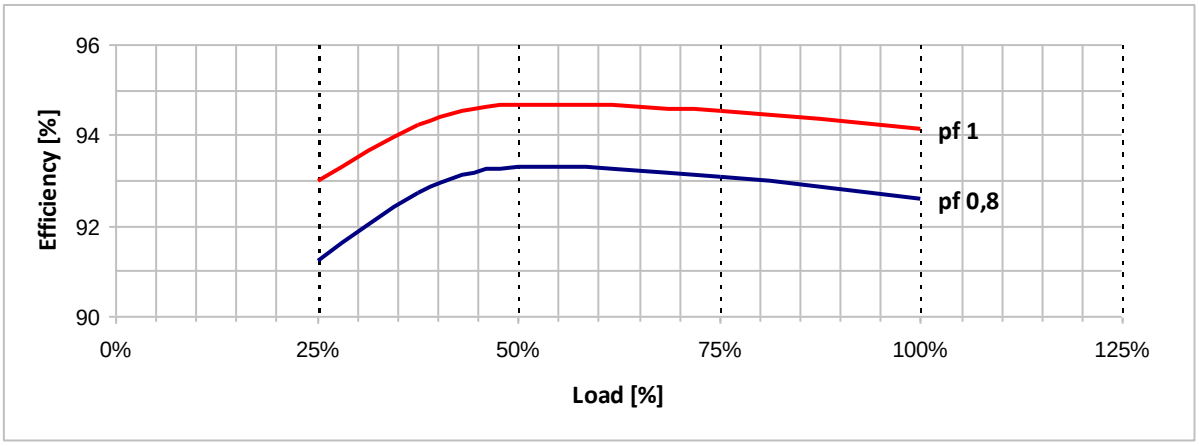
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MB4

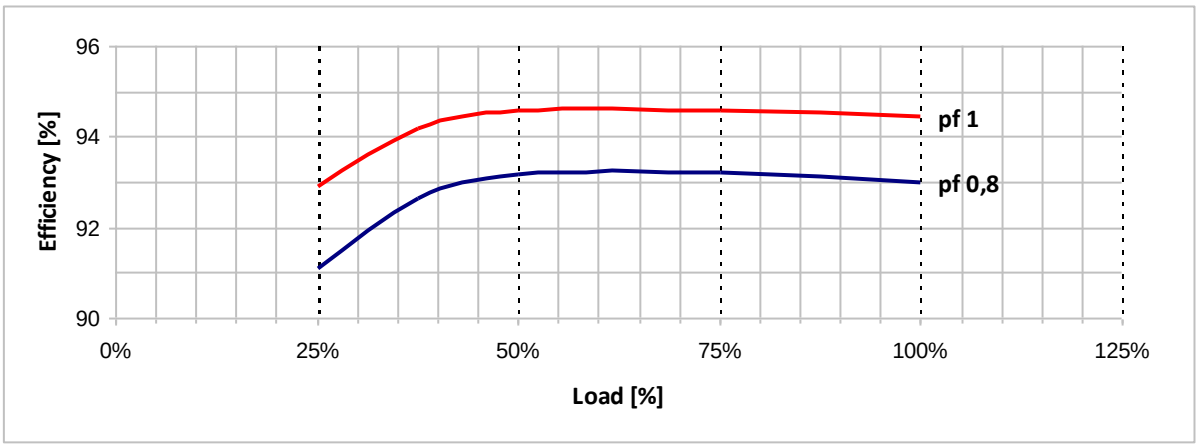
Typical efficiency curves

50 Hz - 1500 rpm

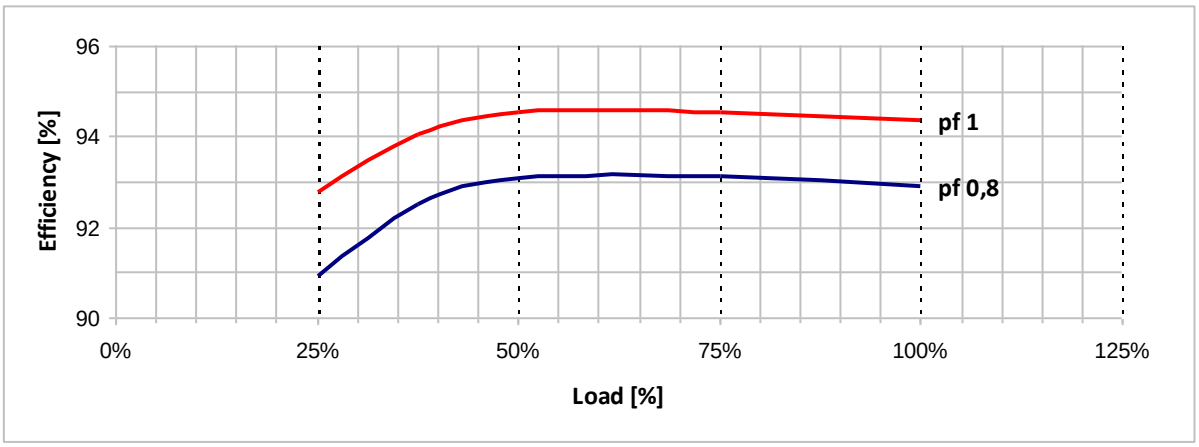
380 V



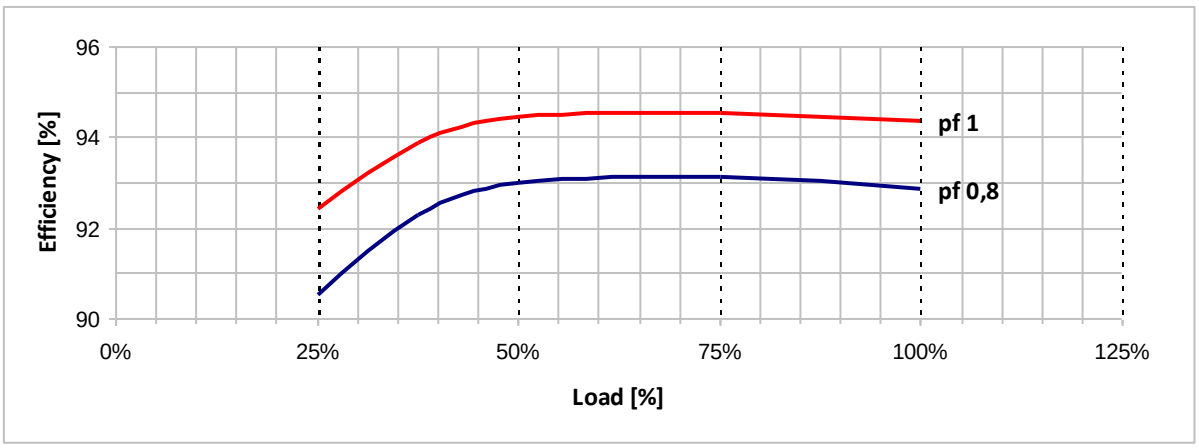
400 V



415 V



440 V



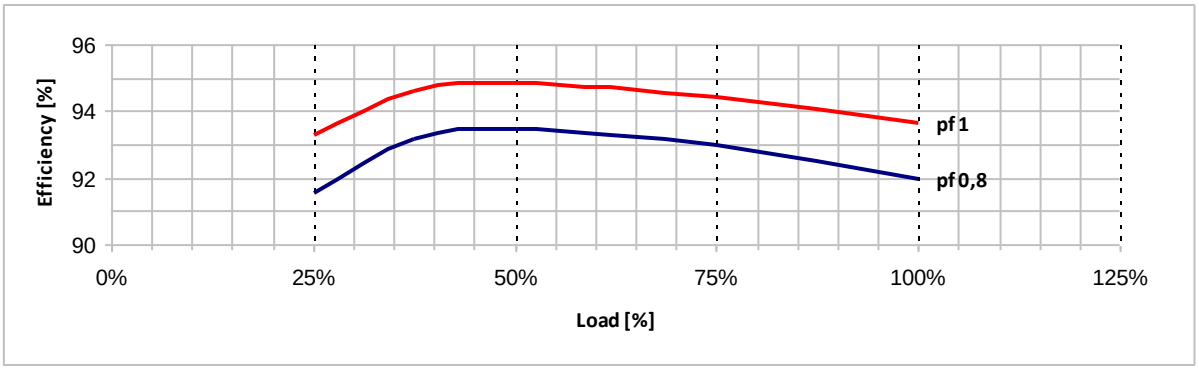
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MB4

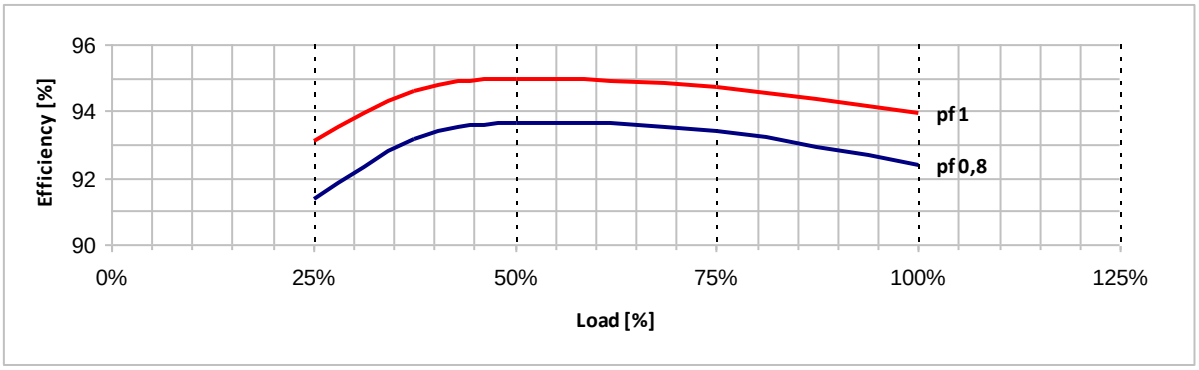
Typical efficiency curves

60 Hz - 1800 rpm

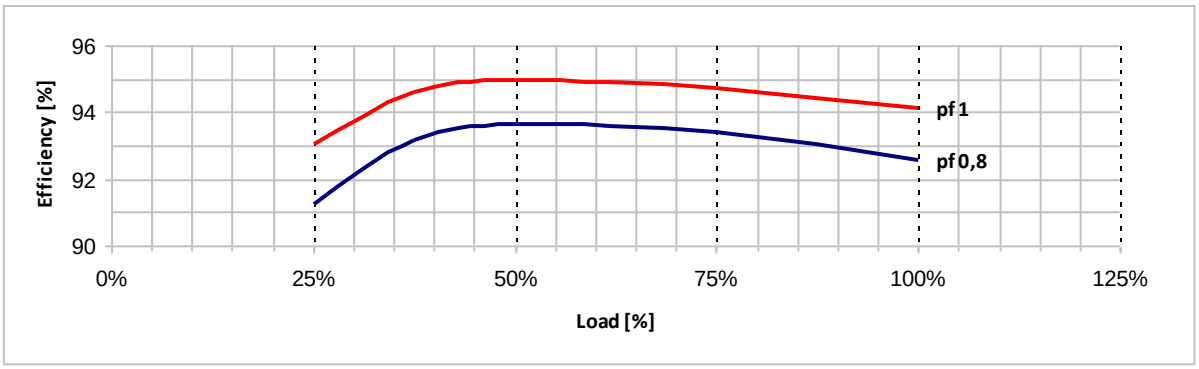
380 V



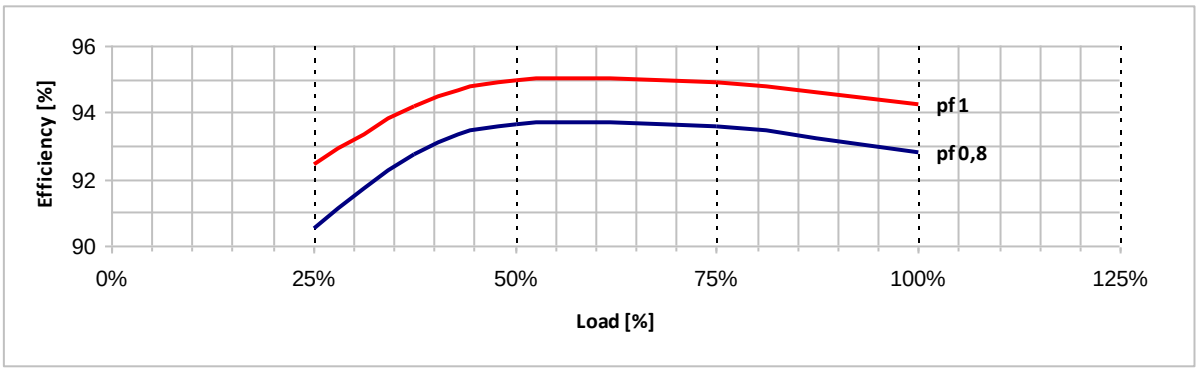
416 V



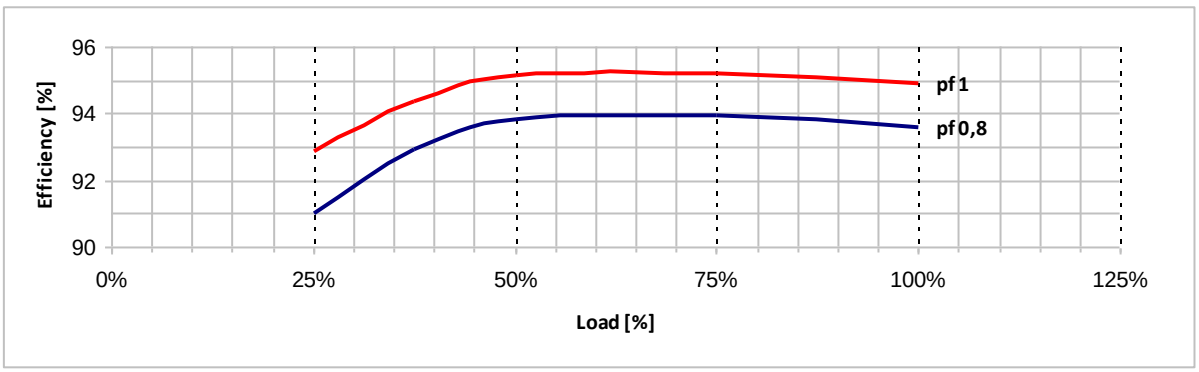
440 V



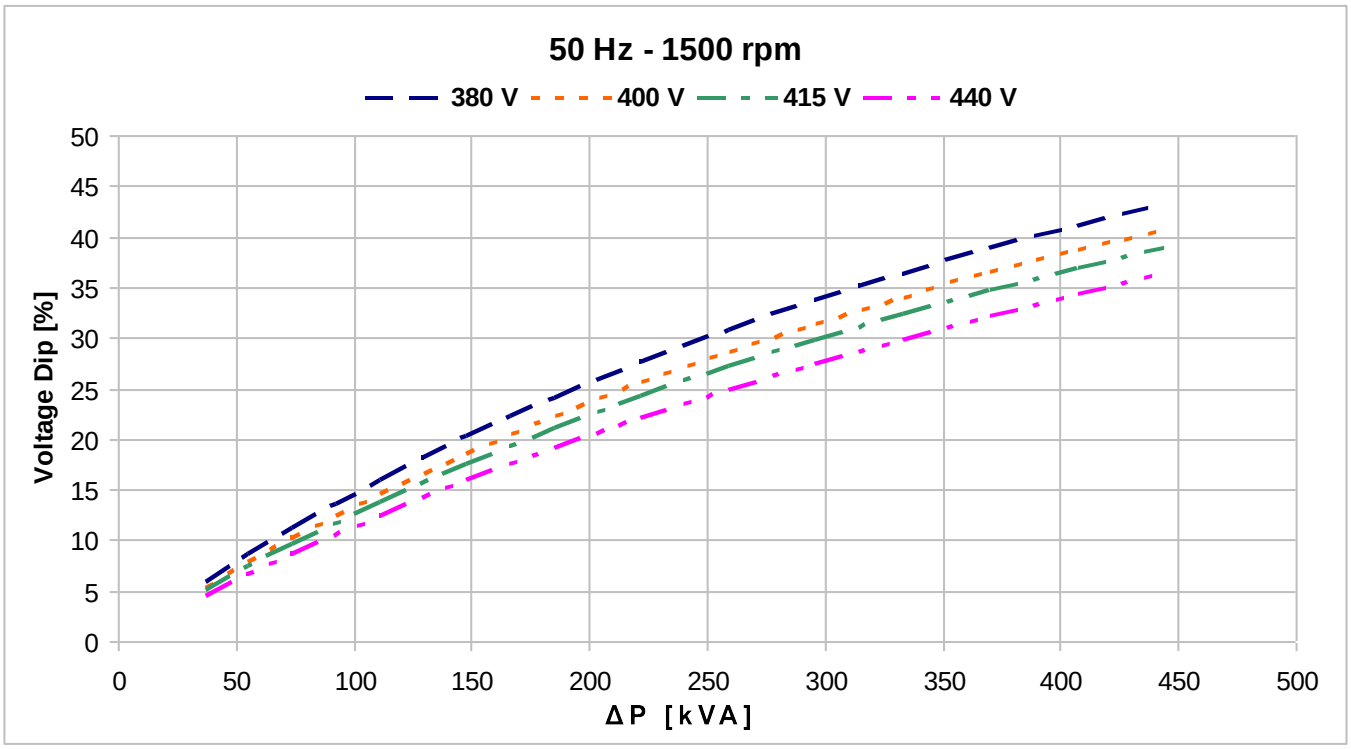
460 V

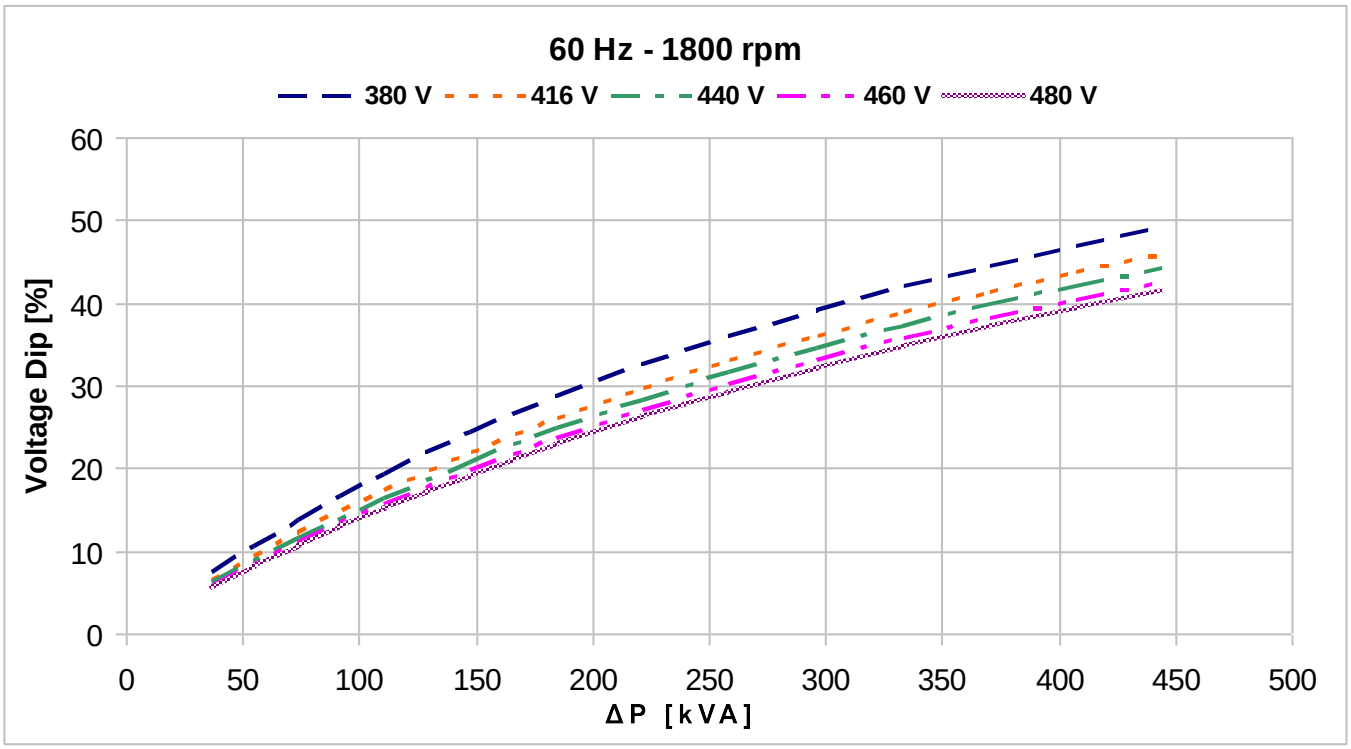


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MA4

CONTINUOUS DUTY

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

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

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**	**410**	**410**	**410**	**410**	**420**	**430**	**470**	**490**	**500**
			kW	***328***	***328***	***328***	***328***	***336***	***344***	***376***	***392***	***400***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	93,4	93,7	93,6	93,7	93,3	93,7	93,9	94,1	94,2
			3/4	94,0	94,1	94,1	94,2	93,8	94,0	94,2	94,3	94,5
			2/4	94,4	94,3	94,3	94,3	94,0	94,2	94,3	94,4	94,5
EFFICIENCY [%] @ 1 p.f.			**4/4**	94,8	95,0	94,9	95,0	94,7	95,0	95,2	95,3	95,4
			3/4	95,3	95,3	95,3	95,4	95,1	95,3	95,4	95,5	95,7
			2/4	95,6	95,5	95,5	95,5	95,3	95,4	95,5	95,6	95,7
SHORT CIRCUIT RATIO			SCR	0,34	0,38	0,41	0,46	0,28	0,33	0,33	0,35	0,37
REACTANCES [%]												
Direct axis synchronous			Xd	443	400	372	331	407	465	455	434	407
Quadrature axis synchronous			Xq	249	225	209	186	306	262	256	244	229
Direct axis transient			X'd	41,0	37,0	34,4	30,6	50,4	43,1	42,1	40,1	37,6
Direct axis subtransient			X"d	18,1	16,3	15,1	13,5	22,2	19,0	18,5	17,7	16,6
Quadrature axis subtransient			X"q	20,7	18,7	17,4	15,5	25,5	21,8	21,3	20,3	19,0
Negative sequence			X_2	19,4	17,5	16,3	14,5	23,8	20,4	19,9	19,0	17,8
Zero sequence			X_0	4,3	3,9	3,6	3,2	5,3	4,5	4,4	4,2	4,0
TIME CONSTANTS [s]												
Open circuit			T'do	1,75								
Transient			T'd	0,16								
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	4,8
Weight [kg]	Refer to B34 construction	1060
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	0,01
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.

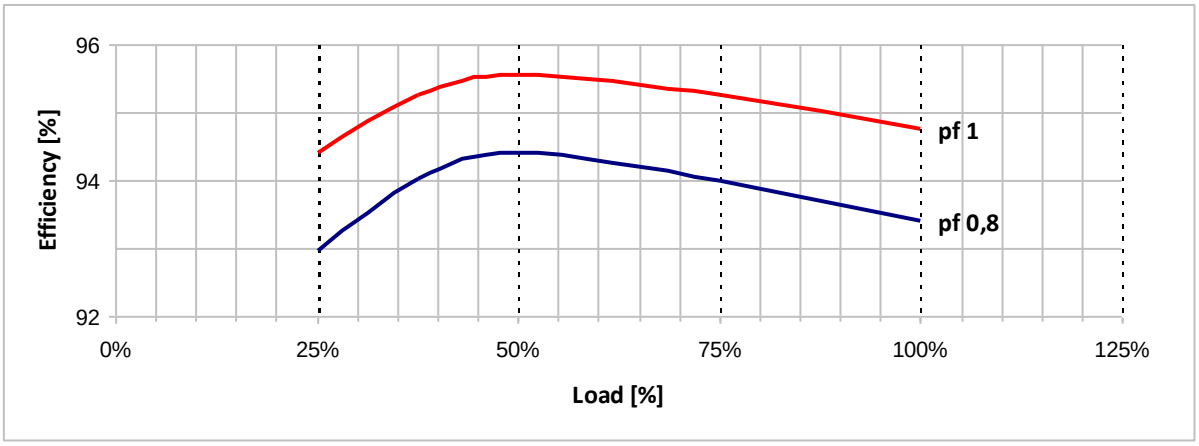
THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MA4

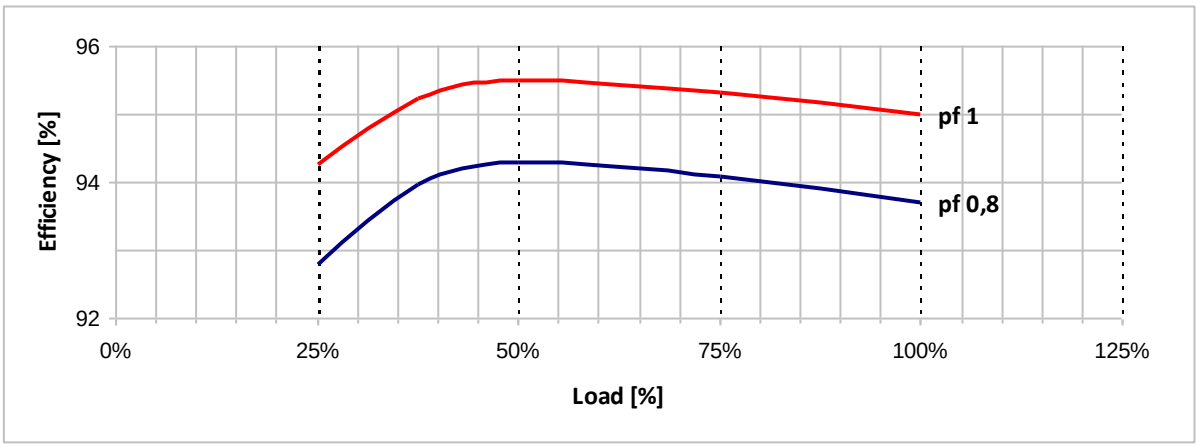
Typical efficiency curves

50 Hz - 1500 rpm

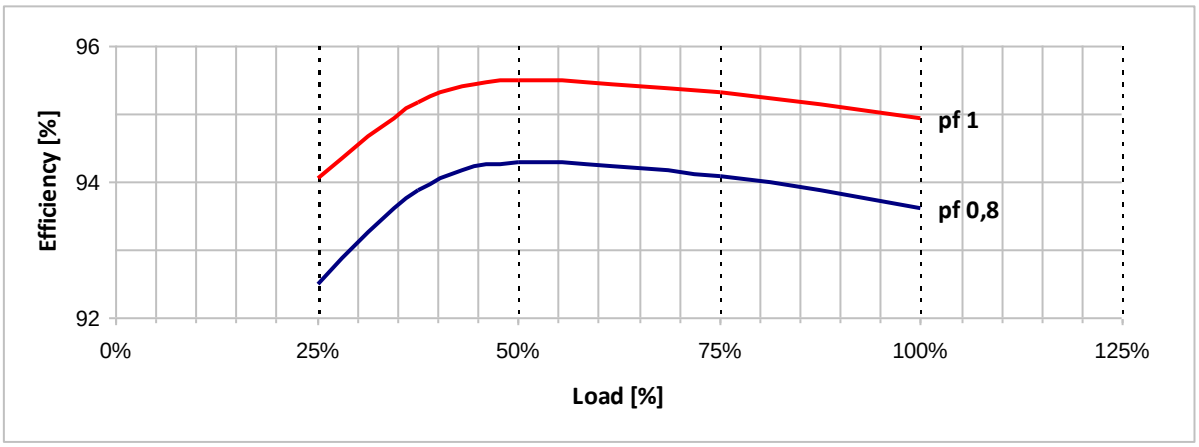
380 V



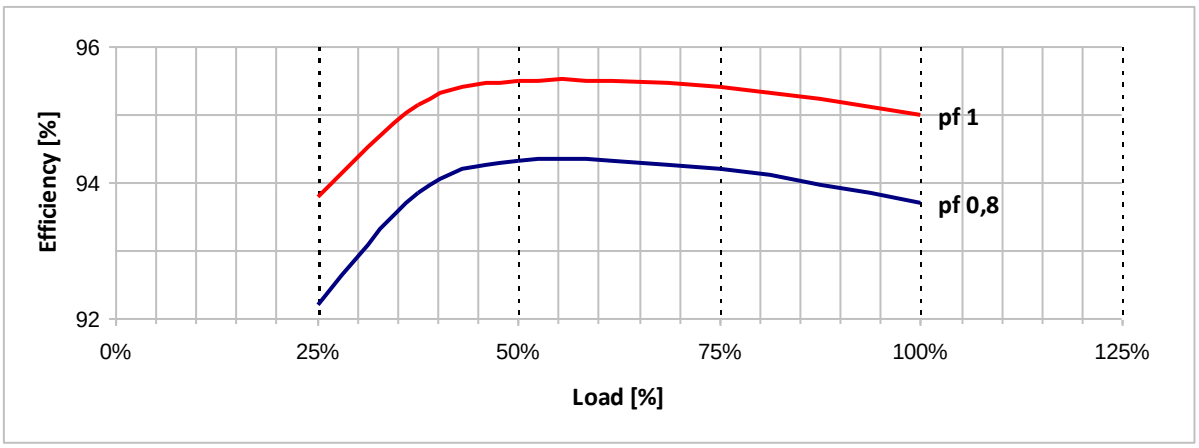
400 V



415 V



440 V



MarelliGenerators®

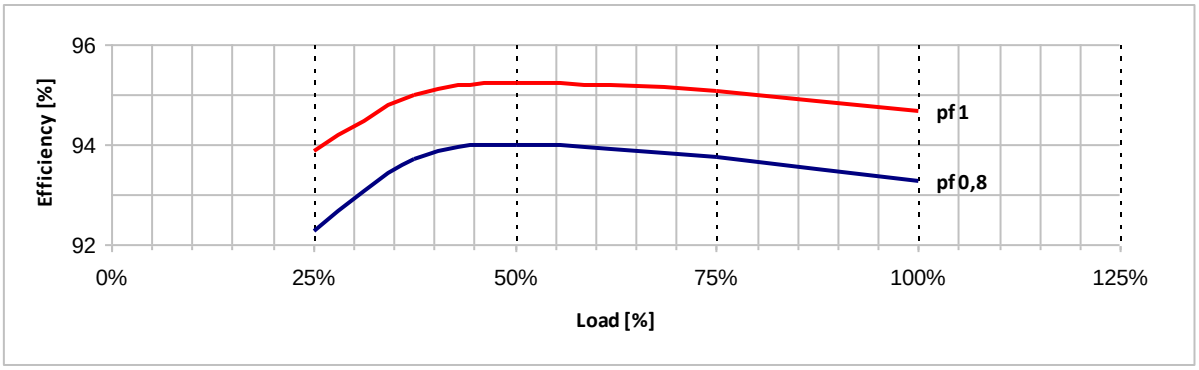
THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MA4

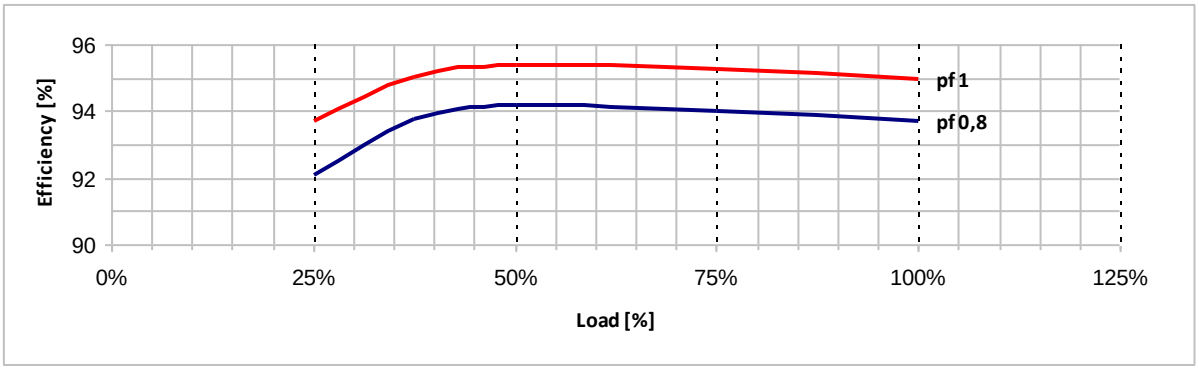
Typical efficiency curves

60 Hz - 1800 rpm

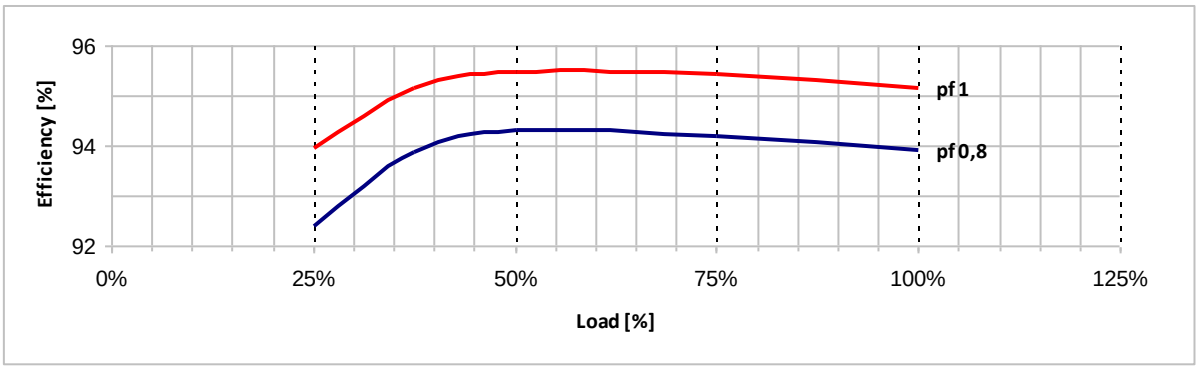
380 V



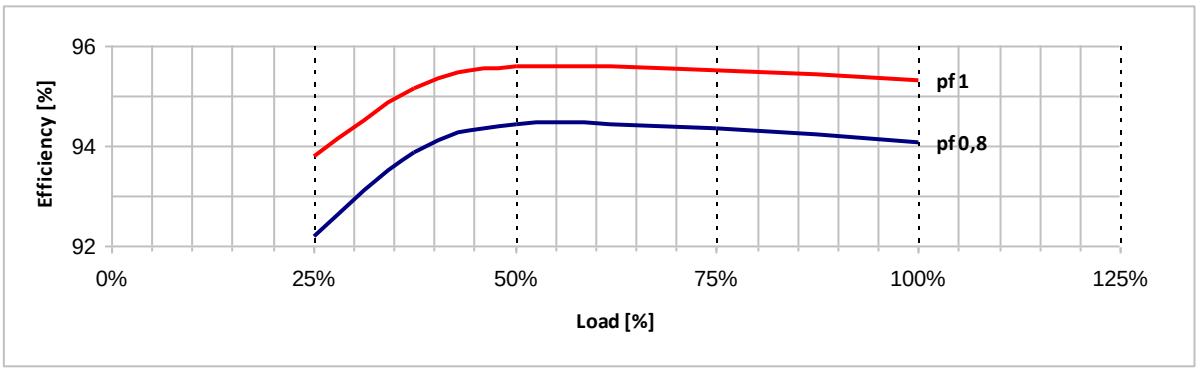
416 V



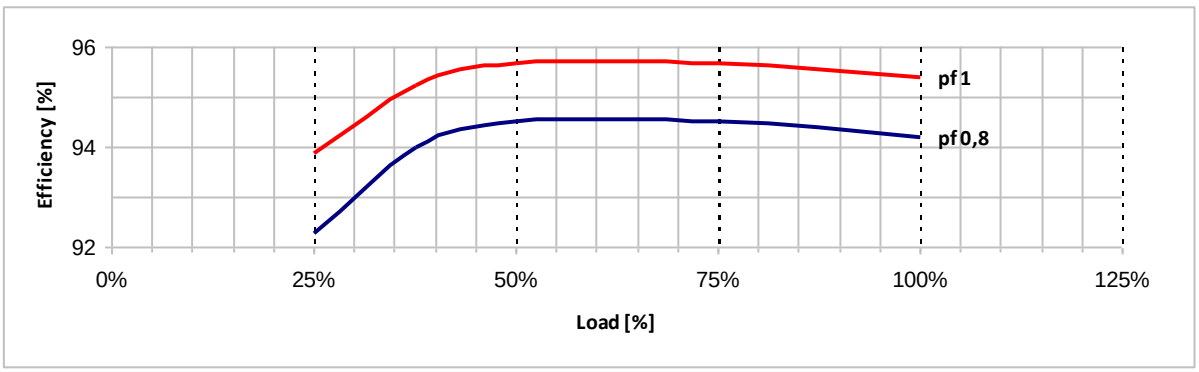
440 V



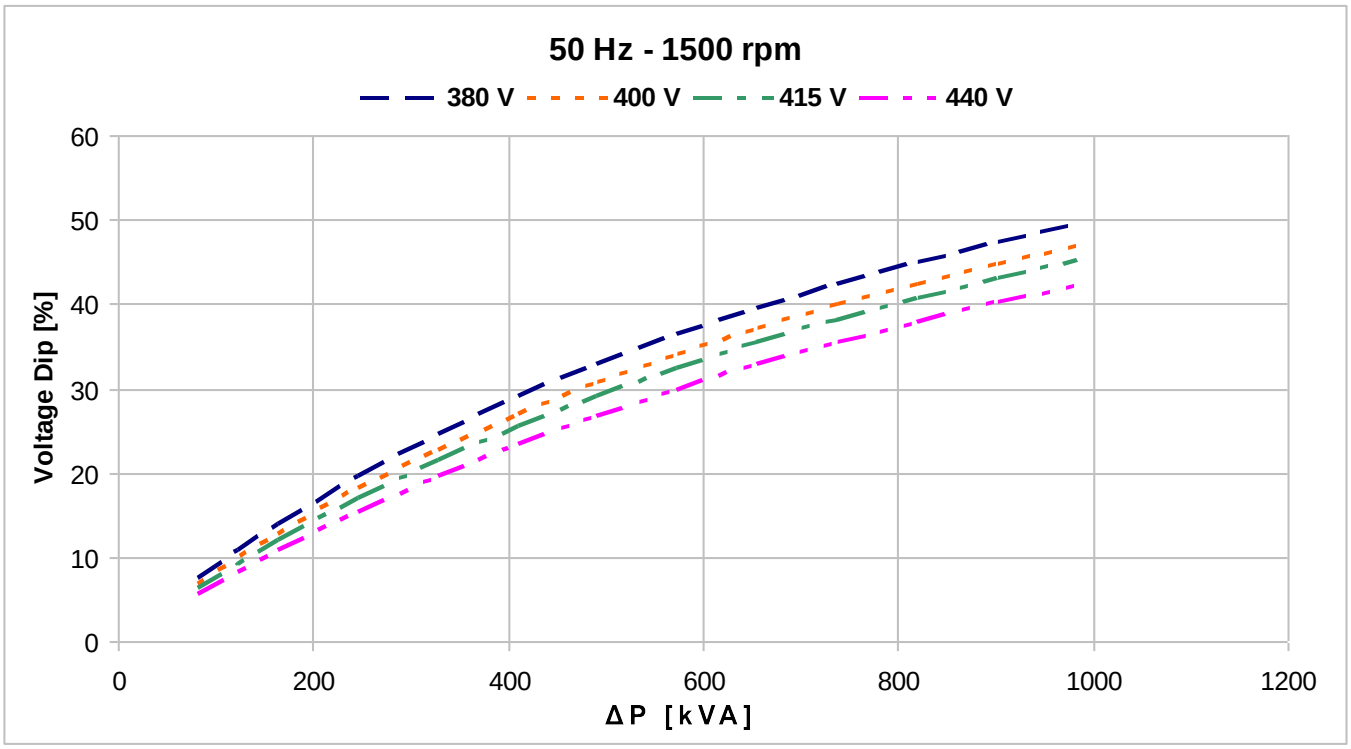
460 V

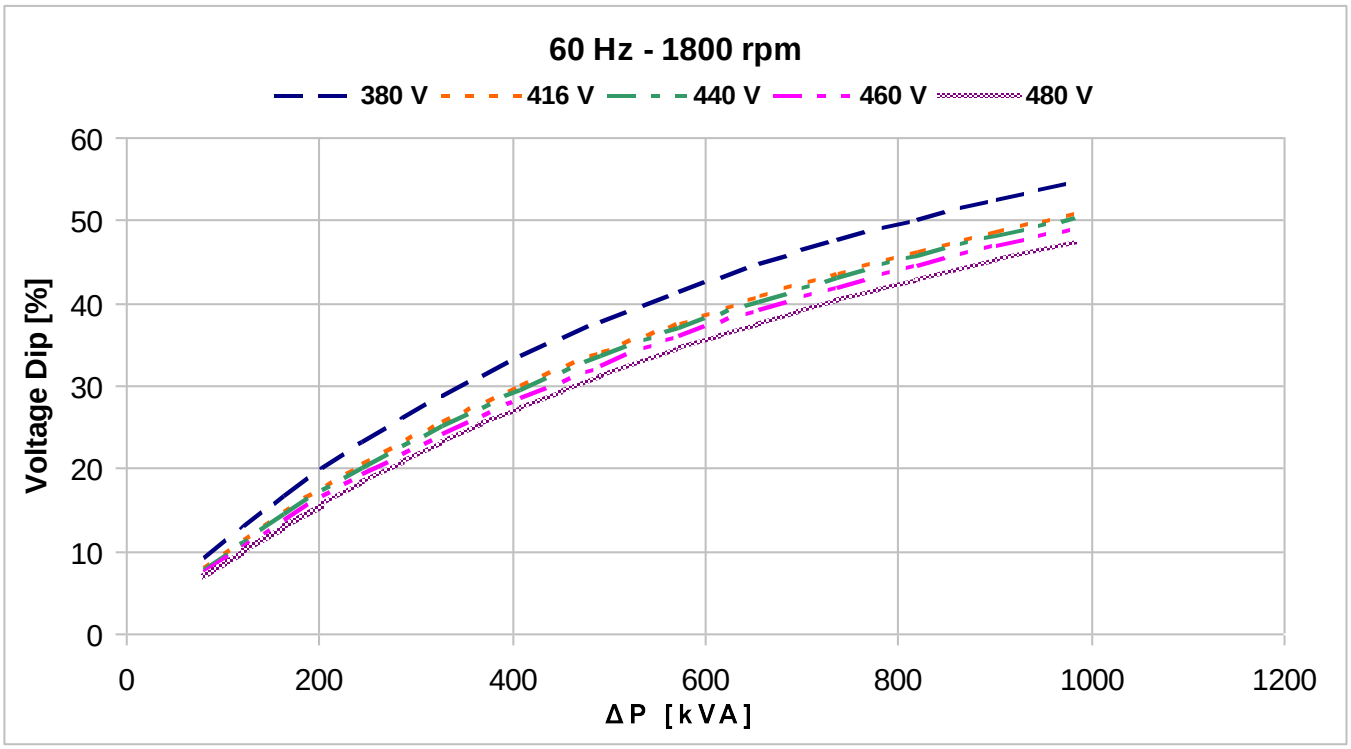


480 V



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.

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.

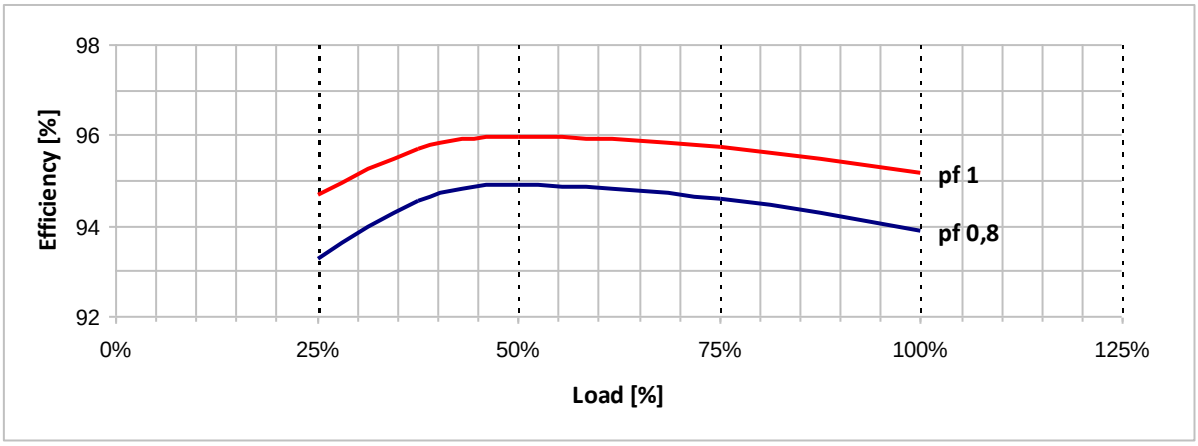
THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MB4

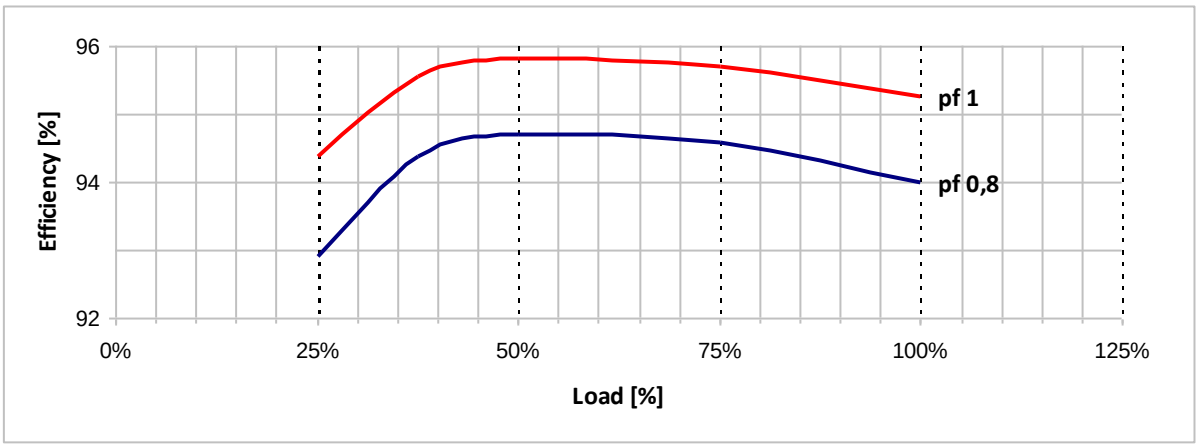
Typical efficiency curves

50 Hz - 1500 rpm

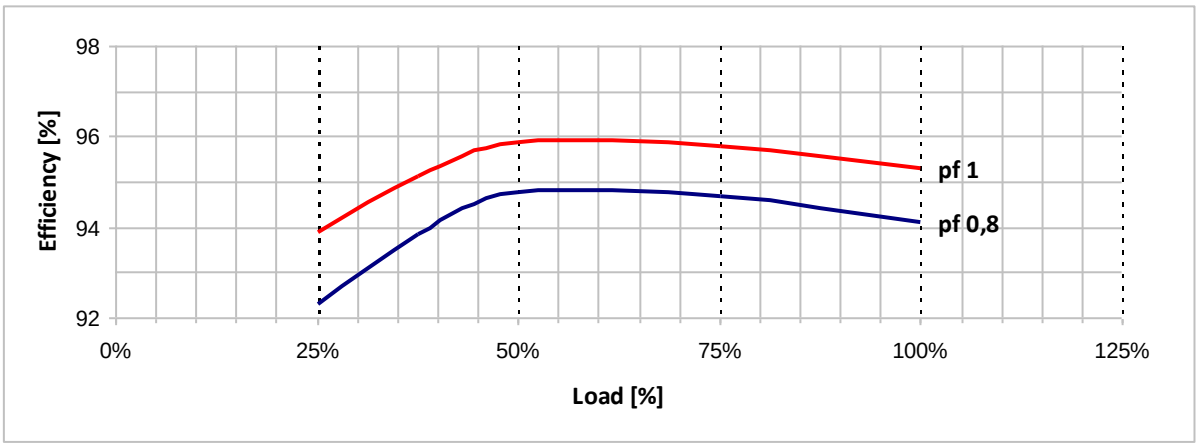
380 V



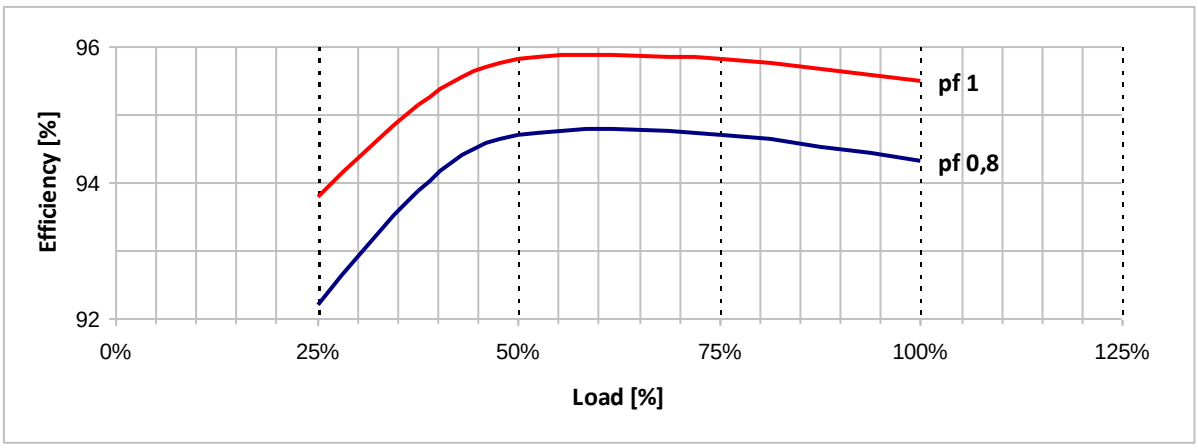
400 V



415 V



440 V



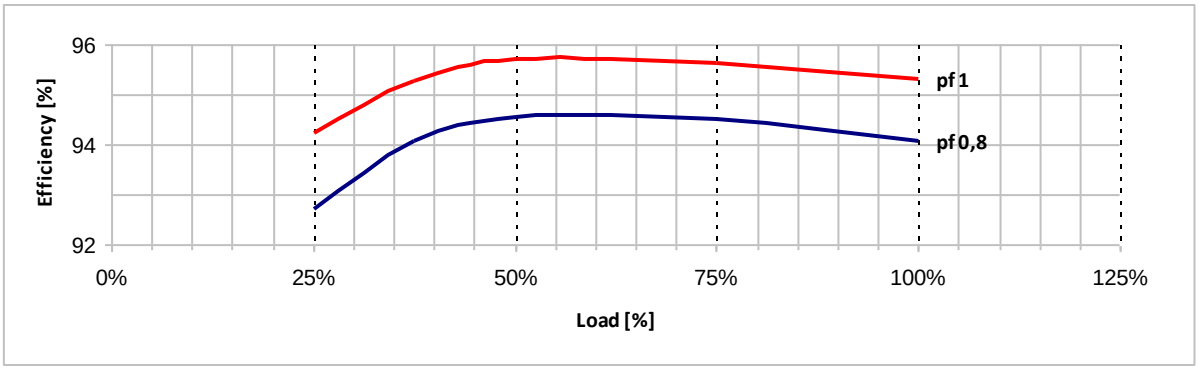
THREE PHASE SYNCRONOUS GENERATOR

MJB 315 MB4

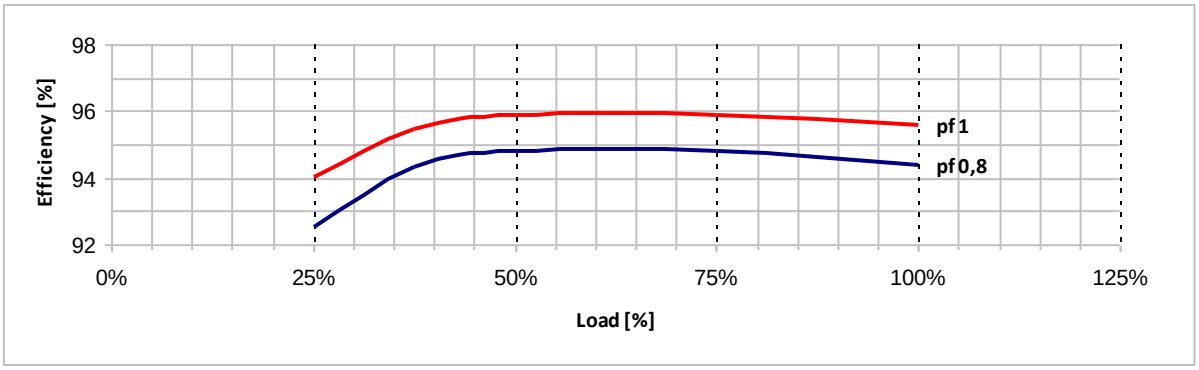
Typical efficiency curves

60 Hz - 1800 rpm

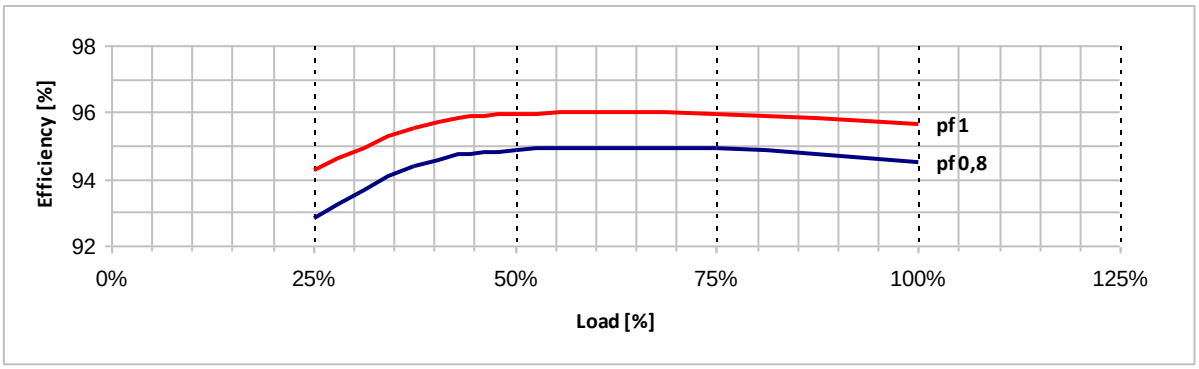
380 V



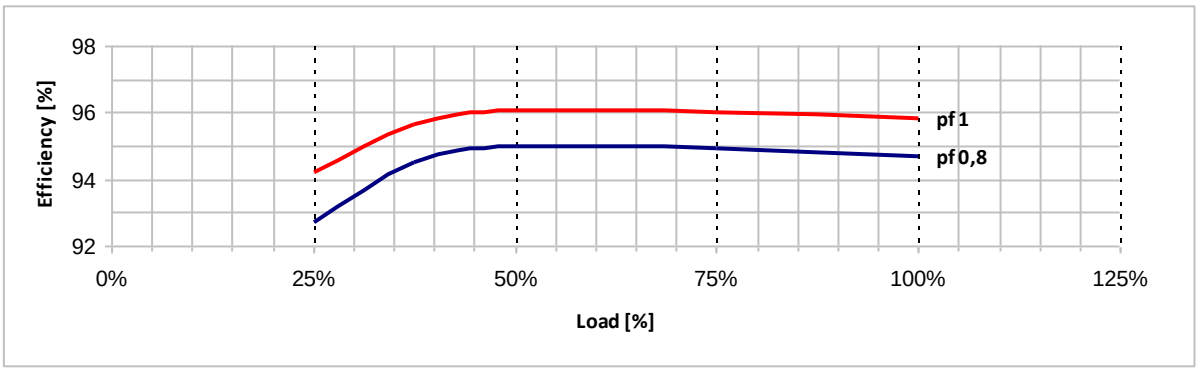
416 V



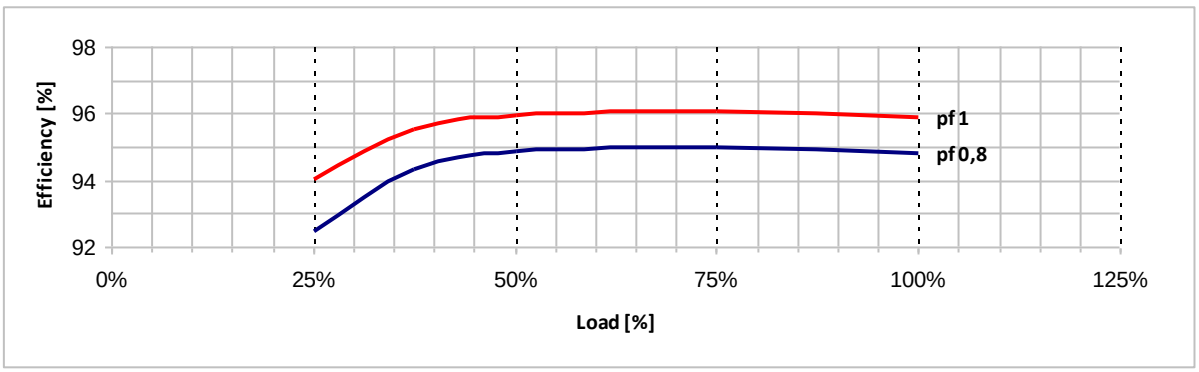
440 V



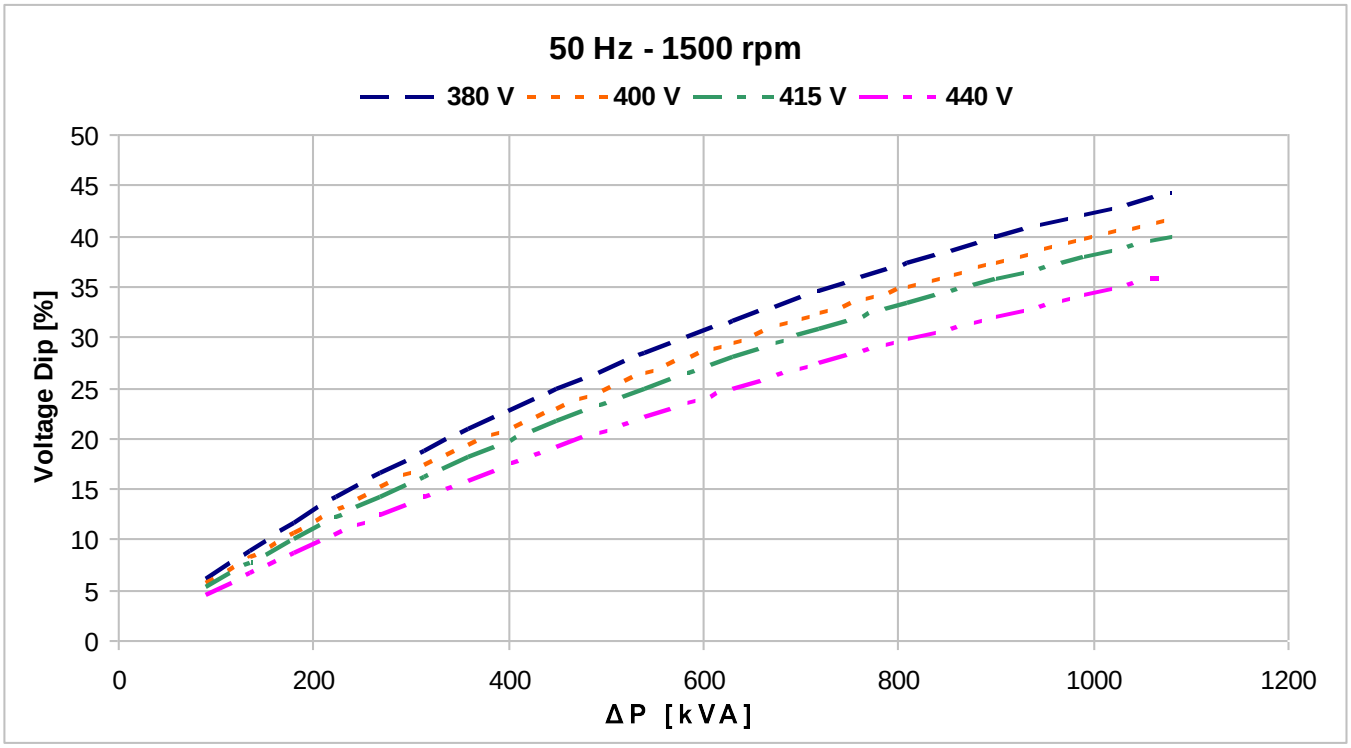
460 V

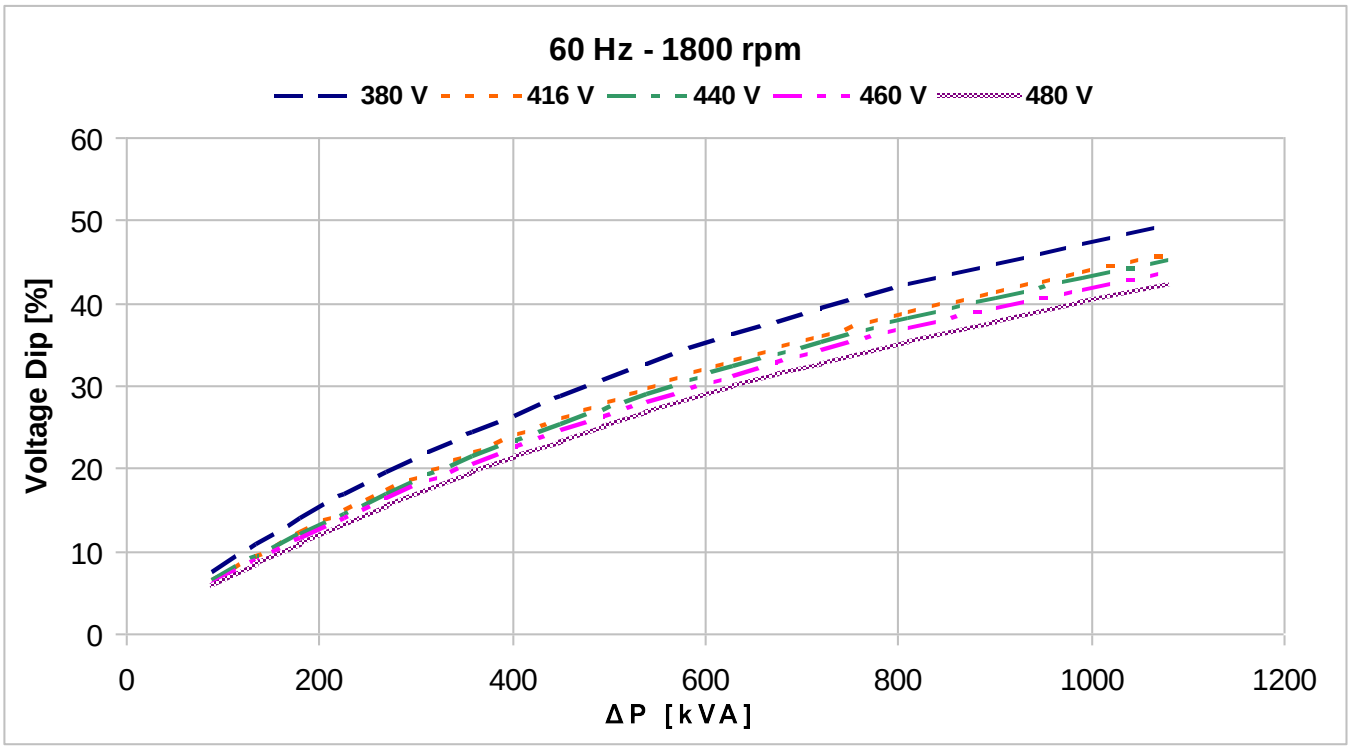


480 V



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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 315 SA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**300**	**300**	**300**	**280**	**310**	**320**	**350**	**360**	**370**
		kW	***240***	***240***	***240***	***224***	***248***	***256***	***280***	***288***	***296***
EFFICIENCY (%) @ 0,8 p.f.		4/4	92,7	93,1	93,0	93,4	92,5	93,1	93,4	93,5	93,8
		3/4	93,4	93,7	93,6	93,7	93,1	93,5	93,8	93,9	94,1
		2/4	93,9	93,9	93,9	93,8	93,3	93,6	93,9	94,0	94,1
EFFICIENCY (%) @ 1,0 p.f.		4/4	94,2	94,5	94,5	94,8	94,0	94,5	94,8	94,8	95,1
		3/4	94,8	95,0	94,9	95,0	94,5	94,9	95,1	95,2	95,3
		2/4	95,2	95,2	95,2	95,1	94,7	94,9	95,2	95,3	95,3
SHORT CIRCUIT RATIO			0,30	0,33	0,36	0,43	0,24	0,28	0,29	0,30	0,32
REACTANCES (%)											
Direct axis synchronous		xd	400	360	335	280	495	425	415	390	370
Quadrature axis synchronous		xq	200	180	165	140	245	215	210	195	185
Direct axis transient		x'd	35,5	32,0	29,7	24,7	44,0	37,9	37,0	34,8	32,9
Direct axis subtransient		x"d	17,2	15,5	14,4	12,0	21,3	18,3	17,9	16,9	15,9
Quadrature axis subtransient		x"q	19,4	17,5	16,3	13,5	24,0	20,7	20,2	19,1	18,0
Negative sequence		x_2	18,3	16,5	15,3	12,7	22,7	19,5	19,1	18,0	17,0
Zero sequence		x_0	4,4	4,0	3,7	3,1	5,5	4,7	4,6	4,4	4,1

TIME CONSTANTS [s]

Open circuit (T'do)	1,6	Subtransient (T"d)	0,014
Transient (T'd)	0,145	Armature (Ta)	0,018

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6319 2RS C3 / Prelubricated
N-end bearing/Lubrication	6315 2RS C3 / Prelubricated
Weight (IM B34) [kg]	830
Inertia (J) (IM B34) [kgm^2]	3,66
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,83 / 1,0
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [mΩ] @ 20 °C - Star series	16
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

STANDARDS

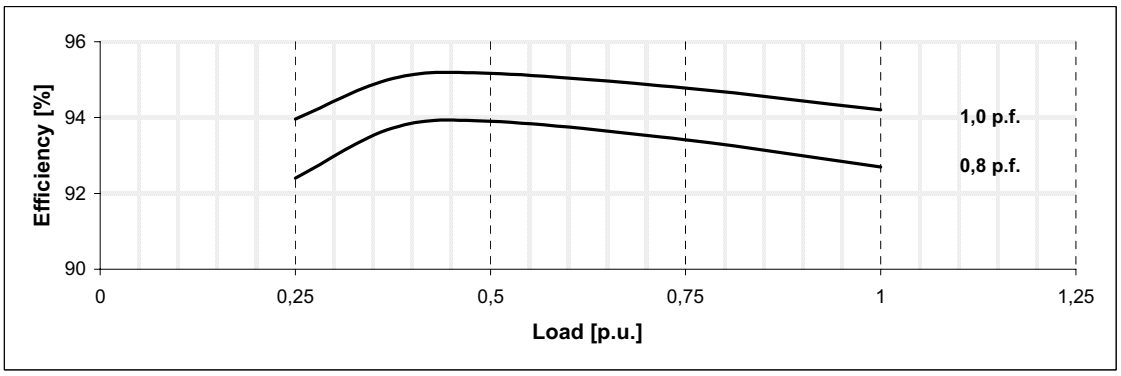
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

MarelliGenerators

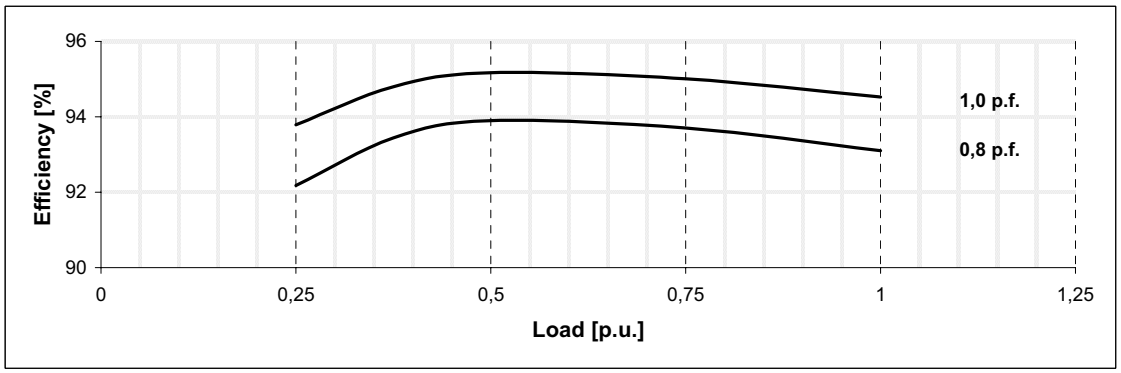
Typical efficiency curves

50 Hz - 1500 min^{-1}

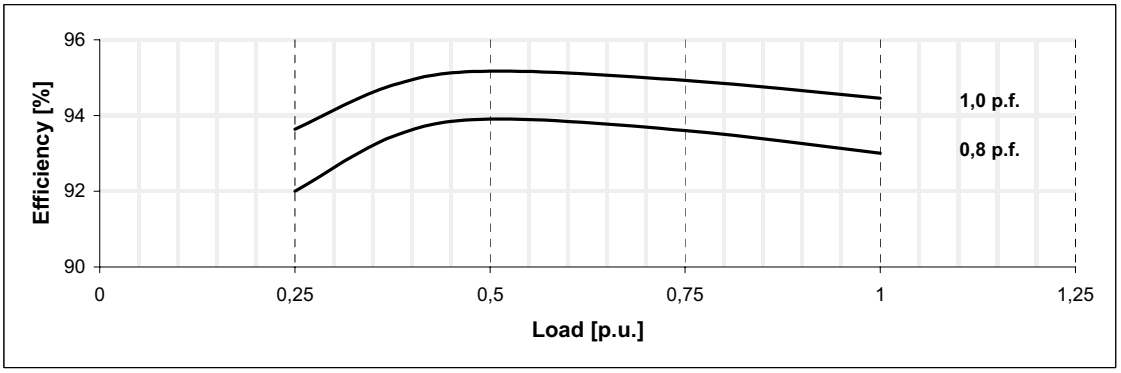
380 V



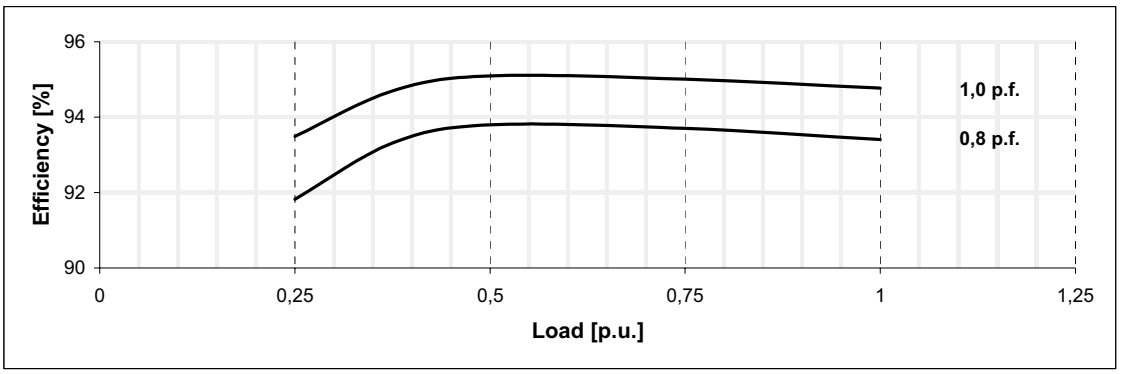
400 V



415 V



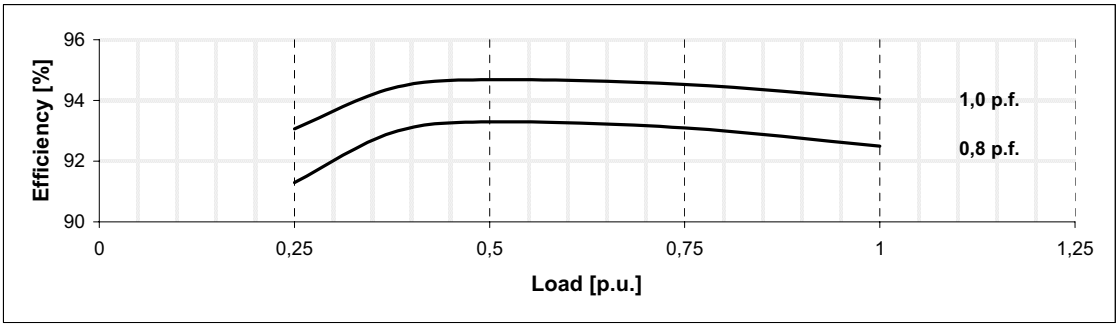
440 V



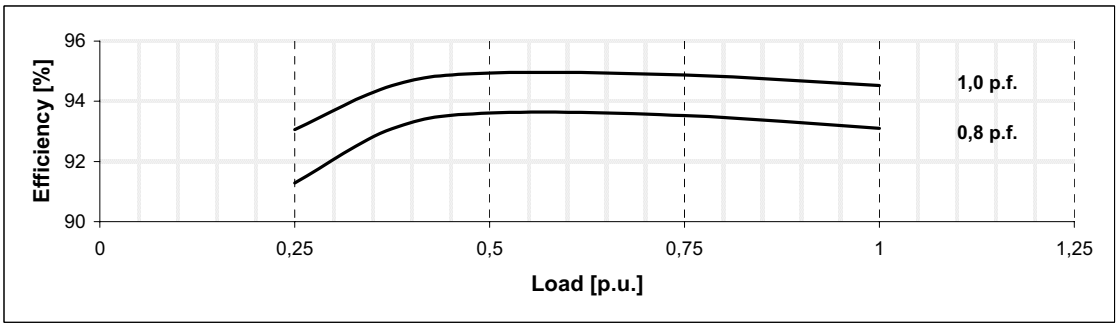
Typical efficiency curves

60 Hz - 1800 min^{-1}

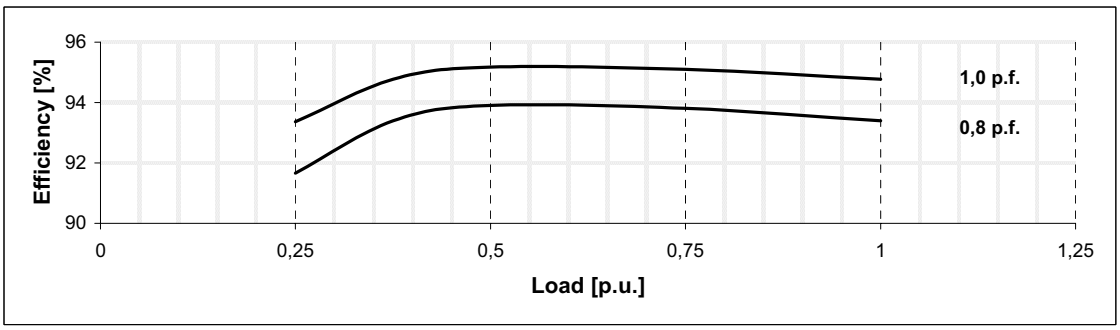
380 V



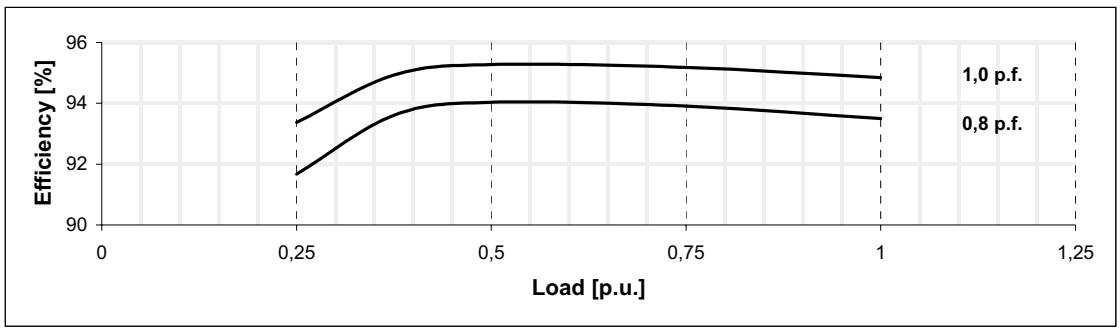
416 V



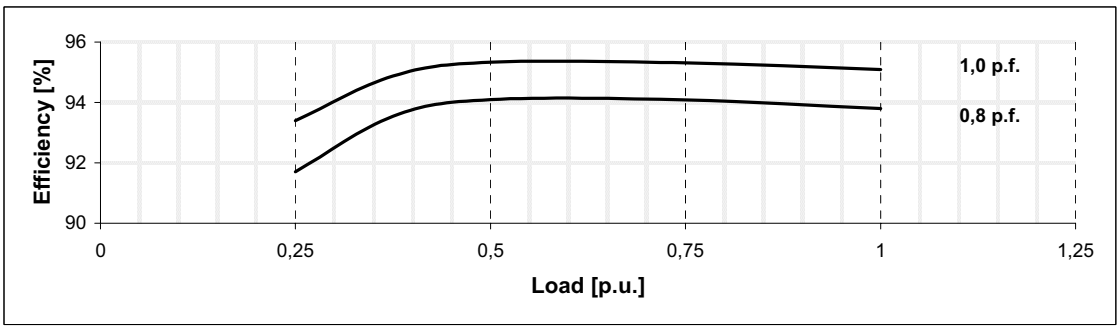
440 V



460 V

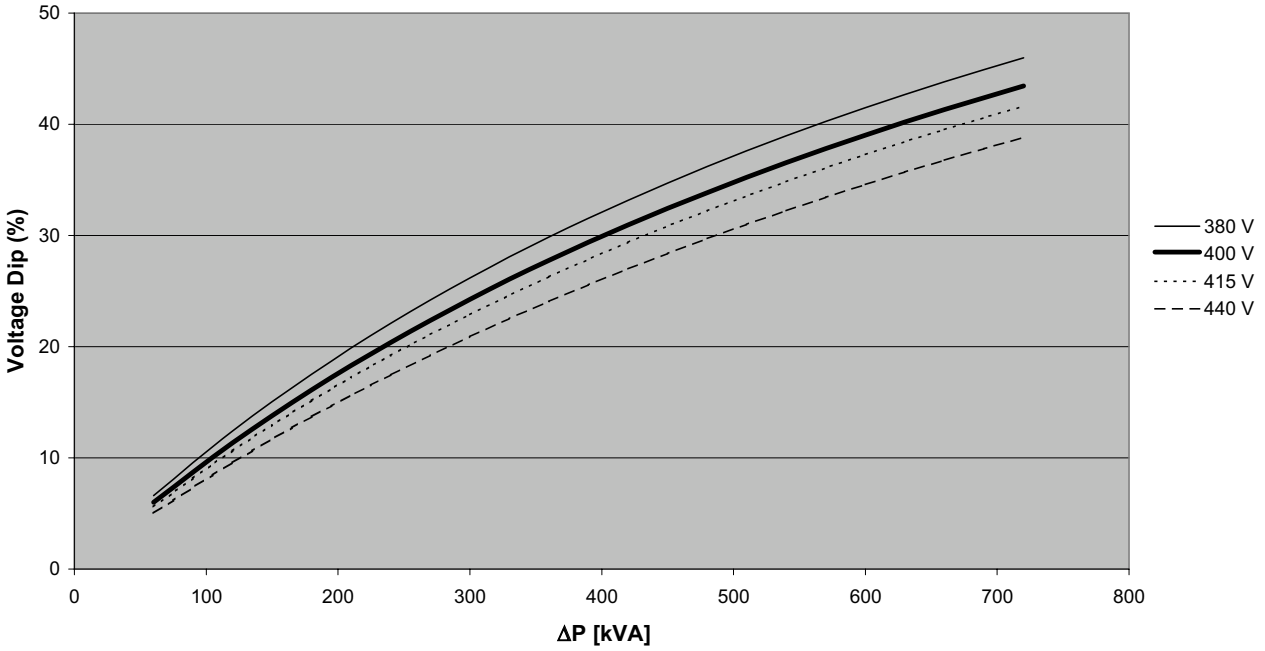


480 V

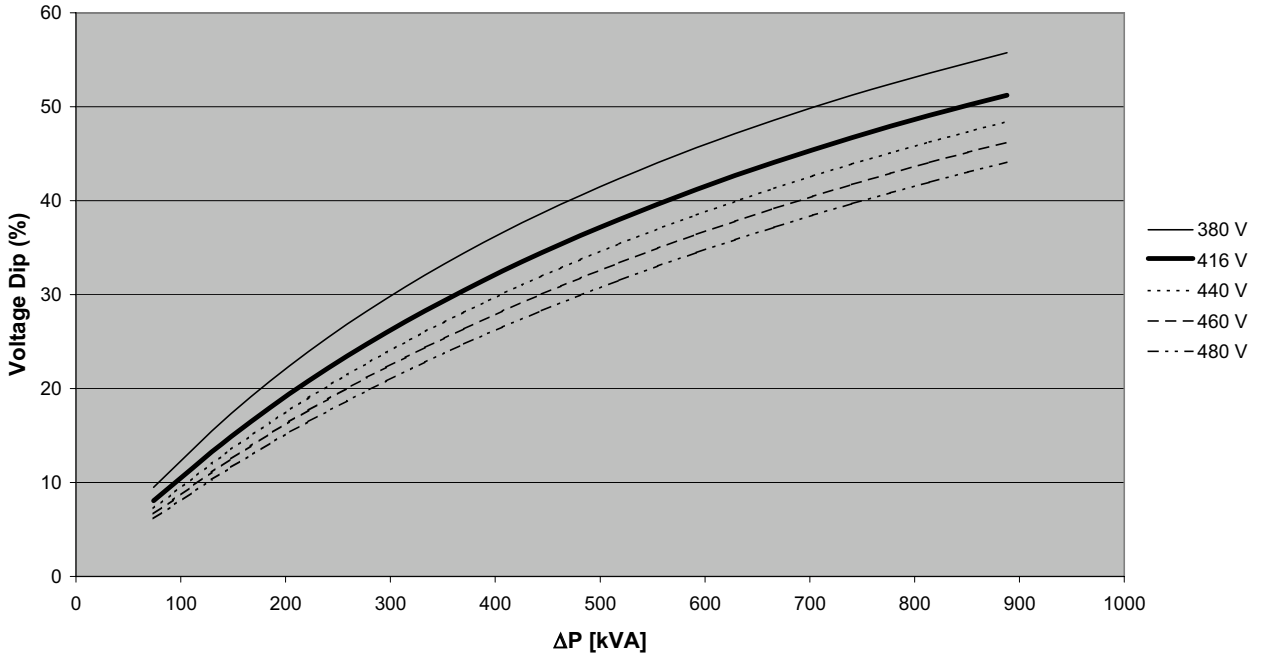


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 315 SB 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**350**	**350**	**350**	**340**	**360**	**370**	**400**	**420**	**425**
		kW	***280***	***280***	***280***	***272***	***288***	***296***	***320***	***336***	***340***
EFFICIENCY (%) @ 0,8 p.f.		4/4	93,2	93,4	93,4	93,4	92,8	93,3	93,5	93,7	94,0
		3/4	93,8	93,9	93,9	93,9	93,4	93,7	93,9	94,0	94,2
		2/4	94,1	94,1	94,1	94,1	93,5	93,8	94,0	94,1	94,1
EFFICIENCY (%) @ 1,0 p.f.		4/4	94,6	94,8	94,8	94,8	94,3	94,7	94,8	95,0	95,3
		3/4	95,1	95,2	95,2	95,2	94,8	95,0	95,2	95,3	95,4
		2/4	95,3	95,3	95,3	95,3	94,8	95,1	95,2	95,3	95,4
SHORT CIRCUIT RATIO			0,32	0,35	0,38	0,44	0,26	0,30	0,31	0,32	0,35
REACTANCES (%)											
Direct axis synchronous		xd	380	345	320	275	470	405	390	375	350
Quadrature axis synchronous		xq	195	175	165	140	240	205	200	190	175
Direct axis transient		x'd	33,2	30,0	27,9	24,1	41,0	35,2	34,0	32,7	30,4
Direct axis subtransient		x"d	15,5	14,0	13,0	11,2	19,1	16,4	15,9	15,2	14,2
Quadrature axis subtransient		x"q	18,2	16,4	15,2	13,2	22,4	19,2	18,6	17,9	16,6
Negative sequence		x_2	16,8	15,2	14,1	12,2	20,8	17,8	17,2	16,6	15,4
Zero sequence		x_0	4,2	3,8	3,5	3,1	5,2	4,5	4,3	4,1	3,8

TIME CONSTANTS [s]

Open circuit (T'do)	1,42	Subtransient (T"d)	0,014
Transient (T'd)	0,14	Armature (Ta)	0,018

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6319 2RS C3 / Prelubricated
N-end bearing/Lubrication	6315 2RS C3 / Prelubricated
Weight (IM B34) [kg]	920
Inertia (J) (IM B34) [kgm^2]	4,25
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,83 / 1,0
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [mΩ] @ 20 °C - Star series	12,5
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
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.

MarelliGenerators

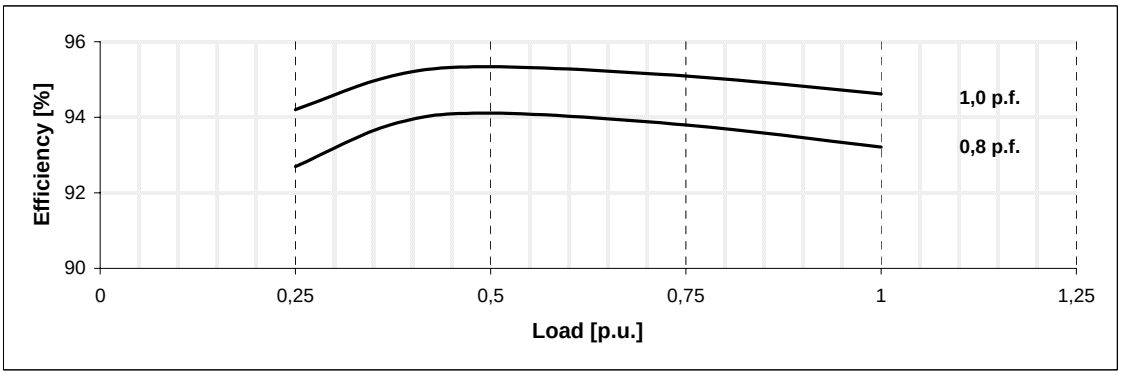
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 315 SB 4

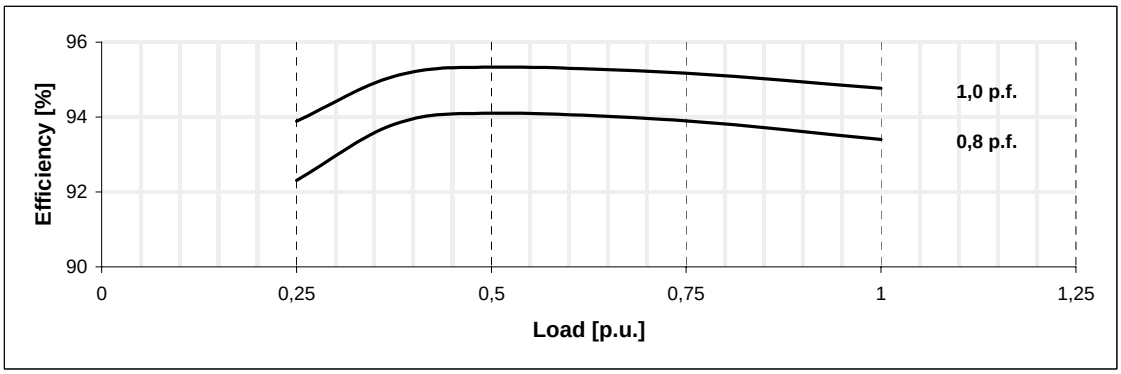
Typical efficiency curves

50 Hz - 1500 min^{-1}

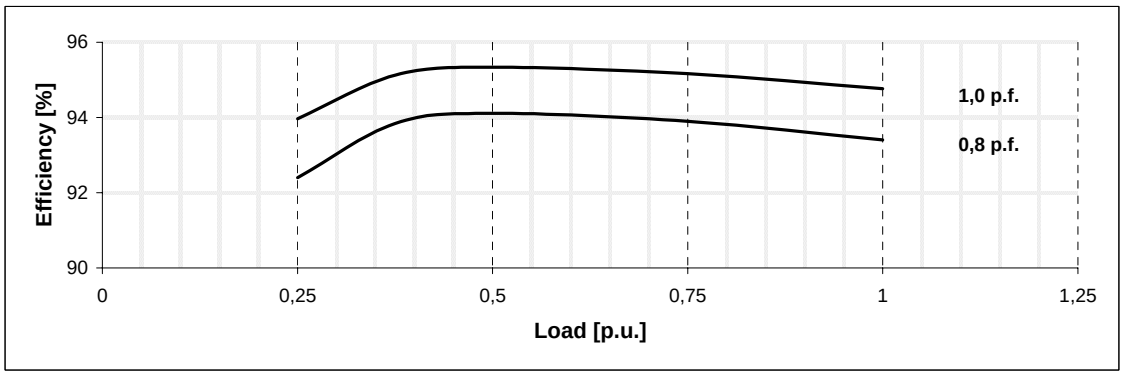
380 V



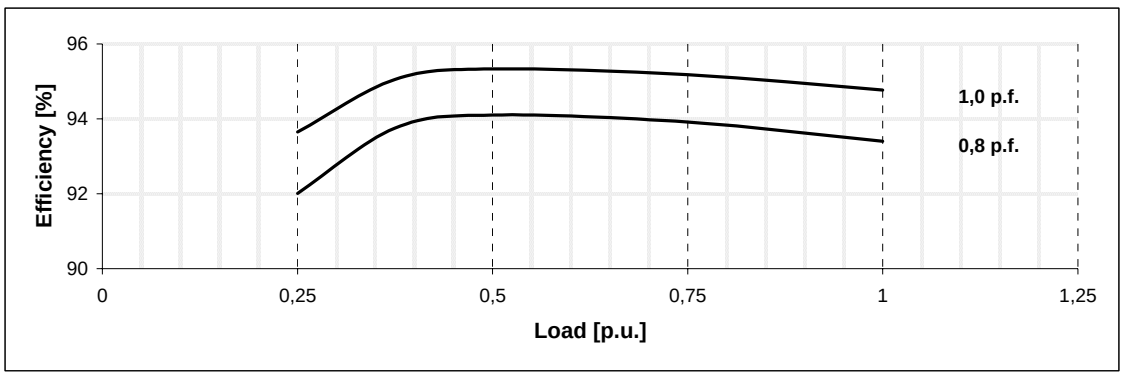
400 V



415 V



440 V



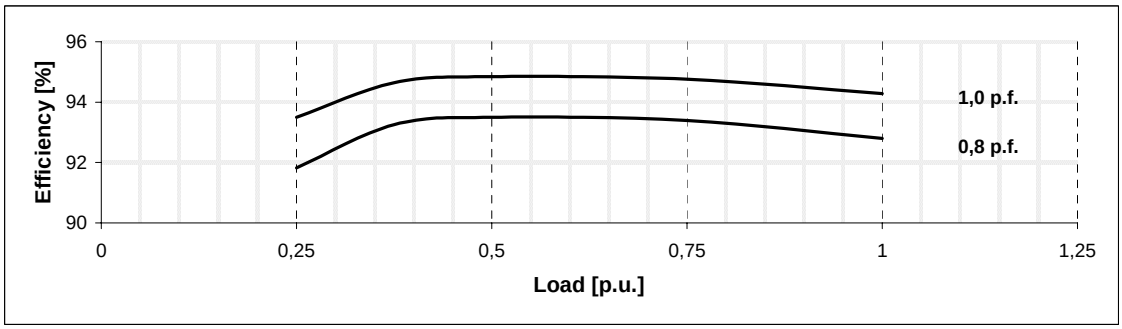
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 315 SB 4

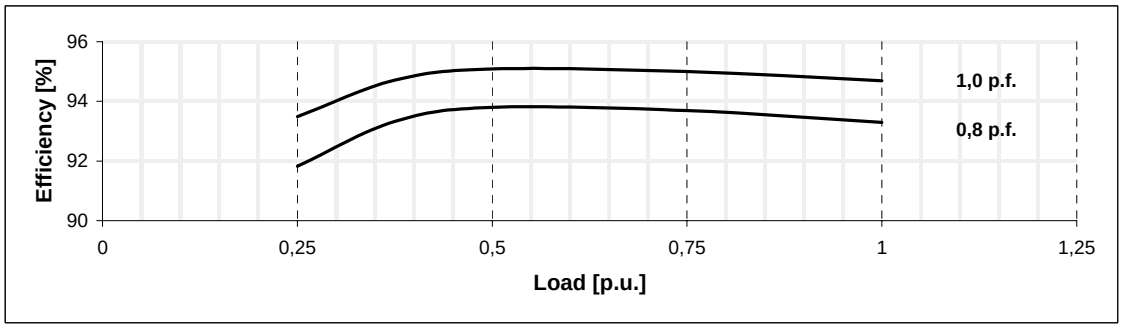
Typical efficiency curves

60 Hz - 1800 min^{-1}

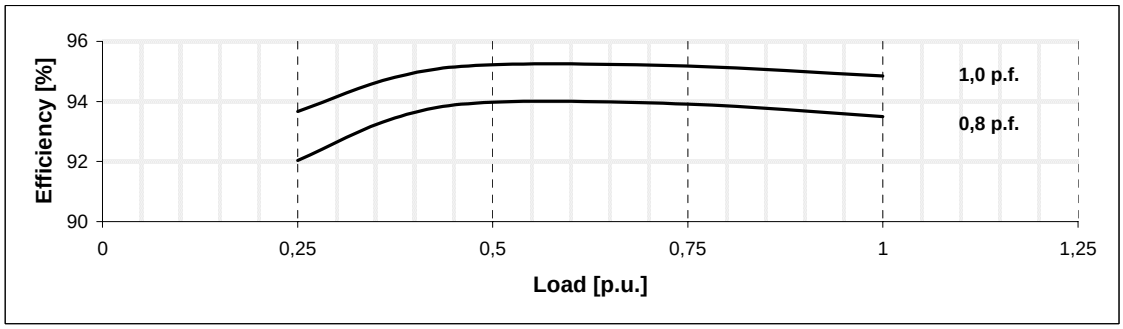
380 V



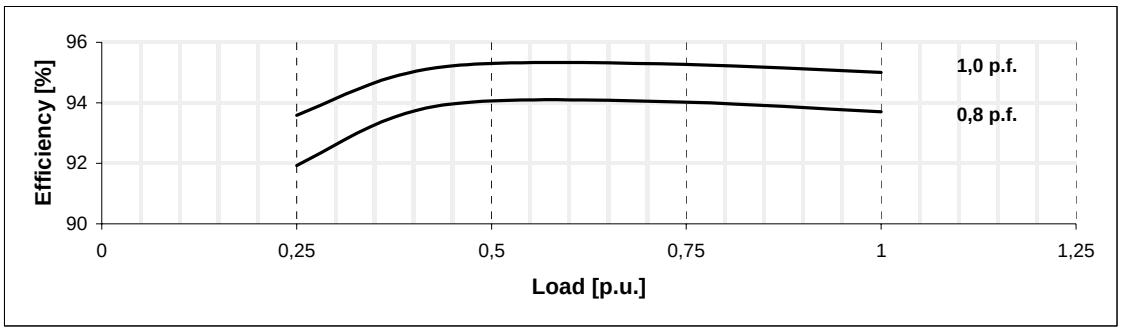
416 V



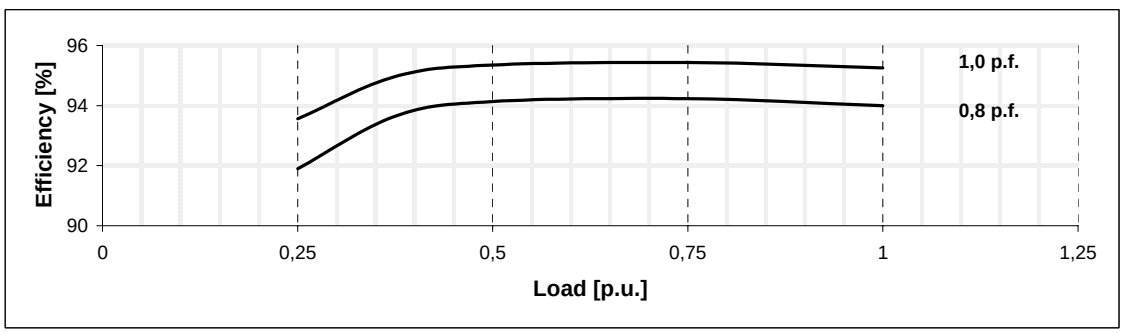
440 V



460 V

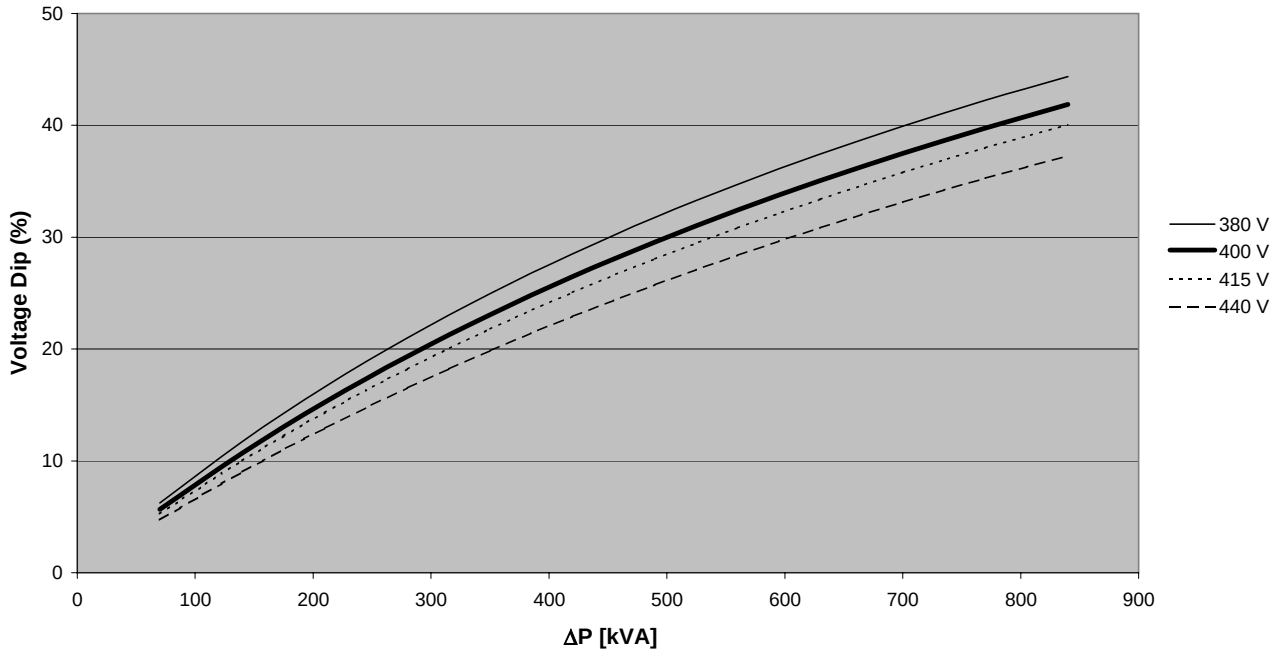


480 V

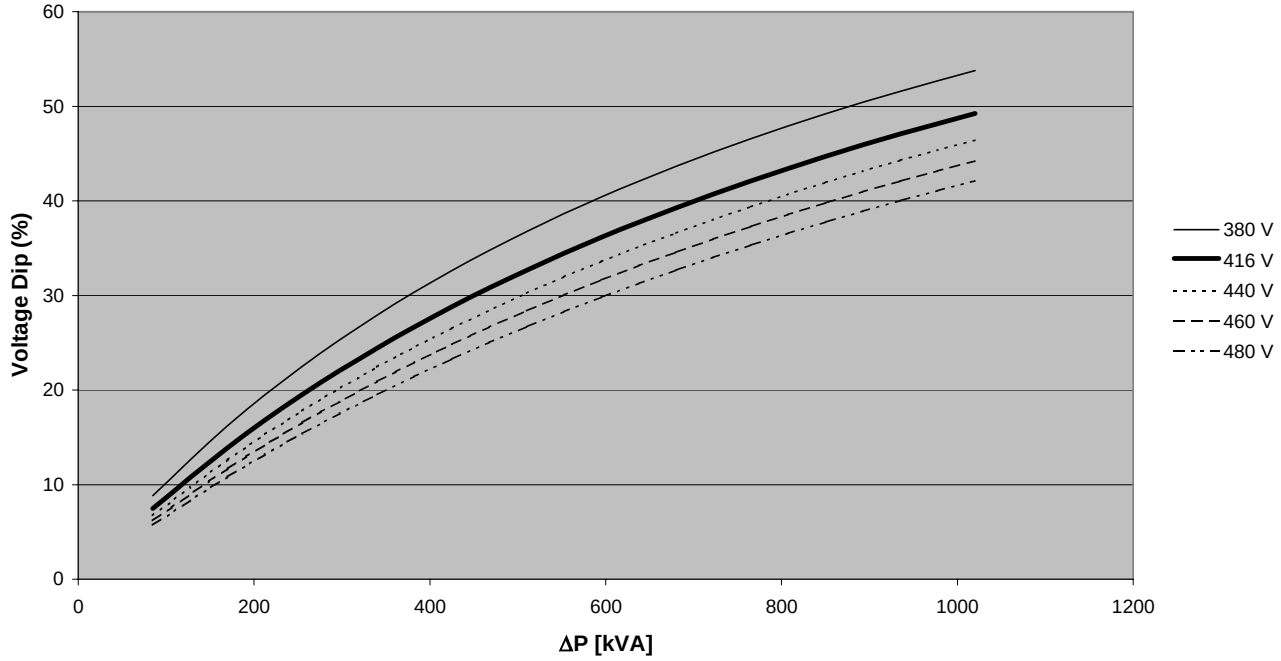


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 MA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**680**	**680**	**680**	**680**	**700**	**740**	**775**	**805**	**825**
		kW	***544***	***544***	***544***	***544***	***560***	***592***	***620***	***644***	***660***
EFFICIENCY (%) @ 0,8 p.f.		4/4	94,4	94,7	94,8	94,8	94,3	94,6	94,9	95,0	95,1
		3/4	95,2	95,3	95,3	95,2	94,8	95,1	95,3	95,4	95,4
		2/4	95,5	95,4	95,4	95,4	95,0	95,2	95,4	95,5	95,5
EFFICIENCY (%) @ 1,0 p.f.		4/4	95,6	95,8	95,9	95,9	95,5	95,7	96,0	96,1	96,1
		3/4	96,2	96,3	96,3	96,2	95,9	96,1	96,3	96,3	96,4
		2/4	96,4	96,4	96,4	96,3	96,1	96,2	96,4	96,4	96,4
SHORT CIRCUIT RATIO			0,32	0,35	0,38	0,42	0,26	0,29	0,31	0,33	0,35
REACTANCES (%)											
Direct axis synchronous		xd	320	290	270	240	395	350	330	310	295
Quadrature axis synchronous		xq	175	160	150	130	220	195	180	170	160
Direct axis transient		x'd	26,6	24,0	22,3	19,8	32,8	29,0	27,1	25,8	24,3
Direct axis subtransient		x"d	13,5	12,2	11,3	10,1	16,7	14,7	13,8	13,1	12,3
Quadrature axis subtransient		x"q	16,1	14,5	13,5	12,0	19,8	17,5	16,4	15,6	14,7
Negative sequence		x_2	14,8	13,4	12,4	11,1	18,3	16,2	15,1	14,4	13,5
Zero sequence		x_0	3,9	3,5	3,3	2,9	4,8	4,2	4,0	3,8	3,5

TIME CONSTANTS [s]

Open circuit (T'do)	1,95	Subtransient (T"d)	0,016
Transient (T'd)	0,16	Armature (Ta)	0,022

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6322 2RS C3 / Prelubricated
N-end bearing/Lubrication	6317 2RS C3 / Prelubricated
Weight (IM B34) [kg]	1800
Inertia (J) (IM B34) [kgm^2]	11,69
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,93 / 1,12
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [mΩ] @ 20 °C - Star series	4,0
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
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.

MarelliGenerators

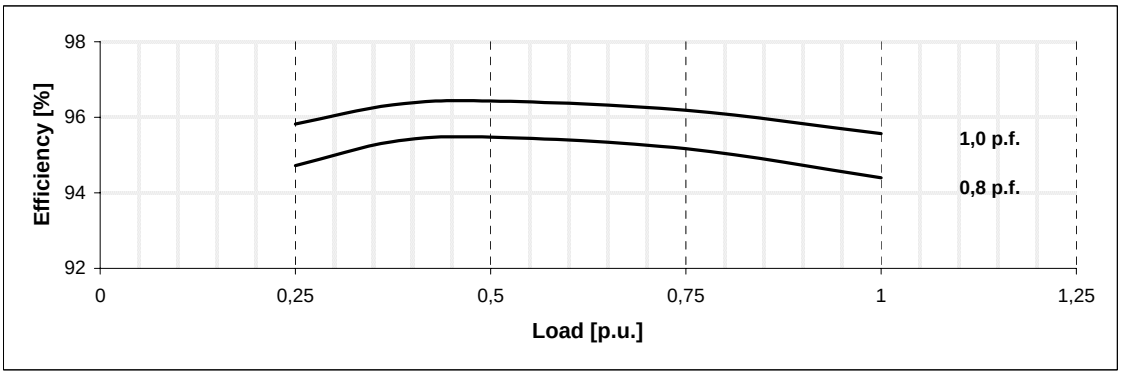
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 MA 4

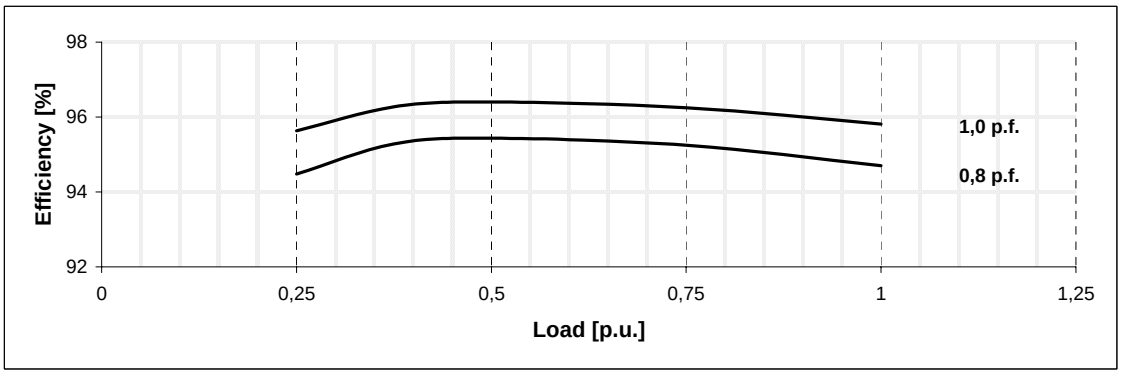
Typical efficiency curves

50 Hz - 1500 min^{-1}

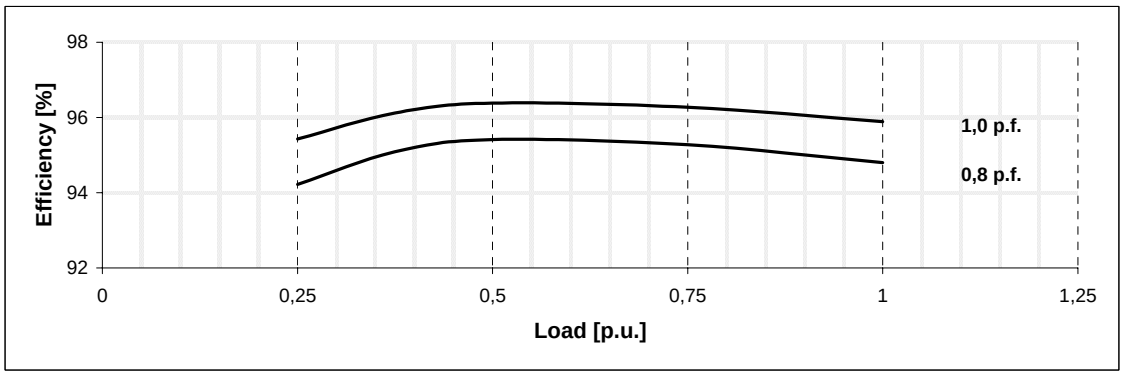
380 V



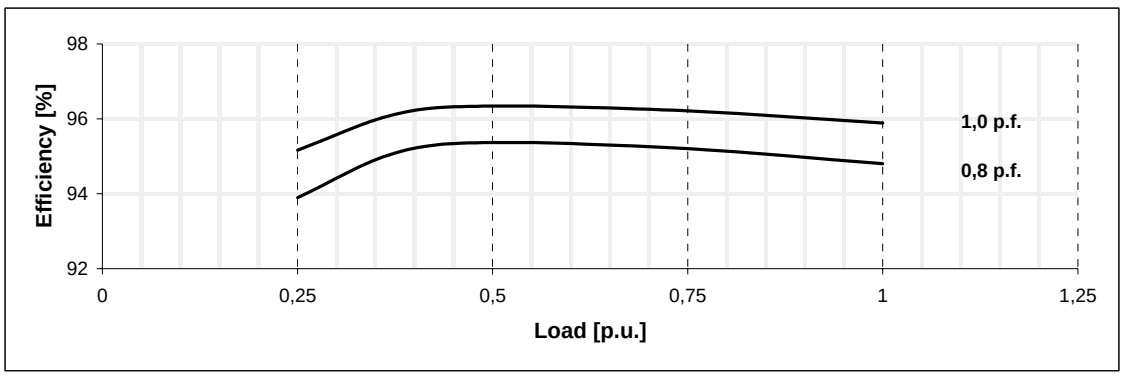
400 V



415 V



440 V



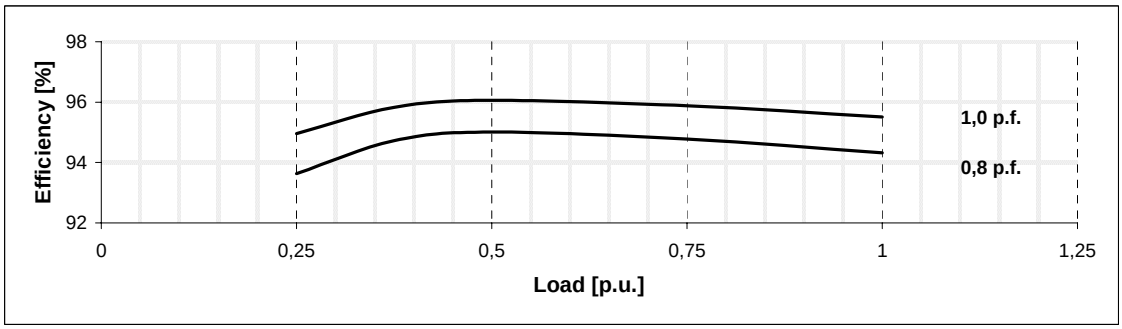
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 MA 4

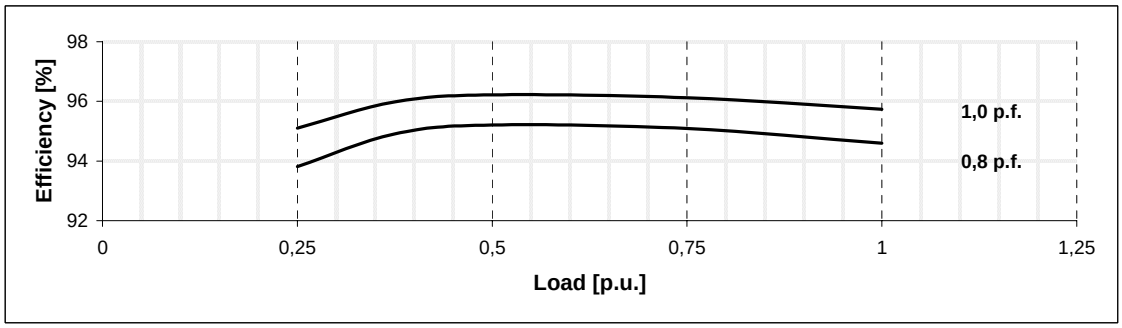
Typical efficiency curves

60 Hz - 1800 min^{-1}

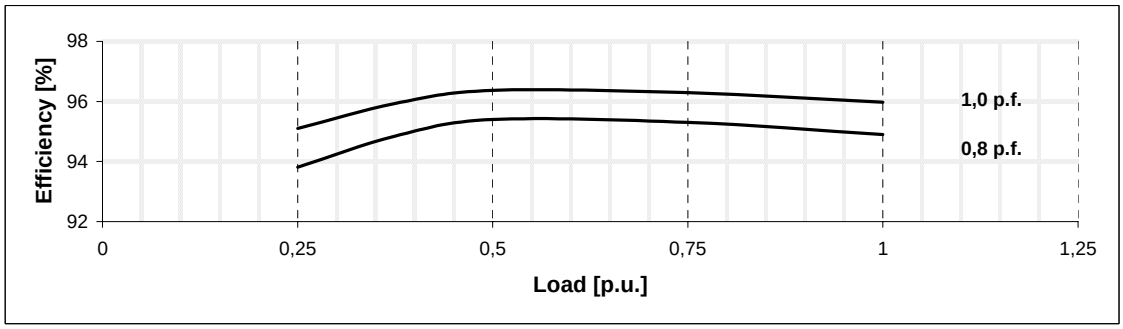
380 V



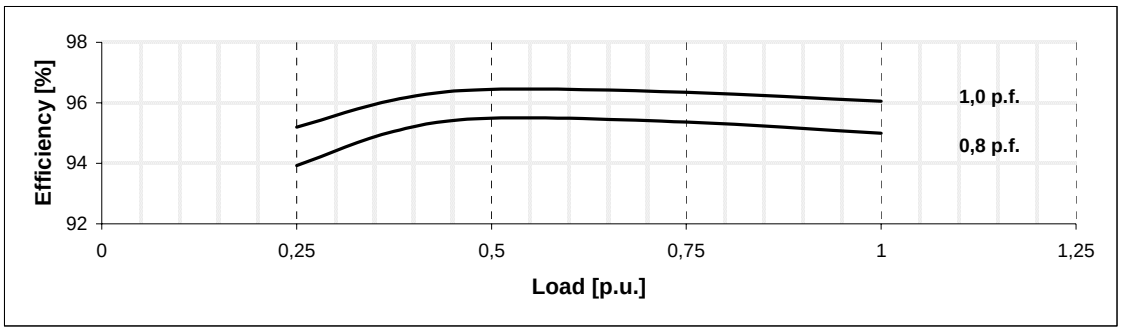
416 V



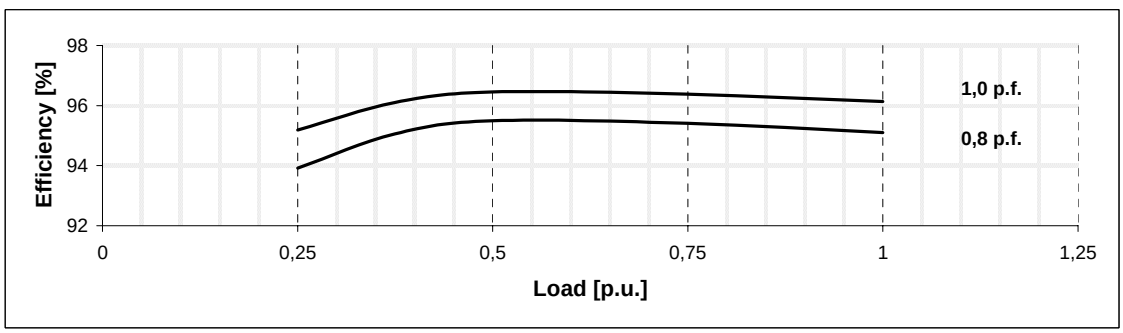
440 V



460 V

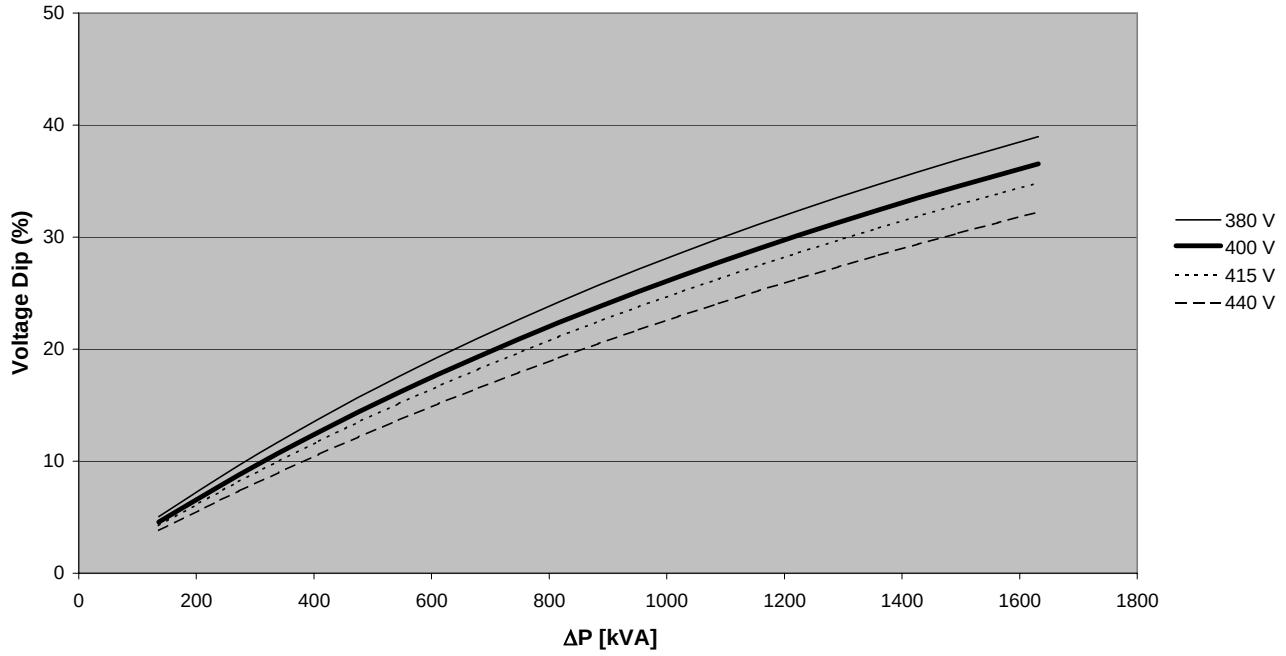


480 V

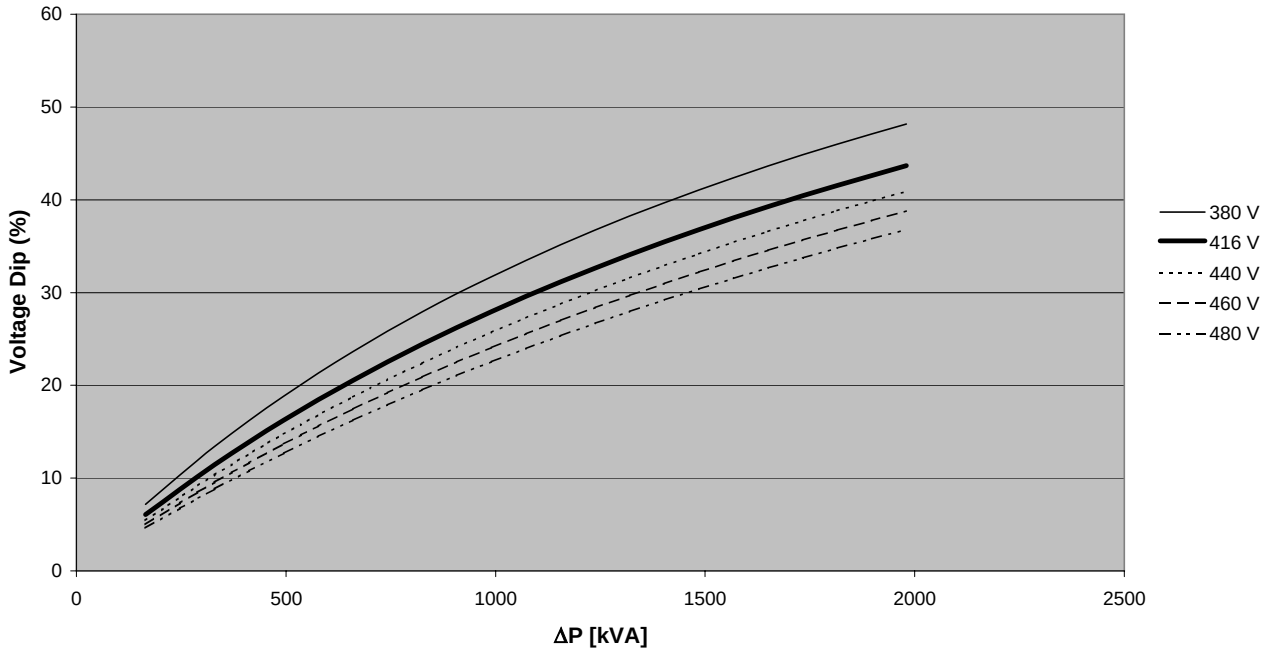


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 355 MB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**17**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY		**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE	Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
	Delta		**220**	**230**	**240**	**240**	**254**	**265**	**277**
RATING		**kVA**	**800**	**800**	**800**	**880**	**920**	**950**	**960**
		kW	***640***	***640***	***640***	***704***	***736***	***760***	***768***
EFFICIENCY [%] @ 0,8 p.f.		**4/4**	94,9	95,0	95,1	95,2	95,2	95,2	95,3
		3/4	95,4	95,5	95,6	95,5	95,6	95,6	95,7
		2/4	95,7	95,6	95,6	95,6	95,7	95,8	95,8
EFFICIENCY [%] @ 1 p.f.		**4/4**	96,0	96,1	96,1	96,2	96,2	96,2	96,3
		3/4	96,4	96,4	96,5	96,4	96,5	96,6	96,6
		2/4	96,6	96,6	96,6	96,5	96,6	96,7	96,7
SHORT CIRCUIT RATIO		SCR	0,31	0,34	0,37	0,28	0,30	0,32	0,34
REACTANCES [%]									
Direct axis synchronous		Xd	353	319	296	389	364	344	319
Quadrature axis synchronous		Xq	196	177	164	216	202	191	177
Direct axis transient		X'd	31,5	28,4	26,4	34,7	32,4	30,6	28,4
Direct axis subtransient		X"d	13,1	11,8	11,0	14,4	13,5	12,7	11,8
Quadrature axis subtransient		X"q	16,8	15,2	14,1	18,6	17,3	16,4	15,2
Negative sequence		X_2	15,0	13,5	12,5	16,5	15,4	14,5	13,5
Zero sequence		X_0	3,2	2,9	2,7	3,5	3,3	3,1	2,9
TIME CONSTANTS [s]									
Open circuit		T'do	2,6						
Transient		T'd	0,23						
Subtransient		T"d	0,016						
Armature		T_a	0,023						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6322 C3 / With grease nipple
N-end bearing/Lubrication		6317 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	13,12
Weight [kg]	Refer to B34 construction	2050
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,93 / 1,12
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	3
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.

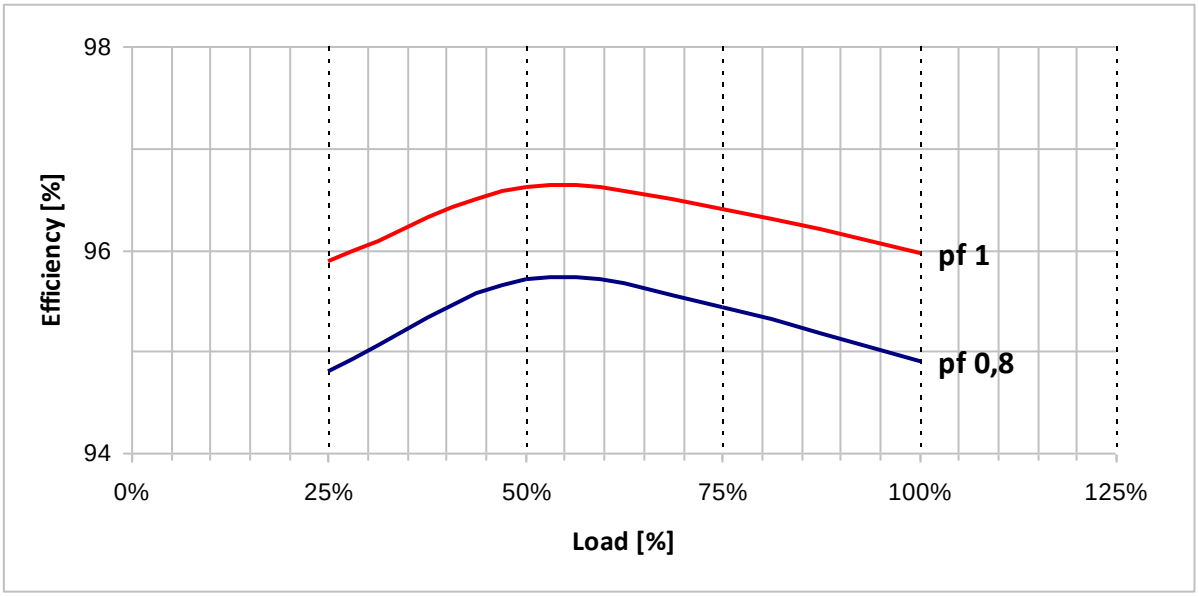
THREE PHASE SYNCRONOUS GENERATOR

MJB 355 MB4

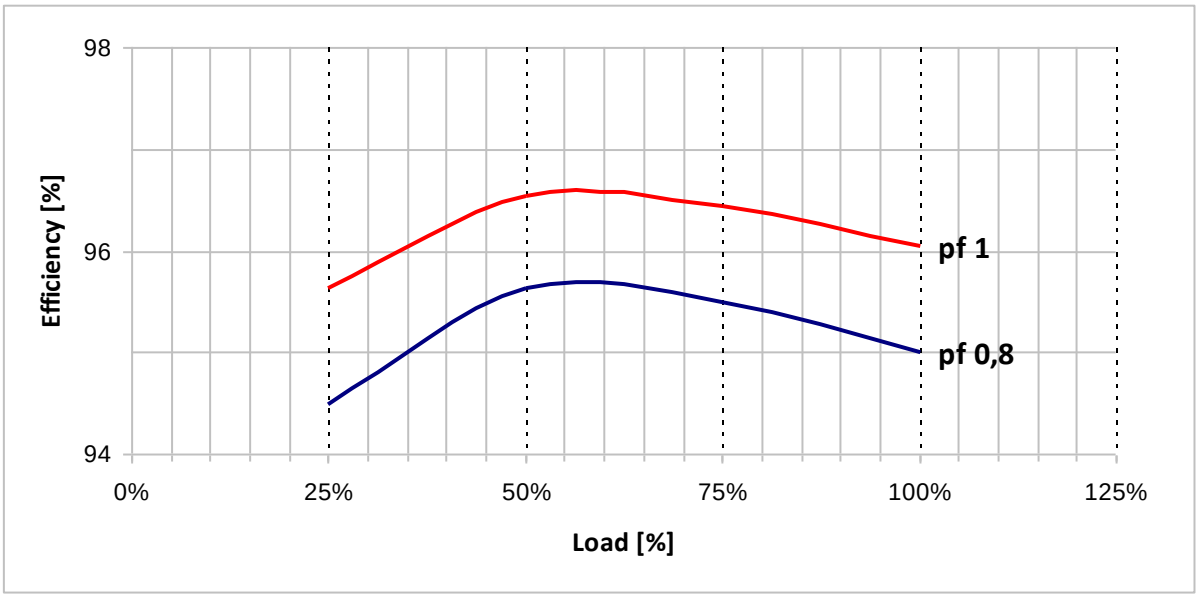
Typical efficiency curves

50 Hz - 1500 rpm

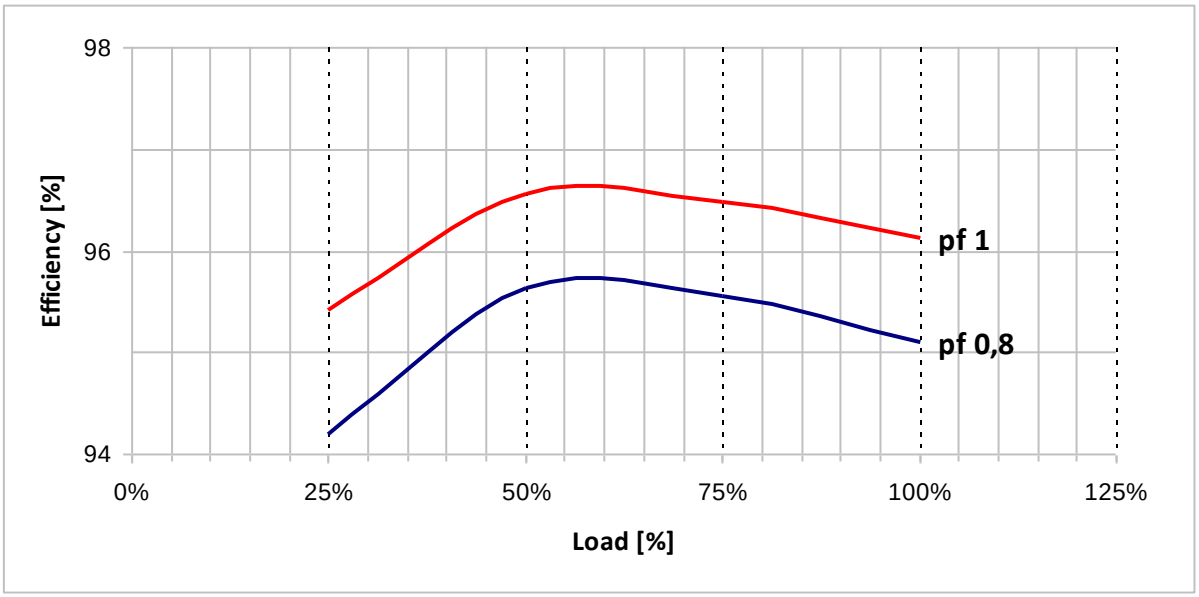
380 V



400 V



415 V



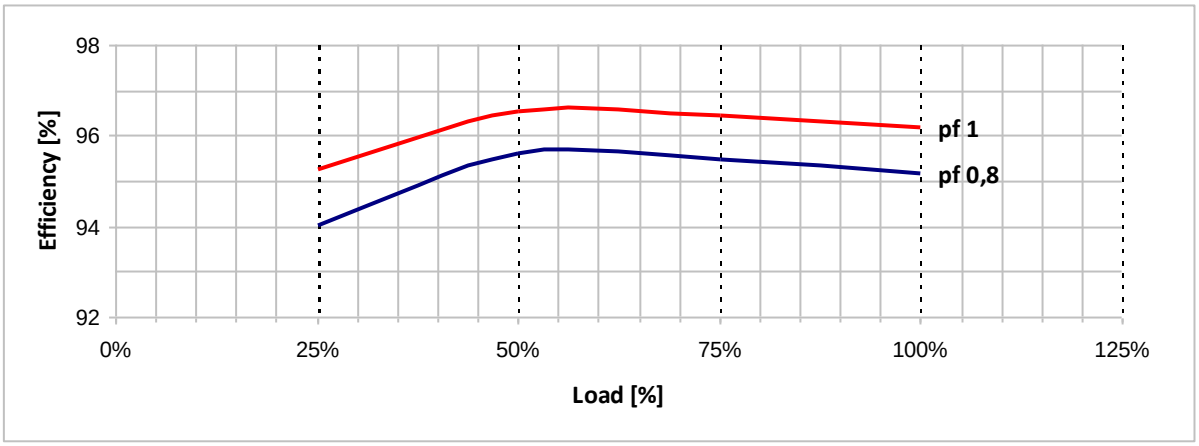
THREE PHASE SYNCRONOUS GENERATOR

MJB 355 MB4

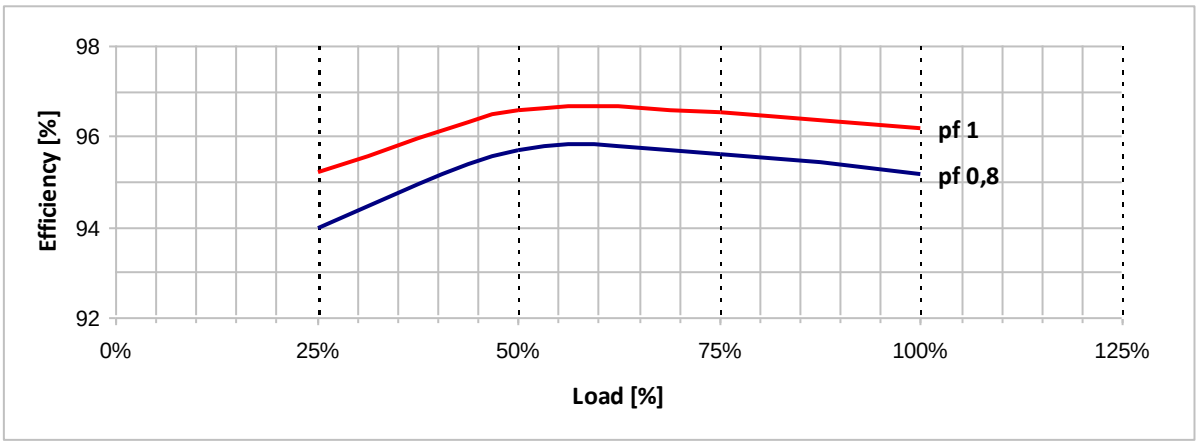
Typical efficiency curves

60 Hz - 1800 rpm

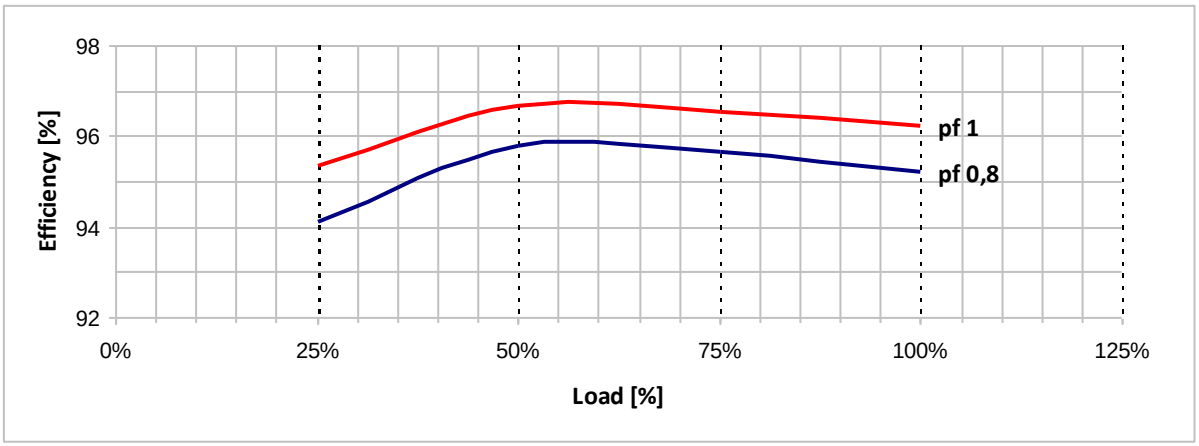
416 V



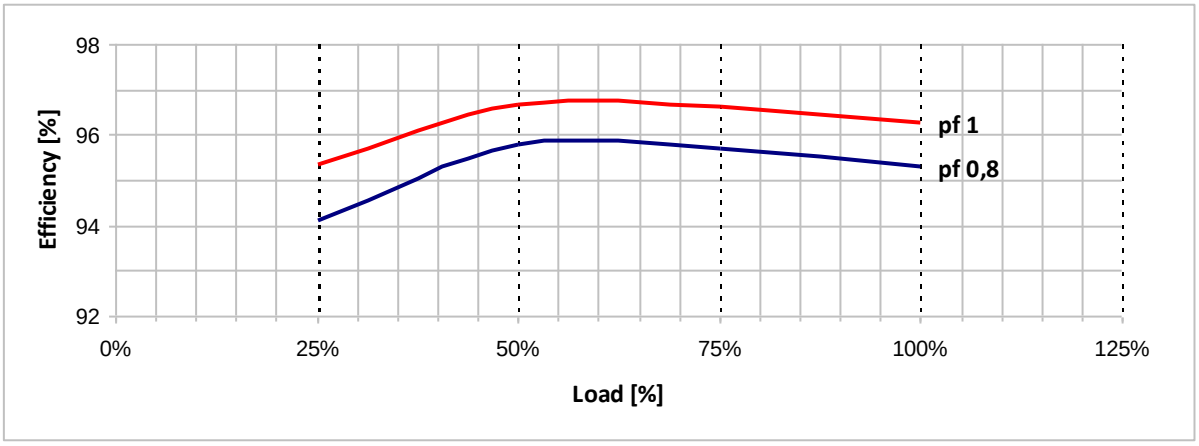
440 V



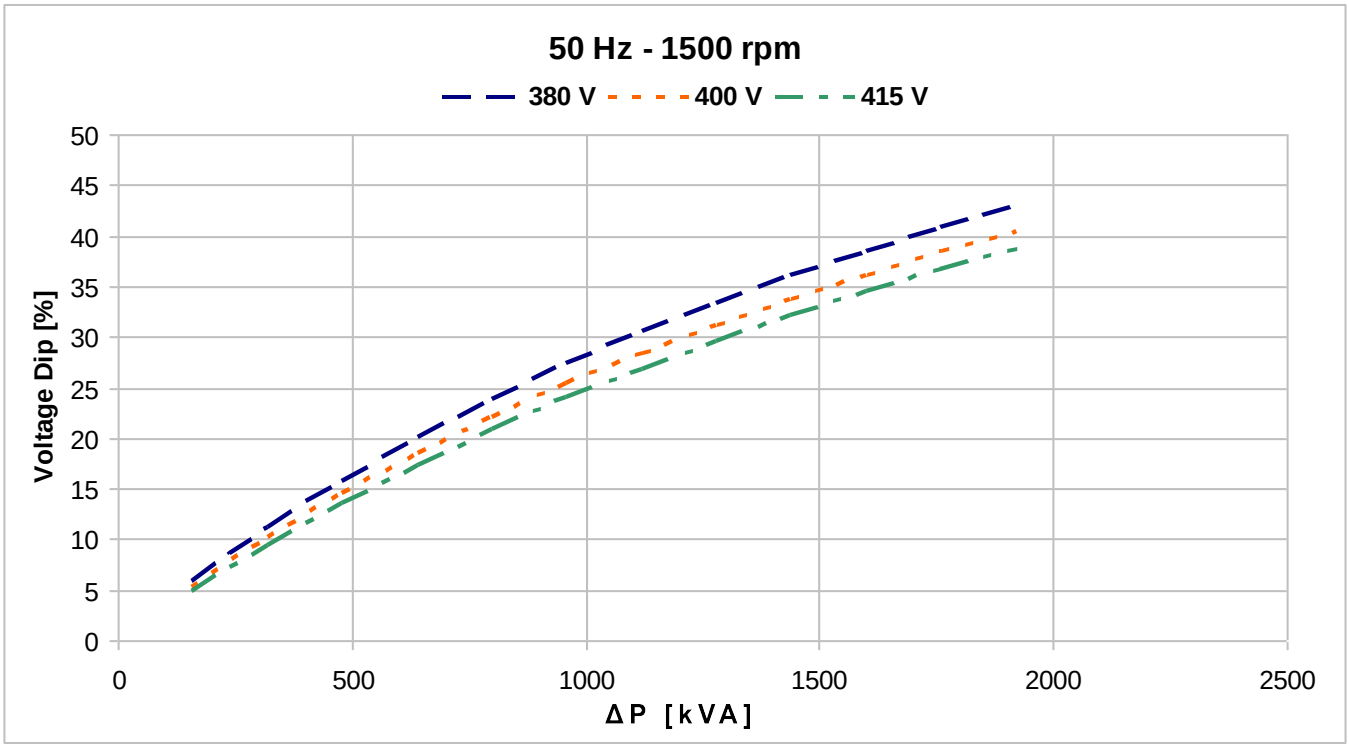
460 V

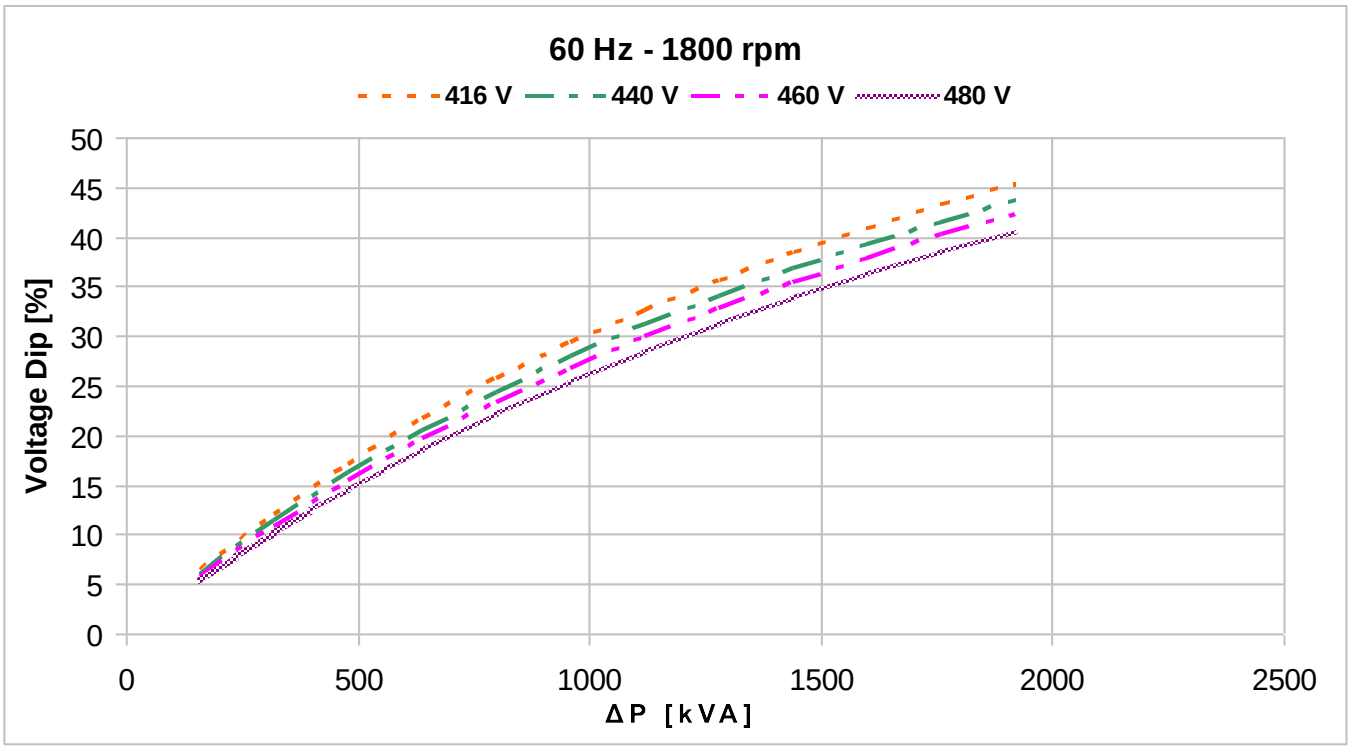


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 SA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		**Hz**	**50**				**60**				
VOLTAGE	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
	Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING		**kVA**	**490**	**510**	**510**	**510**	**510**	**540**	**570**	**610**	**625**
		kW	***392***	***408***	***408***	***408***	***408***	***432***	***456***	***488***	***500***
EFFICIENCY (%) @ 0,8 p.f.		4/4	93,5	94,0	94,1	94,2	93,0	93,4	93,7	94,0	94,5
		3/4	94,4	94,6	94,7	94,7	93,9	94,0	94,4	94,6	94,9
		2/4	94,9	94,9	94,9	94,9	94,3	94,4	94,7	94,9	95,1
EFFICIENCY (%) @ 0,8 p.f.		4/4	94,8	95,3	95,3	95,4	94,5	94,7	95,0	95,3	95,7
		3/4	95,6	95,7	95,8	95,8	95,2	95,3	95,6	95,7	96,0
		2/4	96,0	96,0	96,0	96,0	95,5	95,6	95,8	96,0	96,1
SHORT CIRCUIT RATIO			0,33	0,35	0,38	0,42	0,26	0,30	0,32	0,32	0,34
REACTANCES (%)											
Direct axis synchronous		xd	350	330	305	275	440	390	365	360	335
Quadrature axis synchronous		xq	200	190	175	155	255	225	210	205	195
Direct axis transient		x'd	28,7	27,0	25,1	22,3	35,9	31,7	29,9	29,3	27,6
Direct axis subtransient		x"d	16,4	15,4	14,3	12,7	20,5	18,1	17,1	16,7	15,7
Quadrature axis subtransient		x"q	18,6	17,5	16,3	14,5	23,3	20,6	19,4	19,0	17,9
Negative sequence		x_2	17,5	16,4	15,2	13,6	21,8	19,3	18,2	17,8	16,7
Zero sequence		x_0	4,4	4,1	3,8	3,4	5,5	4,8	4,5	4,4	4,2

TIME CONSTANTS [s]

Open circuit (T'do)	1,65	Subtransient (T"d)	0,015
Transient (T'd)	0,135	Armature (Ta)	0,021

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6322 2RS C3 / Prelubricated
N-end bearing/Lubrication	6317 2RS C3 / Prelubricated
Weight (IM B34) [kg]	1250
Inertia (J) (IM B34) [kgm^2]	7,97
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	0,93 / 1,12
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [mΩ] @ 20 °C - Star series	8,6
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
Voltage regulation accuracy	+/- 0,5 % (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

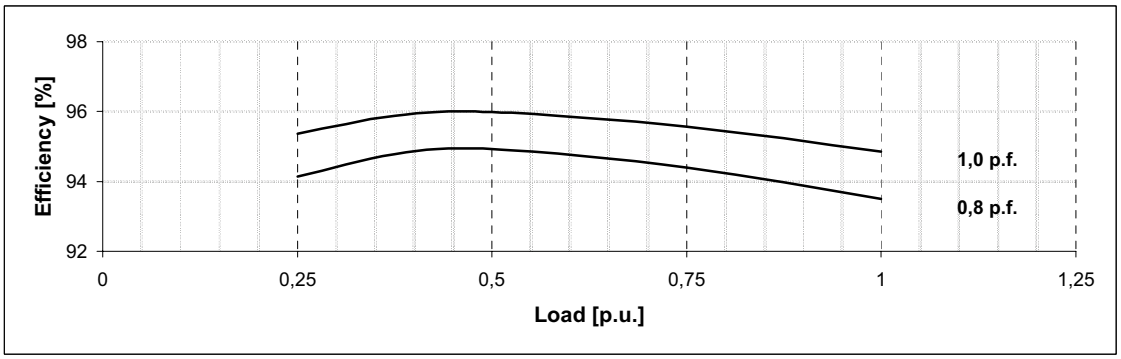
STANDARDS

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

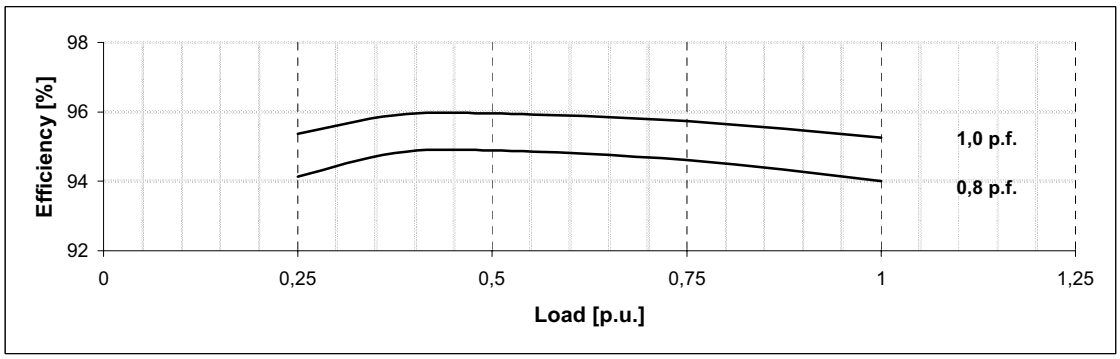
Typical efficiency curves

50 Hz - 1500 min^{-1}

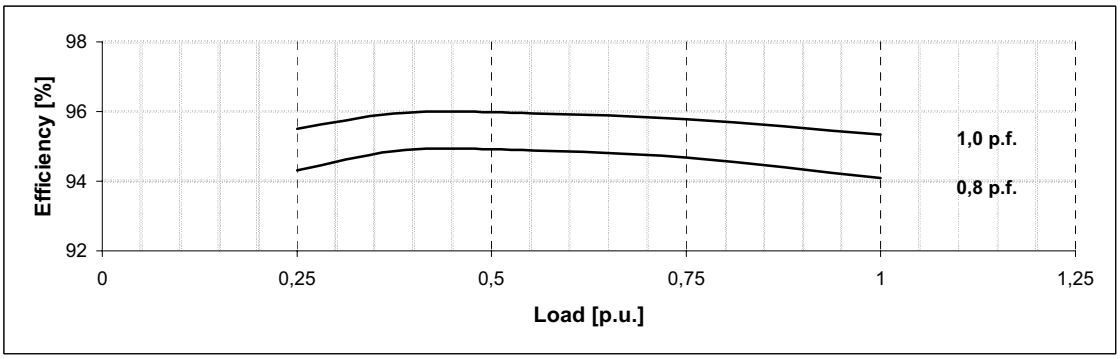
380 V



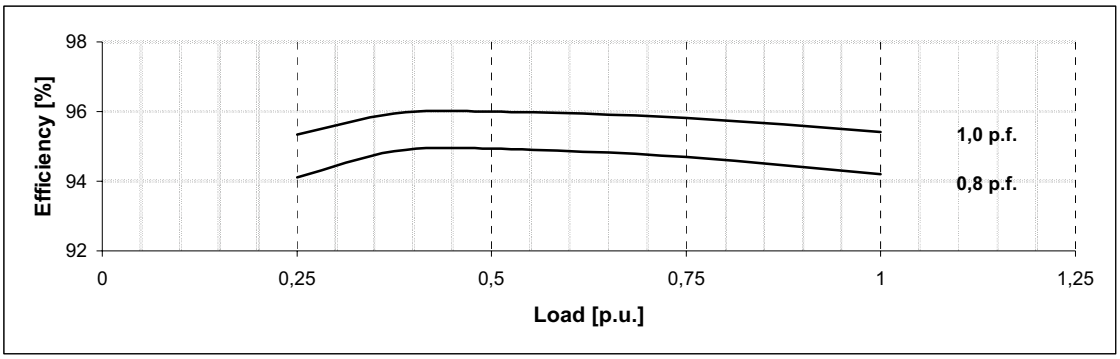
400 V



415 V



440 V



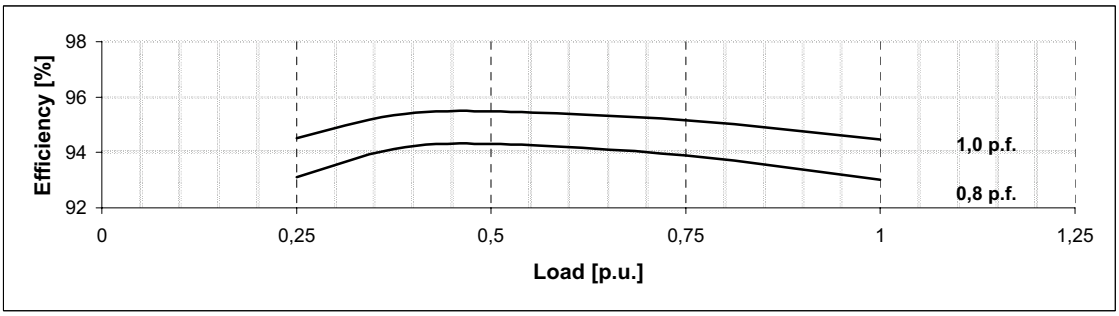
THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 SA 4

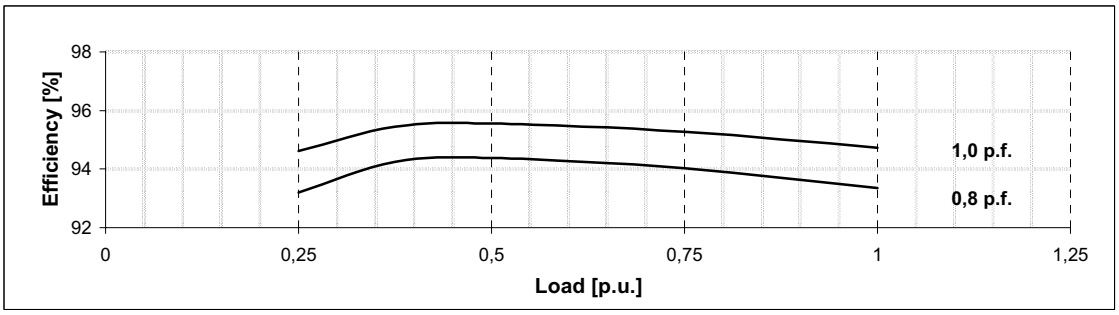
Typical efficiency curves

60 Hz - 1800 min^{-1}

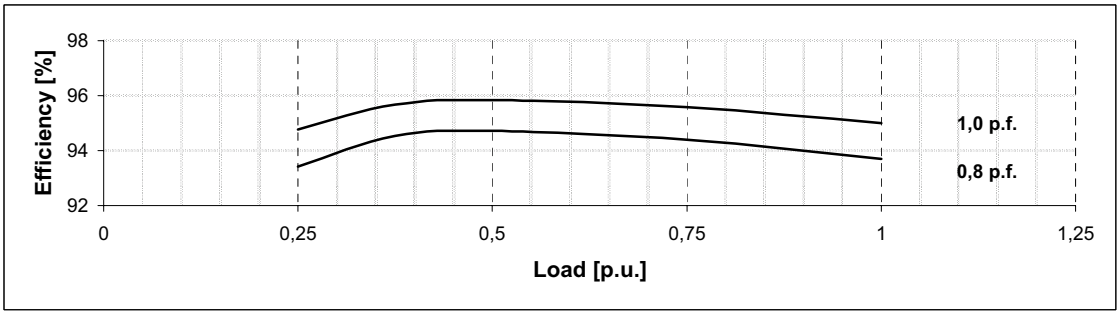
380 V



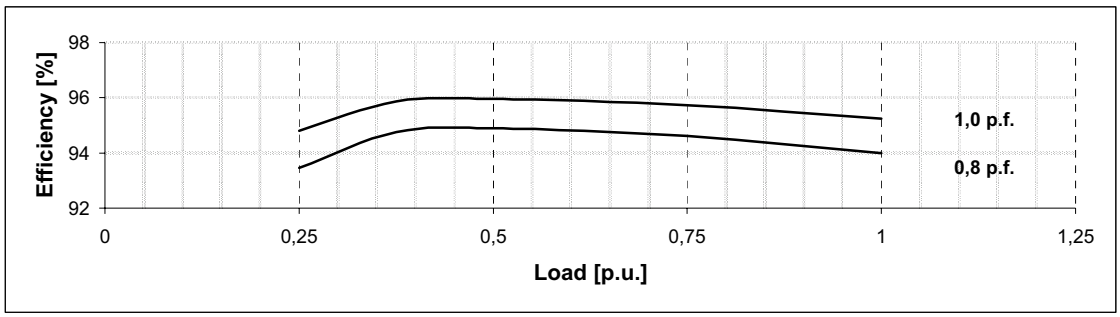
416 V



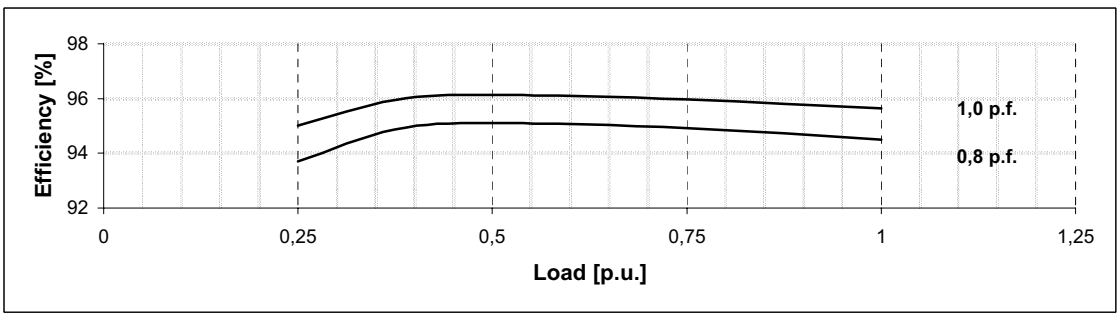
440 V



460 V

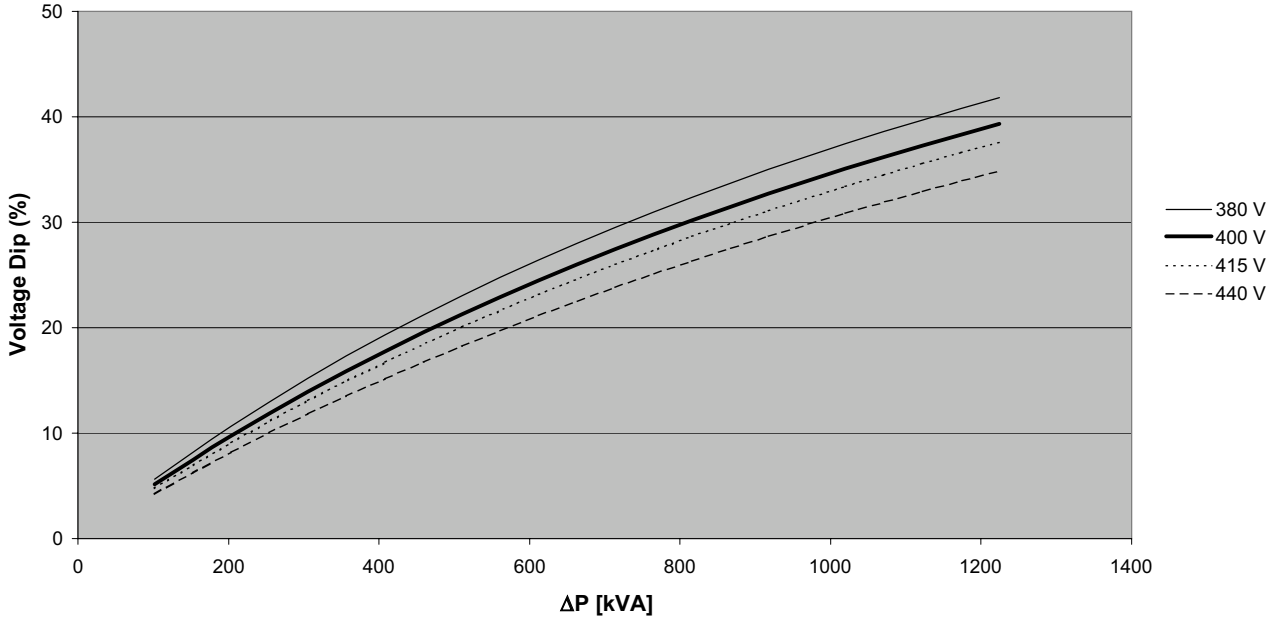


480 V

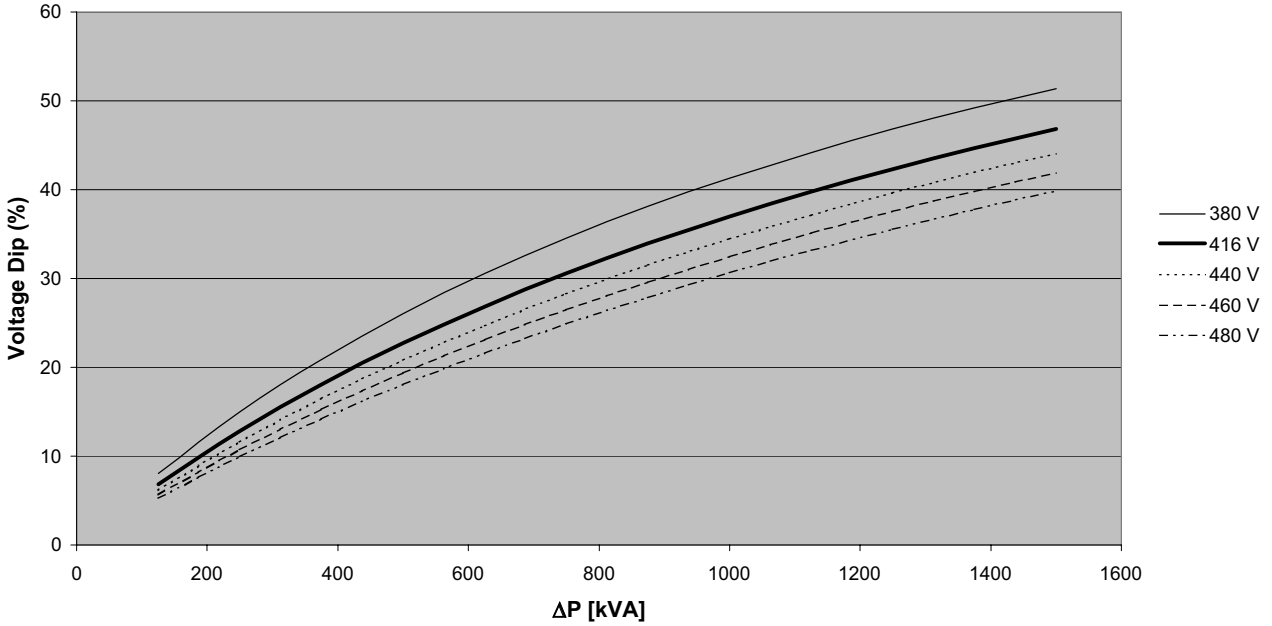


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

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

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 355 SB4

CONTINUOUS DUTY

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

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

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**	**570**	**570**	**570**	**570**	**600**	**645**	**665**	**685**	**695**
			kW	***456***	***456***	***456***	***456***	***480***	***516***	***532***	***548***	***556***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	94,2	94,6	94,7	94,8	93,9	94,4	94,7	94,9	95,1
			3/4	95,1	95,1	95,2	95,2	94,6	94,9	95,1	95,3	95,4
			2/4	95,4	95,3	95,3	95,3	94,9	95,1	95,4	95,4	95,5
EFFICIENCY [%] @ 1 p.f.			**4/4**	95,4	95,7	95,8	95,9	95,2	95,6	95,8	96,0	96,1
			3/4	96,1	96,1	96,2	96,2	95,7	96,0	96,1	96,3	96,4
			2/4	96,3	96,3	96,3	96,3	96,0	96,1	96,3	96,4	96,5
SHORT CIRCUIT RATIO			SCR	0,25	0,28	0,30	0,34	0,20	0,22	0,24	0,26	0,28
REACTANCES [%]												
Direct axis synchronous			Xd	425	384	357	317	390	482	444	419	390
Quadrature axis synchronous			Xq	238	215	200	178	301	270	249	234	218
Direct axis transient			X'd	39,2	35,4	32,9	29,3	49,5	44,4	41,0	38,6	36,0
Direct axis subtransient			X"d	17,2	15,5	14,4	12,8	21,7	19,5	17,9	16,9	15,7
Quadrature axis subtransient			X"q	21,2	19,1	17,7	15,8	26,7	24,0	22,1	20,8	19,4
Negative sequence			X_2	19,3	17,4	16,2	14,4	24,4	21,8	20,1	19,0	17,7
Zero sequence			X_0	4,3	3,9	3,6	3,2	5,5	4,9	4,5	4,3	4,0
TIME CONSTANTS [s]												
Open circuit			T'do	2,46								
Transient			T'd	0,23								
Subtransient			T"d	0,015								
Armature			T_a	0,021								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6322 C3 / With grease nipple
N-end bearing/Lubrication		6317 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	9,29
Weight [kg]	Refer to B34 construction	1550
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,93 / 1,12
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	0,006
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.

MarelliGenerators®

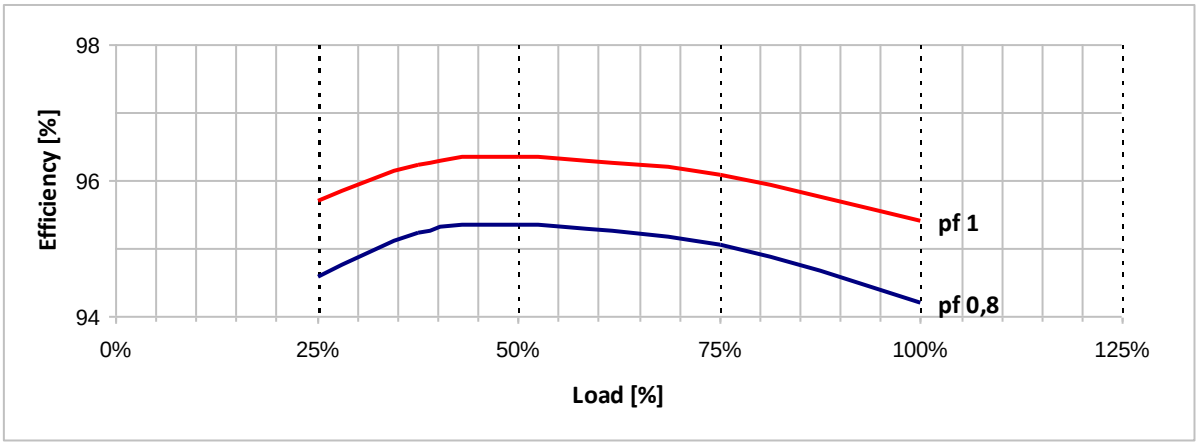
THREE PHASE SYNCRONOUS GENERATOR

MJB 355 SB4

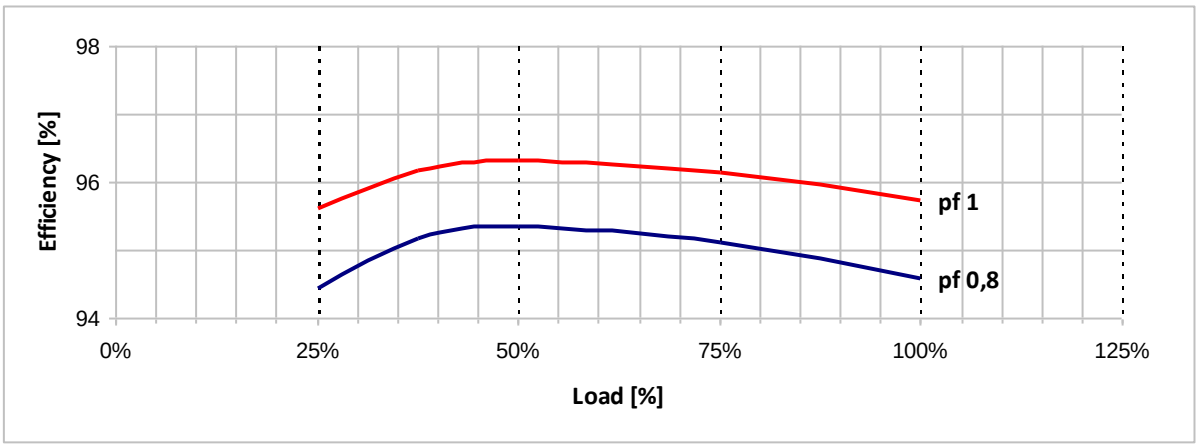
Typical efficiency curves

50 Hz - 1500 rpm

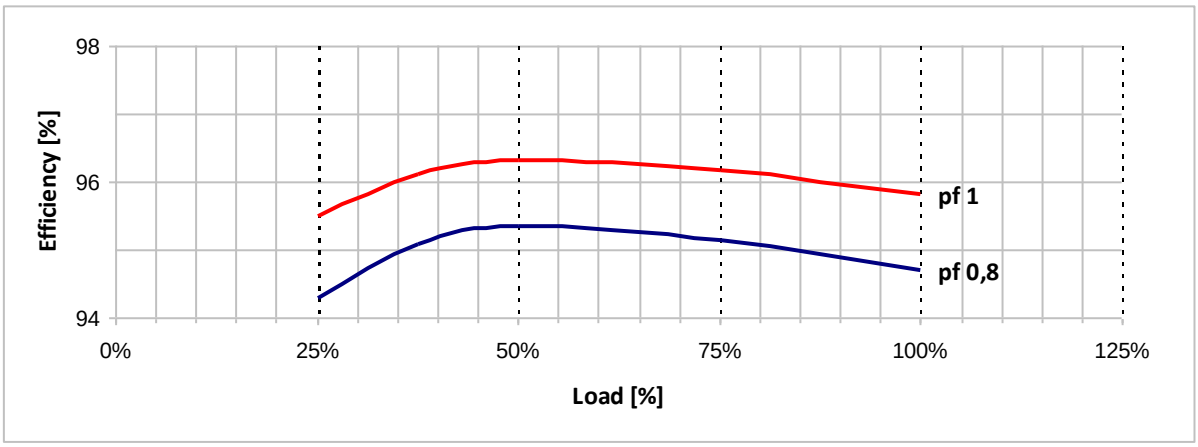
380 V



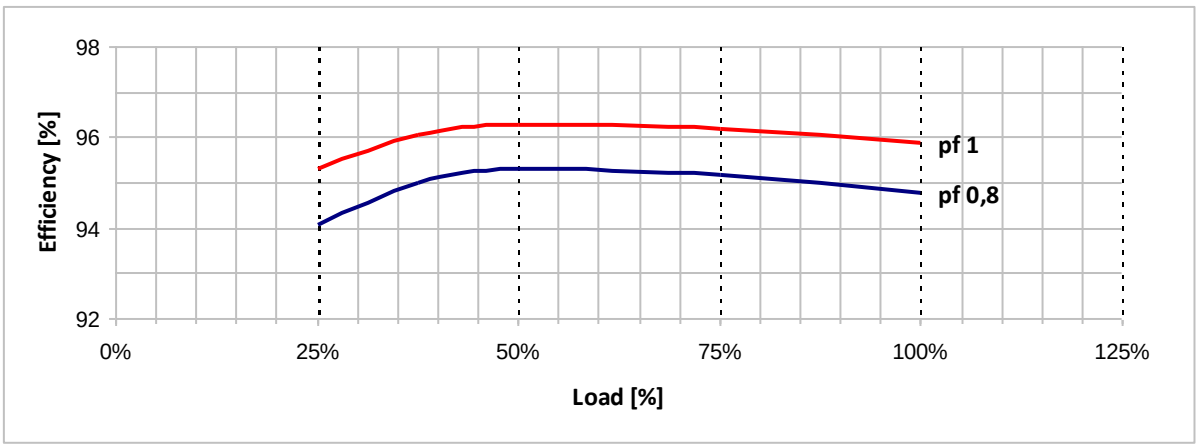
400 V



415 V



440 V



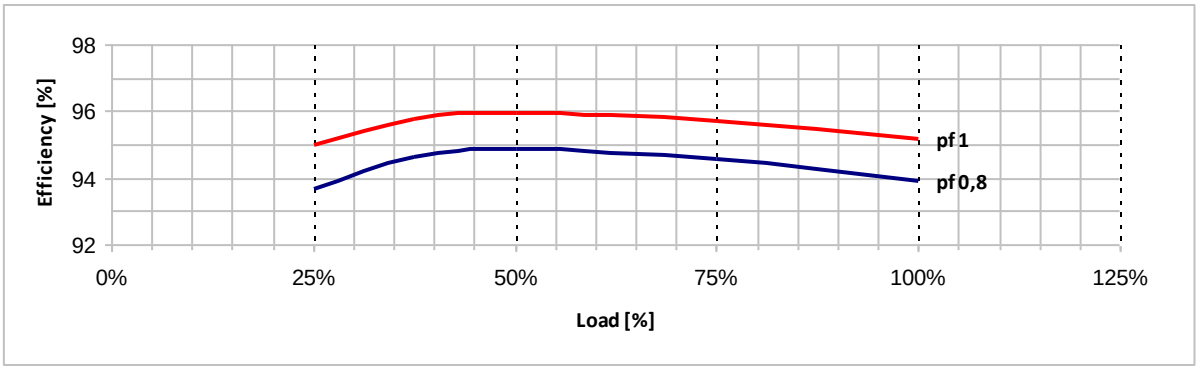
THREE PHASE SYNCRONOUS GENERATOR

MJB 355 SB4

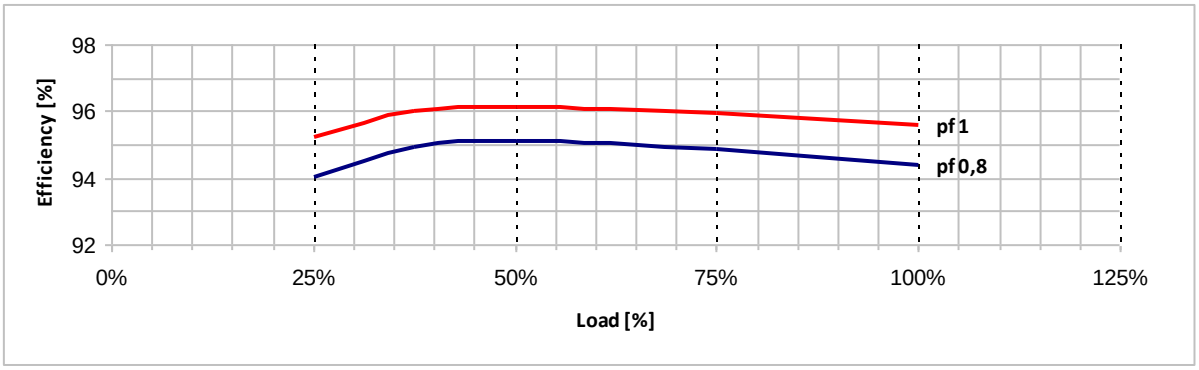
Typical efficiency curves

60 Hz - 1800 rpm

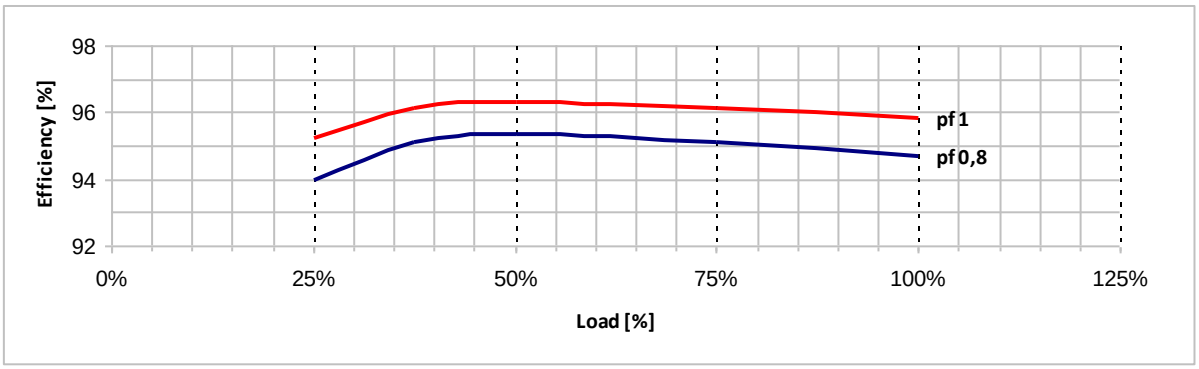
380 V



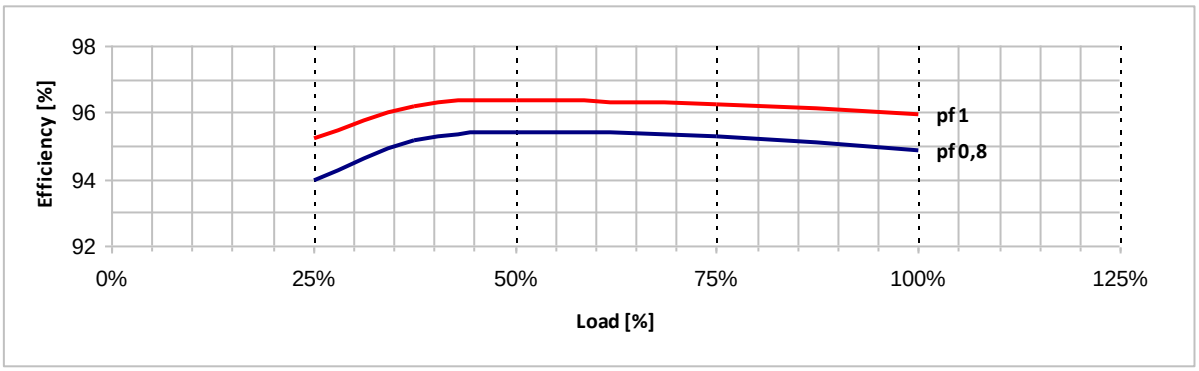
416 V



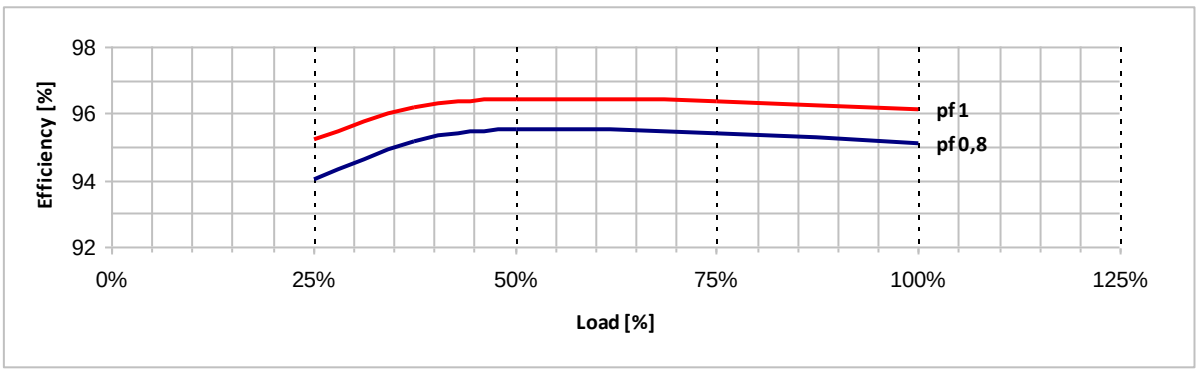
440 V



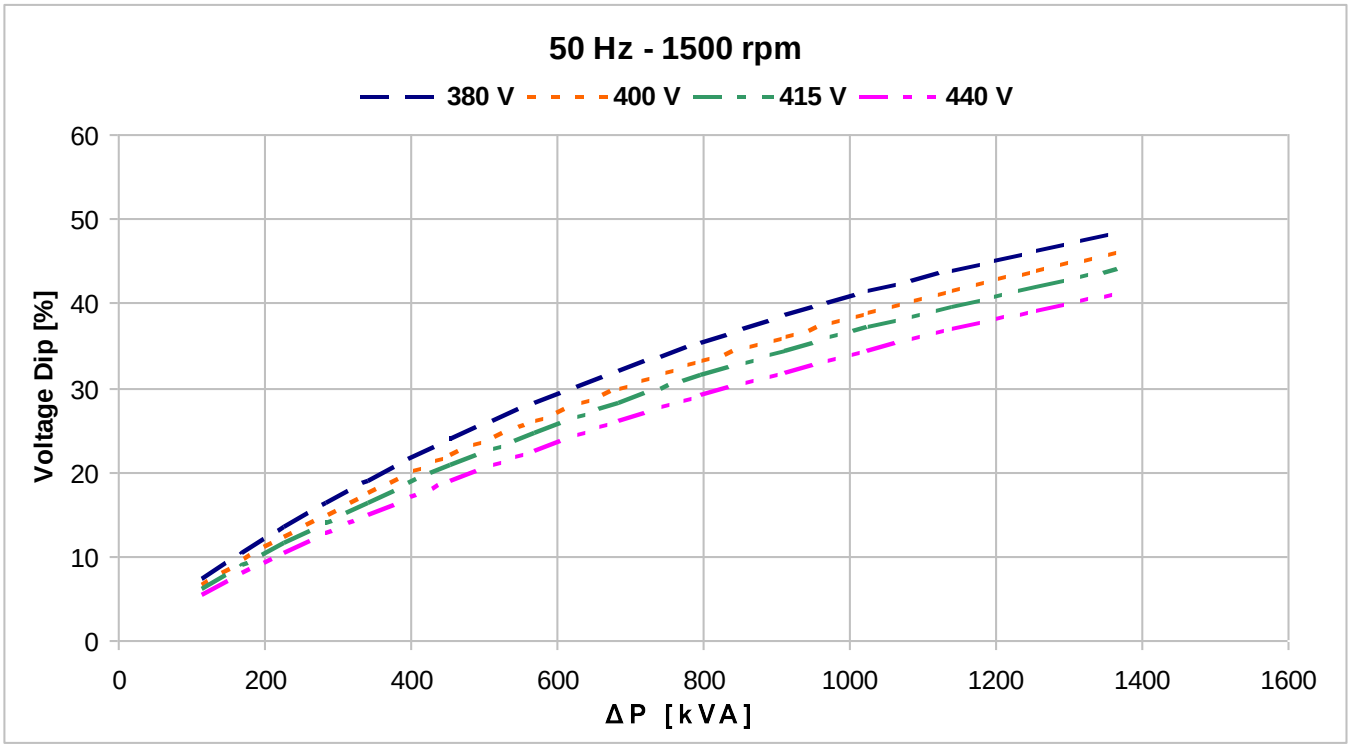
460 V

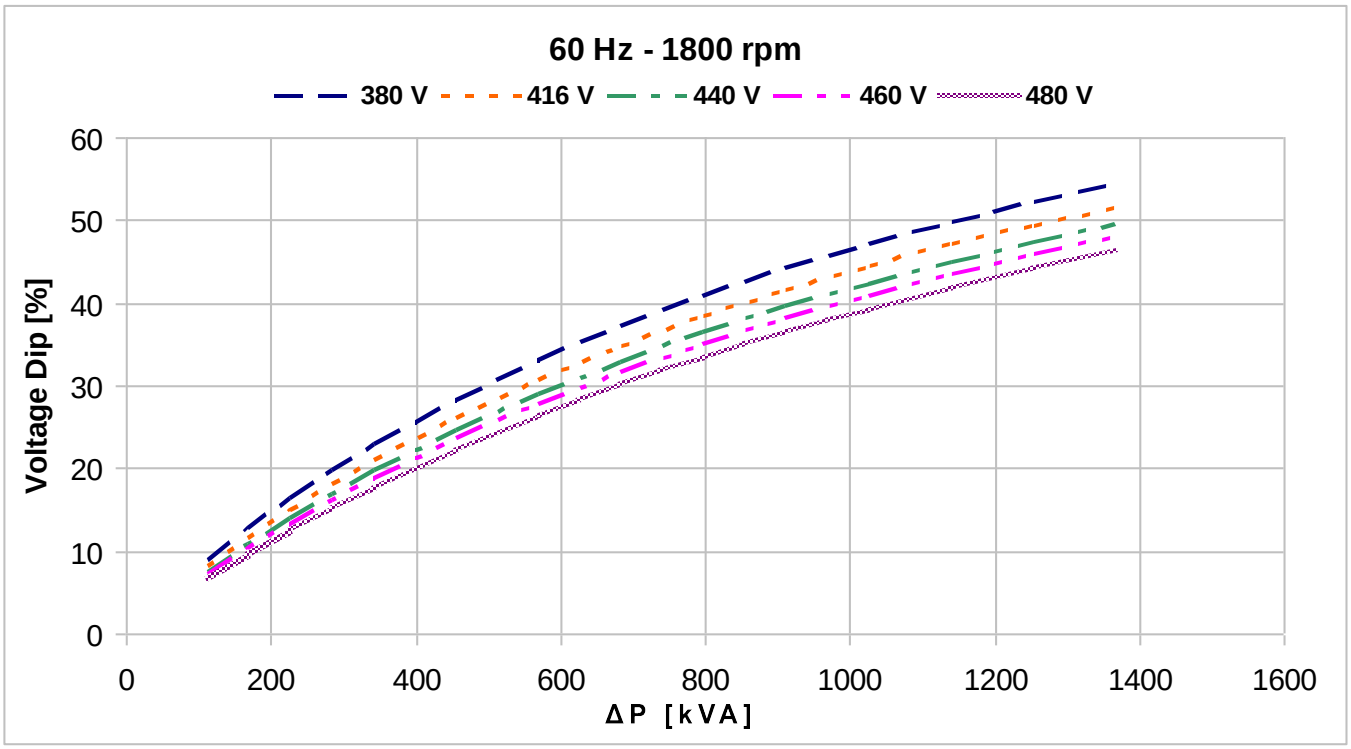


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1150**	**1150**	**1150**	**1320**	**1370**	**1400**	**1420**
	kW	***920***	***920***	***920***	***1056***	***1096***	***1120***	***1136***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	95,5	95,6	95,7	95,6	95,8	95,9	96,0
	3/4	95,8	95,8	95,8	95,9	96,0	96,2	96,2
	2/4	95,9	95,8	95,8	96,0	96,1	96,2	96,2
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,4	96,5	96,6	96,5	96,7	96,7	96,8
	3/4	96,7	96,7	96,7	96,7	96,8	97,0	97,0
	2/4	96,8	96,7	96,7	96,8	96,9	97,0	97,0
SHORT CIRCUIT RATIO	SCR	0,41	0,45	0,48	0,35	0,38	0,41	0,44
REACTANCES [%]								
Direct axis synchronous	Xd	283	255	237	325	301	282	262
Quadrature axis synchronous	Xq	158	143	133	182	169	158	147
Direct axis transient	X'd	27,1	24,5	22,8	31,2	28,9	27,1	25,2
Direct axis subtransient	X"d	12,4	11,2	10,4	14,3	13,2	12,4	11,5
Quadrature axis subtransient	X"q	12,9	11,6	10,8	14,8	13,7	12,8	11,9
Negative sequence	X_2	12,6	11,4	10,6	14,5	13,5	12,6	11,7
Zero sequence	X_0	3,2	2,9	2,7	3,7	3,4	3,2	3,0
TIME CONSTANTS [s]								
Open circuit	T'do	2,41						
Transient	T'd	0,23						
Subtransient	T"d	0,017						
Armature	T_a	0,026						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 C3 / With grease nipple
N-end bearing/Lubrication		6318 Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	19,3
Weight [kg]	Refer to B34 construction	2550
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,30 / 1,55
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	1,8
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.

MarelliGenerators®

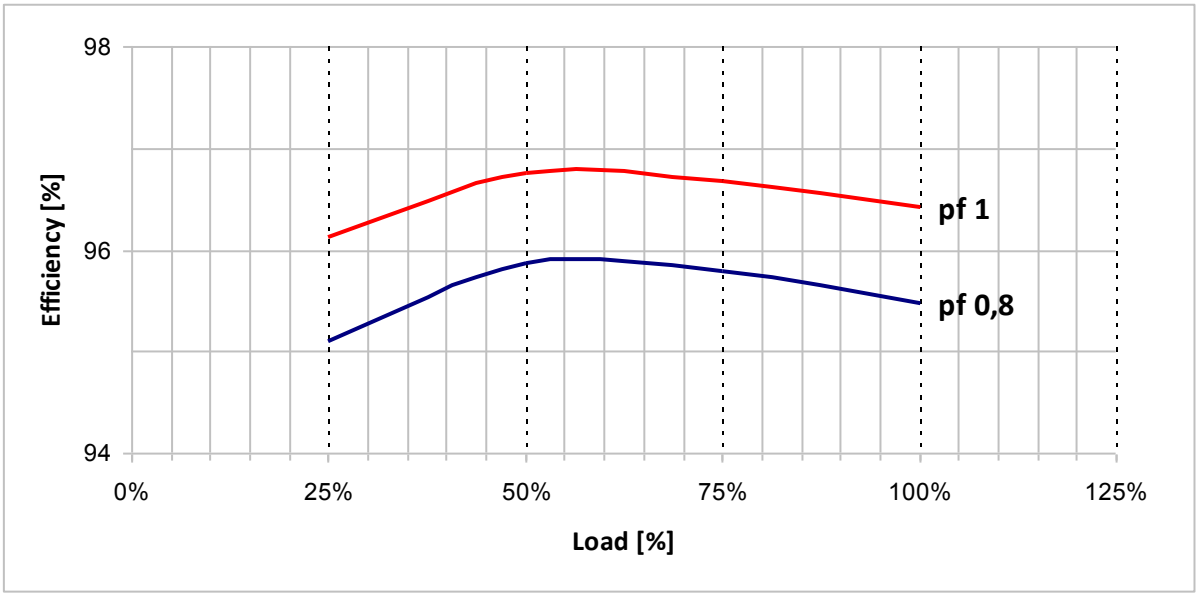
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LA4

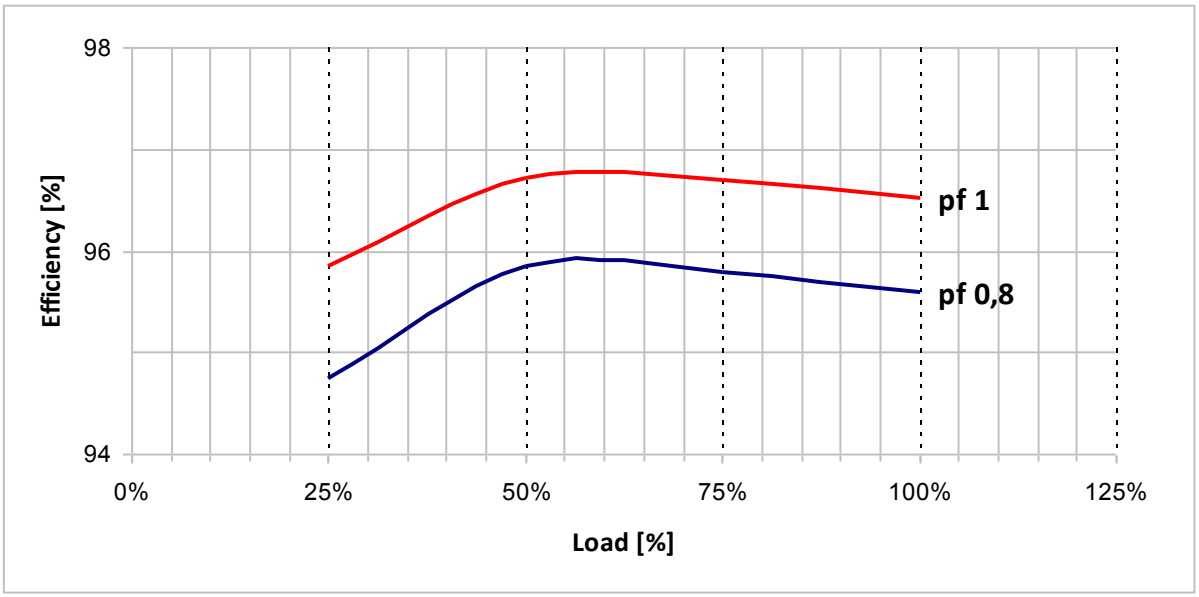
Typical efficiency curves

50 Hz - 1500 rpm

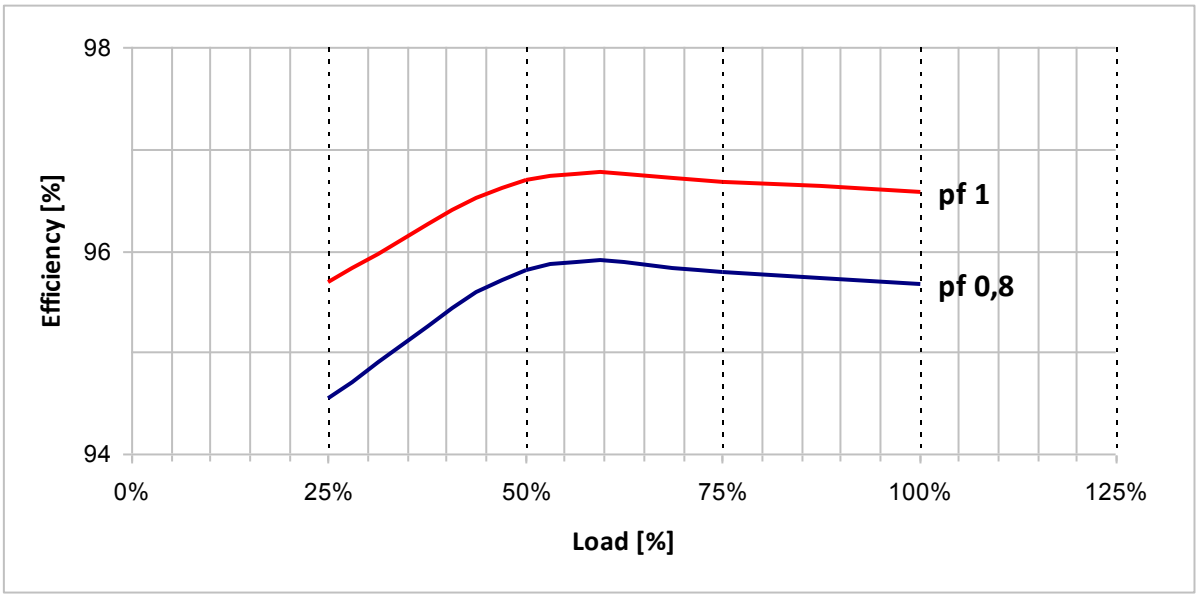
380 V



400 V



415 V



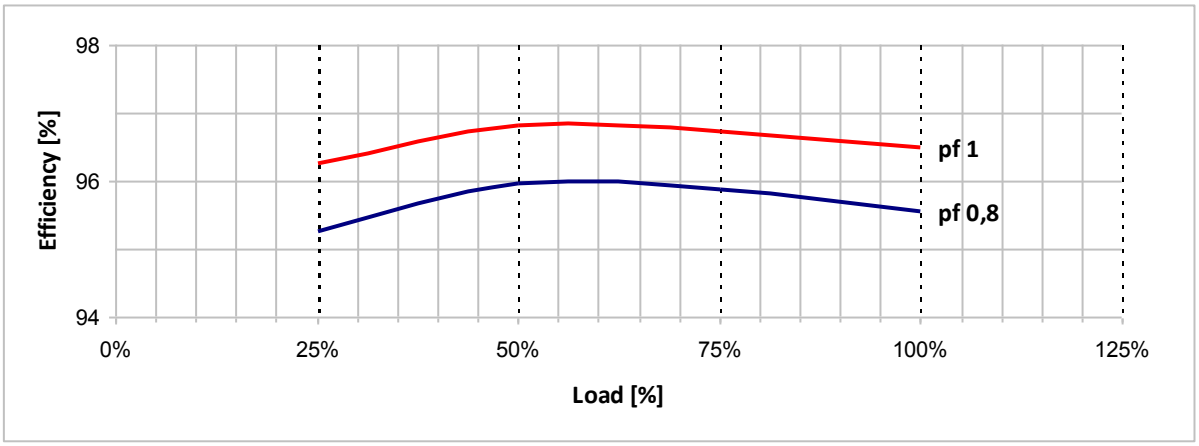
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LA4

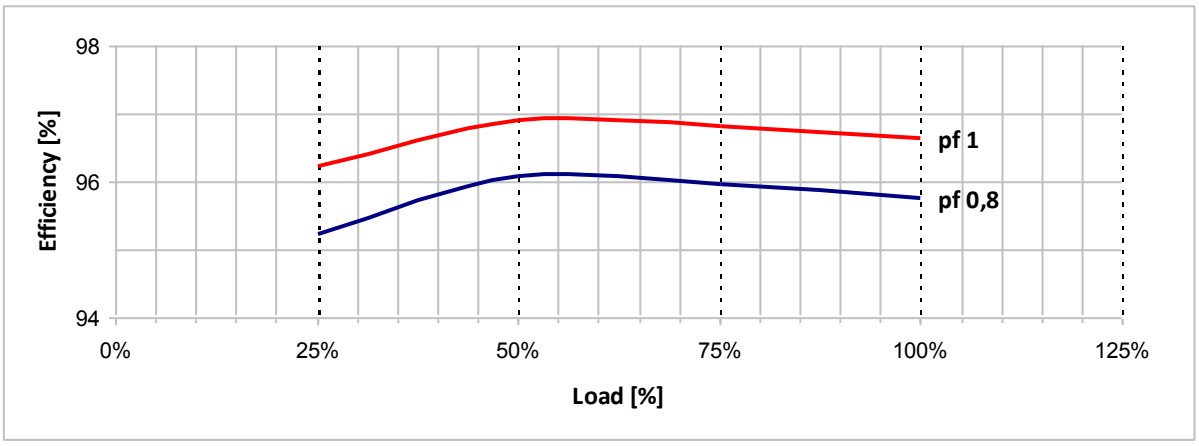
Typical efficiency curves

60 Hz - 1800 rpm

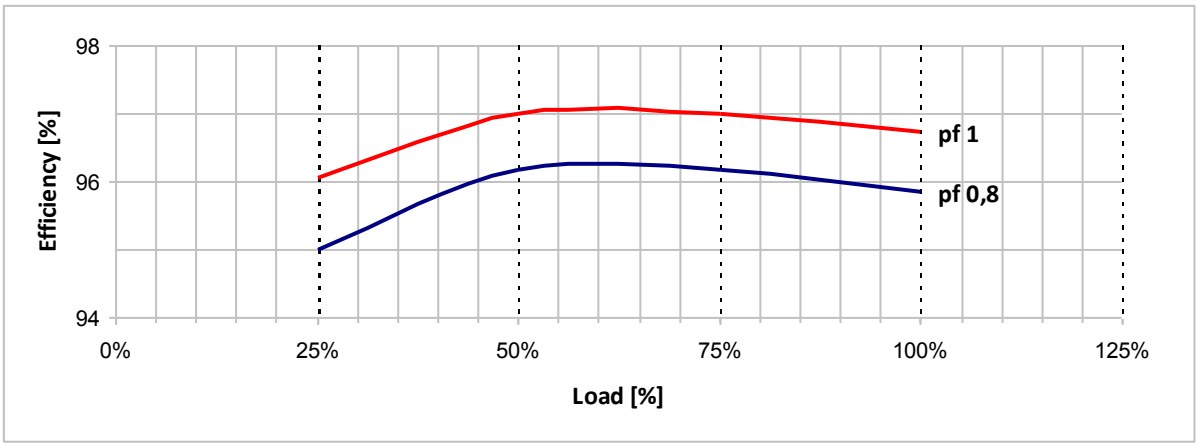
416 V



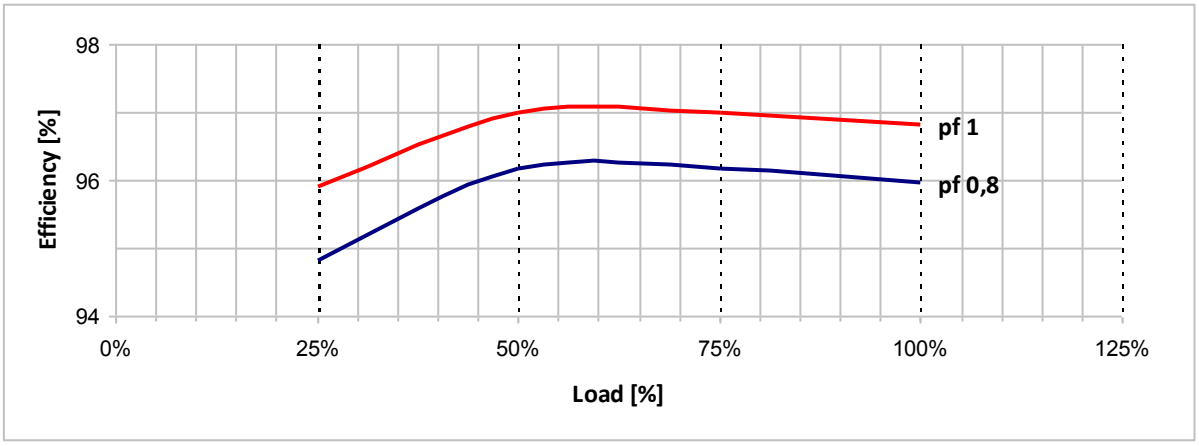
440 V



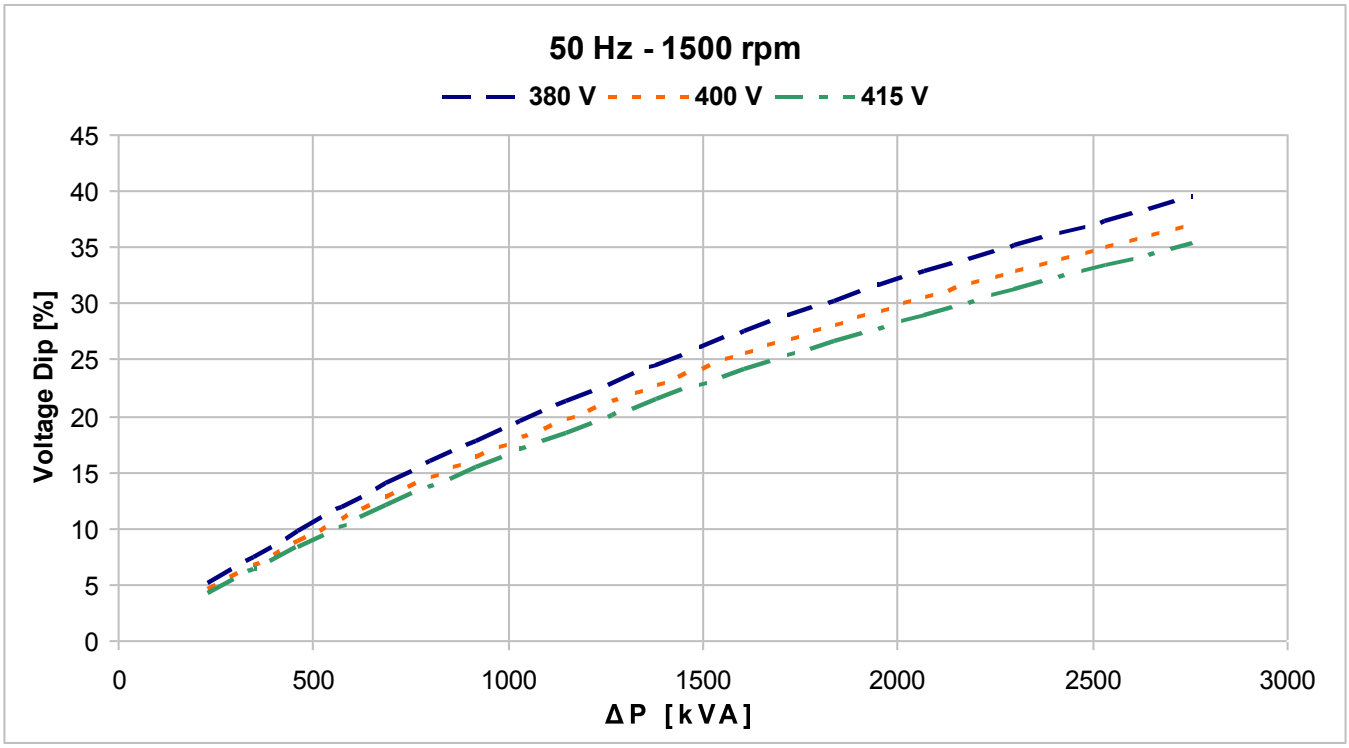
460 V

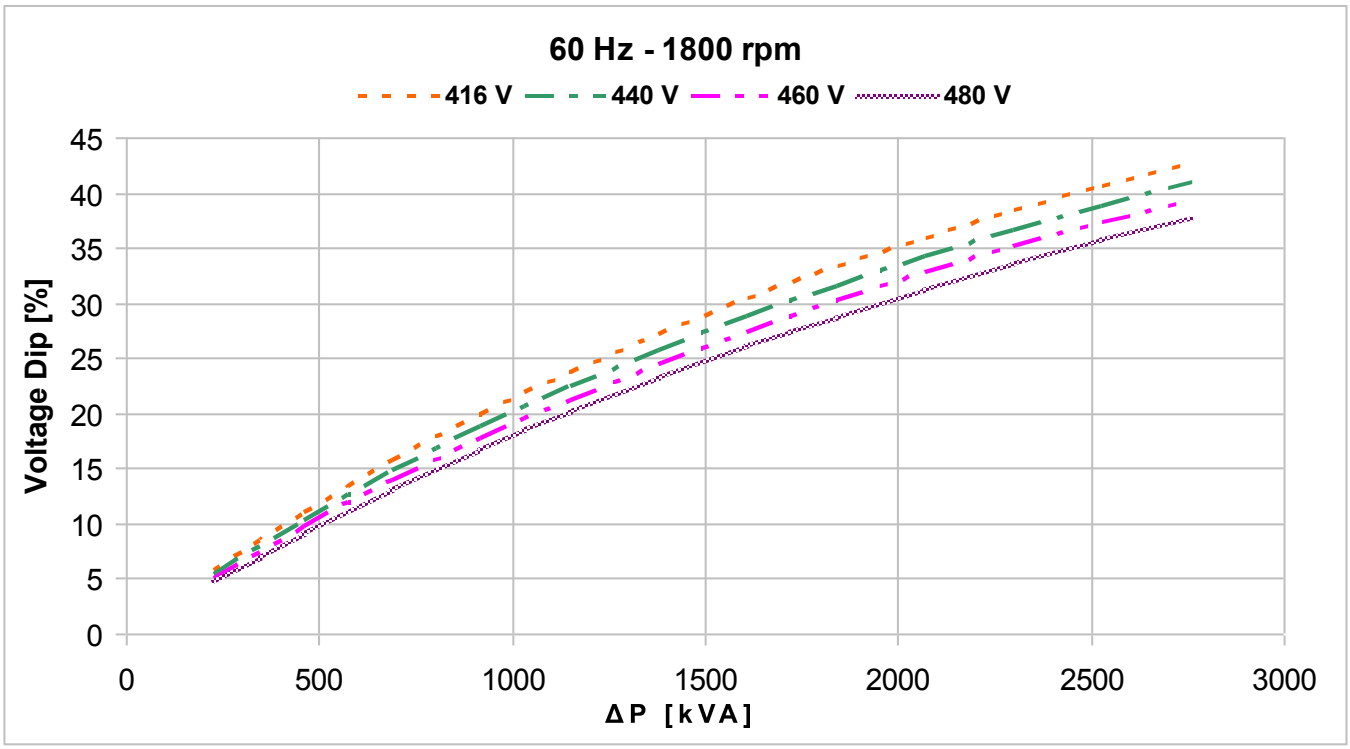


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1300**	**1300**	**1300**	**1450**	**1520**	**1560**	**1625**
	kW	***1040***	***1040***	***1040***	***1160***	***1216***	***1248***	***1300***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	95,6	95,8	95,9	95,8	96,0	96,2	96,3
	3/4	96,0	96,0	96,0	96,1	96,3	96,4	96,5
	2/4	96,1	96,0	96,0	96,2	96,4	96,5	96,5
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,5	96,7	96,8	96,7	96,8	97,0	97,1
	3/4	96,8	96,8	96,8	96,9	97,1	97,2	97,2
	2/4	96,9	96,9	96,9	97,0	97,2	97,2	97,2
SHORT CIRCUIT RATIO	SCR	0,42	0,46	0,50	0,37	0,40	0,42	0,44
REACTANCES [%]								
Direct axis synchronous	Xd	277	250	232	309	290	272	260
Quadrature axis synchronous	Xq	154	139	129	172	161	151	145
Direct axis transient	X'd	24,9	22,5	20,9	27,8	26,1	24,5	23,4
Direct axis subtransient	X"d	10,4	9,4	8,7	11,6	10,9	10,2	9,8
Quadrature axis subtransient	X"q	10,9	9,8	9,1	12,1	11,4	10,7	10,2
Negative sequence	X_2	10,6	9,6	8,9	11,9	11,1	10,5	10,0
Zero sequence	X_0	2,3	2,1	2,0	2,6	2,4	2,3	2,2
TIME CONSTANTS [s]								
Open circuit	T'do	2,49						
Transient	T'd	0,22						
Subtransient	T"d	0,014						
Armature	T_a	0,022						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 C3 / With grease nipple
N-end bearing/Lubrication		6318 Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	22,5
Weight [kg]	Refer to B34 construction	2800
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,30 / 1,55
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	1,4
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.

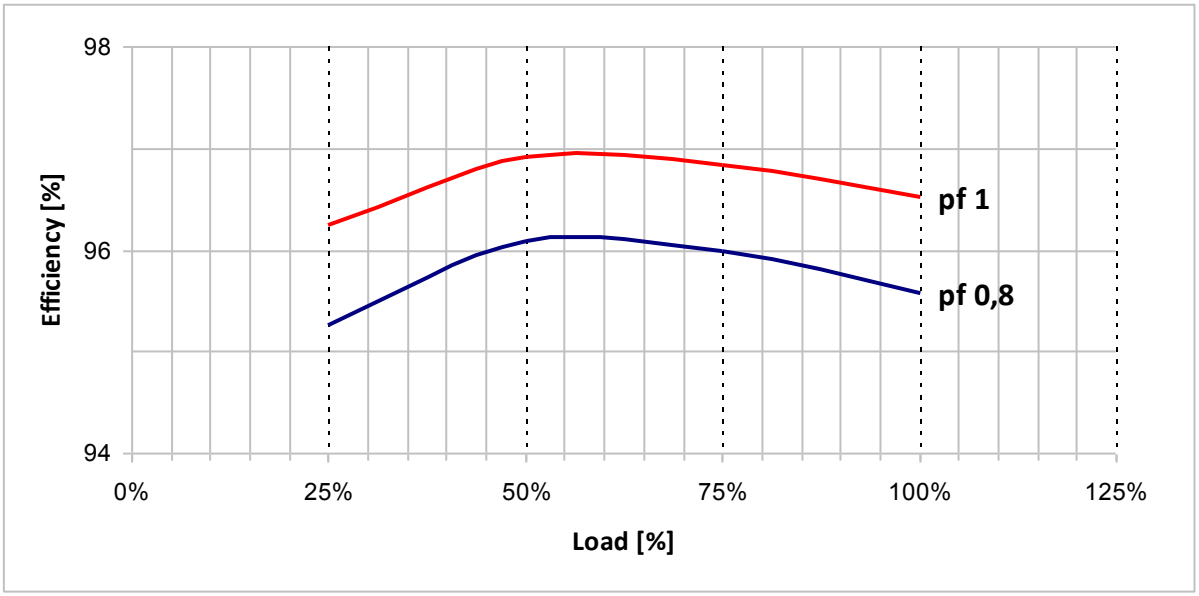
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LB4

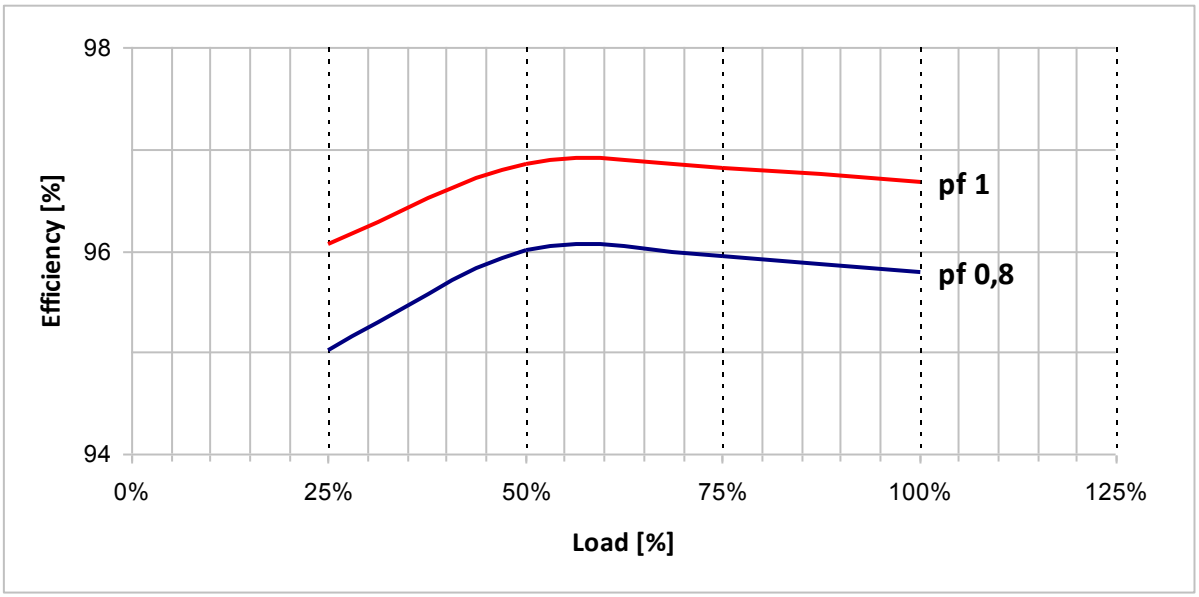
Typical efficiency curves

50 Hz - 1500 rpm

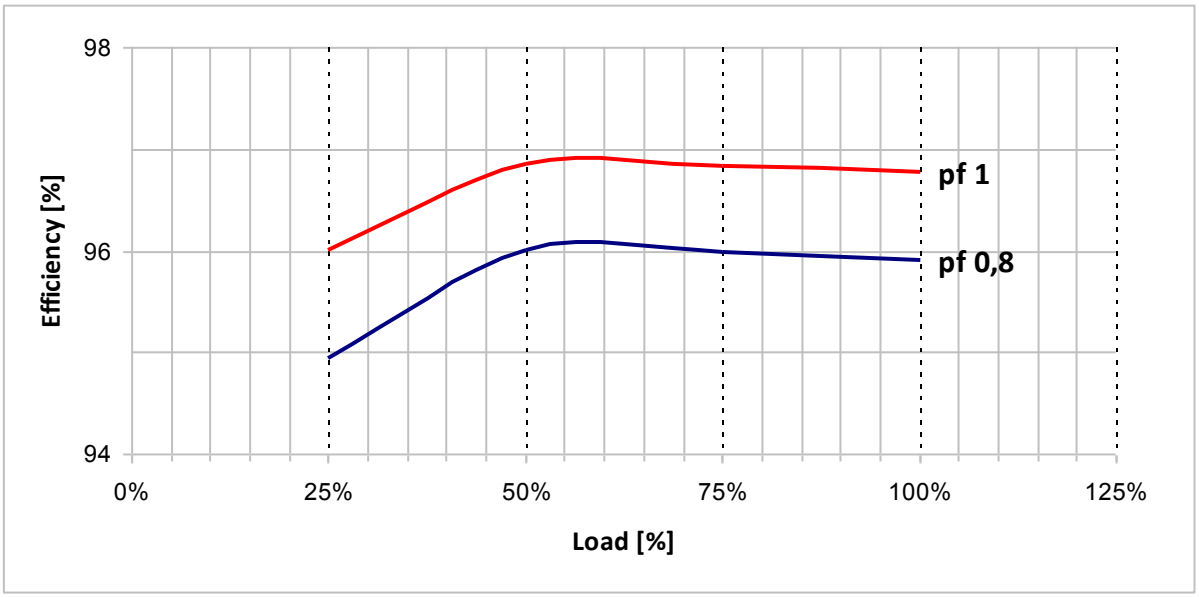
380 V



400 V



415 V



MarelliGenerators®

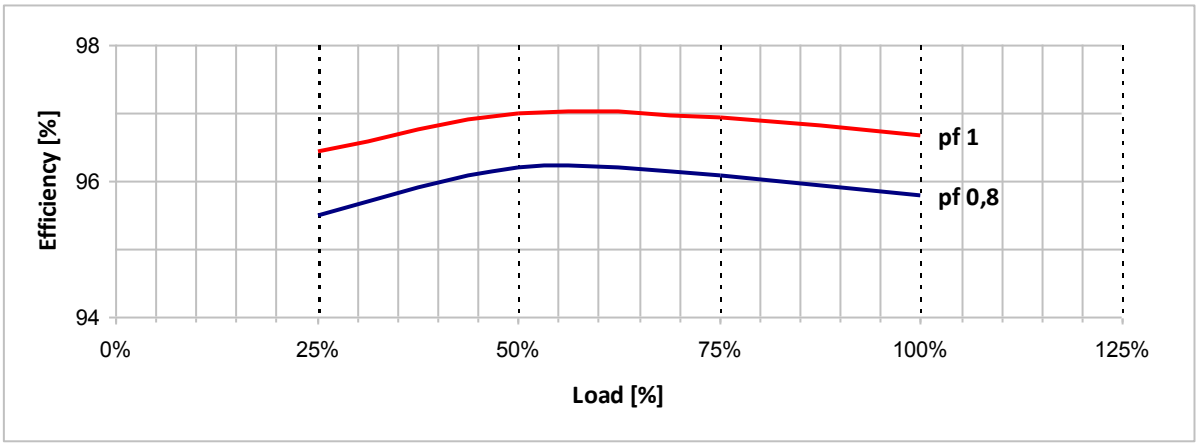
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 LB4

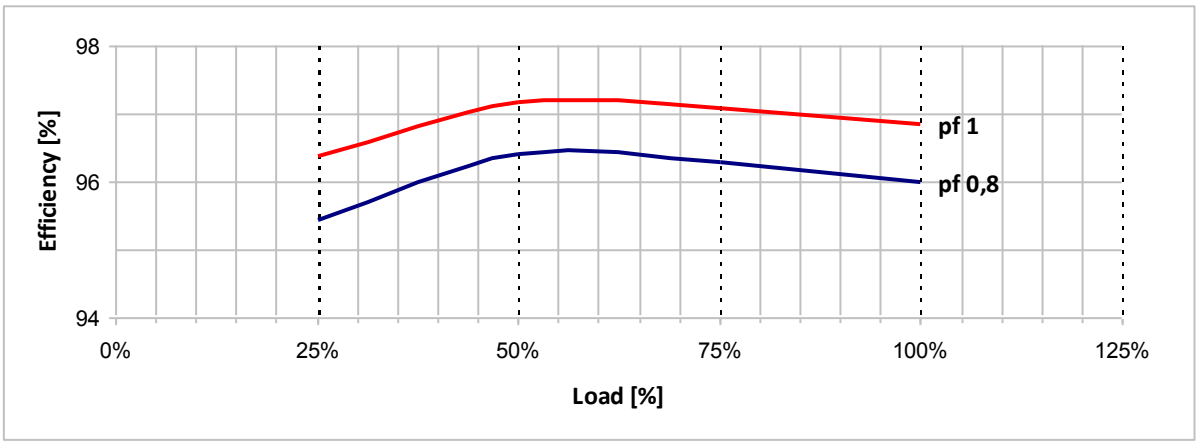
Typical efficiency curves

60 Hz - 1800 rpm

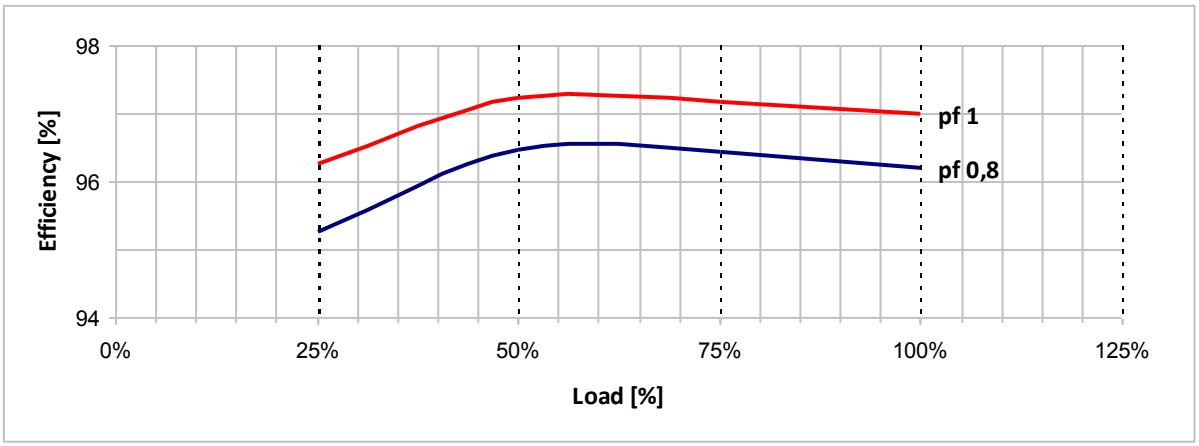
416 V



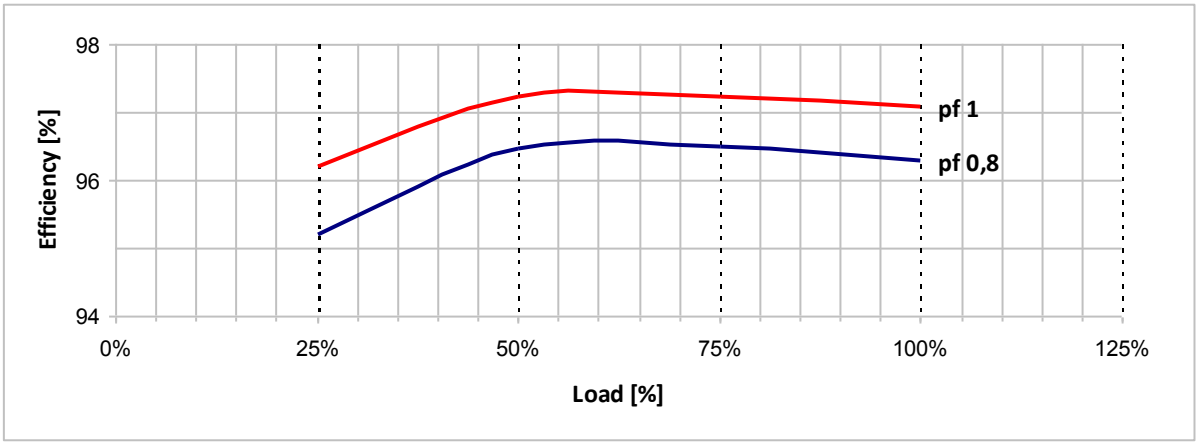
440 V



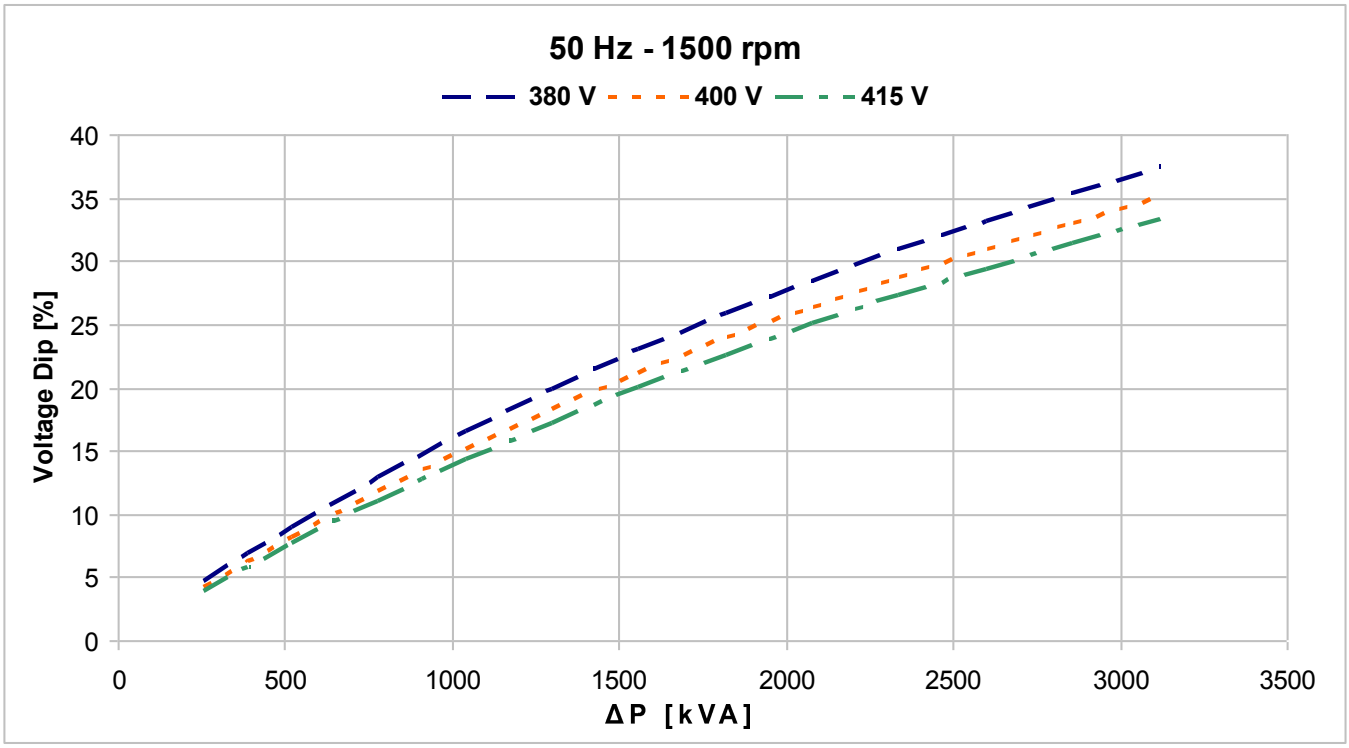
460 V

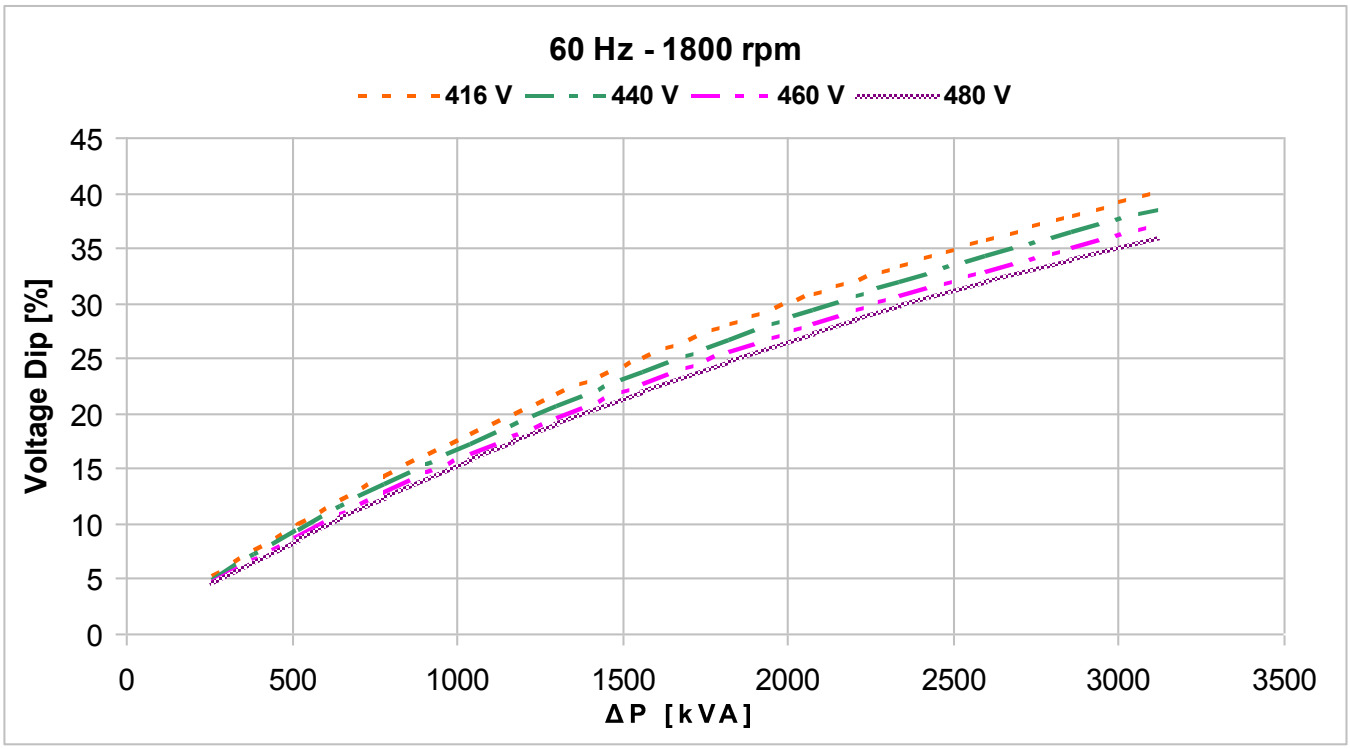


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**930**	**930**	**930**	**1070**	**1120**	**1120**	**1175**
	kW	***744***	***744***	***744***	***856***	***896***	***896***	***940***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	94,9	95,2	95,2	95,0	95,3	95,5	95,7
	3/4	95,3	95,5	95,4	95,3	95,5	95,7	95,9
	2/4	95,4	95,6	95,4	95,4	95,6	95,7	95,8
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,0	96,2	96,2	96,1	96,3	96,4	96,6
	3/4	96,3	96,4	96,4	96,3	96,5	96,6	96,7
	2/4	96,4	96,5	96,4	96,4	96,5	96,6	96,7
SHORT CIRCUIT RATIO	SCR	0,42	0,46	0,50	0,36	0,39	0,42	0,44
REACTANCES [%]								
Direct axis synchronous	Xd	279	252	234	322	301	275	265
Quadrature axis synchronous	Xq	156	141	131	180	168	154	148
Direct axis transient	X'd	27,5	24,8	23,0	31,7	29,6	27,1	26,1
Direct axis subtransient	X"d	12,9	11,6	10,8	14,8	13,9	12,7	12,2
Quadrature axis subtransient	X"q	13,2	11,9	11,1	15,2	14,2	13,0	12,5
Negative sequence	X_2	13,1	11,8	11,0	15,1	14,1	12,9	12,4
Zero sequence	X_0	3,2	2,9	2,7	3,7	3,5	3,2	3,1
TIME CONSTANTS [s]								
Open circuit	T'do	2						
Transient	T'd	0,2						
Subtransient	T"d	0,007						
Armature	T_a	0,023						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 C3 / With grease nipple
N-end bearing/Lubrication		6318 Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	16,3
Weight [kg]	Refer to B34 construction	2250
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,30 / 1,55
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	2,2
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.

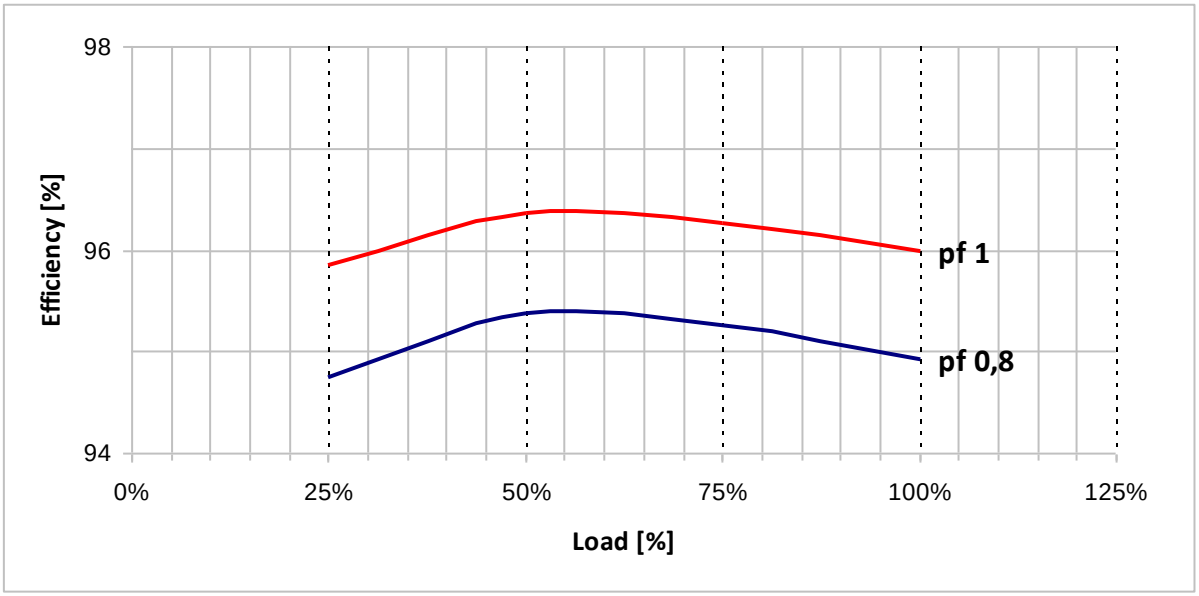
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MA4

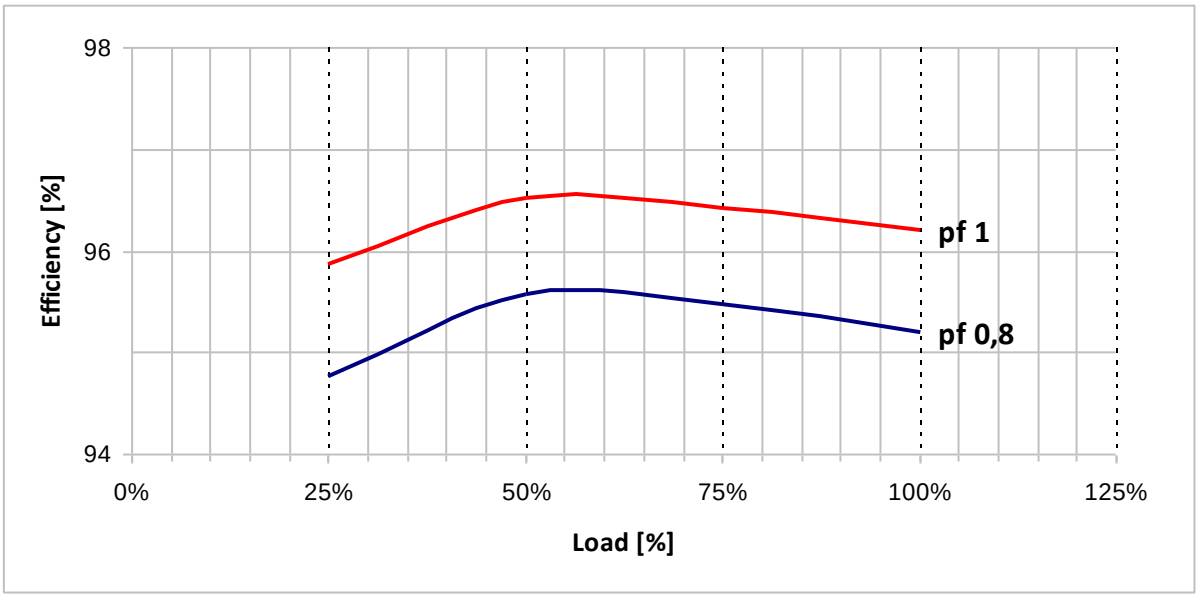
Typical efficiency curves

50 Hz - 1500 rpm

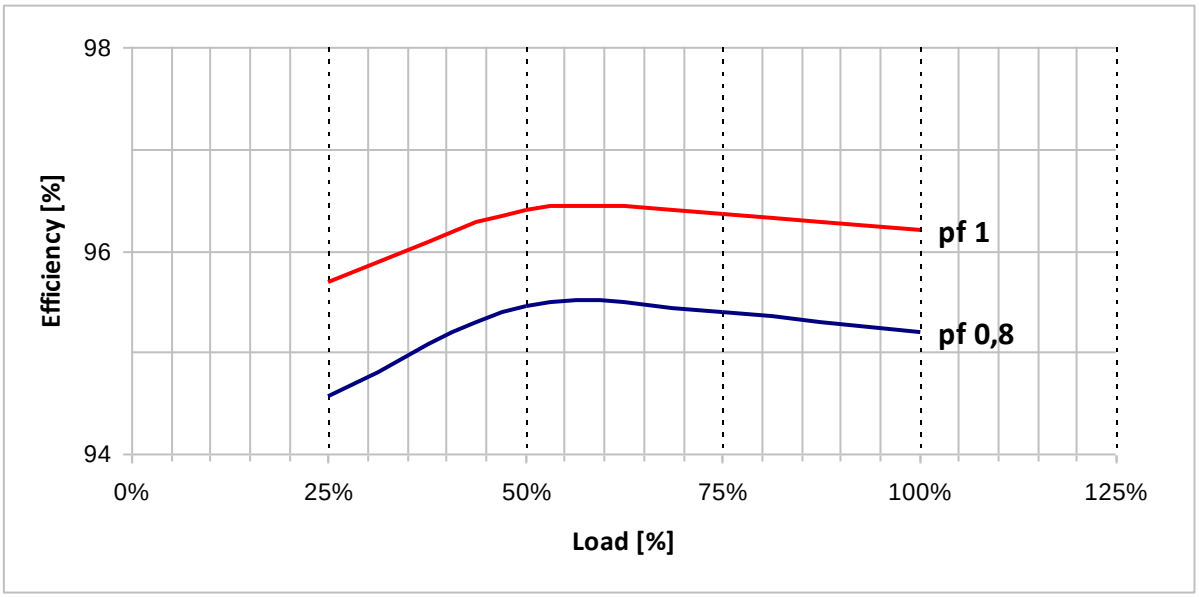
380 V



400 V



415 V



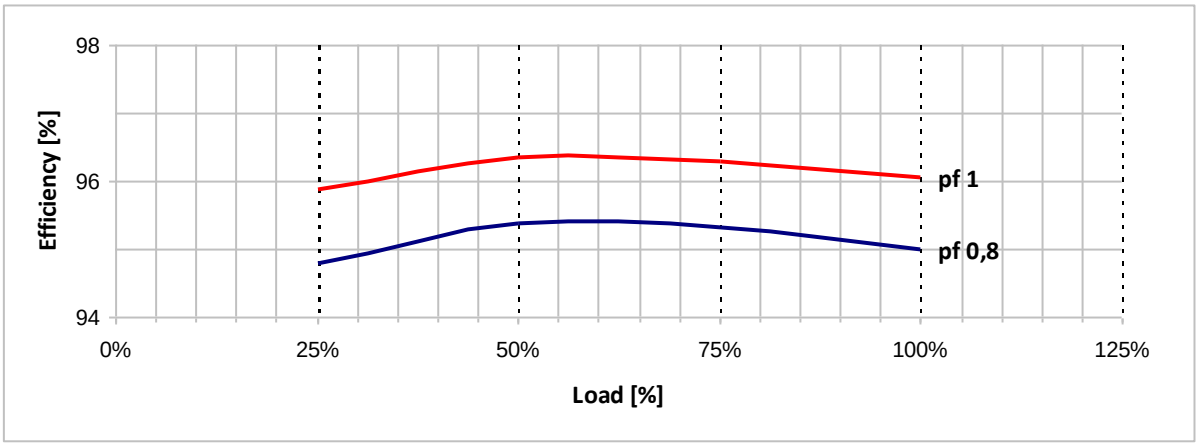
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MA4

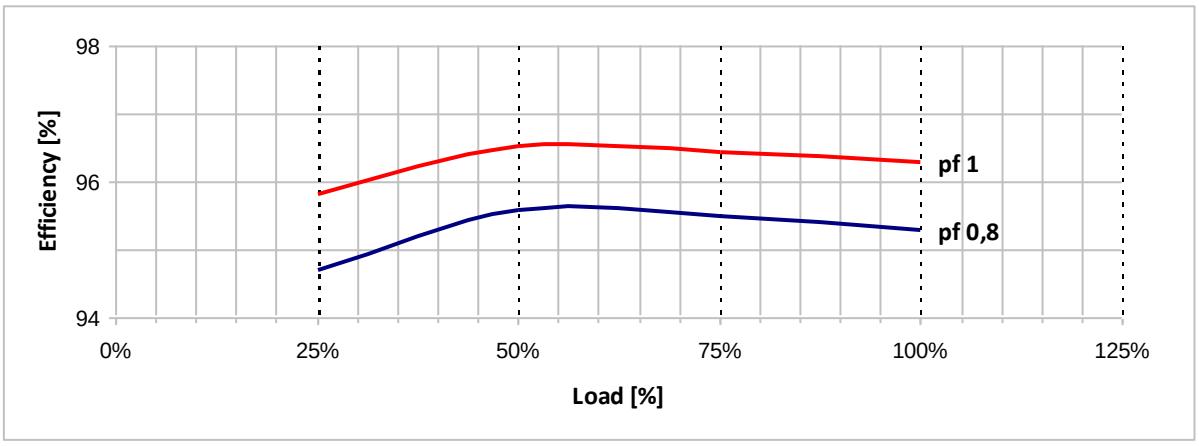
Typical efficiency curves

60 Hz - 1800 rpm

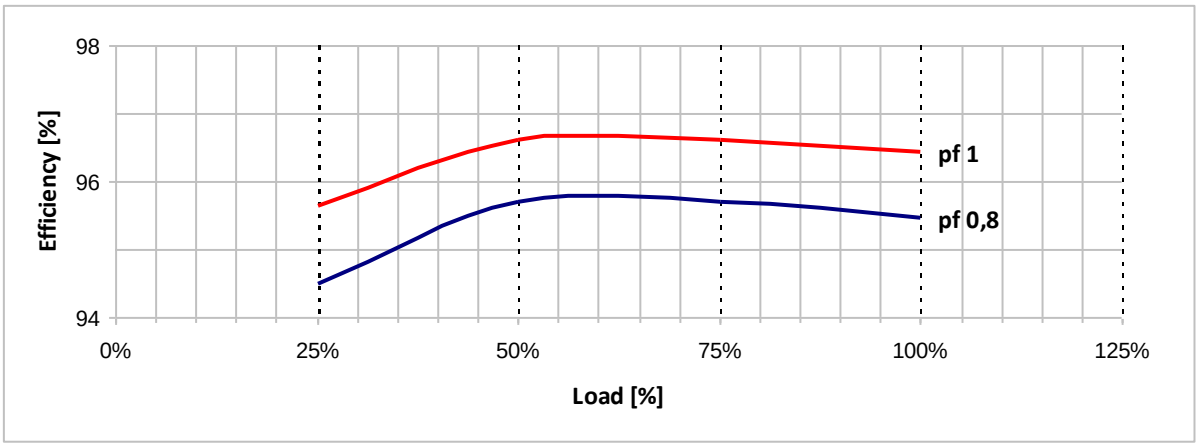
416 V



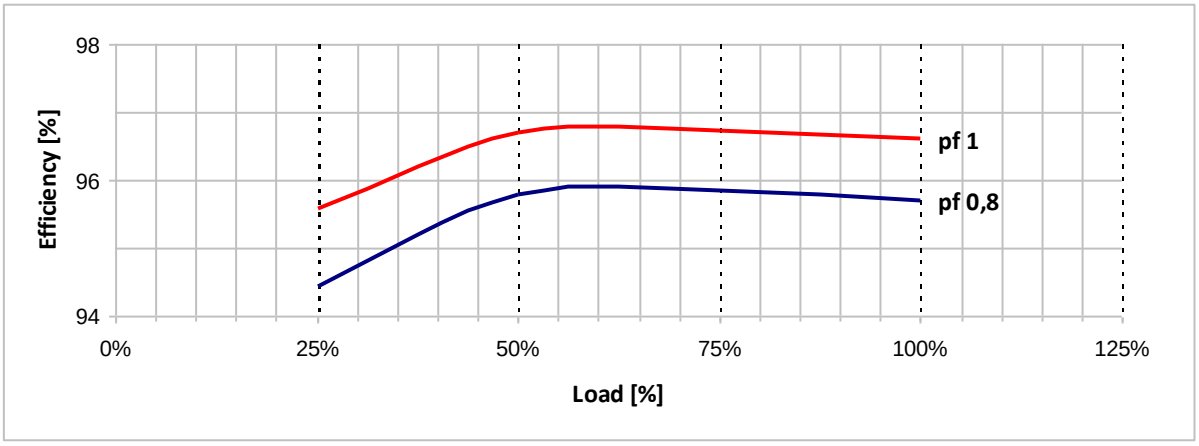
440 V



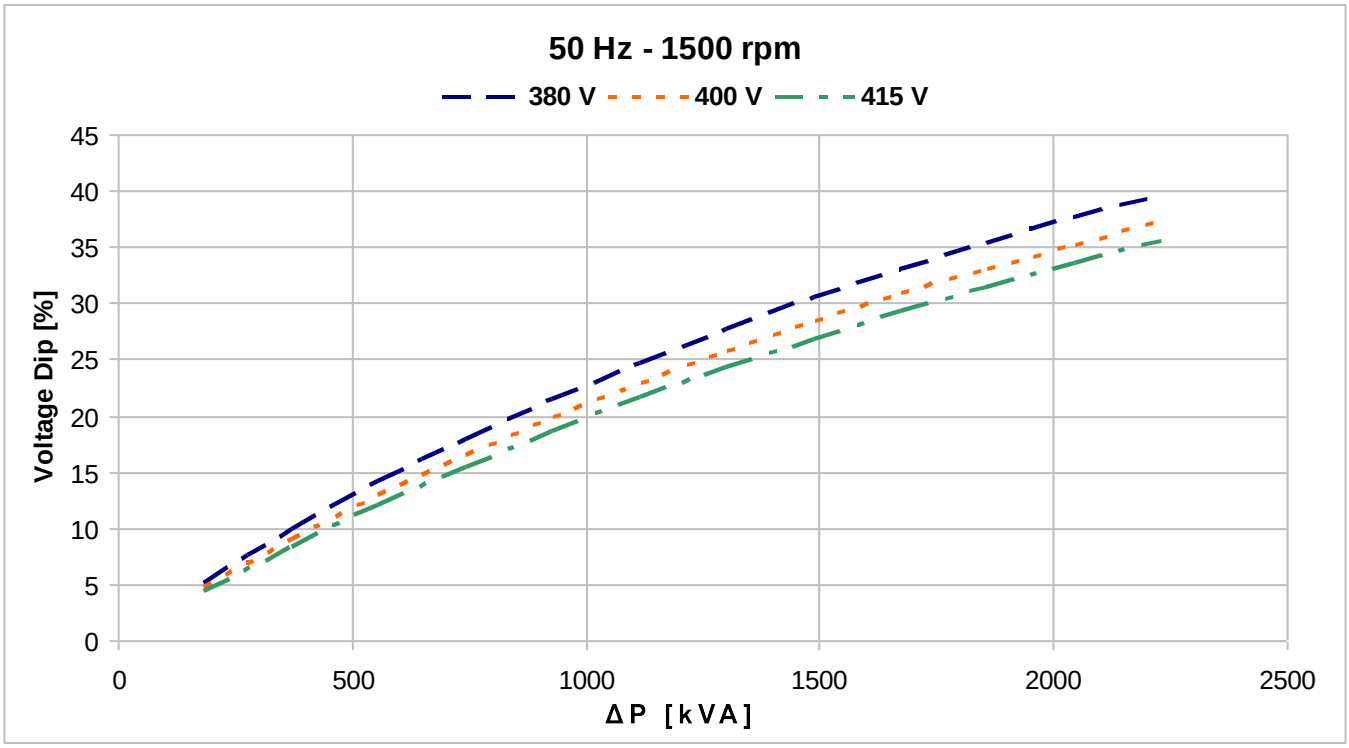
460 V

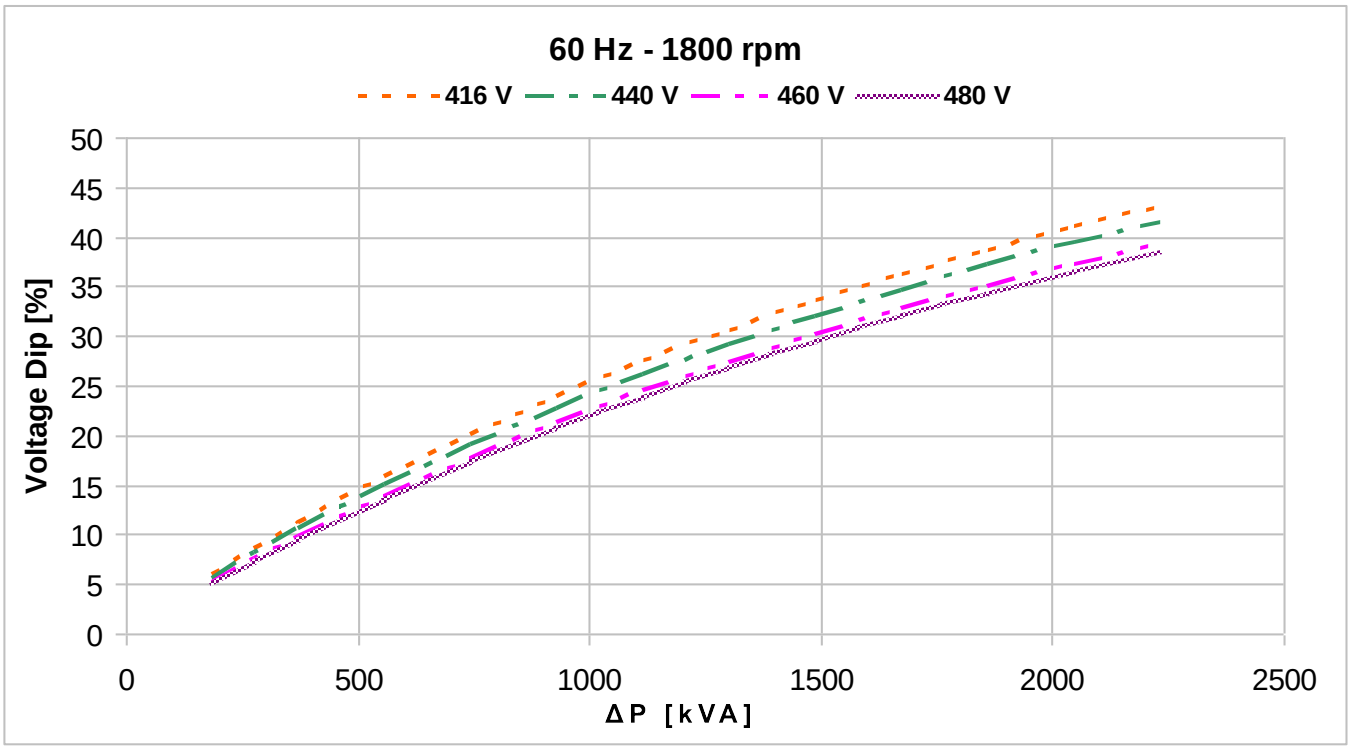


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1020**	**1050**	**1050**	**1200**	**1250**	**1250**	**1320**
	kW	***816***	***840***	***840***	***960***	***1000***	***1000***	***1056***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	95,1	95,3	95,4	95,3	95,5	95,6	95,7
	3/4	95,5	95,5	95,5	95,6	95,7	95,8	95,9
	2/4	95,6	95,6	95,6	95,7	95,7	95,8	95,9
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,2	96,3	96,3	96,3	96,4	96,5	96,6
	3/4	96,5	96,5	96,5	96,5	96,6	96,7	96,8
	2/4	96,6	96,5	96,5	96,6	96,6	96,7	96,8
SHORT CIRCUIT RATIO	SCR	0,37	0,4	0,43	0,32	0,34	0,37	0,38
REACTANCES [%]								
Direct axis synchronous	Xd	330	307	285	389	362	332	322
Quadrature axis synchronous	Xq	183	170	158	216	201	184	178
Direct axis transient	X'd	31,6	29,4	27,3	37,3	34,7	31,8	30,8
Direct axis subtransient	X"d	14,4	13,4	12,4	17,0	15,8	14,5	14,0
Quadrature axis subtransient	X"q	14,6	13,6	12,6	17,2	16,1	14,7	14,2
Negative sequence	X_2	14,5	13,5	12,5	17,1	15,9	14,6	14,1
Zero sequence	X_0	3,4	3,2	2,9	4,0	3,7	3,4	3,3
TIME CONSTANTS [s]								
Open circuit	T'do	2,4						
Transient	T'd	0,23						
Subtransient	T"d	0,018						
Armature	T_a	0,022						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 C3 / With grease nipple
N-end bearing/Lubrication		6318 Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	17
Weight [kg]	Refer to B34 construction	2300
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,30 / 1,55
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	2,4
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.

MarelliGenerators®

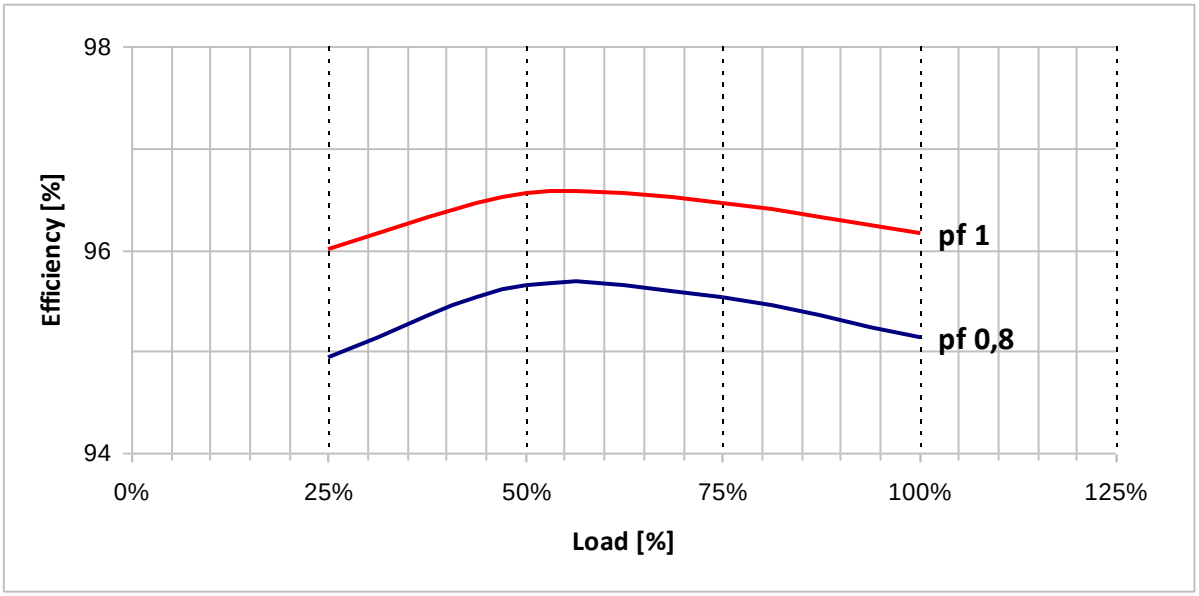
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MB4

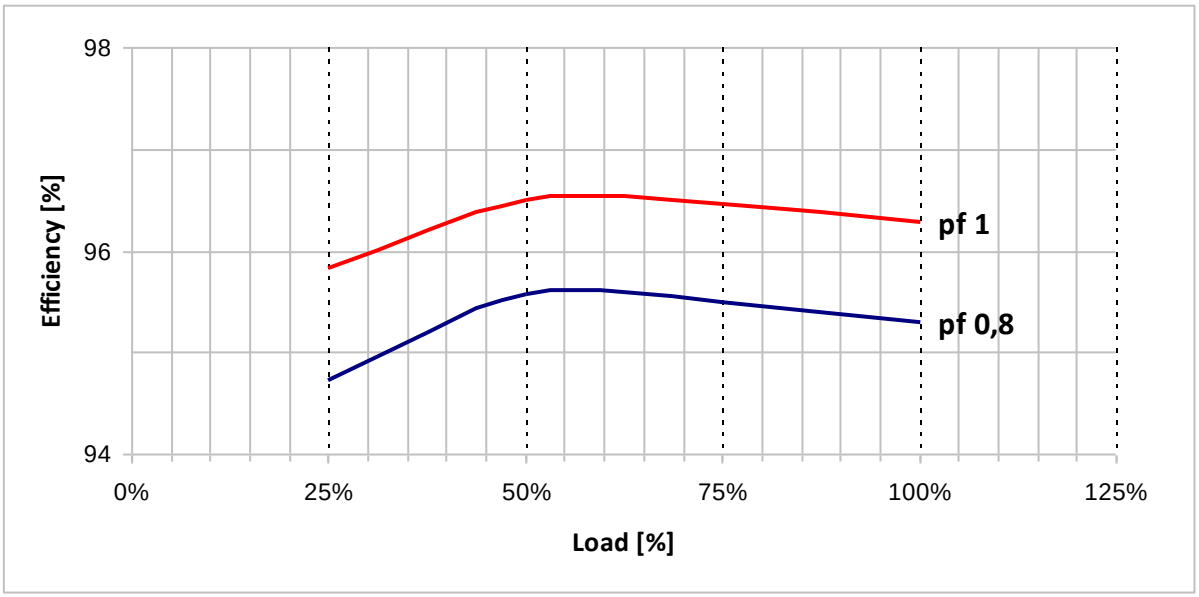
Typical efficiency curves

50 Hz - 1500 rpm

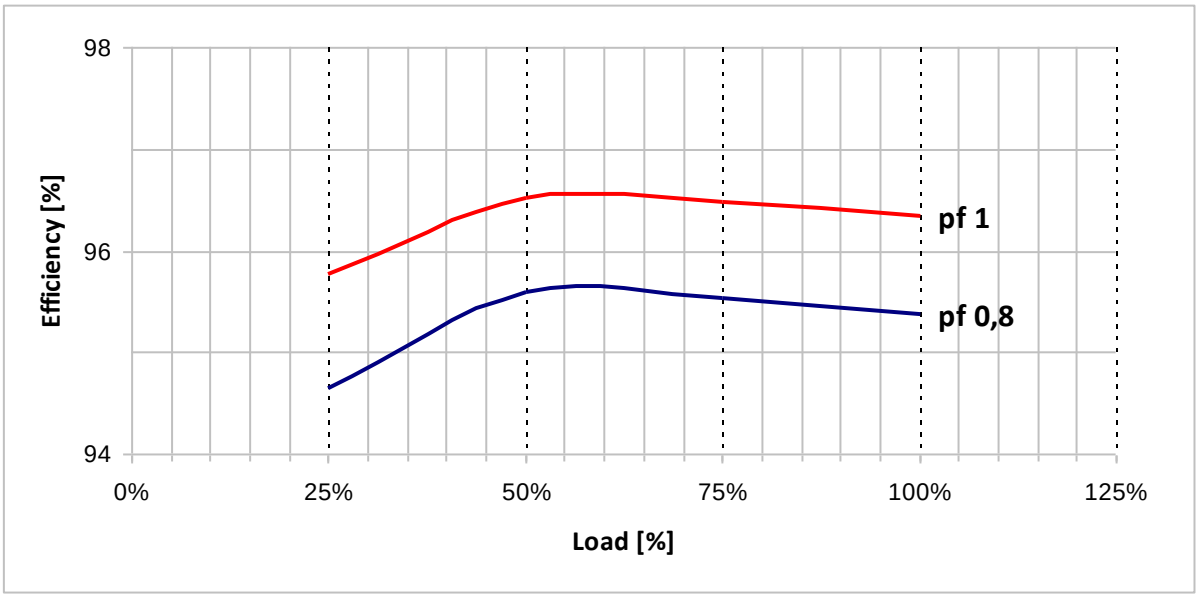
380 V



400 V



415 V



MarelliGenerators®

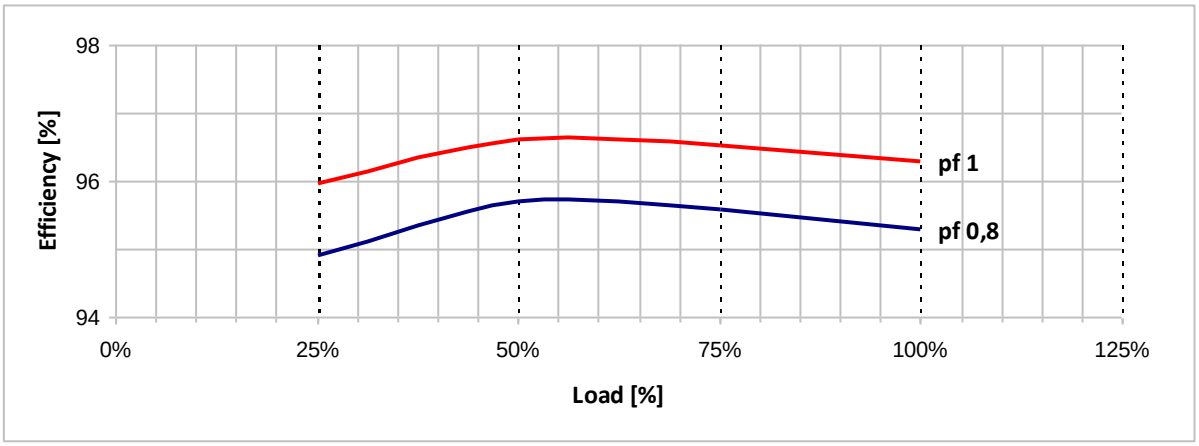
THREE PHASE SYNCRONOUS GENERATOR

MJB 400 MB4

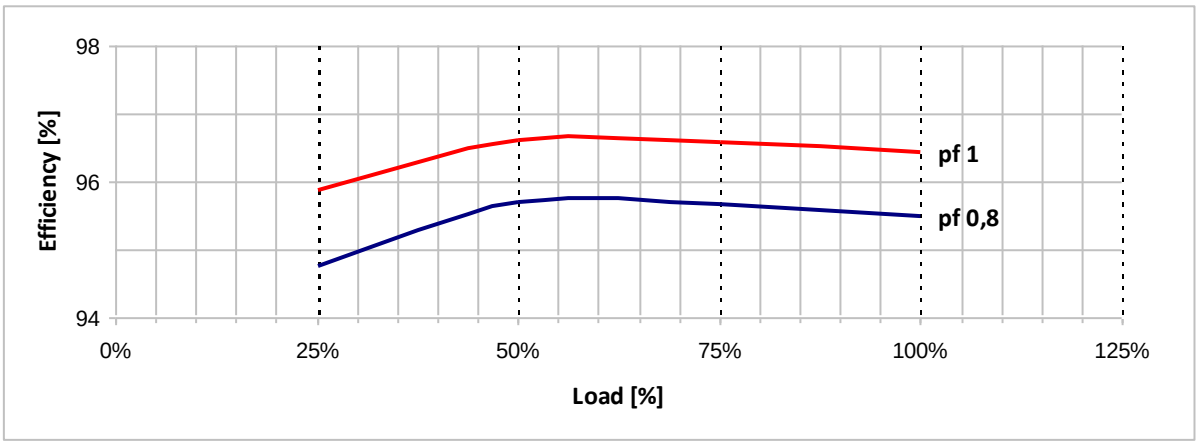
Typical efficiency curves

60 Hz - 1800 rpm

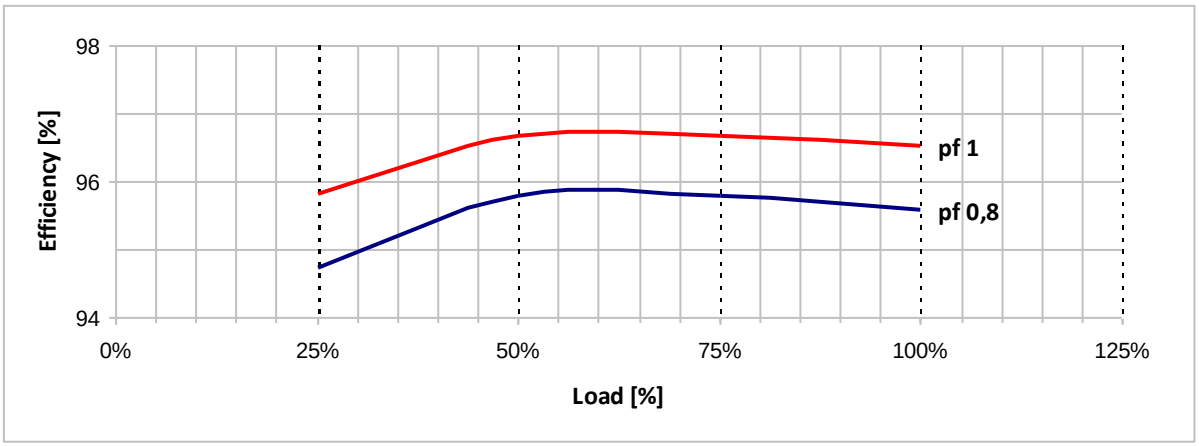
416 V



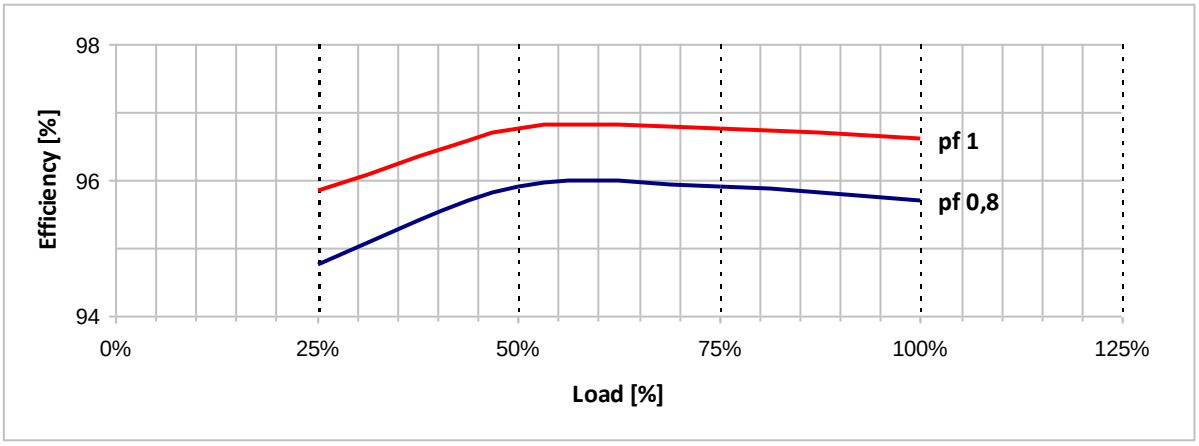
440 V



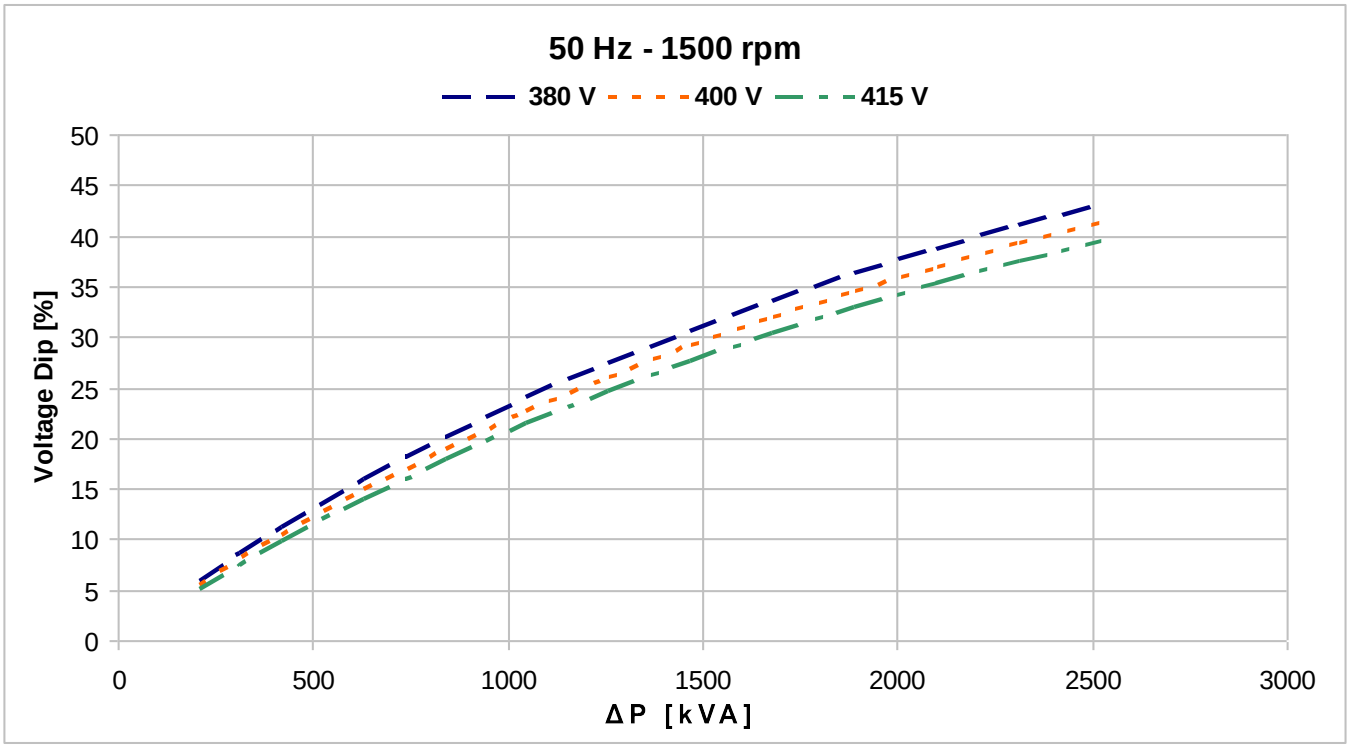
460 V

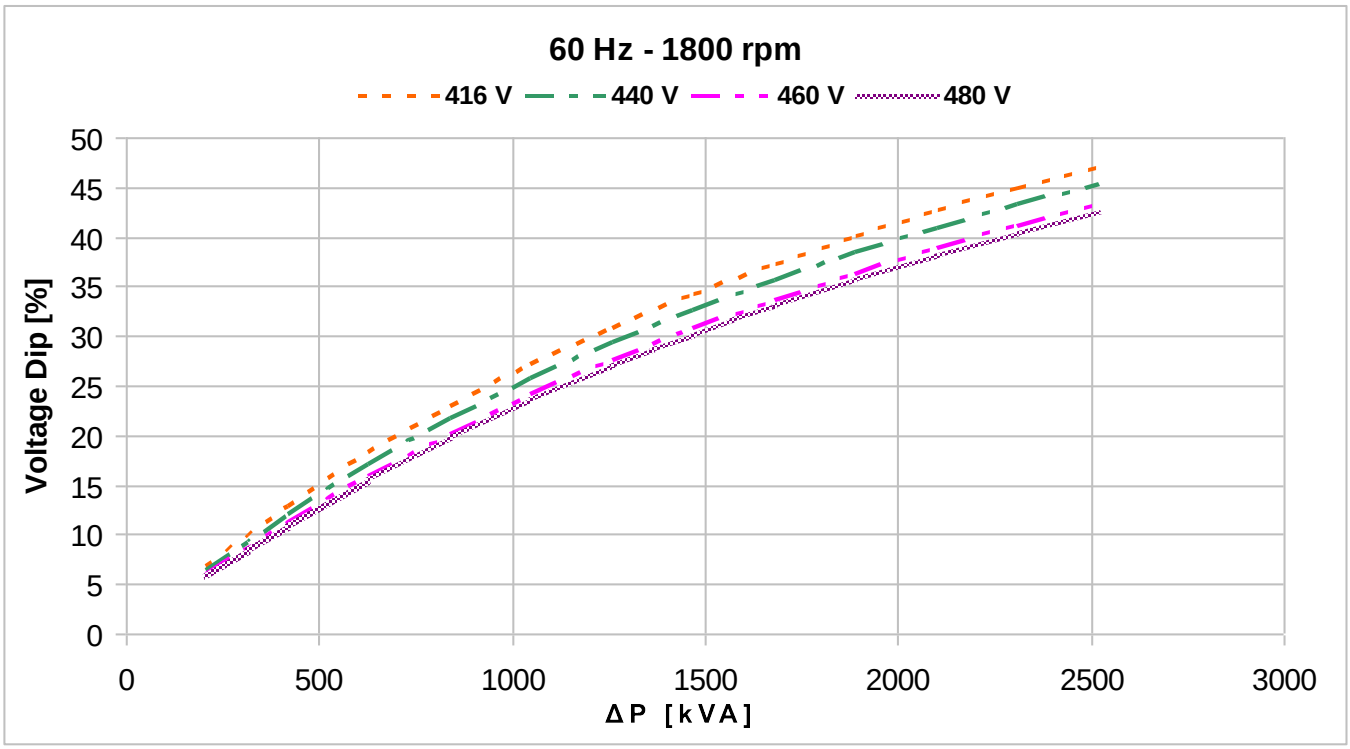


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1600**	**1650**	**1650**	**1740**	**1840**	**1920**	**1980**
	kW	***1280***	***1320***	***1320***	***1392***	***1472***	***1536***	***1584***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	95,8	96,0	96,1	96,0	96,1	96,3	96,3
	3/4	95,9	96,1	96,1	96,2	96,3	96,4	96,4
	2/4	96,0	96,2	95,9	96,2	96,3	96,4	96,4
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,7	96,8	96,9	96,8	96,9	97,1	97,1
	3/4	96,8	96,9	96,9	97,0	97,1	97,2	97,2
	2/4	96,8	97,0	96,8	97,0	97,1	97,2	97,2
SHORT CIRCUIT RATIO	SCR	0,34	0,37	0,40	0,32	0,33	0,35	0,37
REACTANCES [%]								
Direct axis synchronous	Xd	325	303	281	354	335	320	303
Quadrature axis synchronous	Xq	181	169	157	197	187	178	169
Direct axis transient	X'd	29,8	27,7	25,7	32,4	30,6	29,2	27,7
Direct axis subtransient	X"d	12,7	11,8	10,9	13,8	13,0	12,4	11,8
Quadrature axis subtransient	X"q	13,2	12,3	11,4	14,4	13,6	13,0	12,3
Negative sequence	X_2	12,9	12,0	11,2	14,1	13,3	12,7	12,0
Zero sequence	X_0	2,9	2,7	2,5	3,1	2,9	2,8	2,7
TIME CONSTANTS [s]								
Open circuit	T'do	3,47						
Transient	T'd	0,32						
Subtransient	T"d	0,018						
Armature	T_a	0,032						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6326 C3 / With grease nipple
N-end bearing/Lubrication		6320 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	34
Weight [kg]	Refer to B34 construction	3600
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,50 / 1,80
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	1,15
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.

MarelliGenerators®

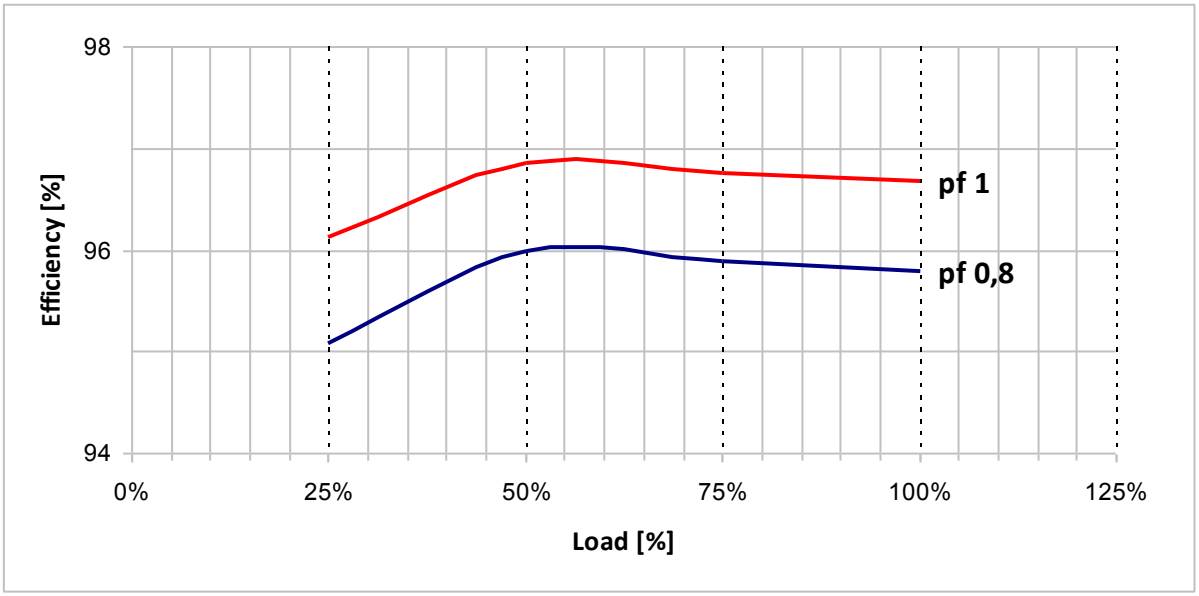
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LA4

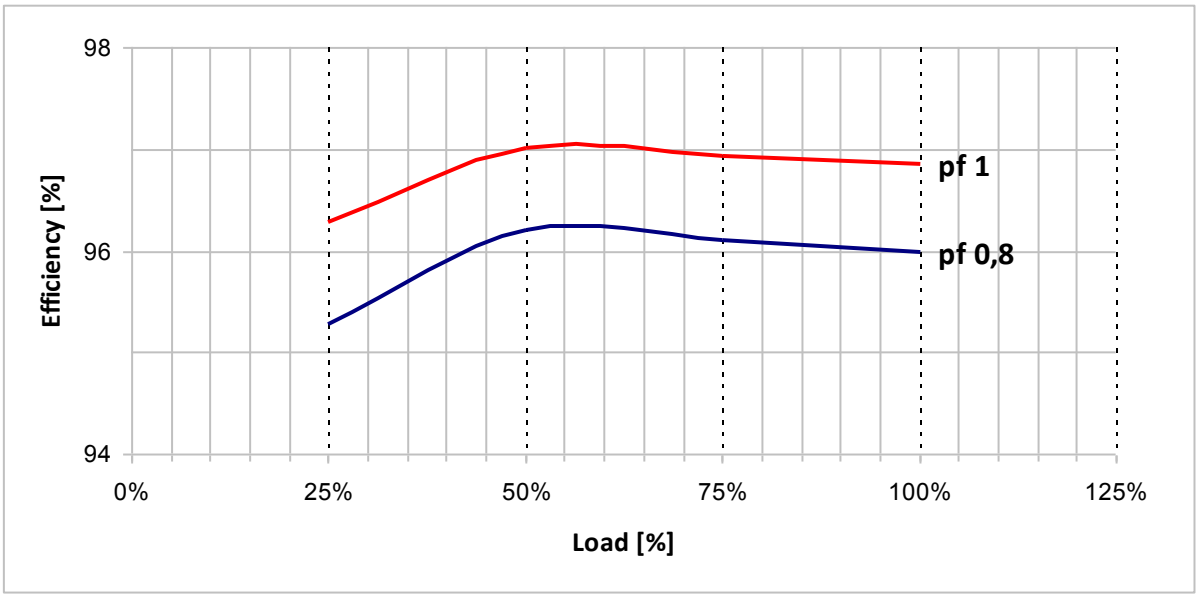
Typical efficiency curves

50 Hz - 1500 rpm

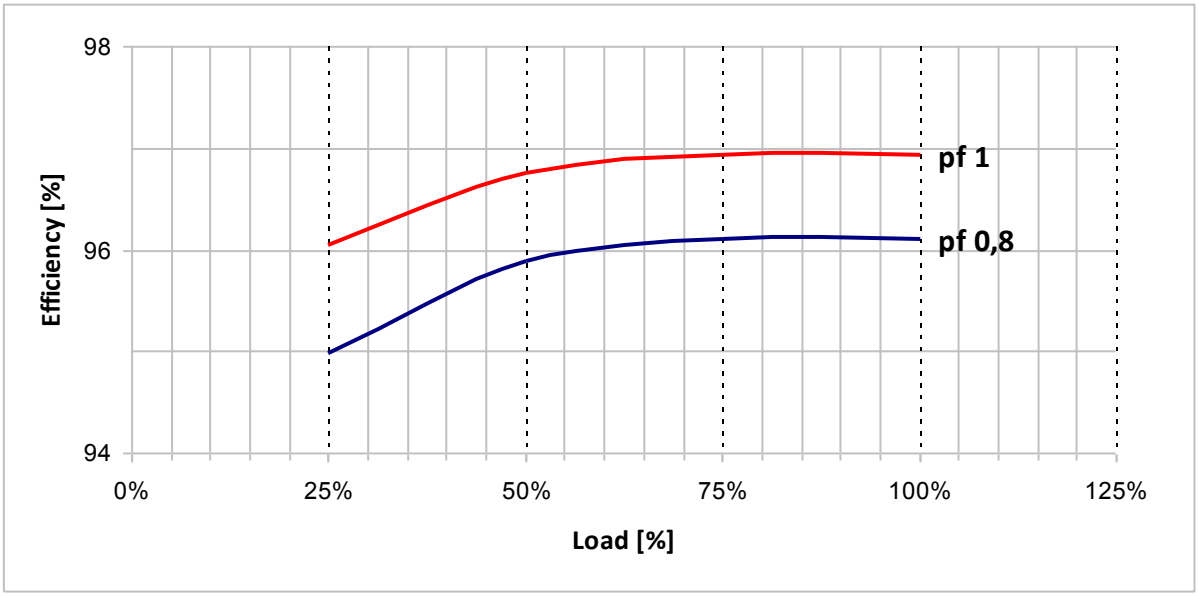
380 V



400 V



415 V



MarelliGenerators®

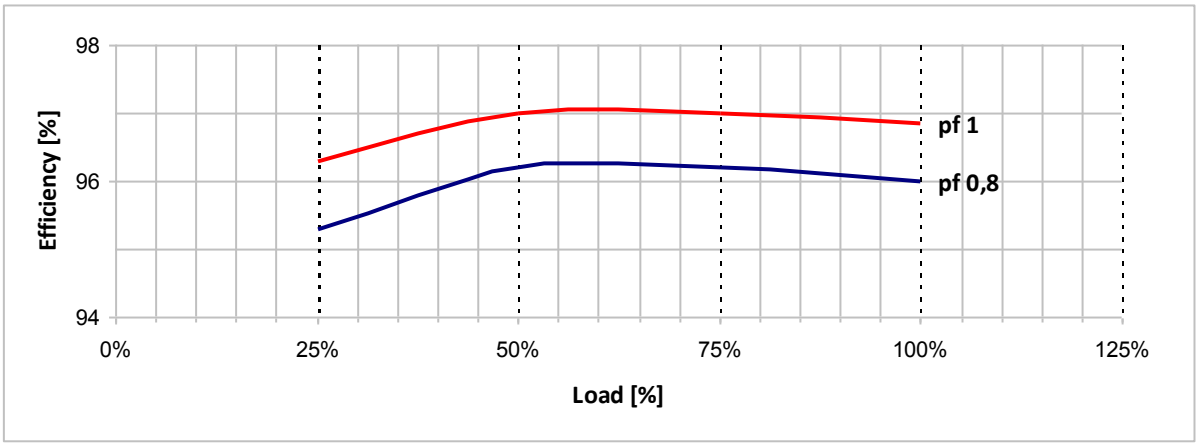
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LA4

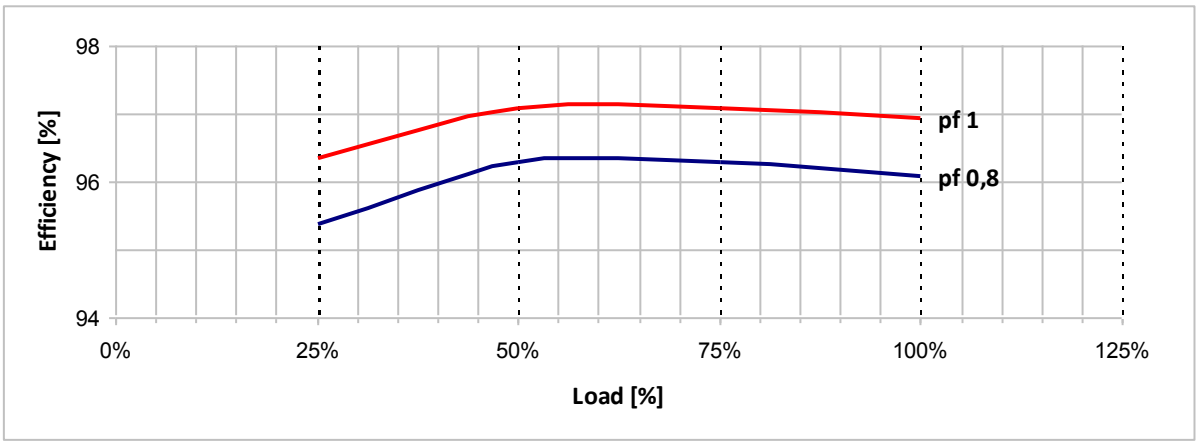
Typical efficiency curves

60 Hz - 1800 rpm

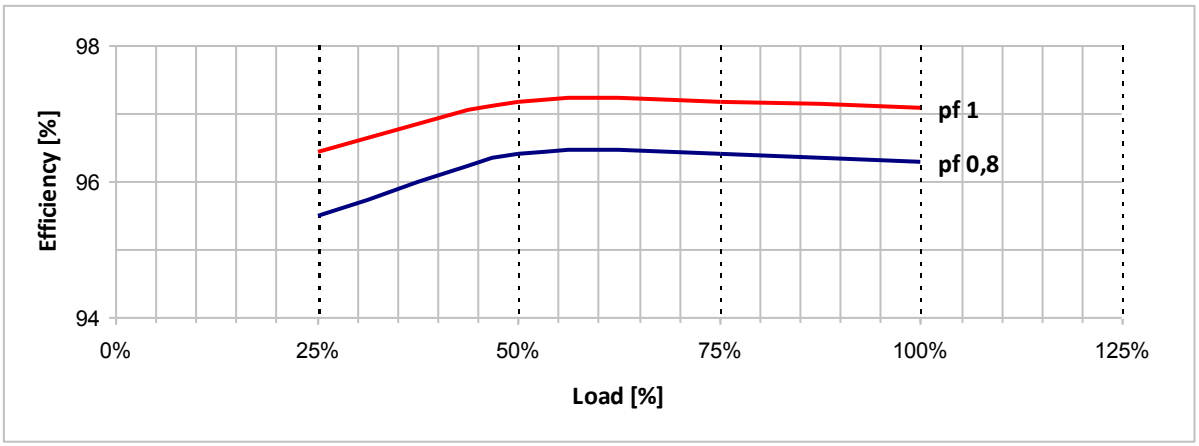
416 V



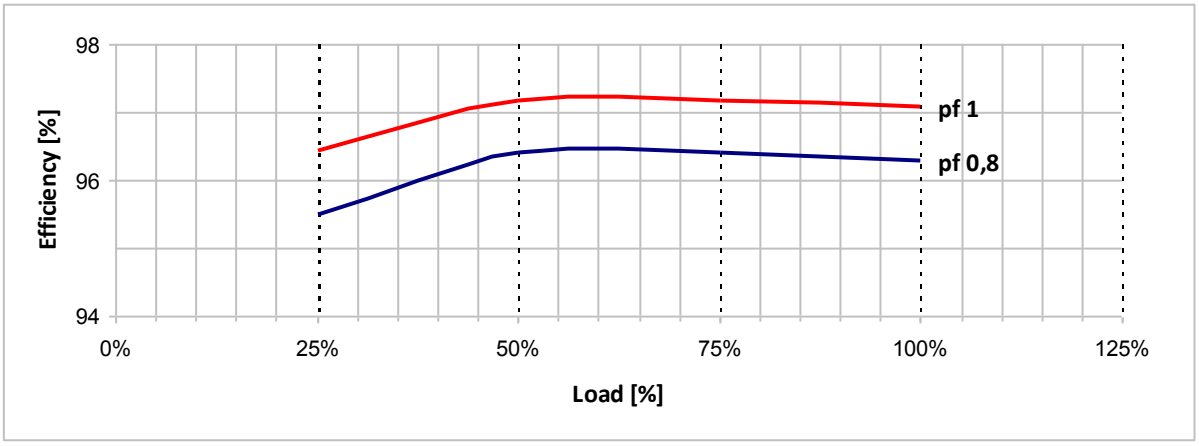
440 V



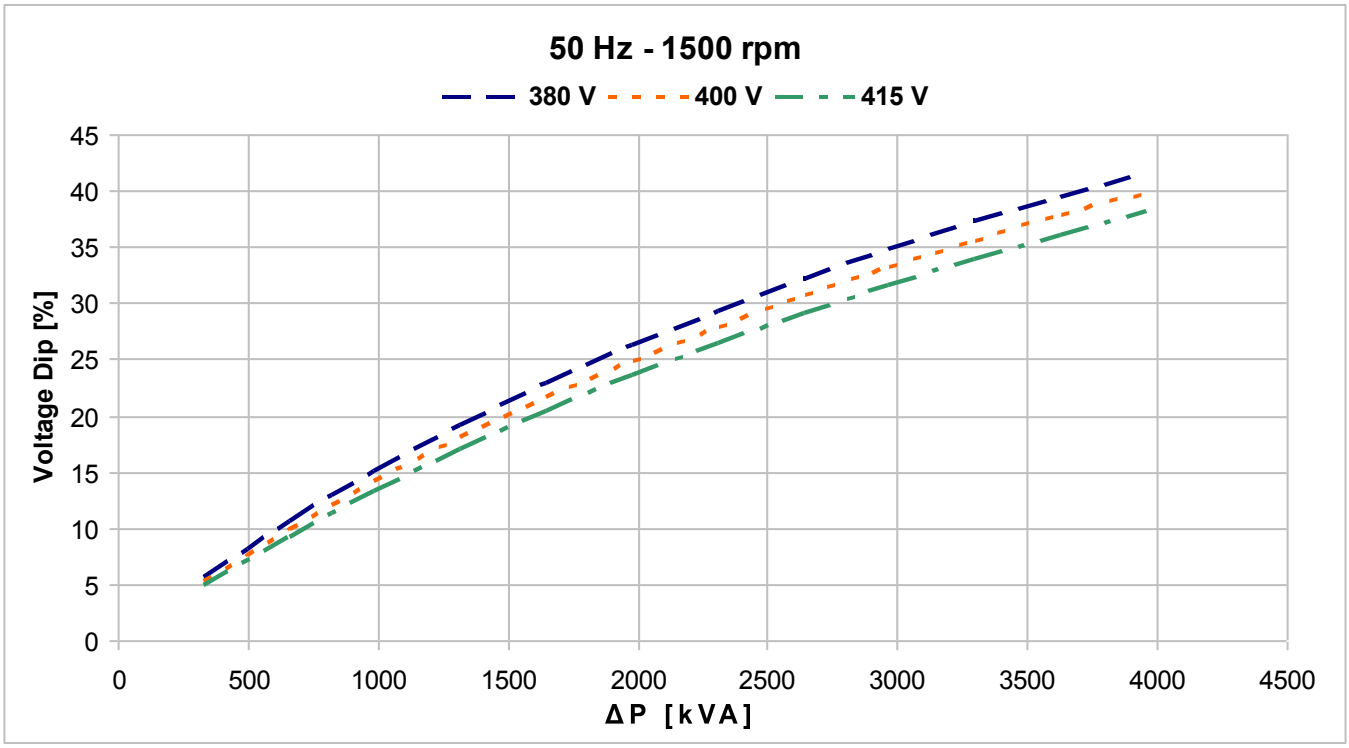
460 V

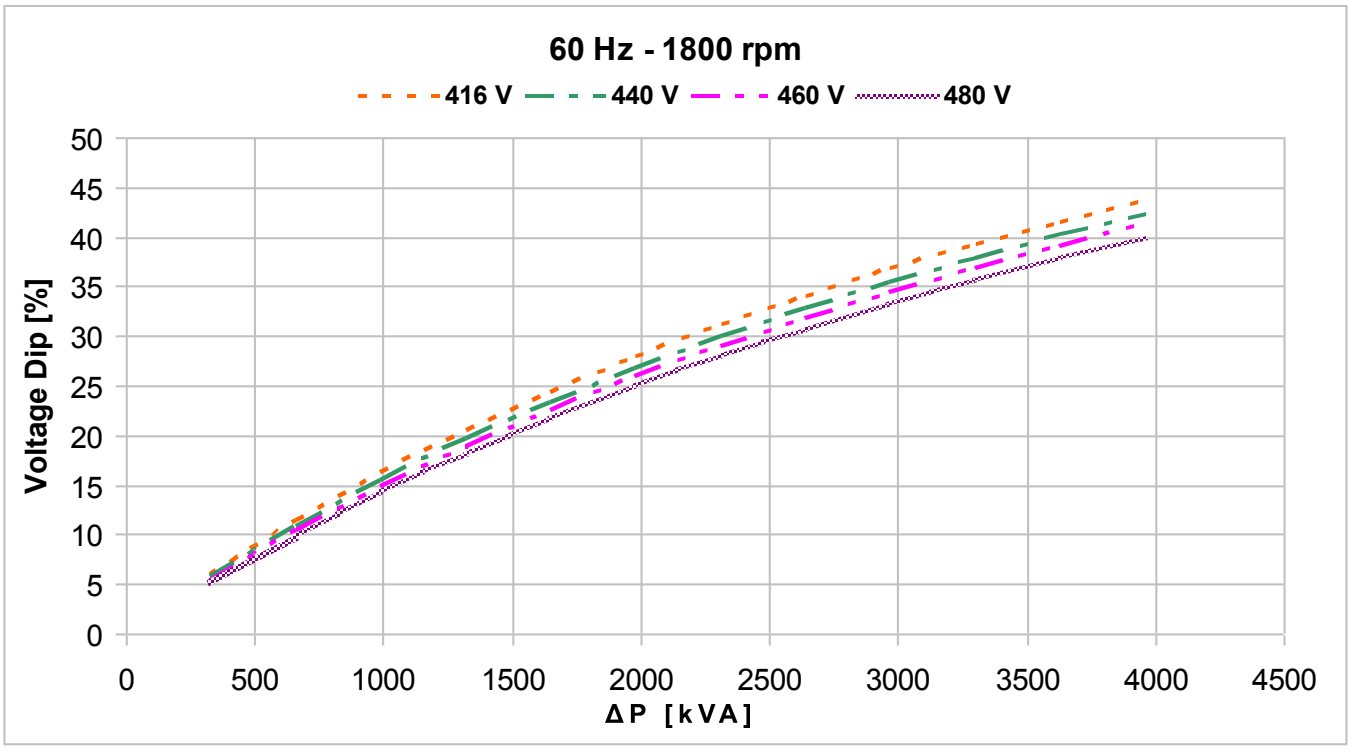


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1830**	**1875**	**1880**	**2000**	**2100**	**2200**	**2250**
	kW	***1464***	***1500***	***1504***	***1600***	***1680***	***1760***	***1800***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,1	96,2	96,2	96,1	96,3	96,4	96,4
	3/4	96,2	96,3	96,3	96,2	96,5	96,6	96,6
	2/4	96,3	96,3	96,2	96,2	96,5	96,6	96,6
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,9	97,0	97,0	96,9	97,1	97,2	97,2
	3/4	97,0	97,1	97,1	97,0	97,2	97,3	97,3
	2/4	97,1	97,1	97,0	97,0	97,2	97,3	97,3
SHORT CIRCUIT RATIO	SCR	0,34	0,37	0,40	0,31	0,33	0,35	0,37
REACTANCES [%]								
Direct axis synchronous	Xd	332	307	286	363	341	327	307
Quadrature axis synchronous	Xq	185	171	160	203	190	183	171
Direct axis transient	X'd	31,2	28,8	26,8	34,1	32,0	30,7	28,8
Direct axis subtransient	X"d	13,7	12,7	11,8	15,0	14,1	13,5	12,7
Quadrature axis subtransient	X"q	14,4	13,3	12,4	15,7	14,8	14,2	13,3
Negative sequence	X_2	14,2	13,1	12,2	15,5	14,6	13,9	13,1
Zero sequence	X_0	3,9	3,6	3,4	4,3	4,0	3,8	3,6
TIME CONSTANTS [s]								
Open circuit	T'do	3,57						
Transient	T'd	0,34						
Subtransient	T"d	0,021						
Armature	T_a	0,038						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6326 C3 / With grease nipple
N-end bearing/Lubrication		6320 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	38
Weight [kg]	Refer to B34 construction	4000
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,50 / 1,80
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,75
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.

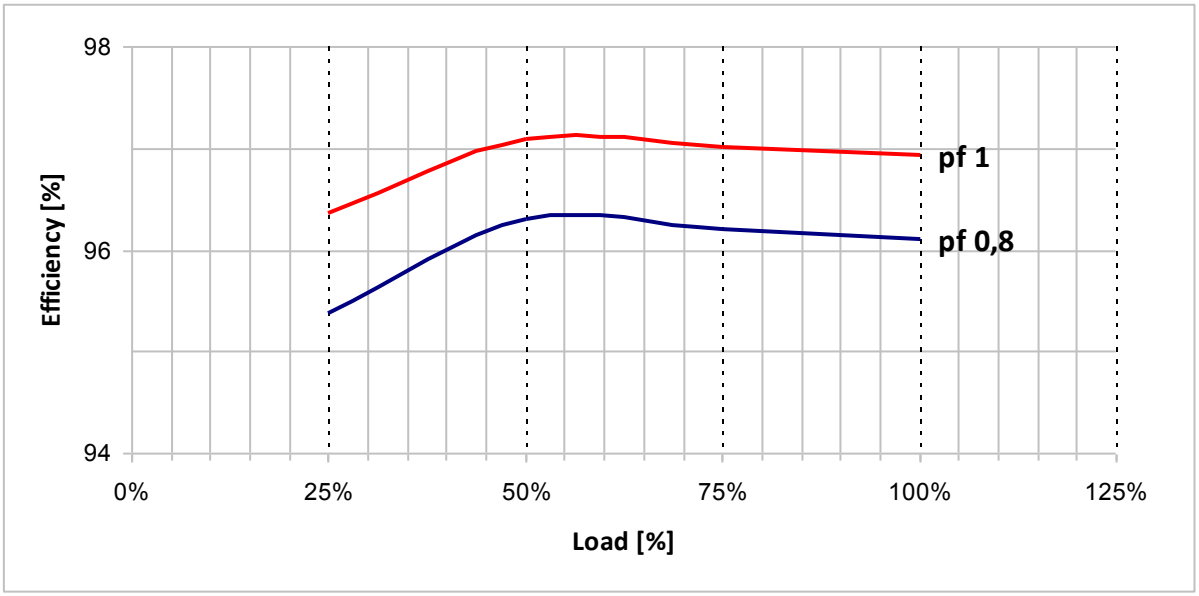
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LB4

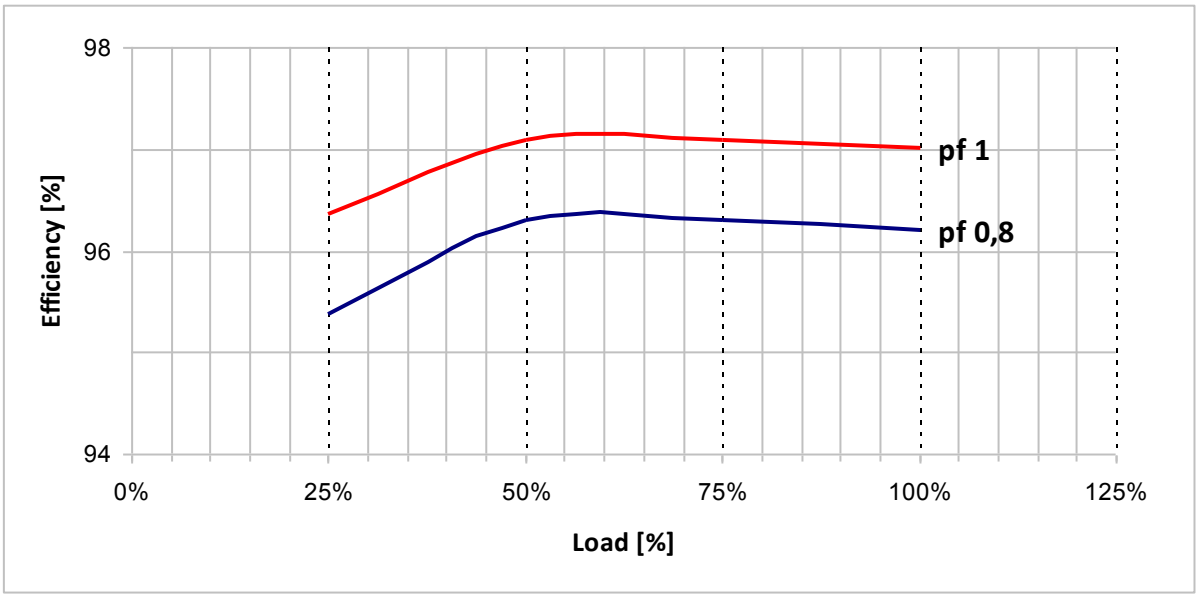
Typical efficiency curves

50 Hz - 1500 rpm

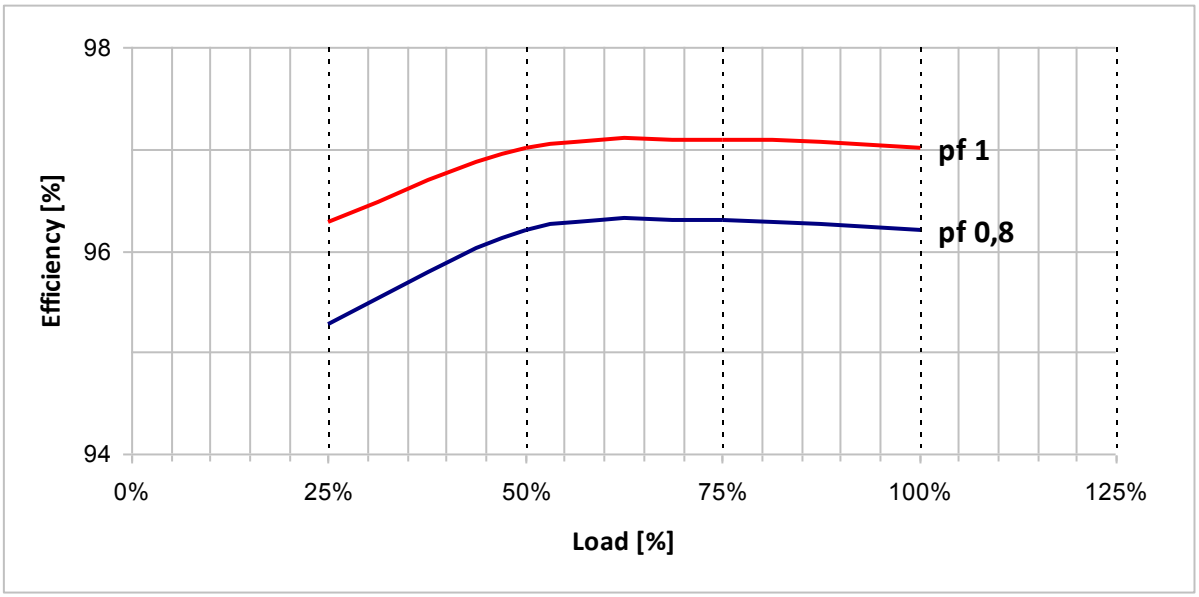
380 V



400 V



415 V



MarelliGenerators®

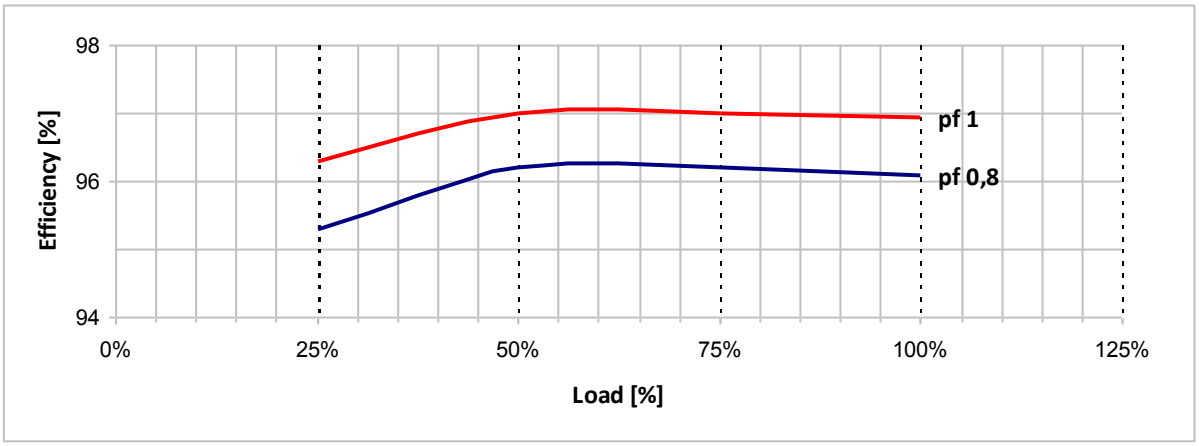
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 LB4

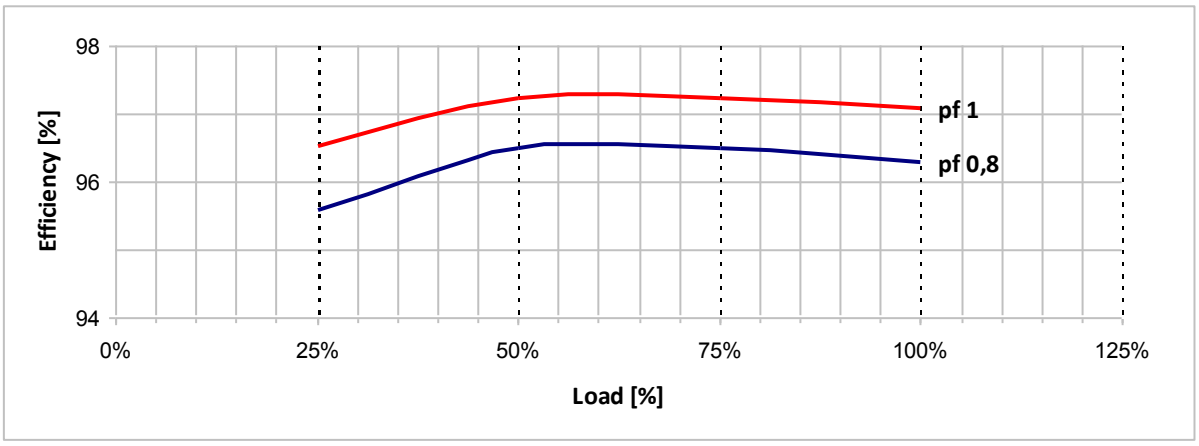
Typical efficiency curves

60 Hz - 1800 rpm

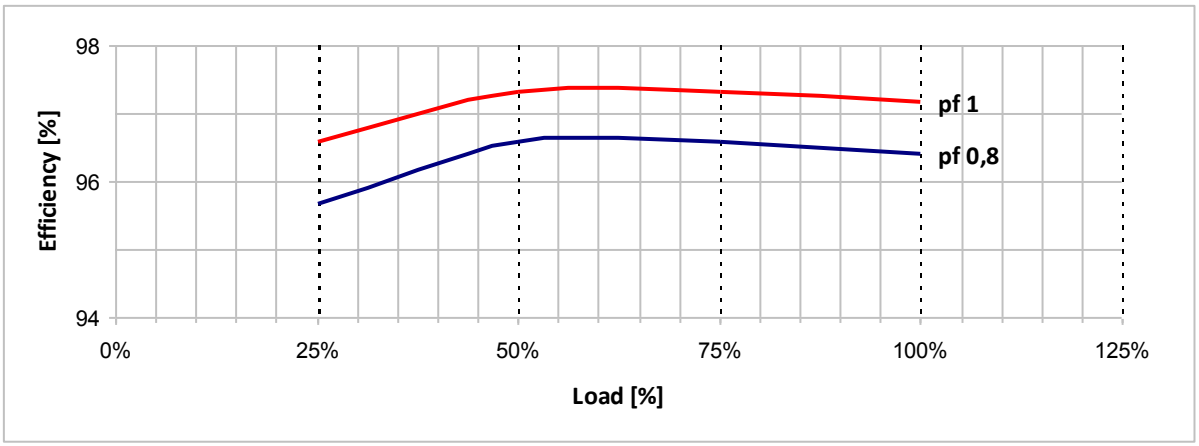
416 V



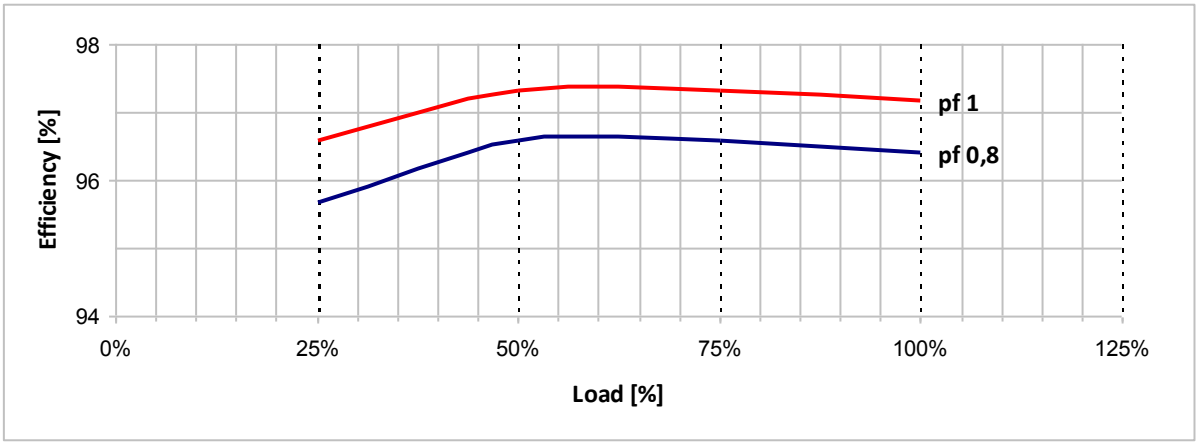
440 V



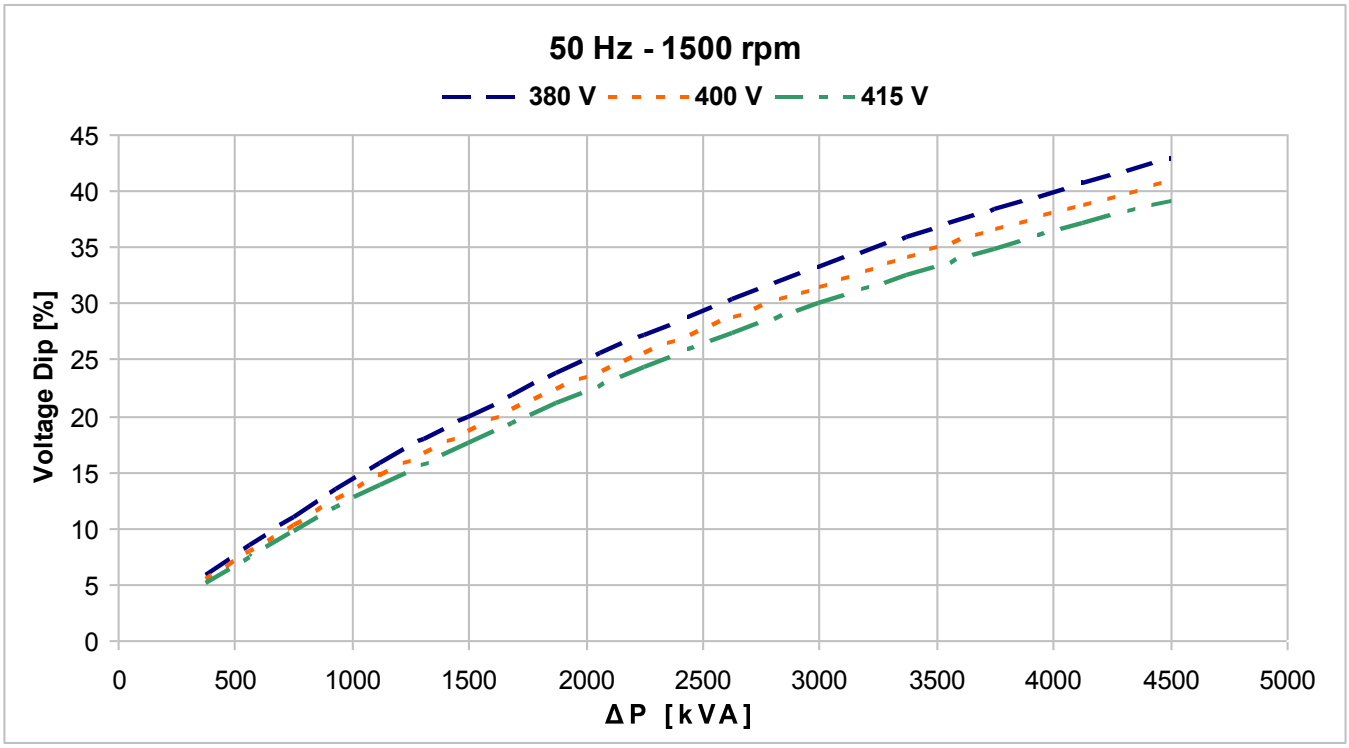
460 V

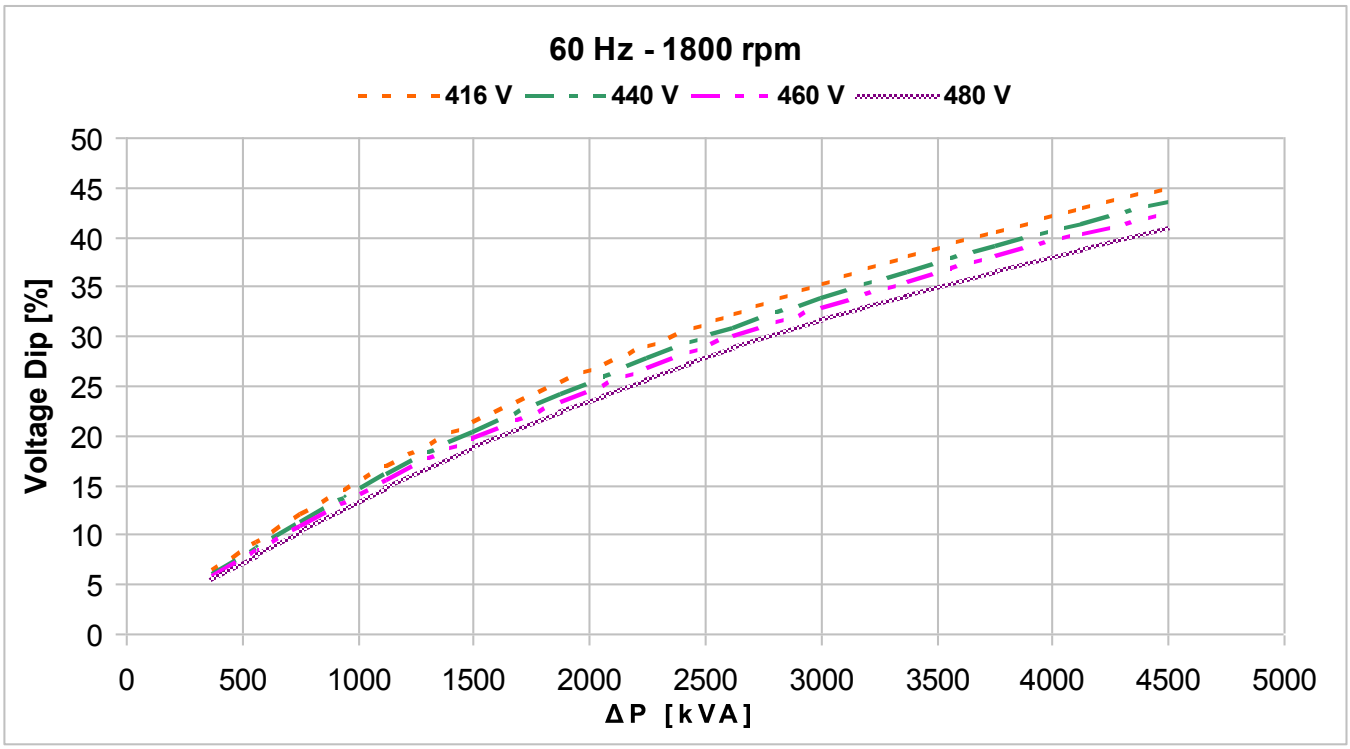


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 450 MB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1460**	**1500**	**1500**	**1620**	**1720**	**1800**	**1800**
	kW	***1168***	***1200***	***1200***	***1296***	***1376***	***1440***	***1440***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	95,7	95,9	96,0	96,0	96,1	96,3	96,3
	3/4	95,8	96,0	96,0	96,2	96,3	96,4	96,4
	2/4	95,9	96,1	95,8	96,2	96,3	96,4	96,4
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,6	96,8	96,8	96,8	96,9	97,1	97,1
	3/4	96,7	96,8	96,8	97,0	97,1	97,2	97,2
	2/4	96,8	96,9	96,7	97,0	97,1	97,2	97,2
SHORT CIRCUIT RATIO	SCR	0,34	0,37	0,40	0,31	0,33	0,34	0,37
REACTANCES [%]								
Direct axis synchronous	Xd	348	323	300	387	367	352	323
Quadrature axis synchronous	Xq	194	180	167	216	205	196	180
Direct axis transient	X'd	34,1	31,6	29,4	37,9	35,9	34,4	31,6
Direct axis subtransient	X"d	16,0	14,8	13,7	17,7	16,8	16,1	14,8
Quadrature axis subtransient	X"q	16,4	15,2	14,1	18,2	17,3	16,6	15,2
Negative sequence	X_2	16,2	15,0	13,9	18,0	17,1	16,3	15,0
Zero sequence	X_0	4,4	4,1	3,8	4,9	4,7	4,5	4,1
TIME CONSTANTS [s]								
Open circuit	T'do	3,37						
Transient	T'd	0,33						
Subtransient	T"d	0,02						
Armature	T_a	0,36						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6326 C3 / With grease nipple
N-end bearing/Lubrication		6320 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	29
Weight [kg]	Refer to B34 construction	3200
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		1,50 / 1,80
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	1,6
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.

MarelliGenerators®

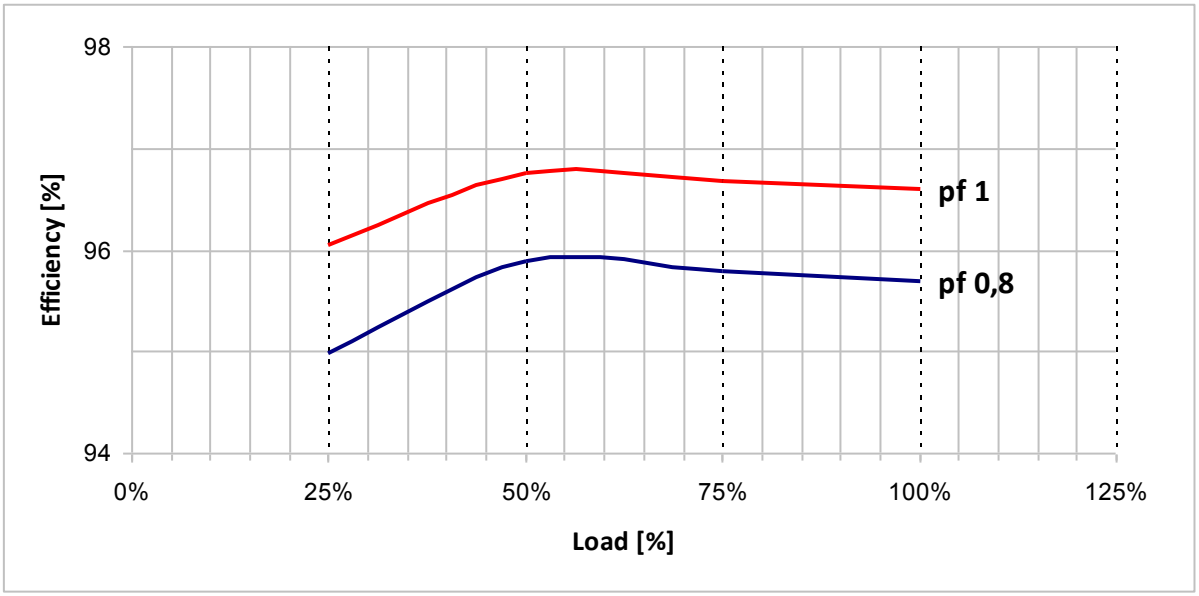
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 MB4

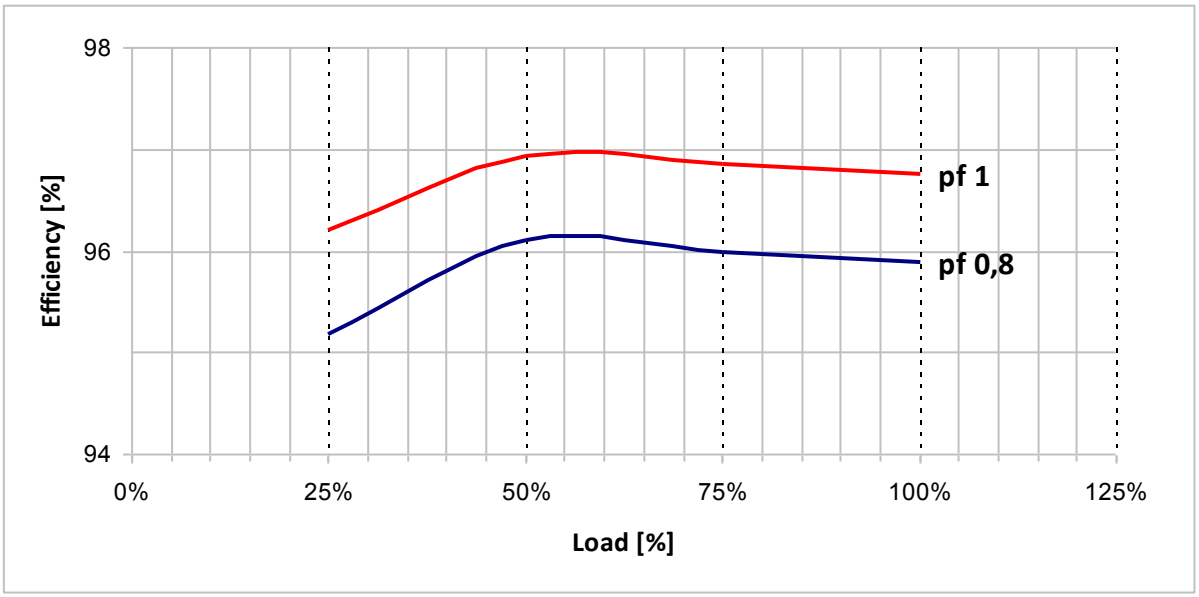
Typical efficiency curves

50 Hz - 1500 rpm

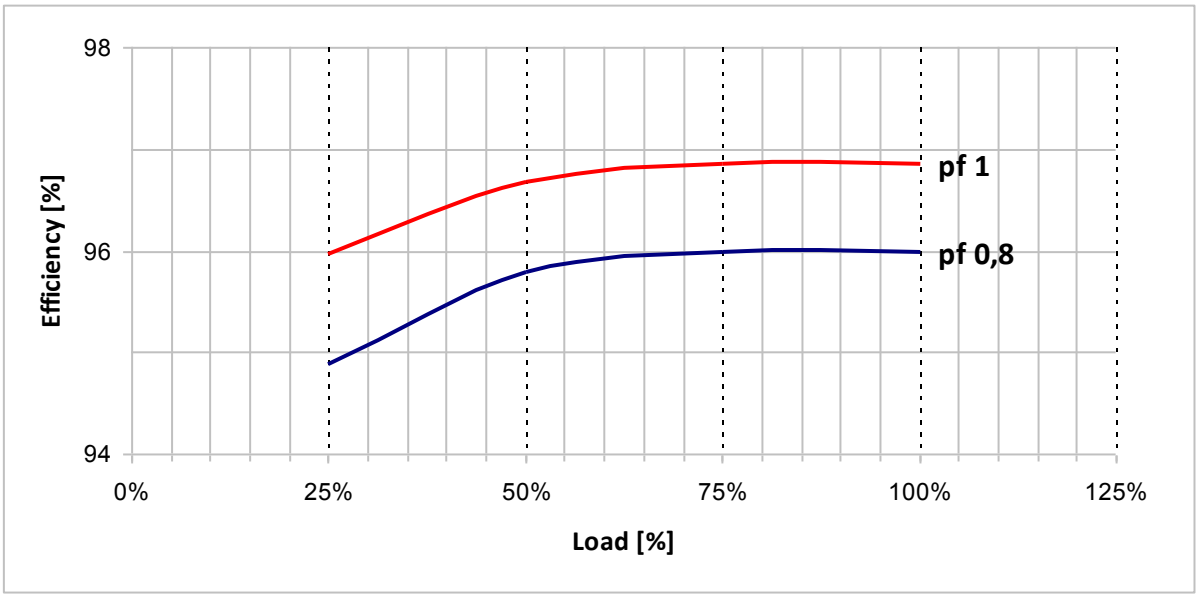
380 V



400 V



415 V



MarelliGenerators®

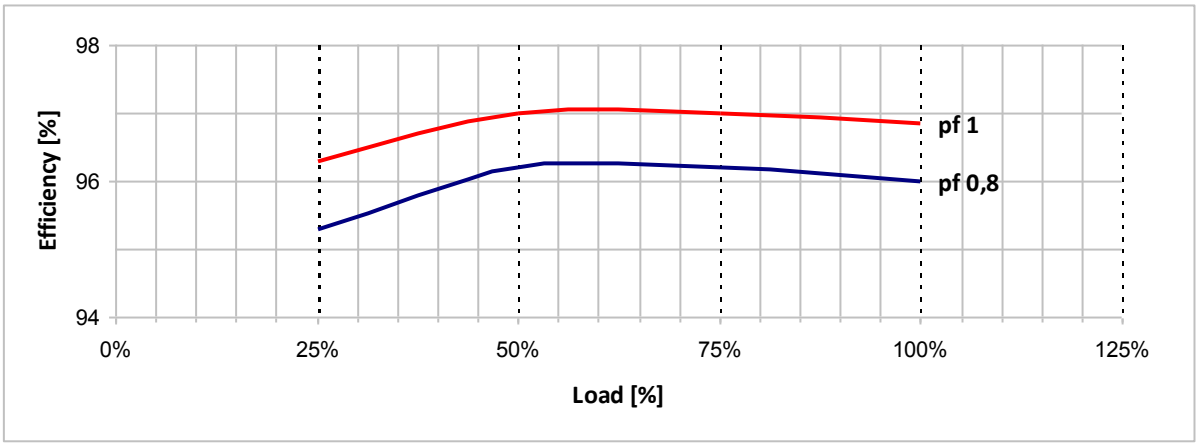
THREE PHASE SYNCRONOUS GENERATOR

MJB 450 MB4

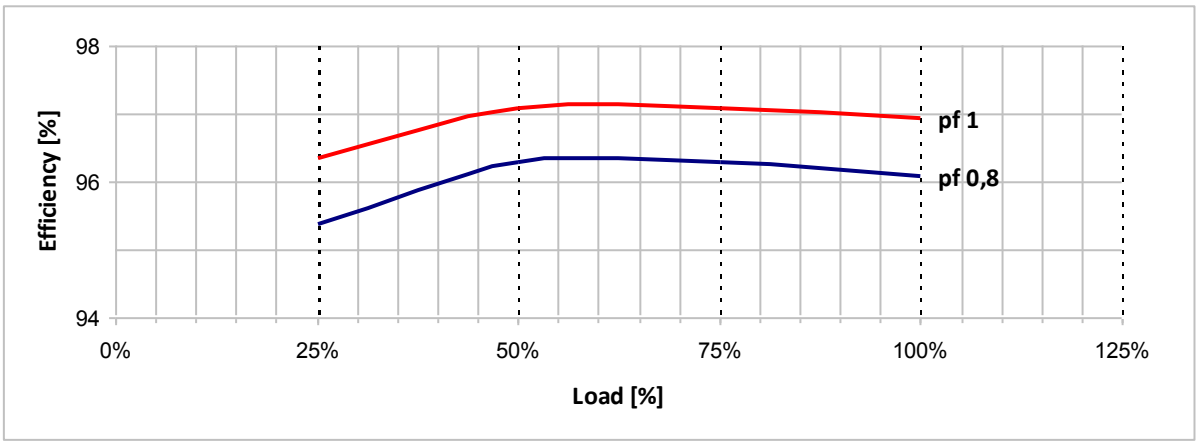
Typical efficiency curves

60 Hz - 1800 rpm

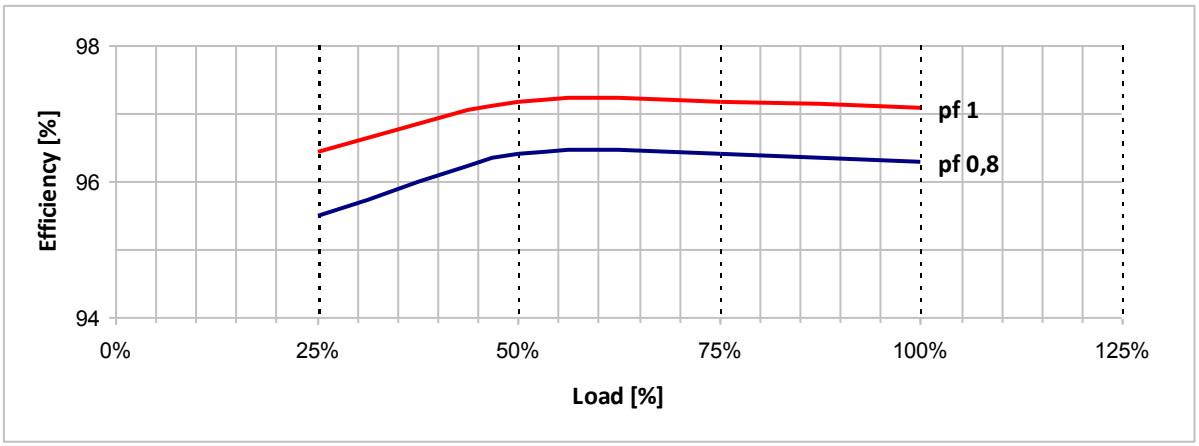
416 V



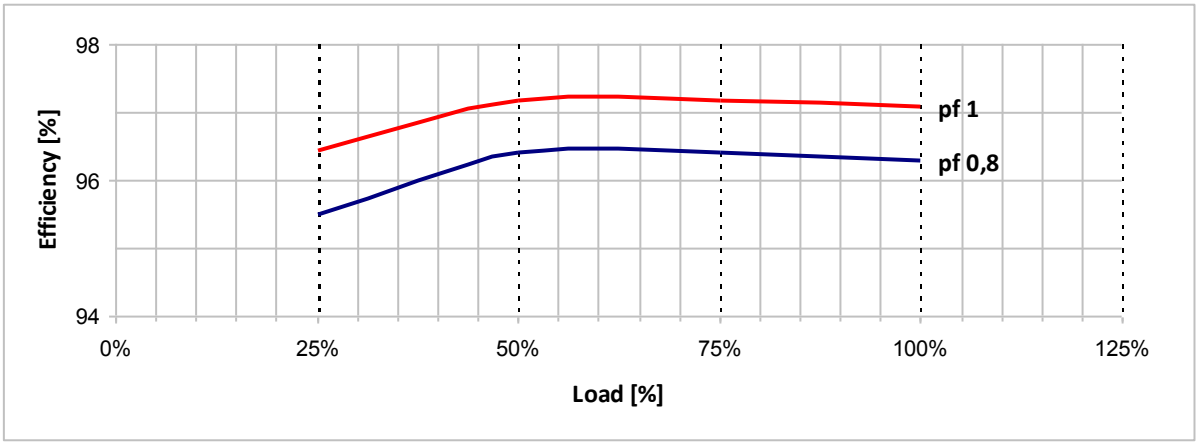
440 V



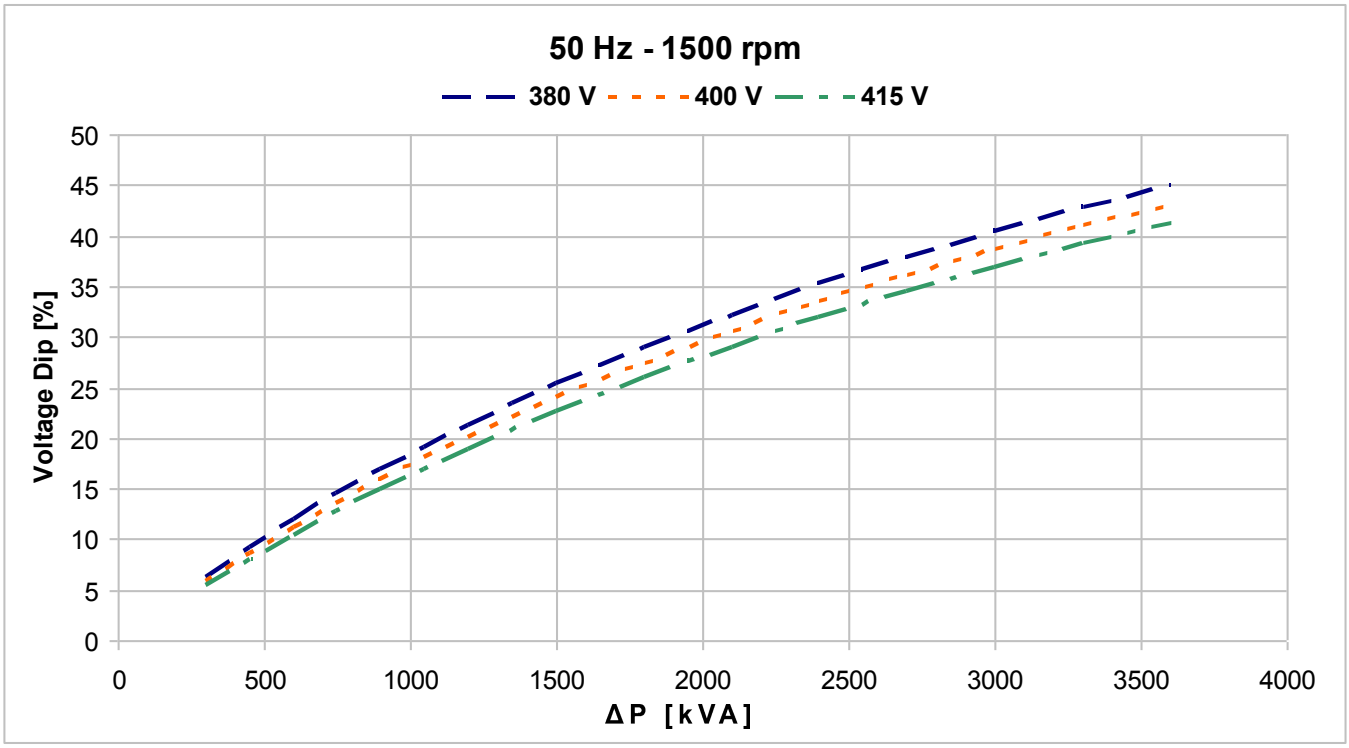
460 V

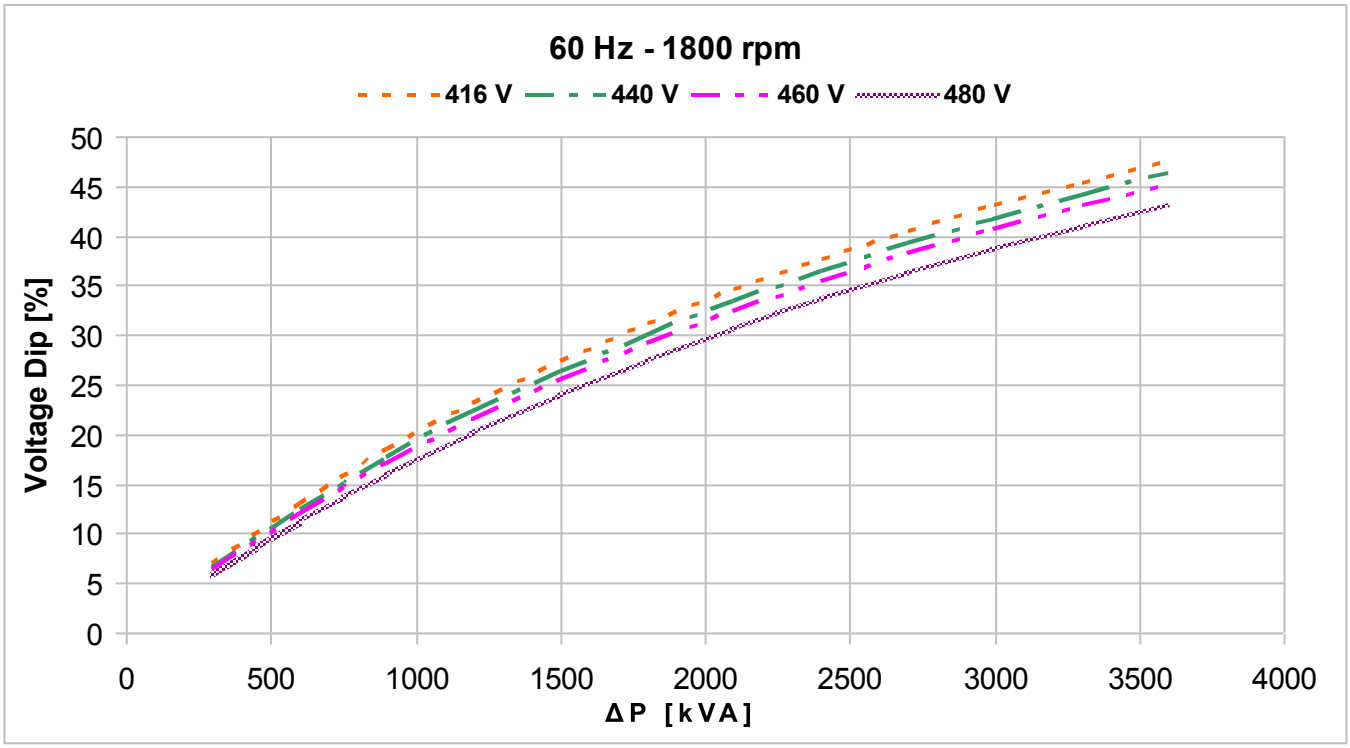


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 500 LA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**2500**	**2500**	**2500**	**2810**	**2900**	**3000**	**3000**
	kW	***2000***	***2000***	***2000***	***2248***	***2320***	***2400***	***2400***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,4	96,4	96,5	96,5	96,6	96,6	96,7
	3/4	96,7	96,7	96,8	96,4	96,5	96,5	96,6
	2/4	96,5	96,5	96,6	96,2	96,3	96,3	96,4
EFFICIENCY [%] @ 1 p.f.	**4/4**	97,2	97,2	97,2	97,2	97,3	97,3	97,4
	3/4	97,4	97,4	97,5	97,2	97,2	97,2	97,3
	2/4	97,2	97,2	97,3	97,0	97,1	97,1	97,2
SHORT CIRCUIT RATIO	SCR	0,38	0,42	0,45	0,34	0,37	0,39	0,42
REACTANCES [%]								
Direct axis synchronous	Xd	338	305	283	380	351	332	305
Quadrature axis synchronous	Xq	188	170	158	212	196	185	170
Direct axis transient	X'd	31,2	28,2	26,2	35,2	32,4	30,7	28,2
Direct axis subtransient	X"d	13,2	11,9	11,1	14,8	13,7	13,0	11,9
Quadrature axis subtransient	X"q	14,3	12,9	12,0	16,1	14,8	14,0	12,9
Negative sequence	X_2	13,3	12,0	11,1	15,0	13,8	13,1	12,0
Zero sequence	X_0	3,7	3,3	3,1	4,2	3,8	3,6	3,3
TIME CONSTANTS [s]								
Open circuit	T'do	3,94						
Transient	T'd	0,36						
Subtransient	T"d	0,018						
Armature	T_a	0,042						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6328 C3 / With grease nipple
N-end bearing/Lubrication		6326 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	61,5
Weight [kg]	Refer to B34 construction	5100
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		2,60 / 3,10
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,5
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with VARICOMP device
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% - 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.

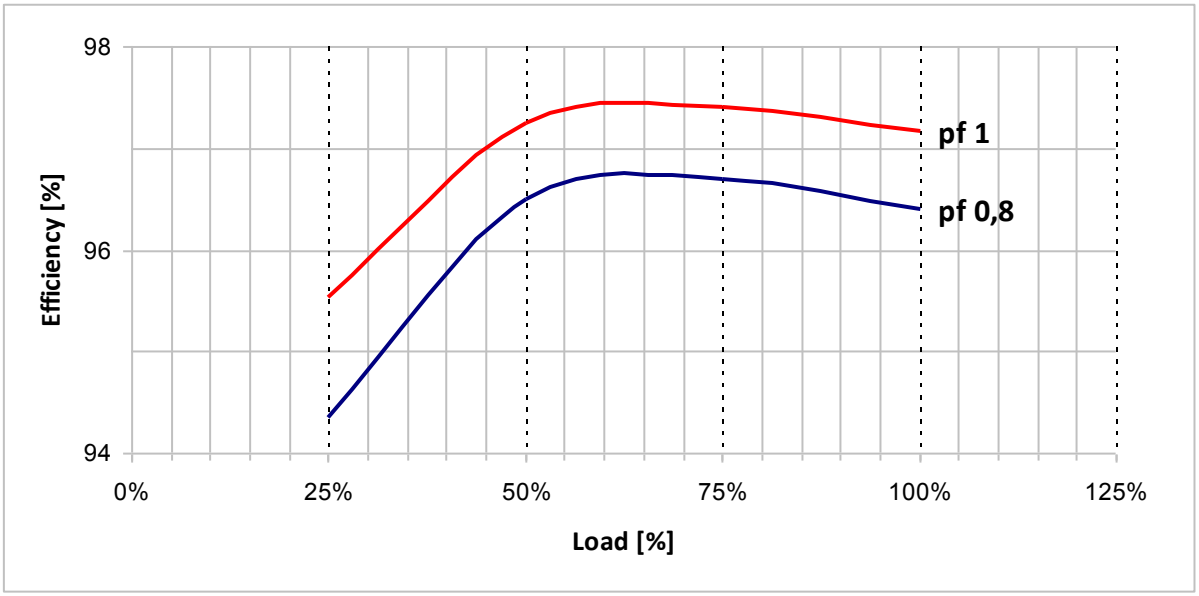
THREE PHASE SYNCRONOUS GENERATOR

MJB 500 LA4

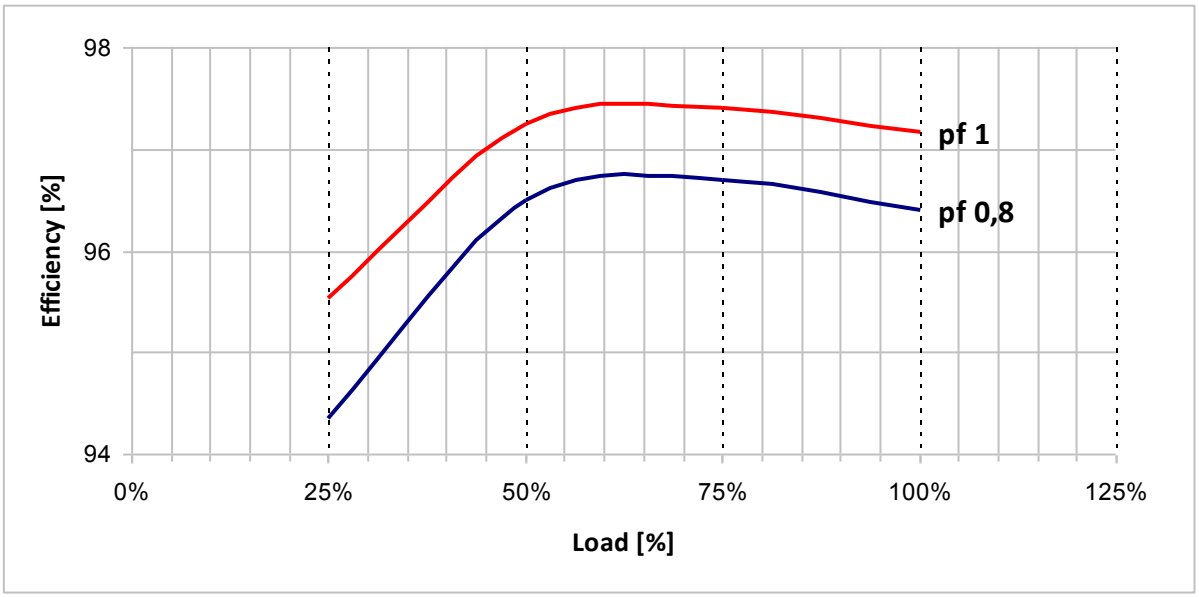
Typical efficiency curves

50 Hz - 1500 rpm

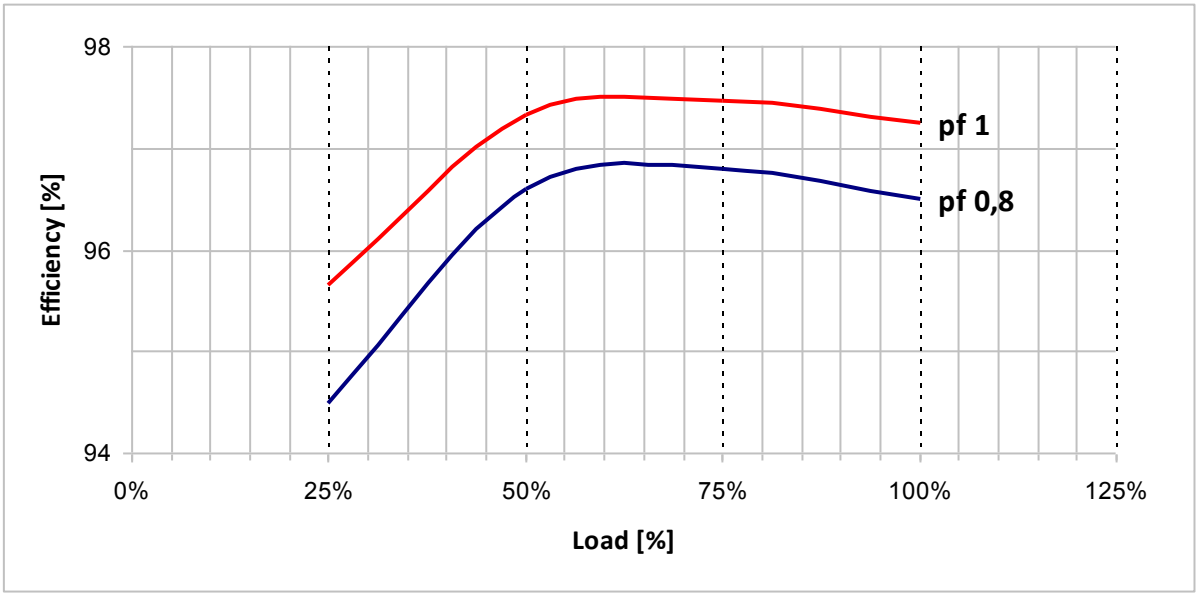
380 V



400 V



415 V



MarelliGenerators®

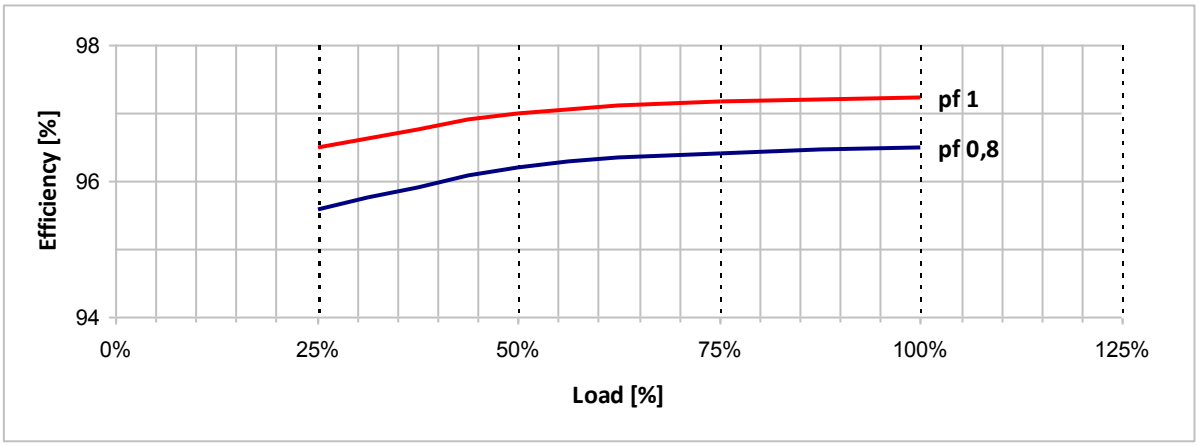
THREE PHASE SYNCRONOUS GENERATOR

MJB 500 LA4

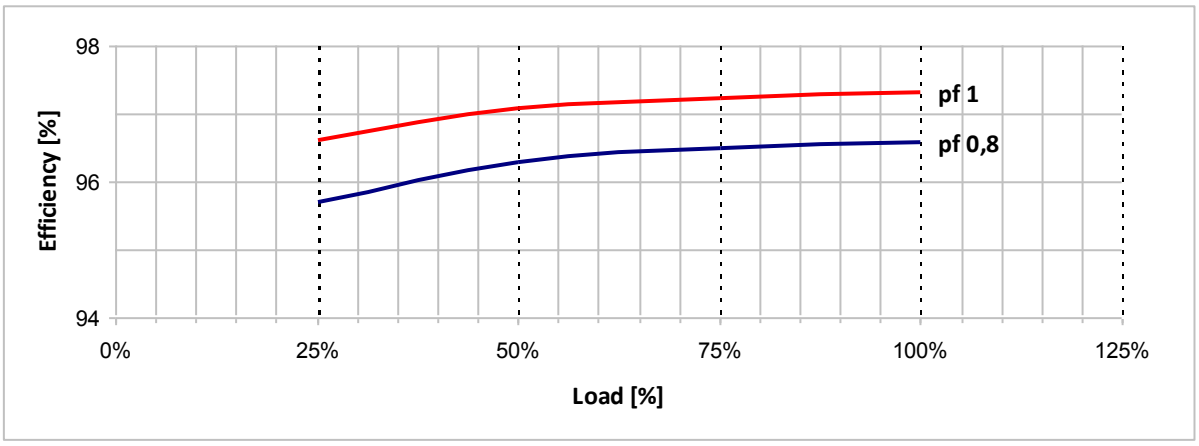
Typical efficiency curves

60 Hz - 1800 rpm

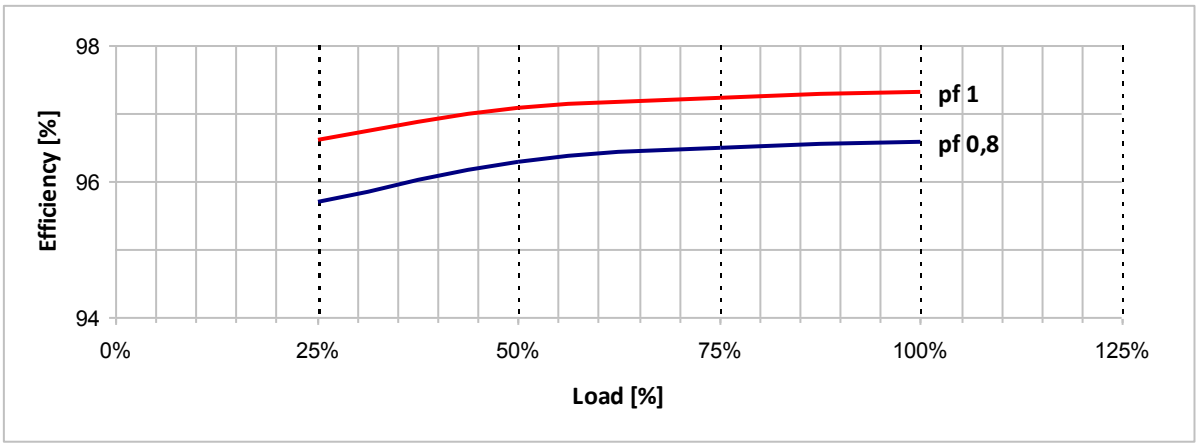
416 V



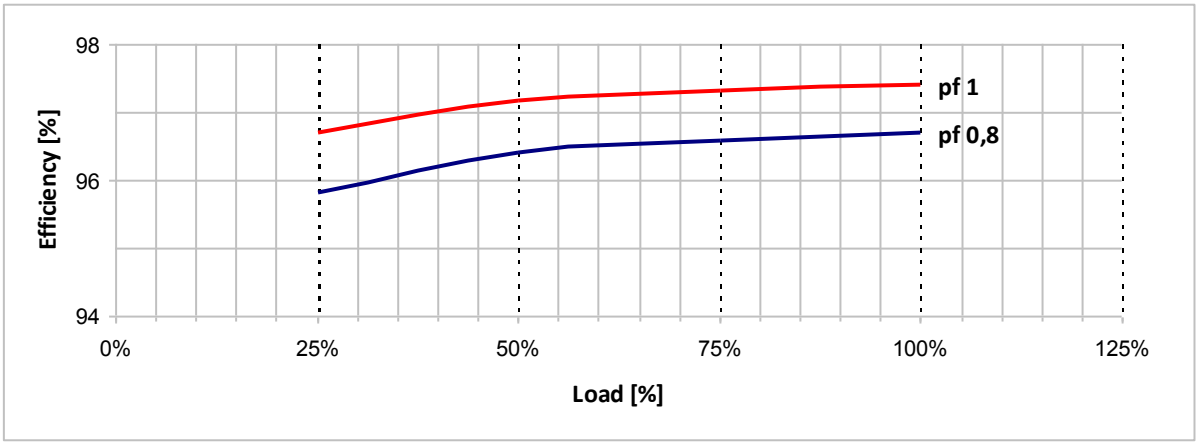
440 V



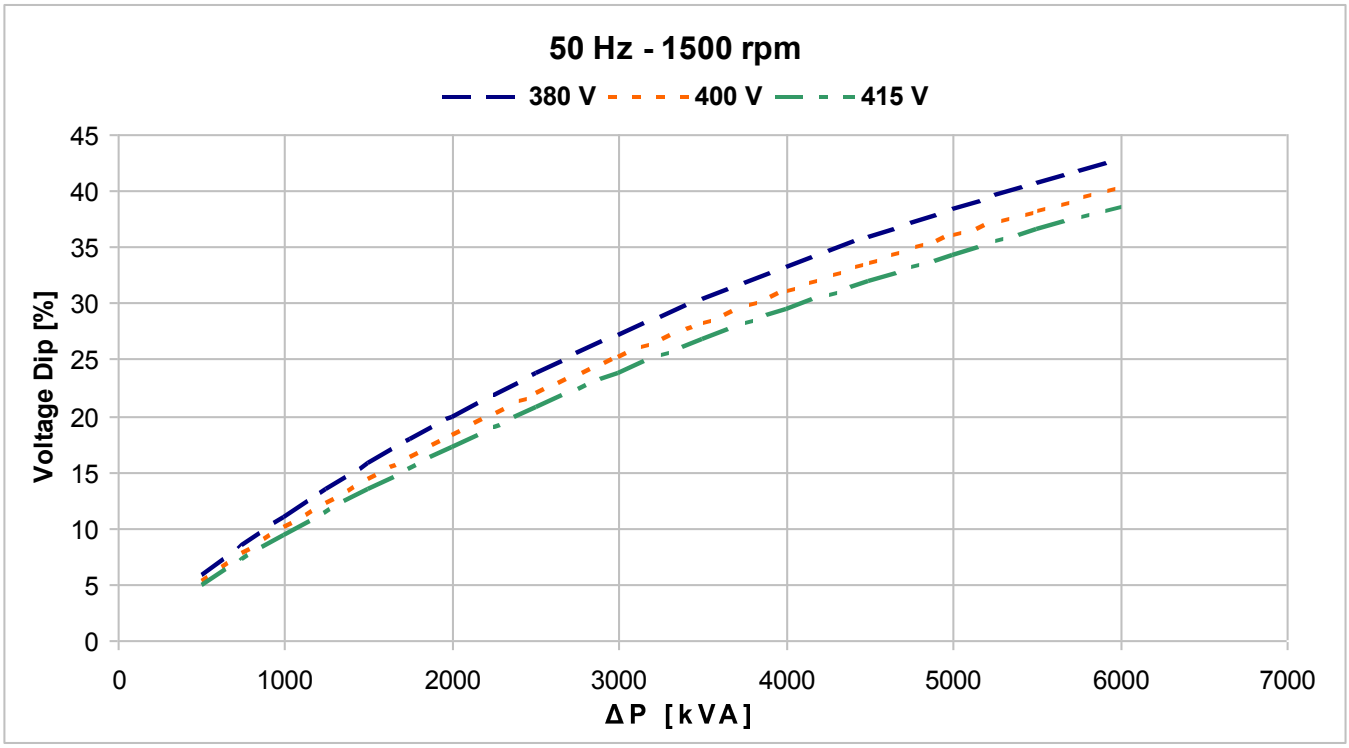
460 V

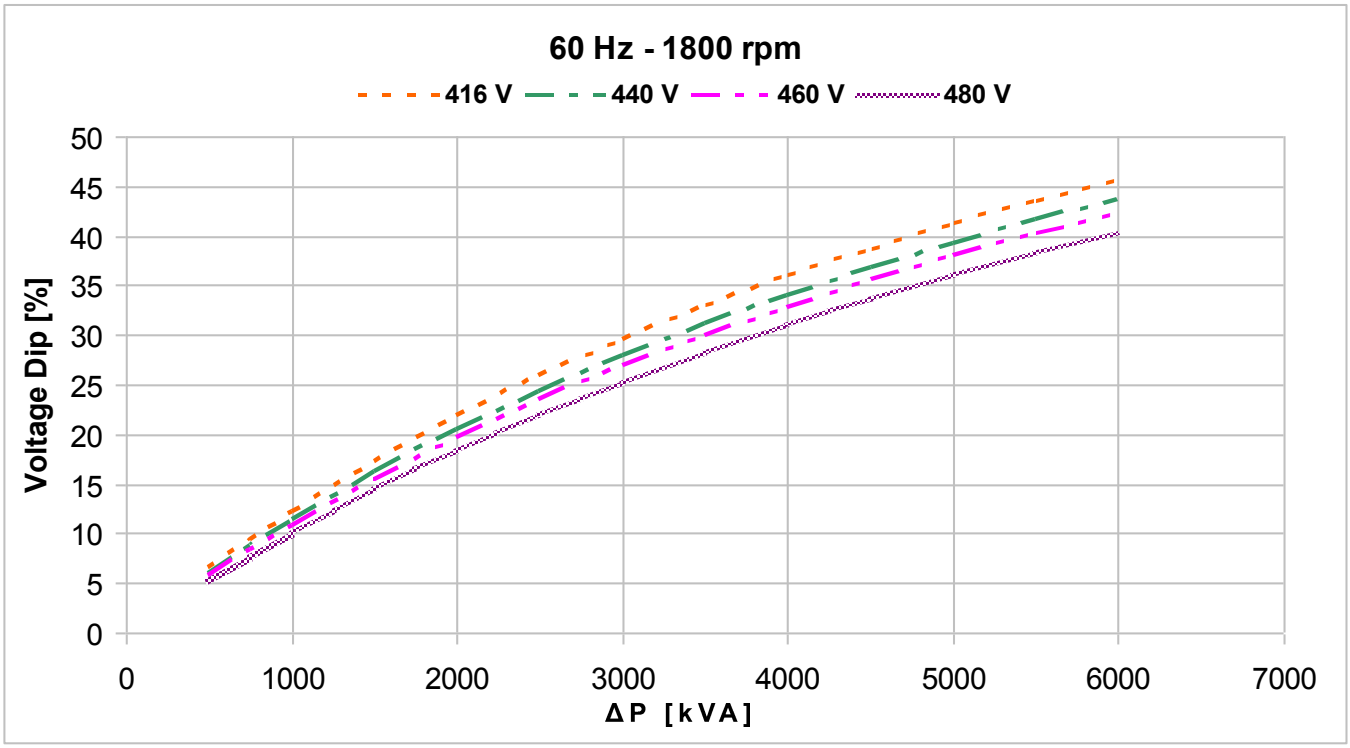


480 V



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.

FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 500 MB 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	
TEMPERATURE RISE	**H**	Winding code	**80**
INSULATION CLASS	**H**	Number of leads	**6**
POWER FACTOR	**0,8**	Winding pitch	**2/3**

FREQUENCY		**Hz**	**50**			**60**			
VOLTAGE	Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
	Delta		**220**	**230**	**240**	**240**	**254**	**265**	**277**
RATING		**kVA**	**2200**	**2200**	**2200**	**2430**	**2500**	**2550**	**2635**
		kW	**1720**	**1720**	**1720**	**1904**	**1960**	**2000**	**2060**
EFFICIENCY (%) @ 0,8 p.f.		4/4	96,2	96,2	96,2	96,3	96,4	96,5	96,5
		3/4	96,5	96,5	96,5	96,3	96,4	96,5	96,5
		2/4	96,3	96,3	96,3	95,9	96,0	96,1	96,1
EFFICIENCY (%) @ 1,0 p.f.		4/4	97,0	97,0	97,0	97,1	97,2	97,2	97,2
		3/4	97,2	97,2	97,2	97,1	97,2	97,2	97,2
		2/4	97,1	97,1	97,1	96,8	96,8	96,9	96,9
SHORT CIRCUIT RATIO			0,32	0,35	0,38	0,29	0,31	0,33	0,35
REACTANCES (%)									
Direct axis synchronous		xd	340	305	285	375	345	320	285
Quadrature axis synchronous		xq	195	175	165	215	195	185	160
Direct axis transient		x'd	33,2	30,0	27,9	36,8	33,8	31,6	27,8
Direct axis subtransient		x"d	16,6	15,0	13,9	18,4	16,9	15,8	13,9
Quadrature axis subtransient		x"q	18,6	16,8	15,6	20,6	18,9	17,7	15,6
Negative sequence		x_2	17,5	15,8	14,7	19,4	17,8	16,6	14,7
Zero sequence		x_0	3,9	3,5	3,3	4,3	3,9	3,7	3,2

TIME CONSTANTS [s]

Open circuit (T'do)	3,60	Subtransient (T"d)	0,018
Transient (T'd)	0,35	Armature (Ta)	0,043

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6328 C3 / With grease nipple
N-end bearing/Lubrication	6326 C3 / With grease nipple
Weight (IM B34) [kg]	4400
Inertia (J) (IM B34) [kgm^2]	52,5
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/s] @ 50/60 Hz	2,6 / 3,1
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34 (IM 2101) / IM B20 (IM 1101)
Direction of rotation	CW

OTHER DATA

Phase resistance [mΩ] @ 20 °C (per phase)	0,75
Overloads	10% for 1 hour
3-phase short circuit current	>= 250% I_n
Voltage regulation accuracy	+/- 0,5% (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% (under no-load or non-distorting-load condition)

STANDARDS

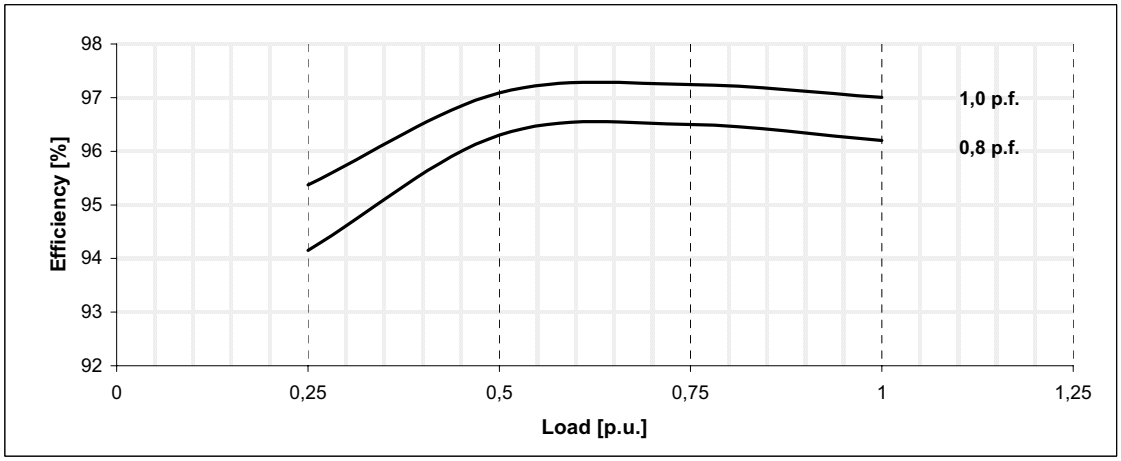
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10; NEMA MG 1.22.

MarelliGenerators®

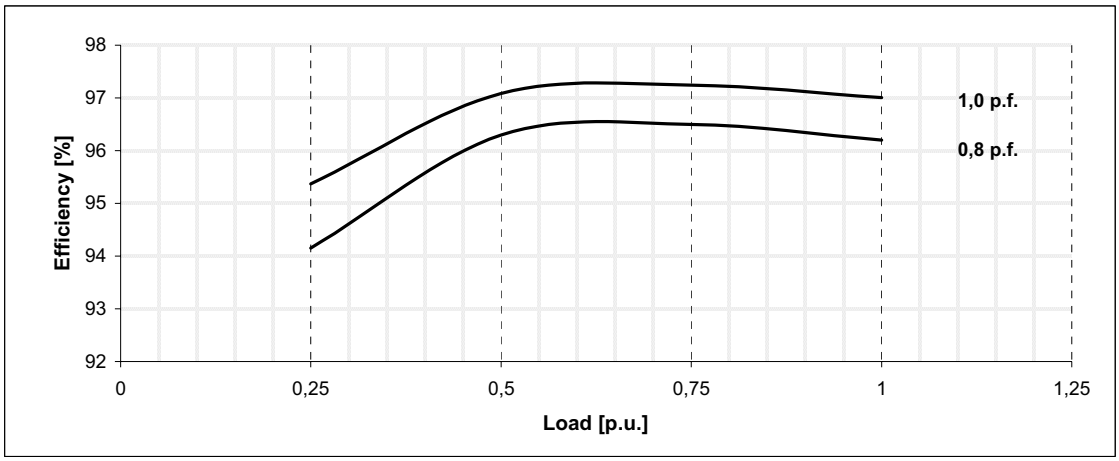
Typical efficiency curves

50 Hz - 1500 min^{-1}

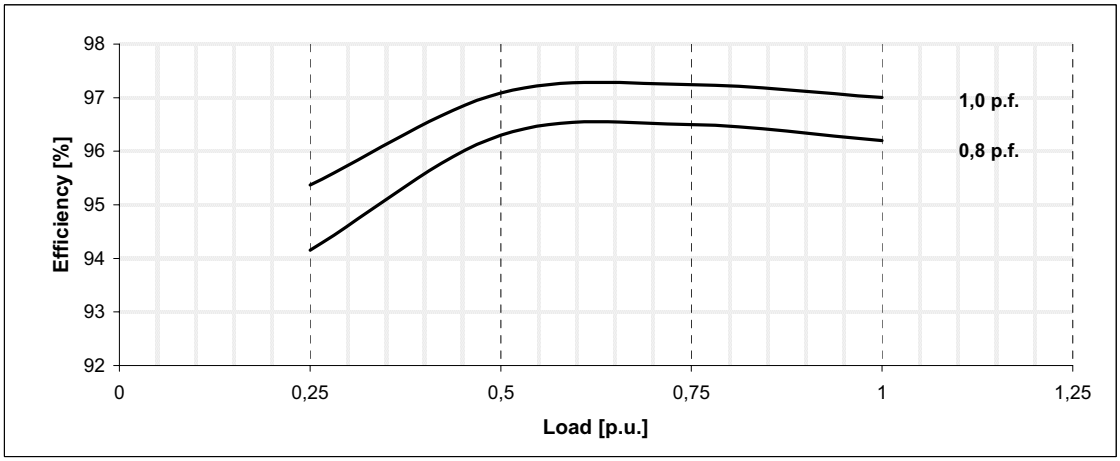
380 V



400 V



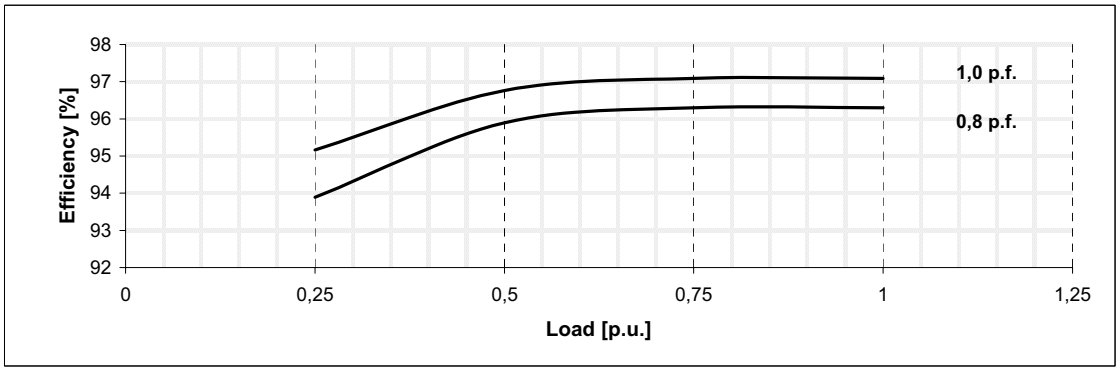
415 V



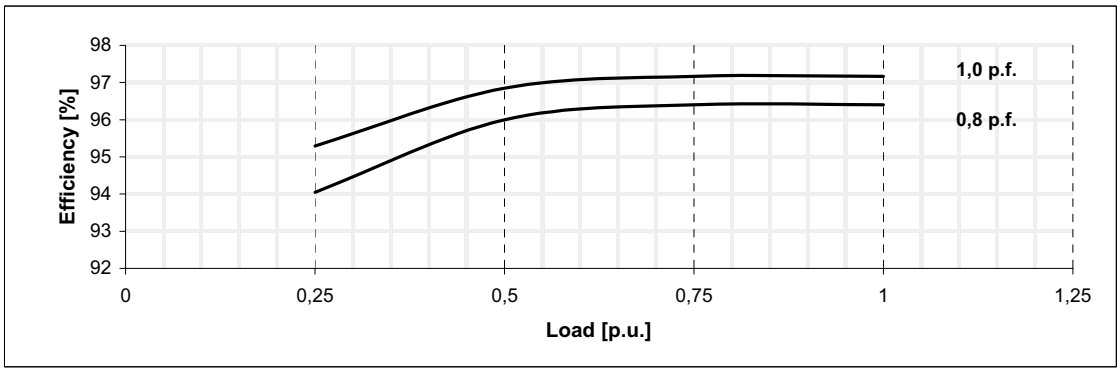
Typical efficiency curves

60 Hz - 1800 min^{-1}

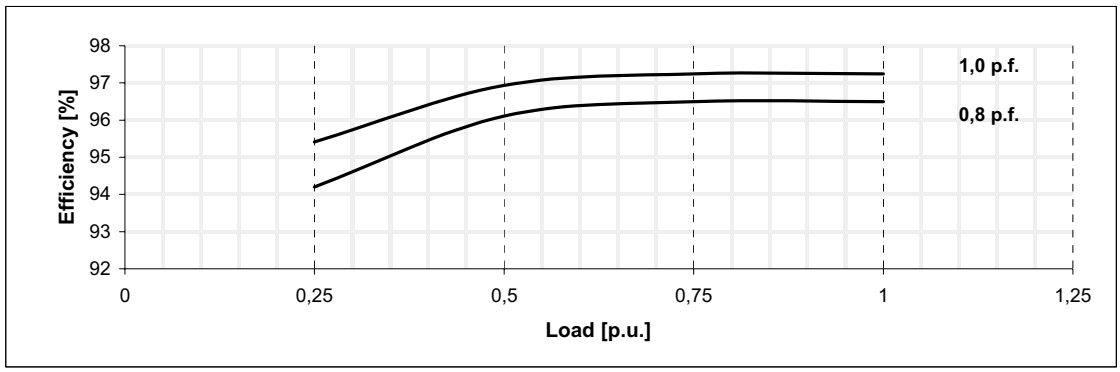
416 V



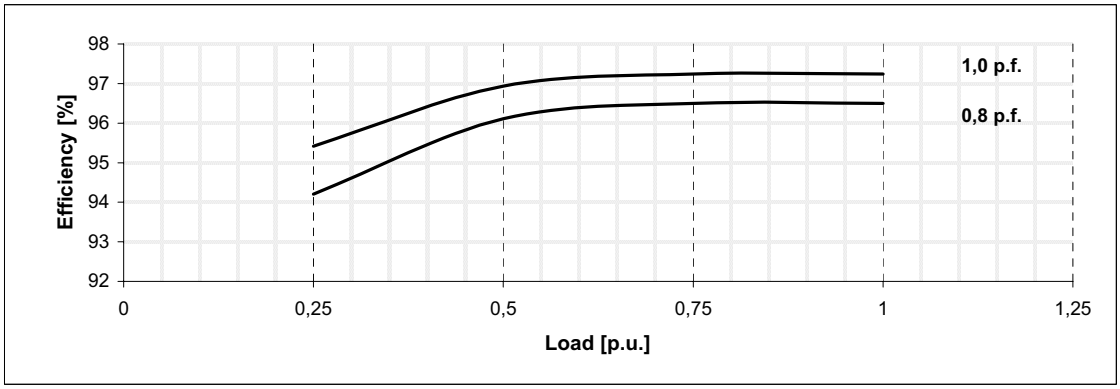
440 V



460 V

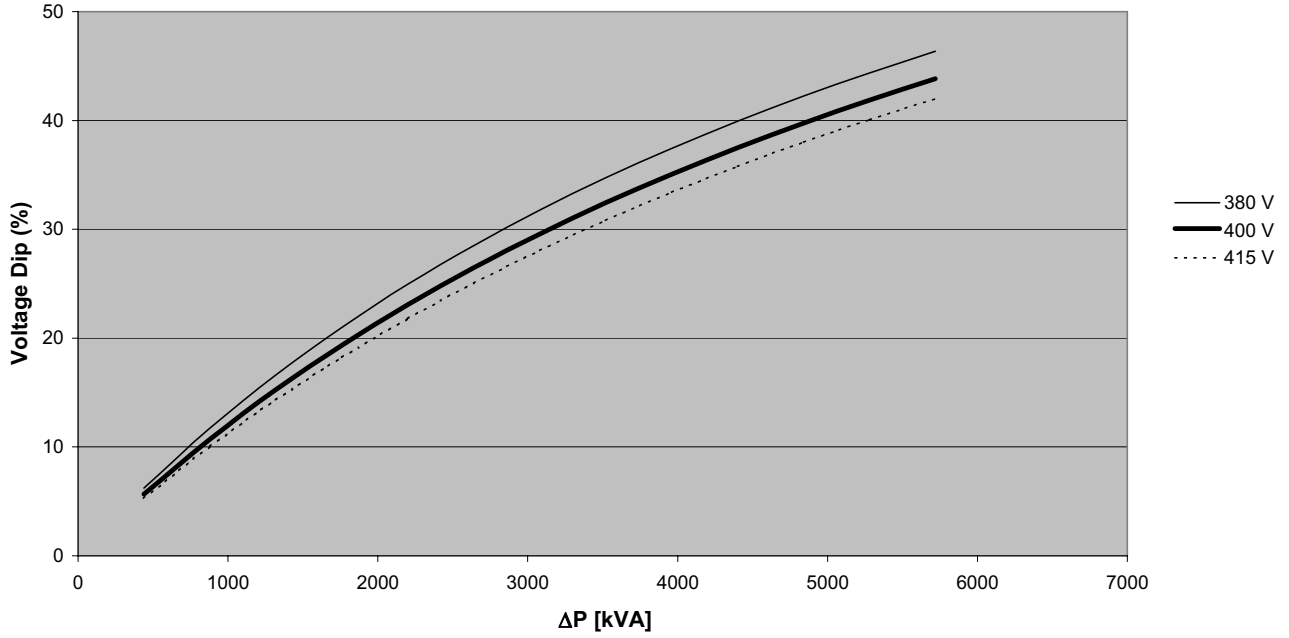


480 V

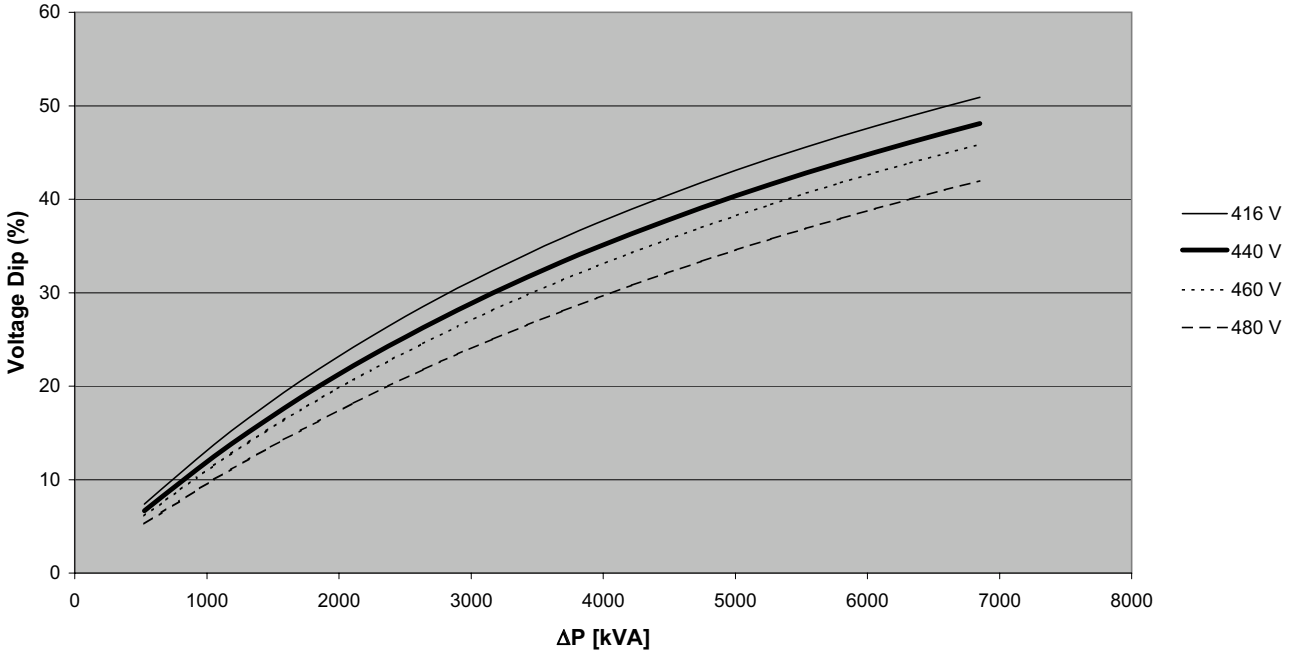


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



$\Delta P = P_n \times (I_s / I_n) / (\cos\varphi_n \times \eta_n)$

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 500 SC4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**1970**	**2000**	**2000**	**2220**	**2280**	**2330**	**2400**
	kW	***1576***	***1600***	***1600***	***1776***	***1824***	***1864***	***1920***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,1	96,1	96,2	96,1	96,3	96,4	96,5
	3/4	96,4	96,4	96,5	96,1	96,3	96,4	96,5
	2/4	96,2	96,2	96,3	95,7	95,9	96,0	96,1
EFFICIENCY [%] @ 1 p.f.	**4/4**	96,9	96,9	97,0	96,9	97,1	97,2	97,2
	3/4	97,2	97,2	97,2	96,9	97,1	97,2	97,2
	2/4	97,0	97,0	97,1	96,6	96,8	96,9	96,9
SHORT CIRCUIT RATIO	SCR	0,29	0,32	0,34	0,26	0,28	0,30	0,32
REACTANCES [%]								
Direct axis synchronous	Xd	367	336	312	414	380	355	336
Quadrature axis synchronous	Xq	205	188	175	232	213	199	188
Direct axis transient	X'd	34,1	31,2	29,0	38,4	35,3	33,0	31,2
Direct axis subtransient	X"d	14,0	12,8	11,9	15,8	14,5	13,5	12,8
Quadrature axis subtransient	X"q	14,4	13,2	12,3	16,3	14,9	14,0	13,2
Negative sequence	X_2	14,2	13,0	12,1	16,0	14,7	13,7	13,0
Zero sequence	X_0	3,3	3,0	2,8	3,7	3,4	3,2	3,0
TIME CONSTANTS [s]								
Open circuit	T'do	3,73						
Transient	T'd	0,34						
Subtransient	T"d	0,014						
Armature	T_a	0,029						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6328 C3 / With grease nipple
N-end bearing/Lubrication		6326 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	46,7
Weight [kg]	Refer to B34 construction	4000
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		2,60 / 3,10
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,85
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with VARICOMP device
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% - 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.

MarelliGenerators®

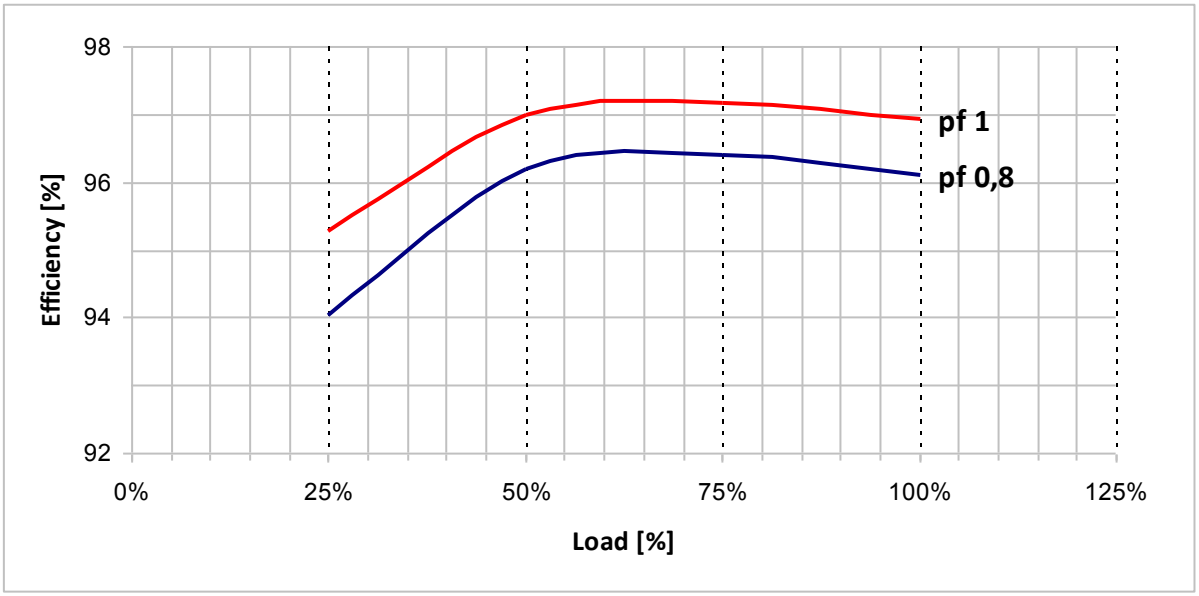
THREE PHASE SYNCRONOUS GENERATOR

MJB 500 SC4

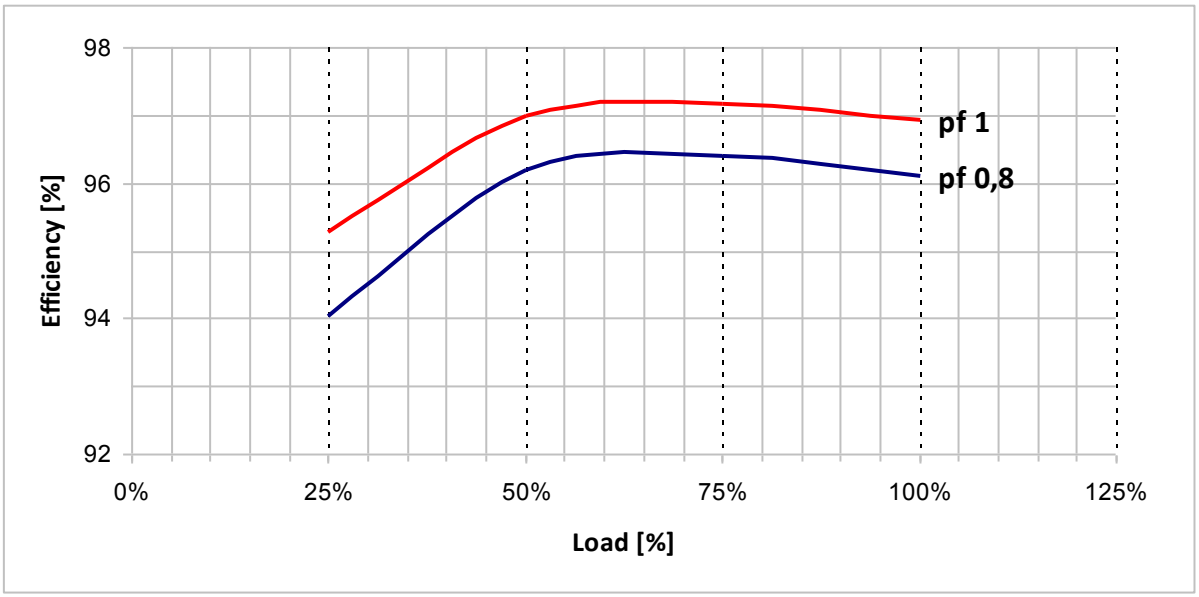
Typical efficiency curves

50 Hz - 1500 rpm

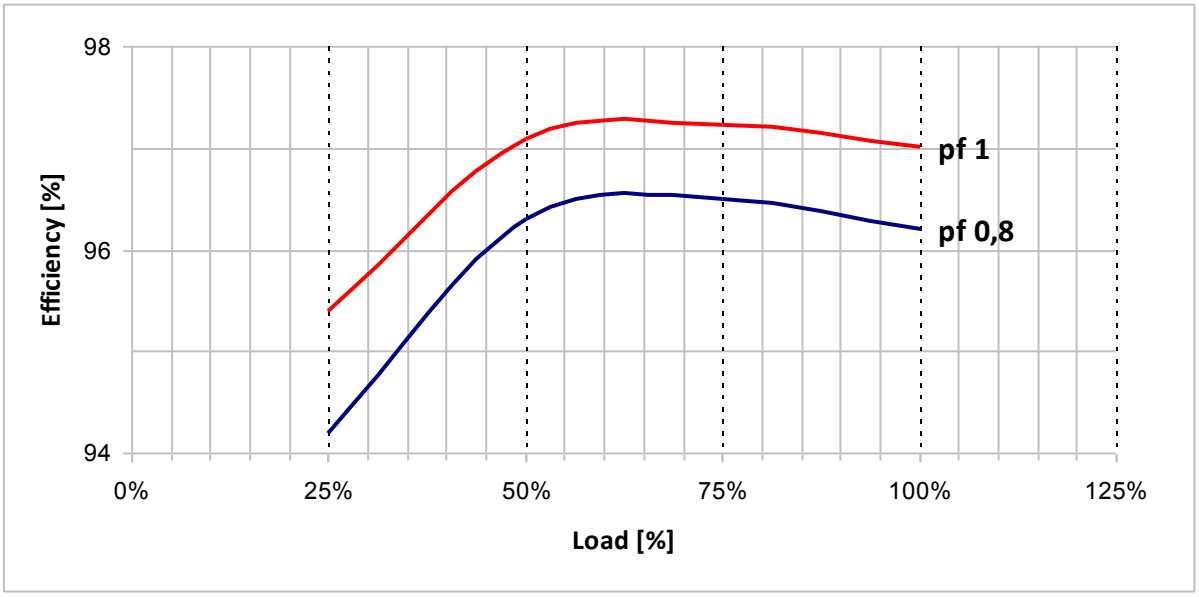
380 V



400 V



415 V



MarelliGenerators®

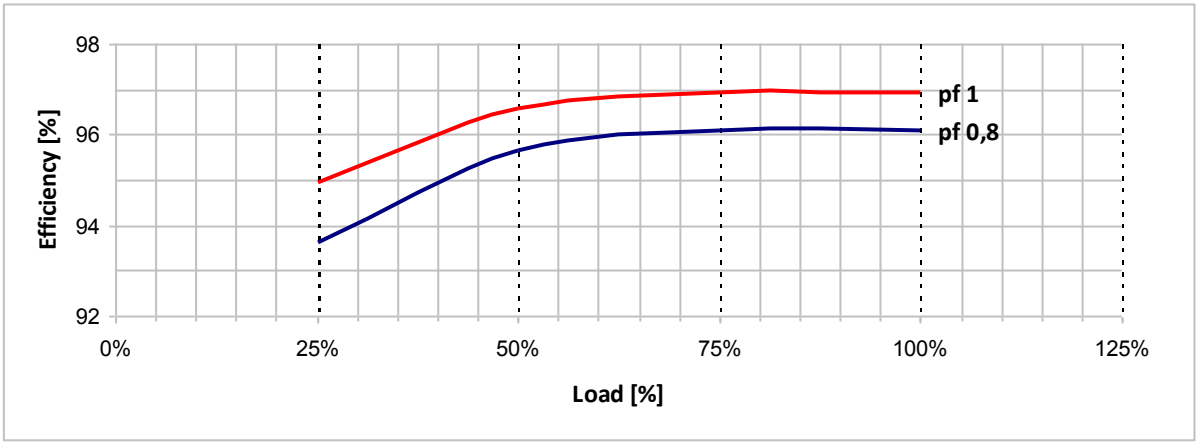
THREE PHASE SYNCRONOUS GENERATOR

MJB 500 SC4

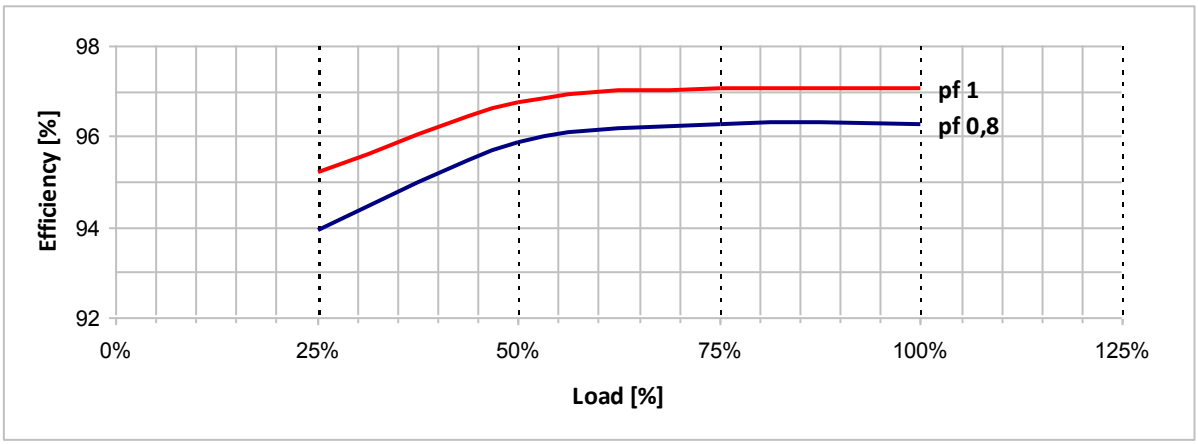
Typical efficiency curves

60 Hz - 1800 rpm

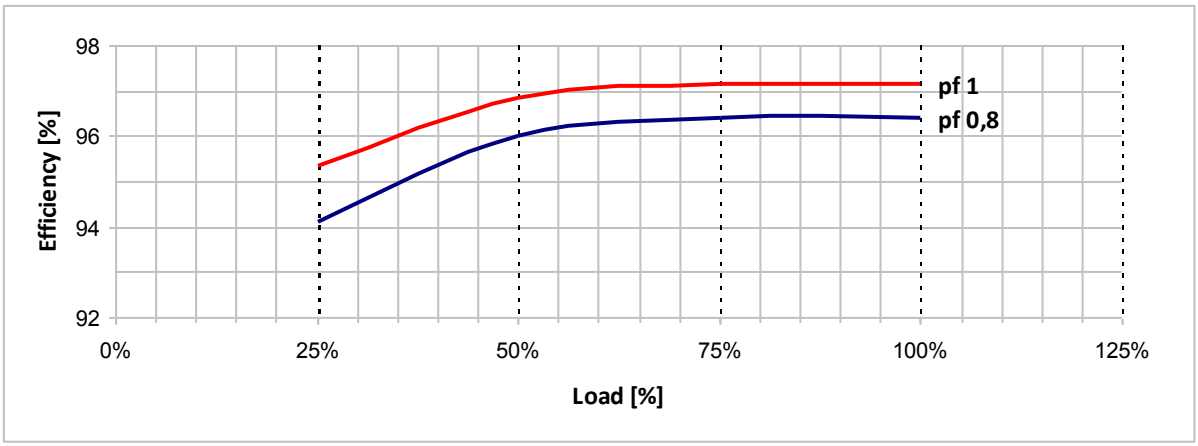
416 V



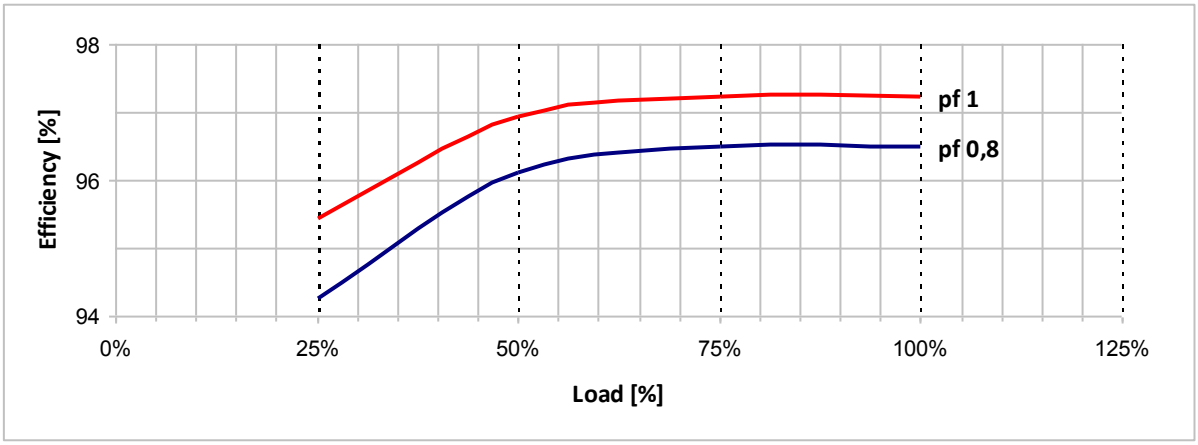
440 V



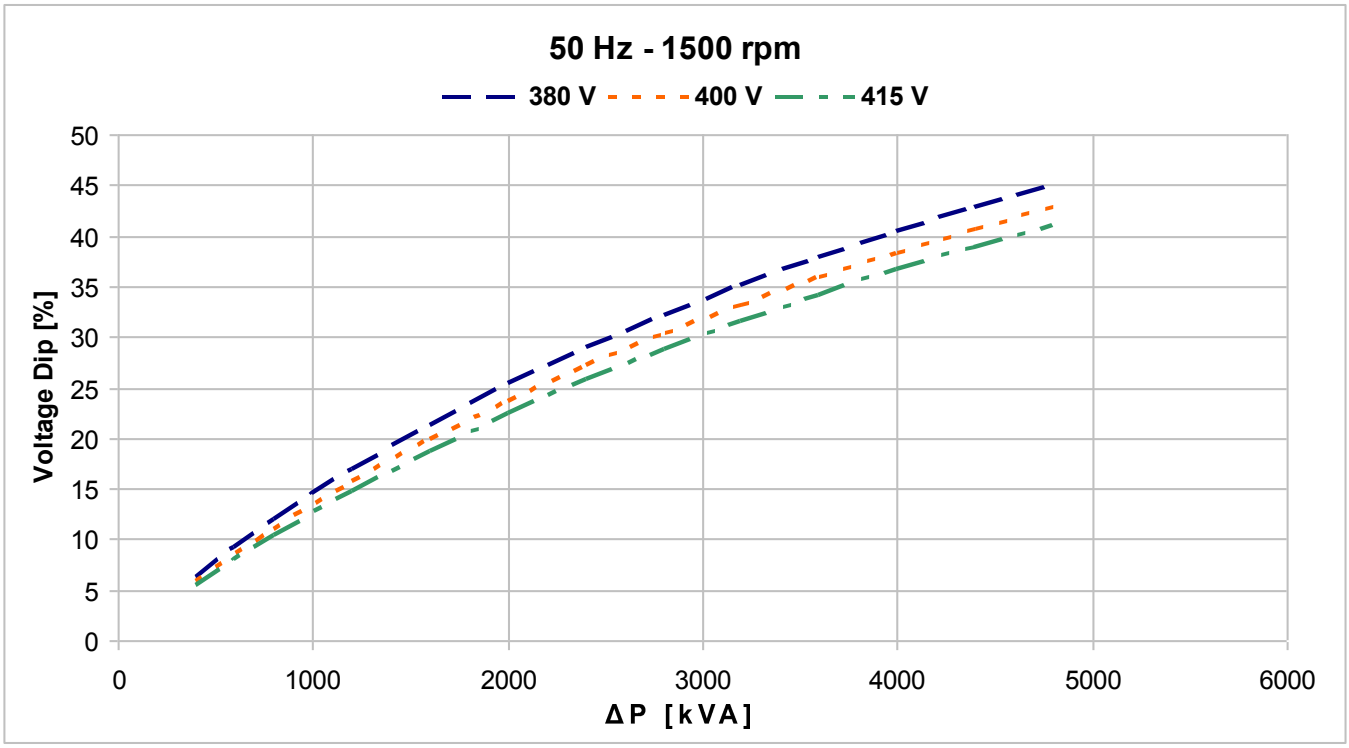
460 V

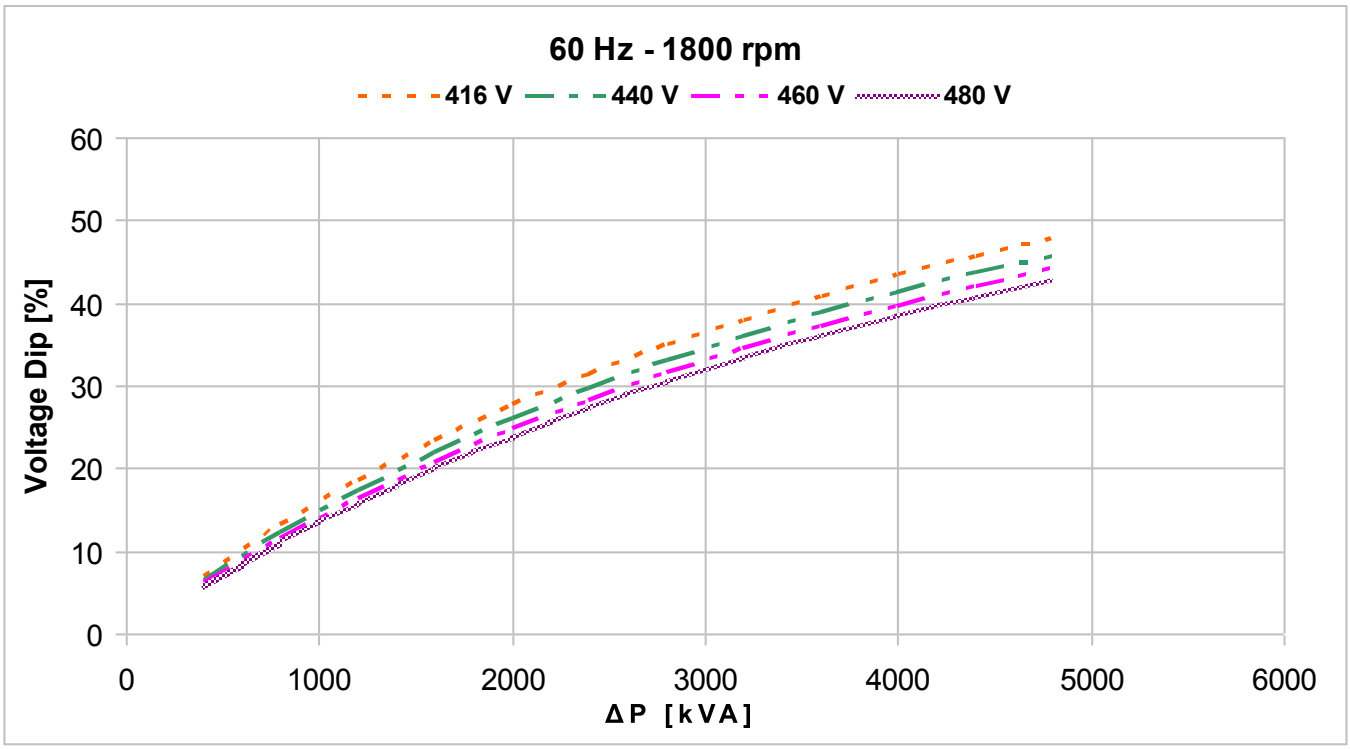


480 V



Locked rotor motor starting curves (*)





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

(*): 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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 560 LA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**3100**	**3200**	**3200**	**3320**	**3470**	**3660**	**3680**
	kW	***2480***	***2560***	***2560***	***2656***	***2776***	***2928***	***2944***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,4	96,5	96,5	96,4	96,4	96,5	96,6
	3/4	96,5	96,6	96,6	96,4	96,5	96,5	96,6
	2/4	96,5	96,5	96,5	96,3	96,3	96,4	96,4
EFFICIENCY [%] @ 1 p.f.	**4/4**	97,2	97,2	97,2	97,2	97,2	97,2	97,3
	3/4	97,3	97,3	97,3	97,2	97,2	97,3	97,3
	2/4	97,2	97,3	97,2	97,1	97,1	97,2	97,2
SHORT CIRCUIT RATIO	SCR	0,33	0,35	0,38	0,30	0,33	0,34	0,37
REACTANCES [%]								
Direct axis synchronous	Xd	342	319	296	367	343	331	306
Quadrature axis synchronous	Xq	192	179	166	206	192	186	172
Direct axis transient	X'd	35,4	33,0	30,7	38,0	35,5	34,2	31,6
Direct axis subtransient	X"d	17,1	15,9	14,8	18,3	17,1	16,5	15,2
Quadrature axis subtransient	X"q	16,6	15,5	14,4	17,8	16,7	16,1	14,9
Negative sequence	X_2	16,9	15,7	14,6	18,1	16,9	16,3	15,0
Zero sequence	X_0	5,5	5,1	4,7	5,9	5,5	5,3	4,9
TIME CONSTANTS [s]								
Open circuit	T'do	4,8						
Transient	T'd	0,5						
Subtransient	T"d	0,025						
Armature	T_a	0,06						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6332 C3 / With grease nipple
N-end bearing/Lubrication		6330 C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	95
Weight [kg]	Refer to B34 construction	6450
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		2,60 / 3,10
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,37
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with VARICOMP device
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% - 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.

MarelliGenerators®

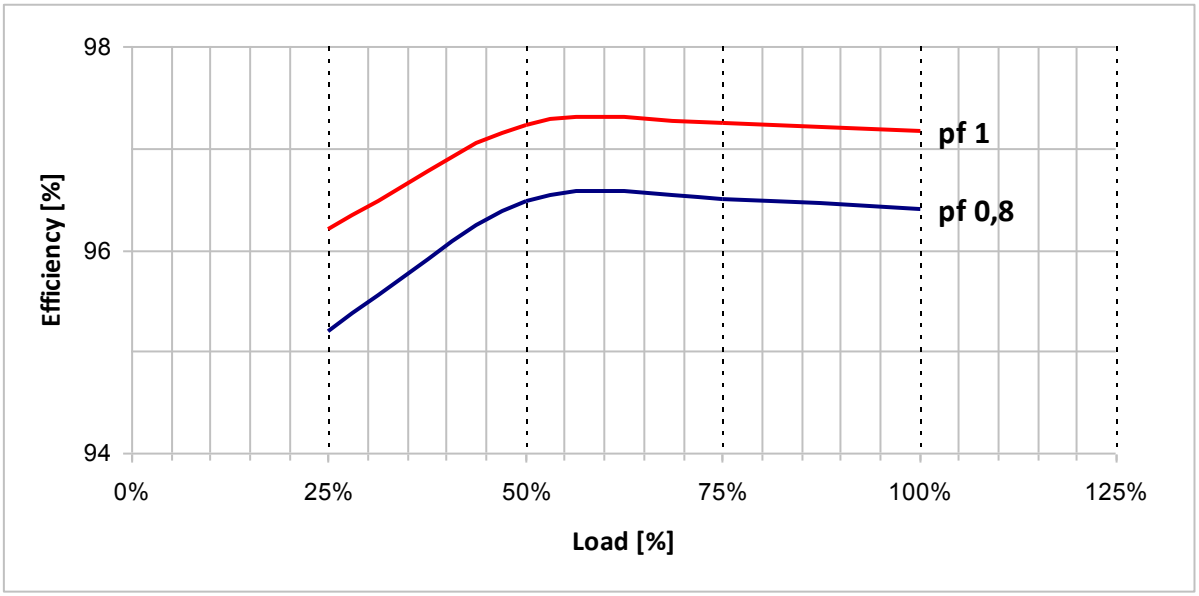
THREE PHASE SYNCRONOUS GENERATOR

MJB 560 LA4

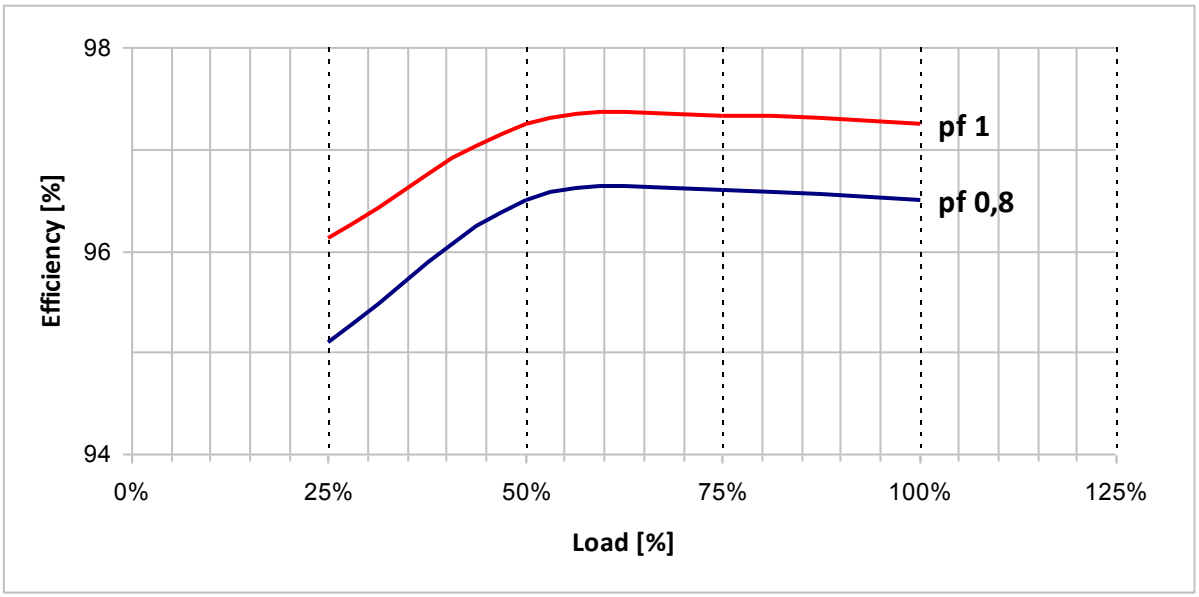
Typical efficiency curves

50 Hz - 1500 rpm

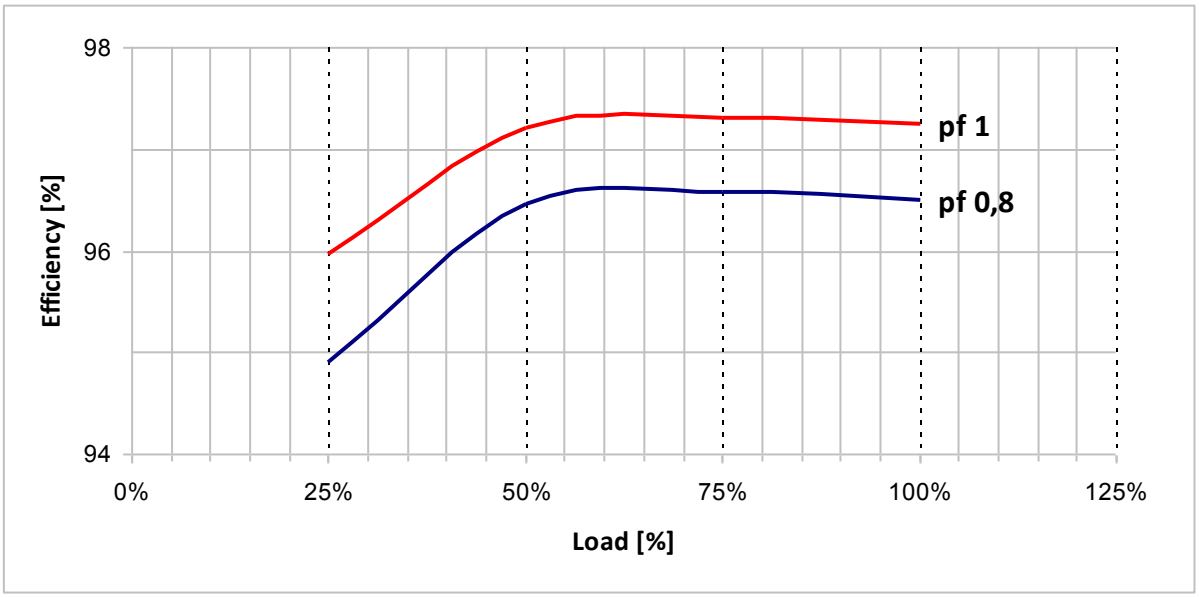
380 V



400 V



415 V



MarelliGenerators®

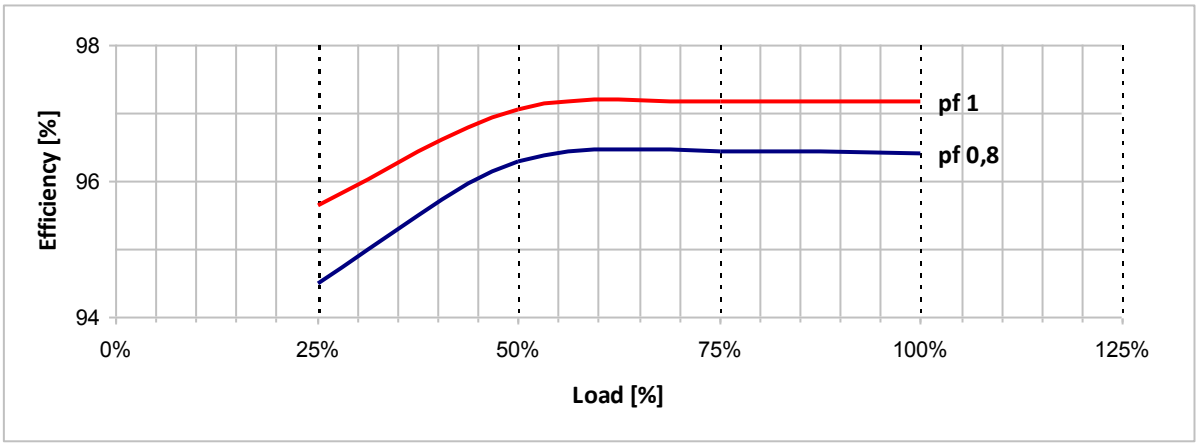
THREE PHASE SYNCRONOUS GENERATOR

MJB 560 LA4

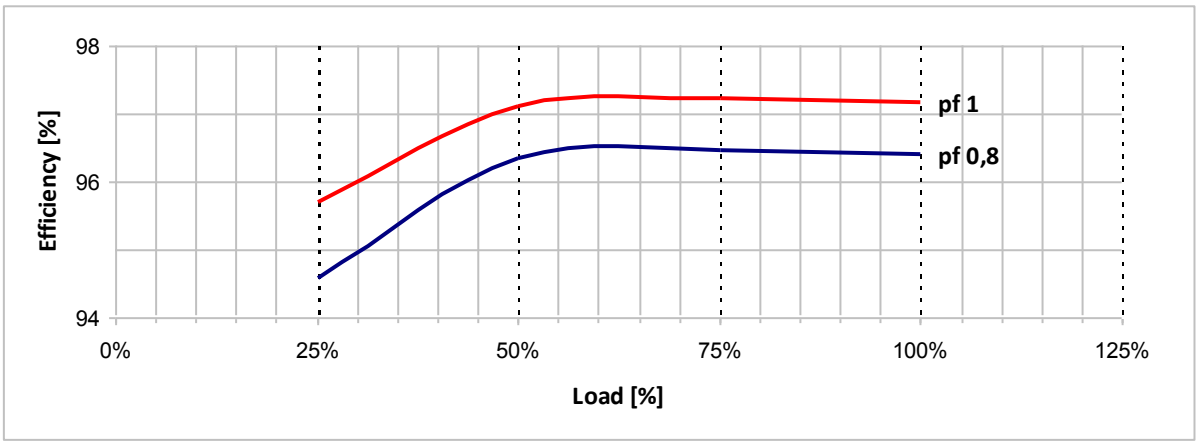
Typical efficiency curves

60 Hz - 1800 rpm

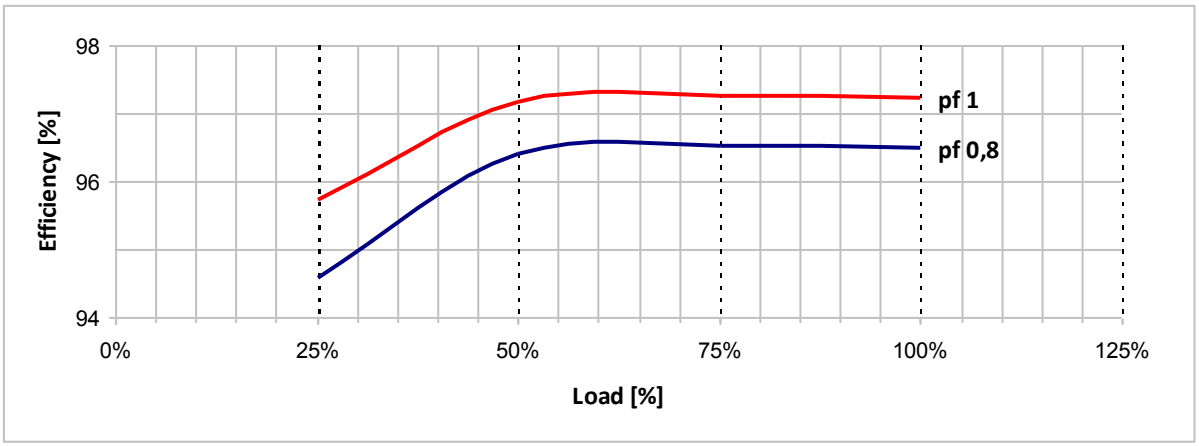
416 V



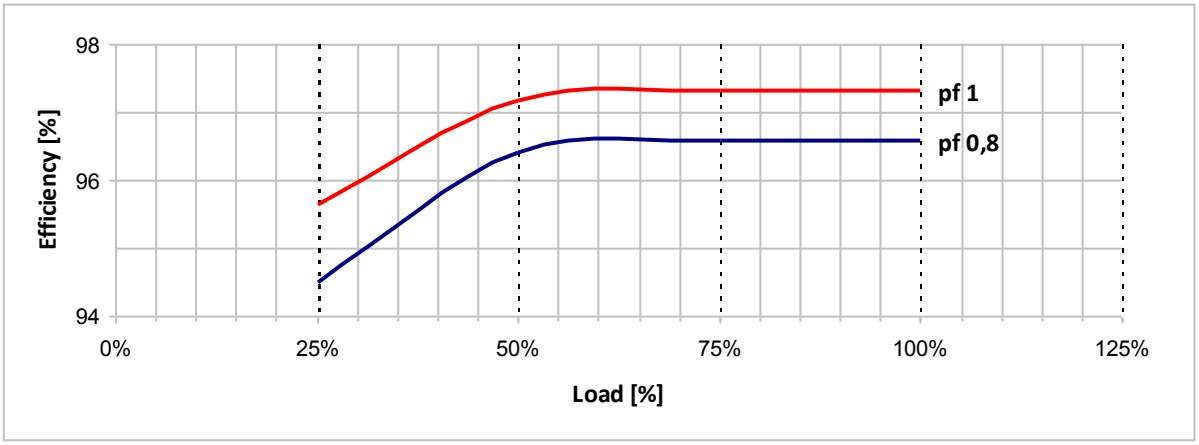
440 V



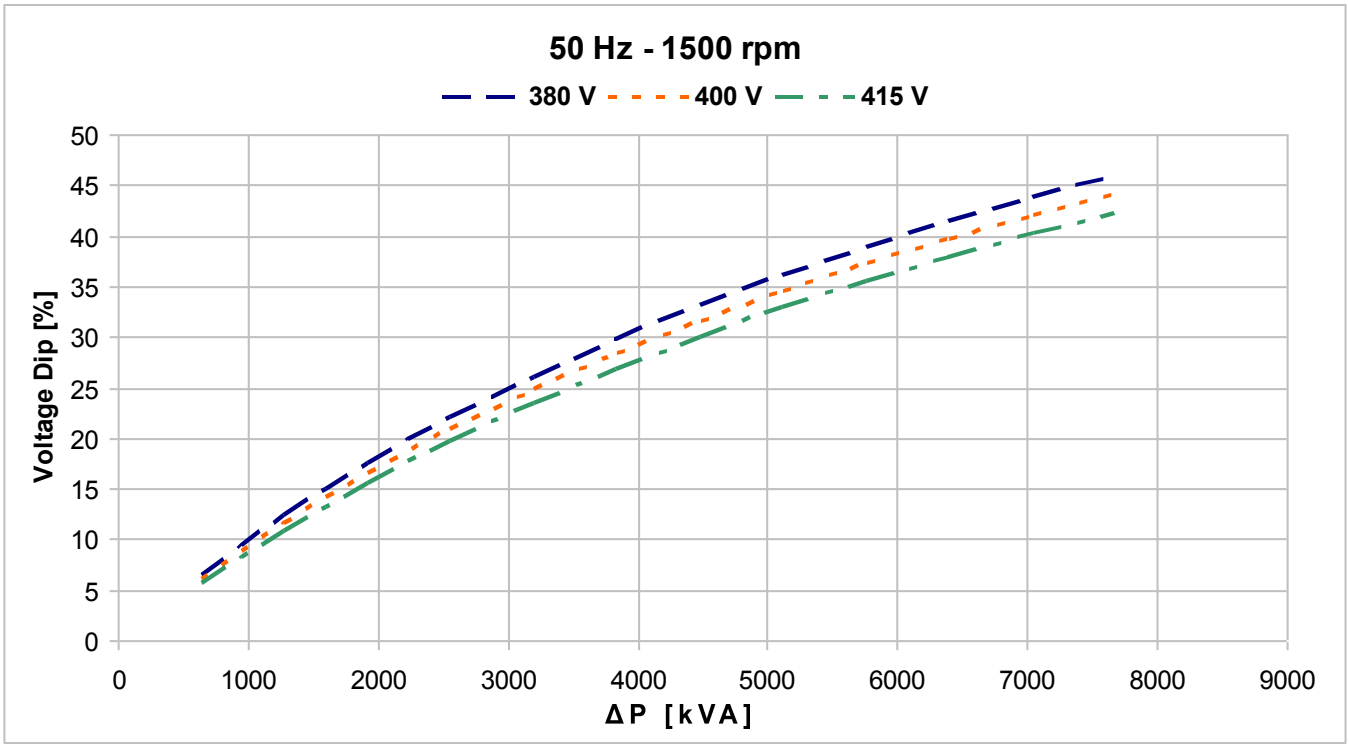
460 V

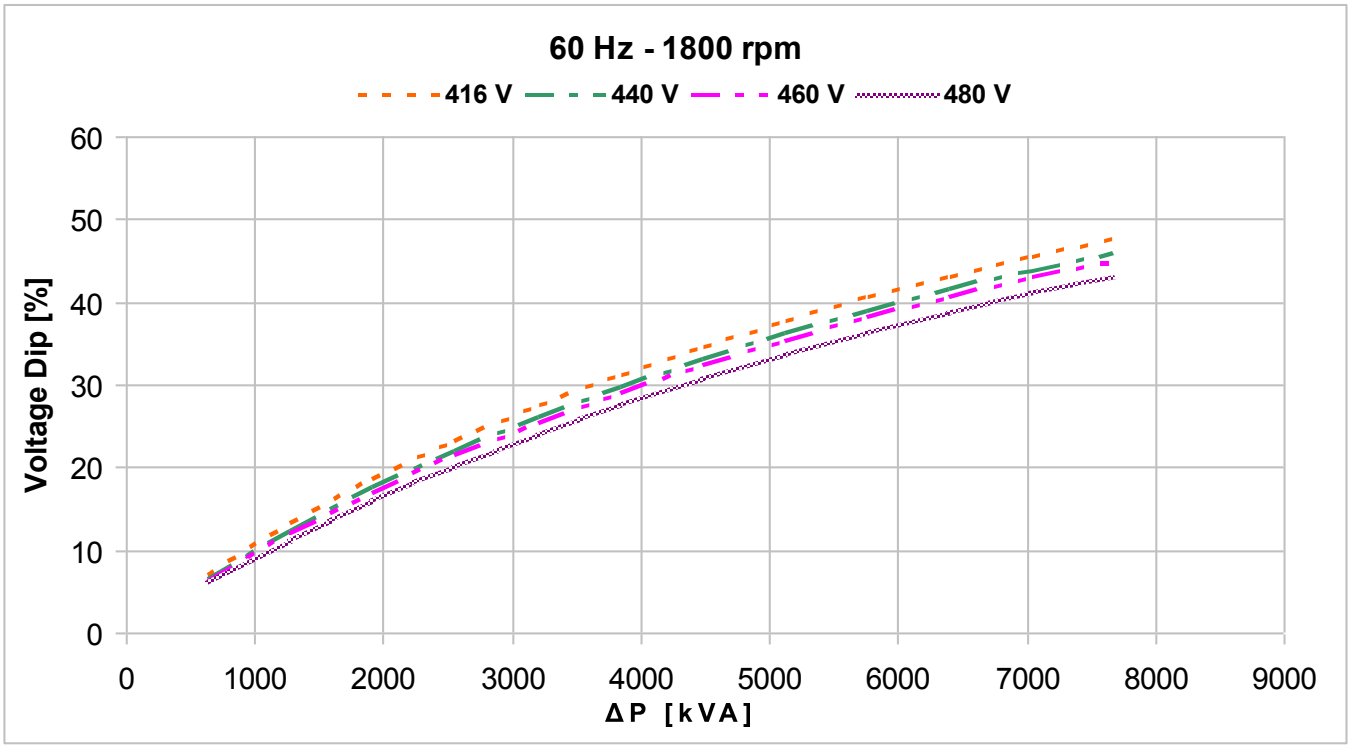


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 630 LA4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**3600**	**3600**	**3600**	**3925**	**4140**	**4140**	**4140**
	kW	***2880***	***2880***	***2880***	***3140***	***3312***	***3312***	***3312***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,3	96,5	96,4	96,4	96,6	96,7	96,8
	3/4	96,4	96,6	96,5	96,5	96,7	96,8	96,9
	2/4	96,2	96,4	96,3	96,2	96,4	96,5	96,6
EFFICIENCY [%] @ 1 p.f.	**4/4**	97,1	97,2	97,2	97,2	97,3	97,4	97,5
	3/4	97,2	97,3	97,2	97,2	97,4	97,5	97,6
	2/4	97,0	97,2	97,1	97,0	97,2	97,2	97,3
SHORT CIRCUIT RATIO	SCR	0,37	0,41	0,44	0,34	0,36	0,39	0,43
REACTANCES [%]								
Direct axis synchronous	Xd	304	274	255	331	312	286	263
Quadrature axis synchronous	Xq	168	152	141	184	173	159	146
Direct axis transient	X'd	30,4	27,4	25,5	33,1	31,2	28,6	26,3
Direct axis subtransient	X"d	13,7	12,4	11,5	15,0	14,1	12,9	11,9
Quadrature axis subtransient	X"q	14,1	12,7	11,8	15,4	14,5	13,3	12,2
Negative sequence	X_2	13,9	12,5	11,6	15,1	14,3	13,0	12,0
Zero sequence	X_0	5,1	4,6	4,3	5,6	5,2	4,8	4,4
TIME CONSTANTS [s]								
Open circuit	T'do	3,1						
Transient	T'd	0,34						
Subtransient	T"d	0,018						
Armature	T_a	0,033						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 M C3 / With grease nipple
N-end bearing/Lubrication		6324 M C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	150
Weight [kg]	Refer to B34 construction	7800
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		3,80 / 4,30
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,14
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with VARICOMP device
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% - 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.

MarelliGenerators®

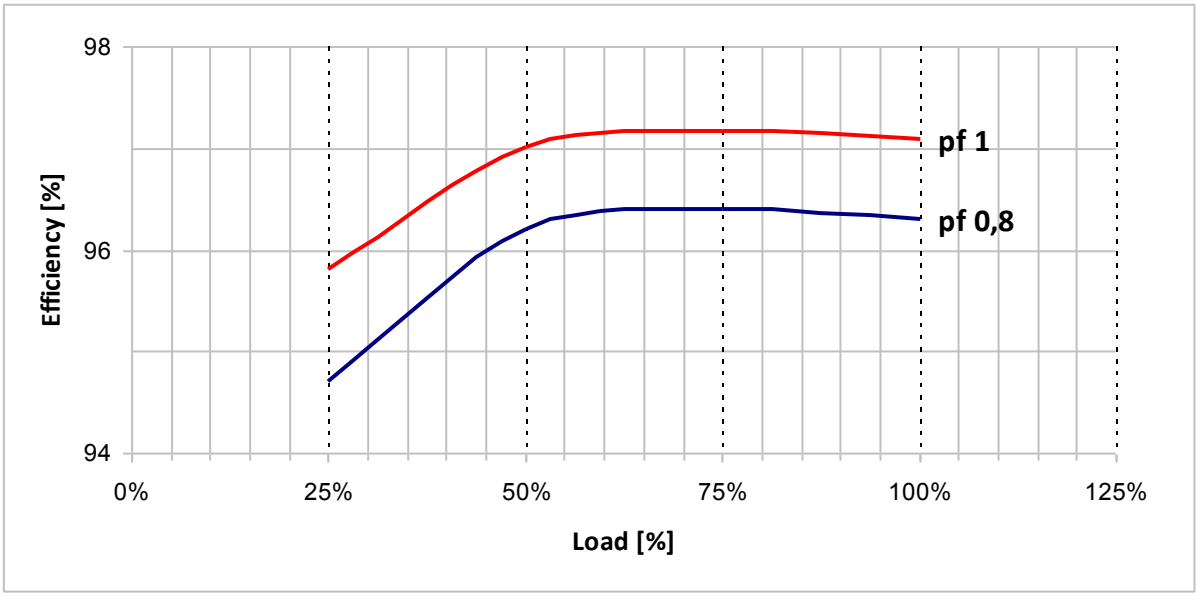
THREE PHASE SYNCRONOUS GENERATOR

MJB 630 LA4

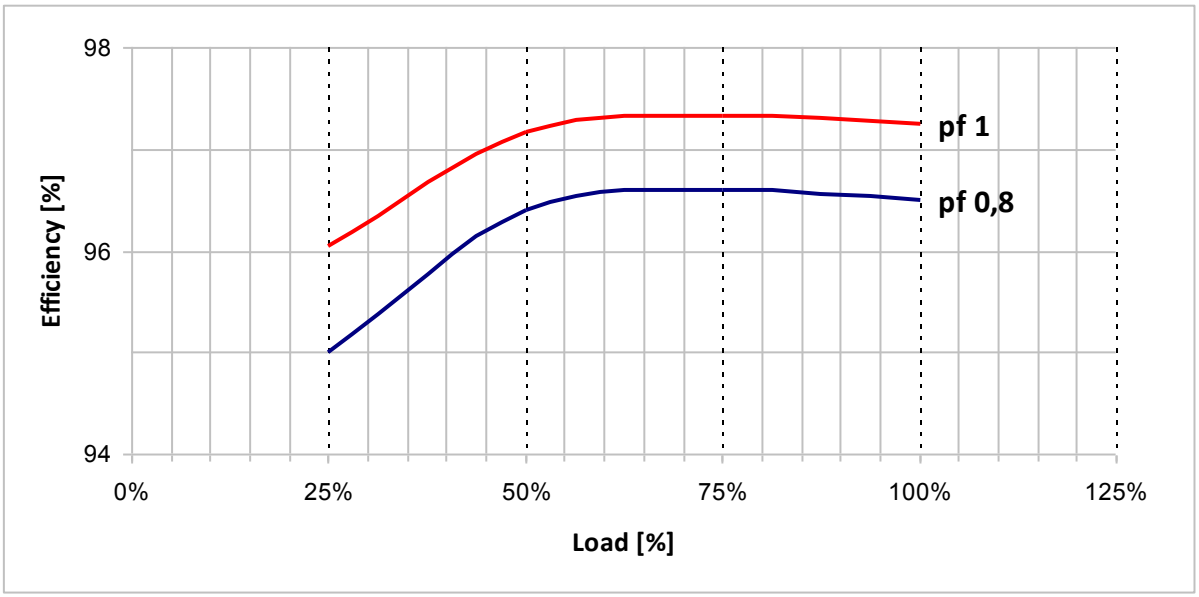
Typical efficiency curves

50 Hz - 1500 rpm

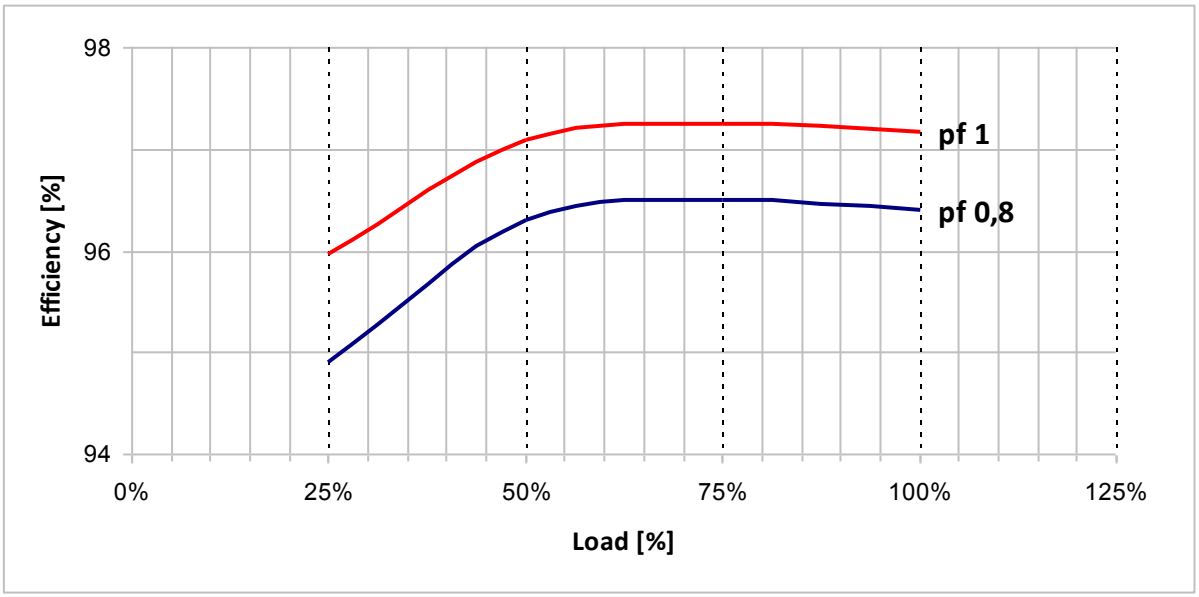
380 V



400 V



415 V



MarelliGenerators®

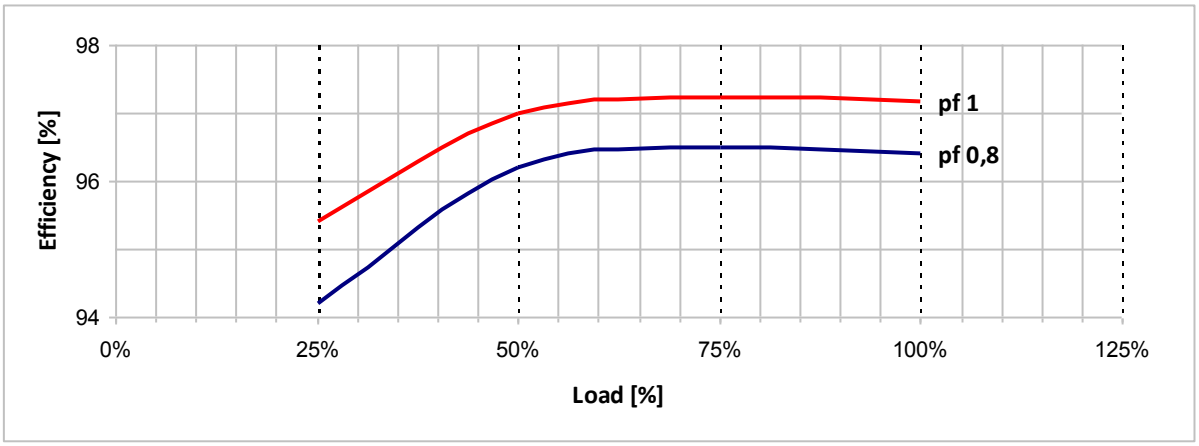
THREE PHASE SYNCRONOUS GENERATOR

MJB 630 LA4

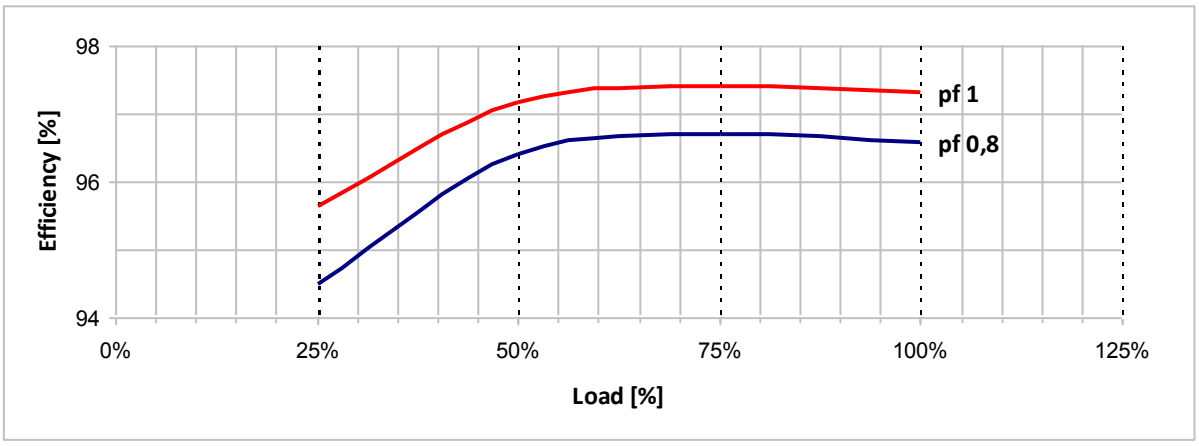
Typical efficiency curves

60 Hz - 1800 rpm

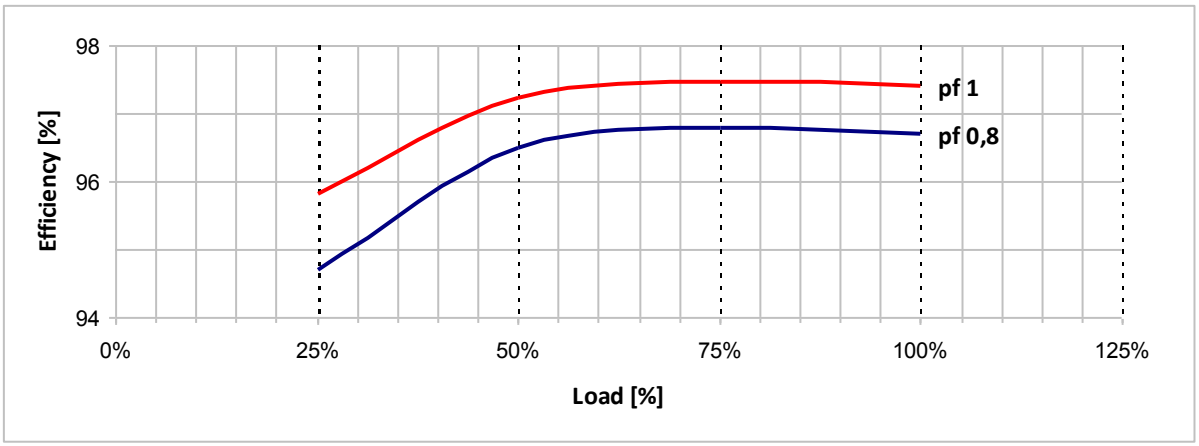
416 V



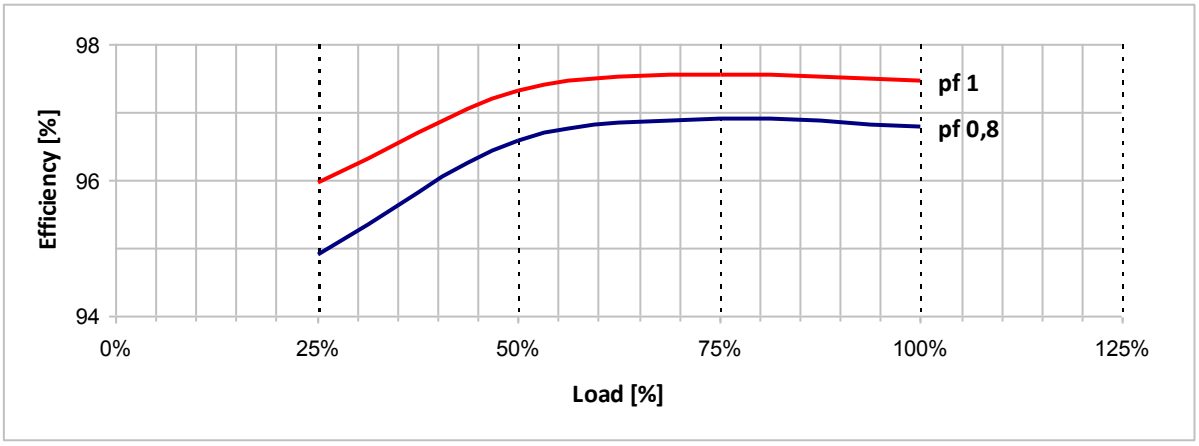
440 V



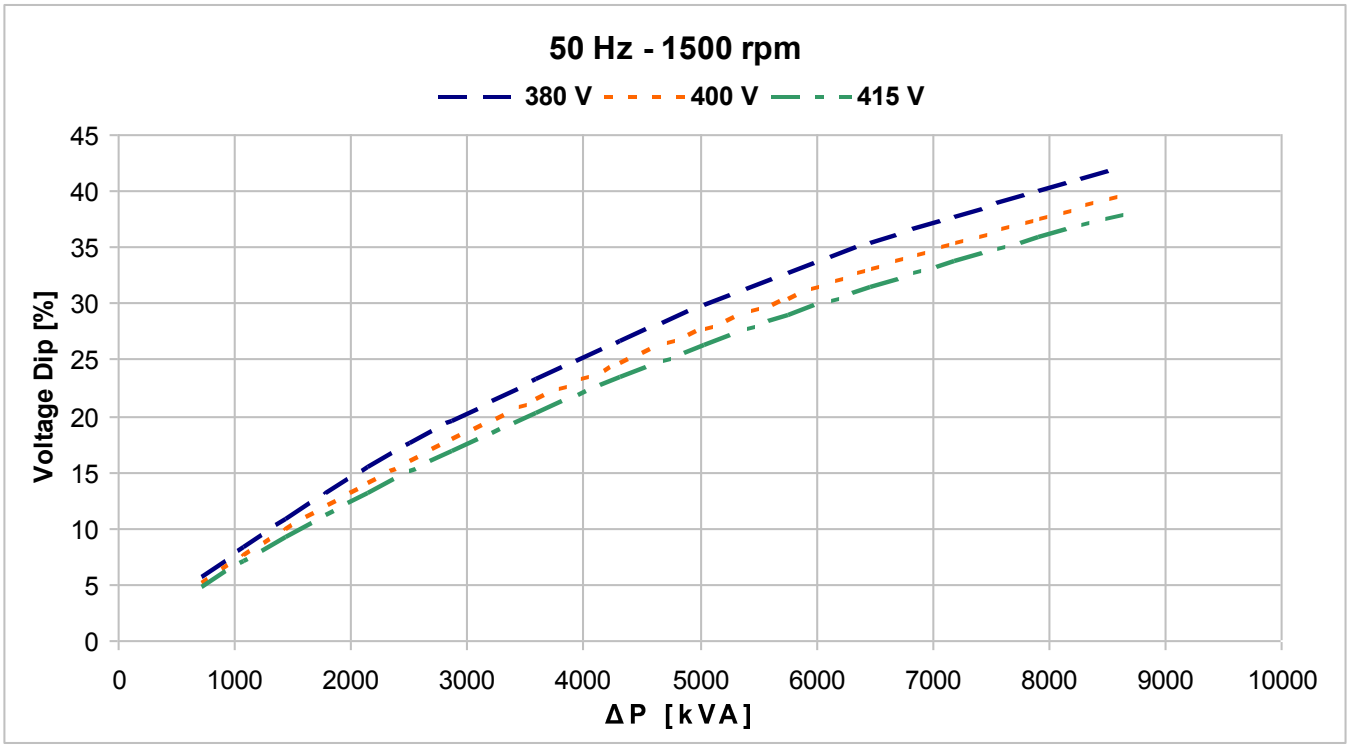
460 V

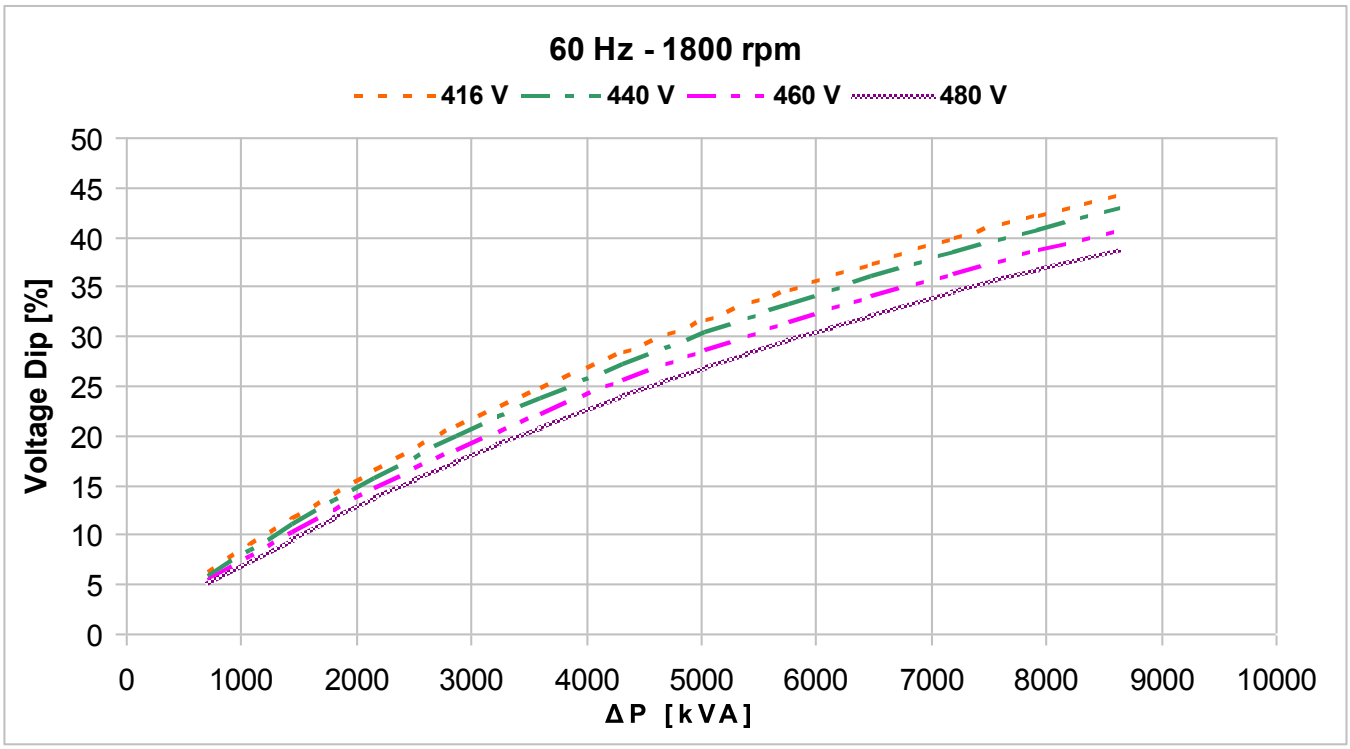


480 V



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.

MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 630 MB4

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE	**40°C**	**WINDING DATA**	Winding code	**80**
TEMPERATURE RISE	**H**		Number of leads	**6**
INSULATION CLASS	**H**		Winding pitch	**2/3**
POWER FACTOR	**0,8**			

FREQUENCY	**Hz**	**50 Hz**			**60 Hz**			
VOLTAGE Star	**V**	**380**	**400**	**415**	**416**	**440**	**460**	**480**
RATING	**kVA**	**3300**	**3300**	**3300**	**3600**	**3795**	**3795**	**3795**
	kW	***2640***	***2640***	***2640***	***2880***	***3036***	***3036***	***3036***
EFFICIENCY [%] @ 0,8 p.f.	**4/4**	96,2	96,4	96,3	96,3	96,5	96,6	96,7
	3/4	96,3	96,5	96,4	96,4	96,6	96,7	96,8
	2/4	96,1	96,3	96,2	96,1	96,3	96,4	96,5
EFFICIENCY [%] @ 1 p.f.	**4/4**	97,0	97,2	97,1	97,1	97,2	97,3	97,4
	3/4	97,1	97,2	97,2	97,2	97,3	97,4	97,5
	2/4	96,9	97,1	97,0	96,9	97,1	97,2	97,3
SHORT CIRCUIT RATIO	SCR	0,40	0,44	0,47	0,36	0,39	0,42	0,46
REACTANCES [%]								
Direct axis synchronous	Xd	371	335	311	405	382	350	321
Quadrature axis synchronous	Xq	208	188	175	228	214	196	180
Direct axis transient	X'd	36,6	33,0	30,7	39,9	37,6	34,4	31,6
Direct axis subtransient	X"d	16,1	14,5	13,5	17,5	16,5	15,1	13,9
Quadrature axis subtransient	X"q	16,6	15,0	13,9	18,2	17,1	15,7	14,4
Negative sequence	X_2	16,4	14,8	13,7	17,9	16,9	15,4	14,2
Zero sequence	X_0	5,4	4,9	4,5	5,9	5,6	5,1	4,7
TIME CONSTANTS [s]								
Open circuit	T'do	4,86						
Transient	T'd	0,49						
Subtransient	T"d	0,029						
Armature	T_a	0,067						

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6324 M C3 / With grease nipple
N-end bearing/Lubrication		6324 M C3 / With grease nipple
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	140
Weight [kg]	Refer to B34 construction	7000
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		3,80 / 4,30
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34 - IM B20
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,14
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	≥ 300 % (3 In) with VARICOMP device
Voltage regulation accuracy	± 0,5 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 5%
Total harmonic content	< 5% - 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.

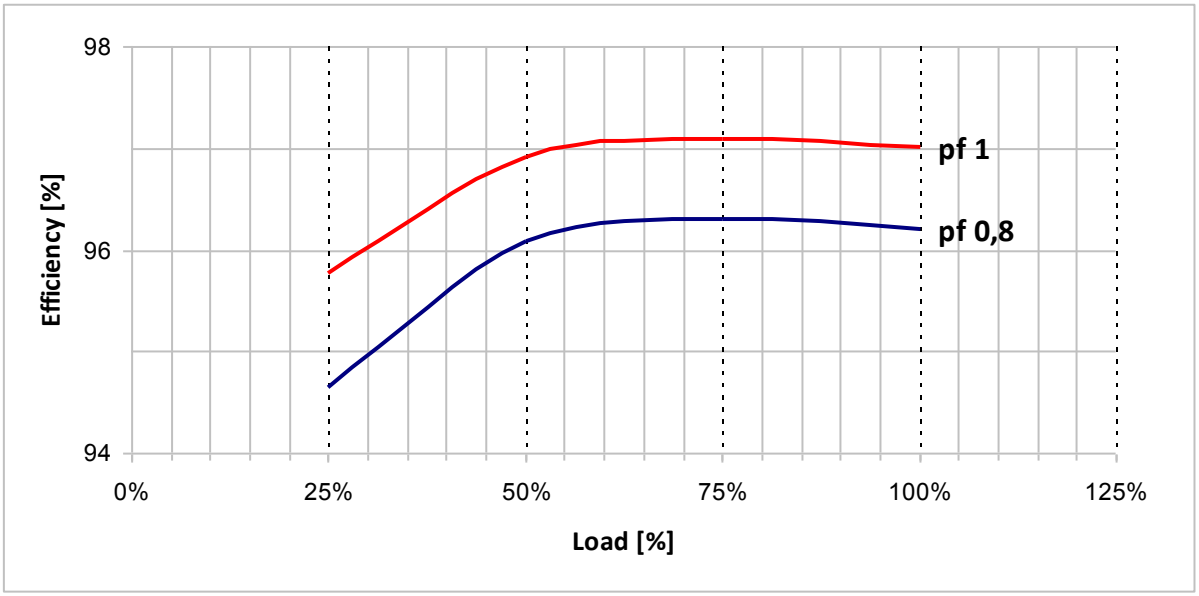
THREE PHASE SYNCRONOUS GENERATOR

MJB 630 MB4

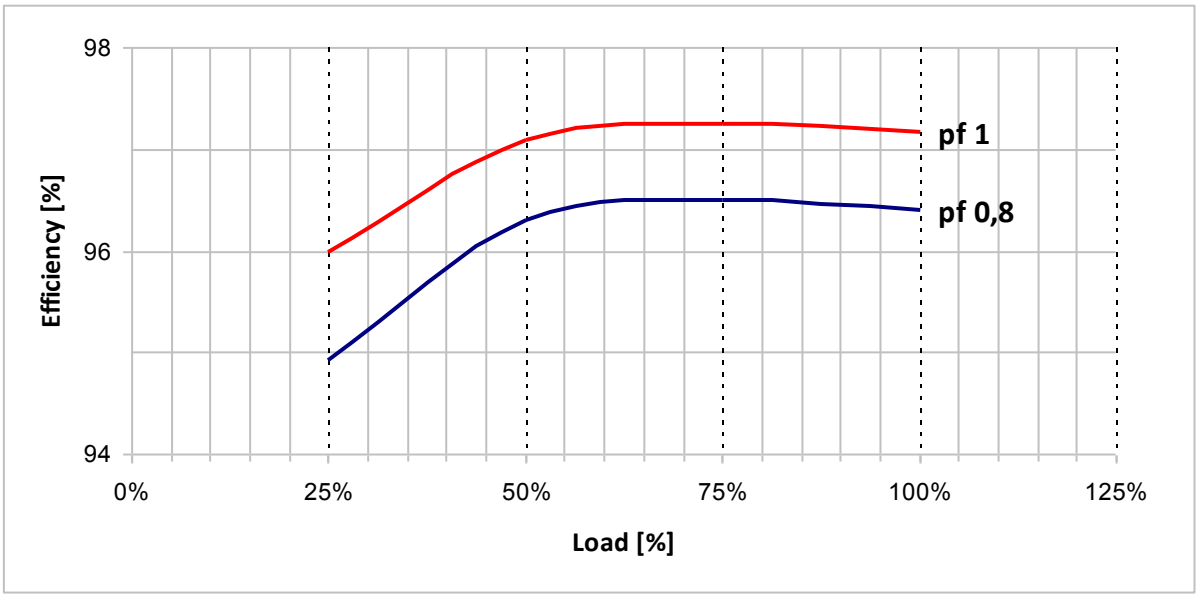
Typical efficiency curves

50 Hz - 1500 rpm

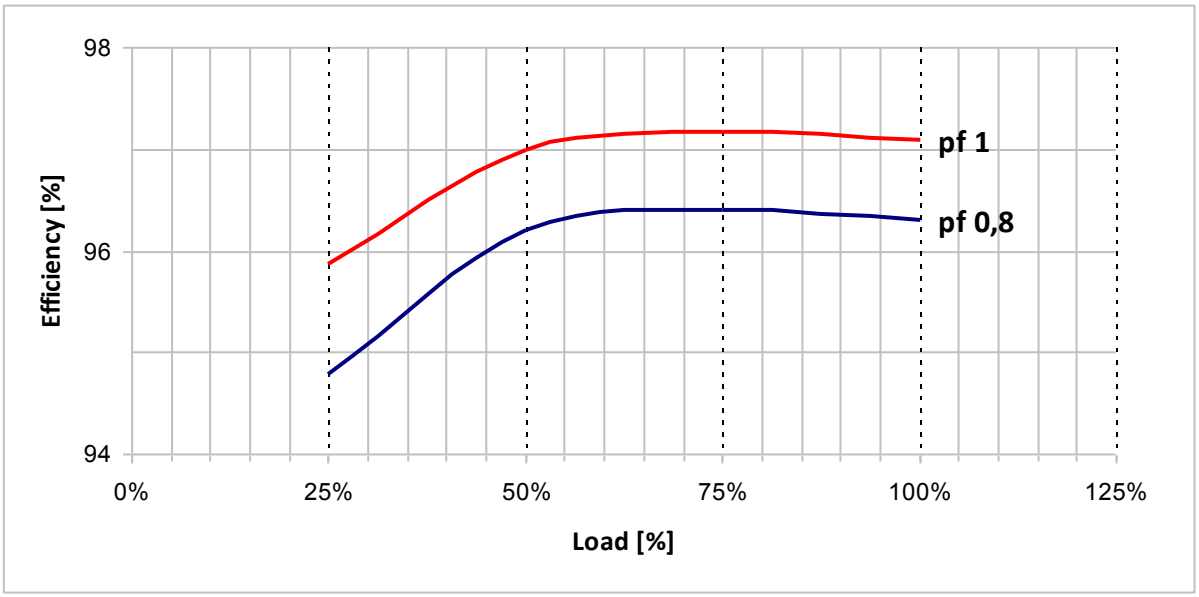
380 V



400 V



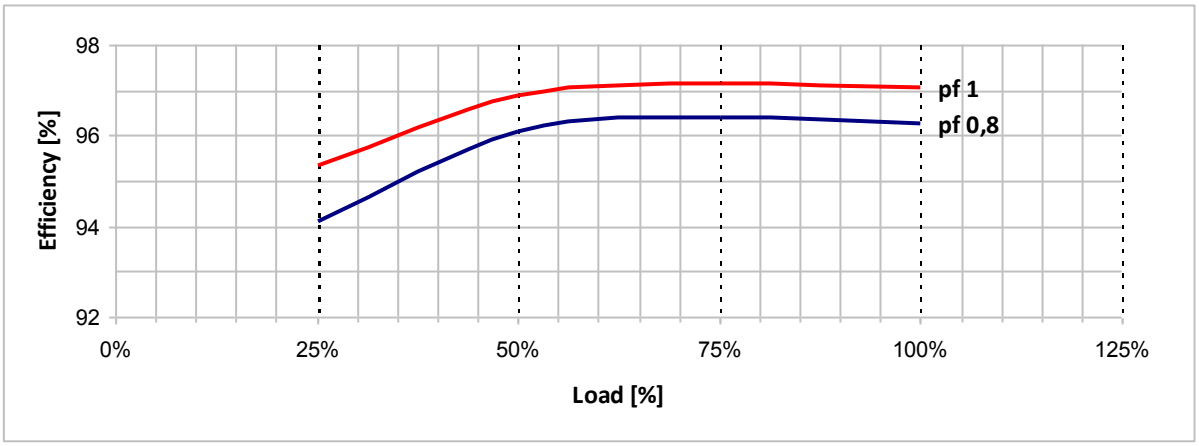
415 V



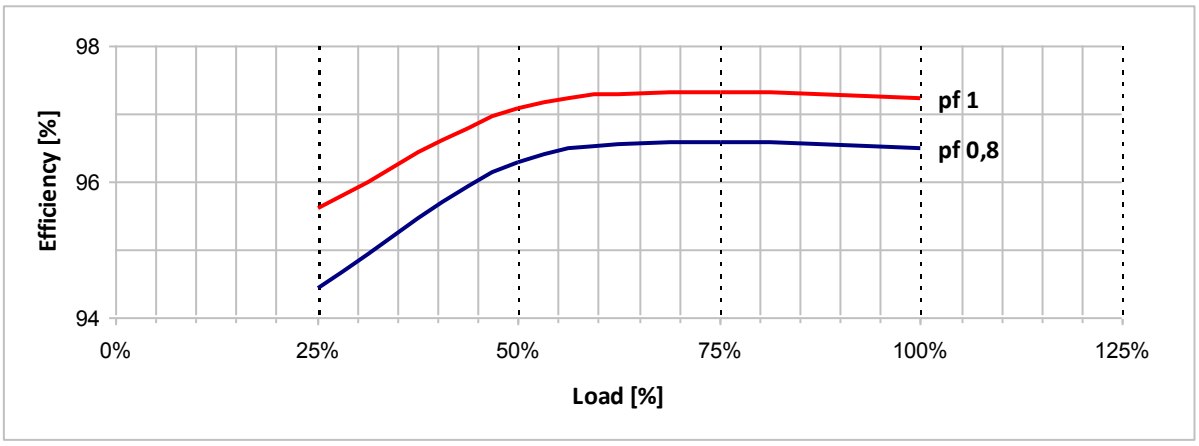
Typical efficiency curves

60 Hz - 1800 rpm

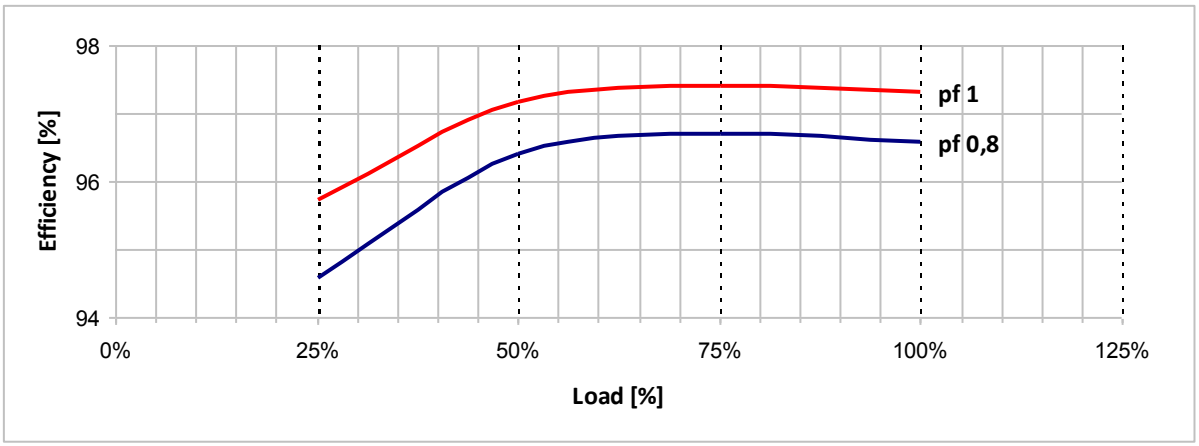
416 V



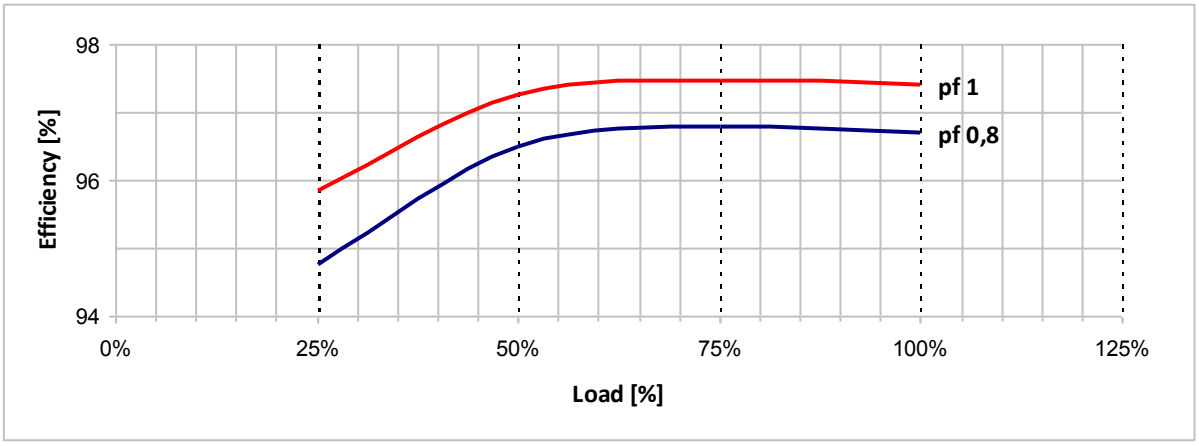
440 V



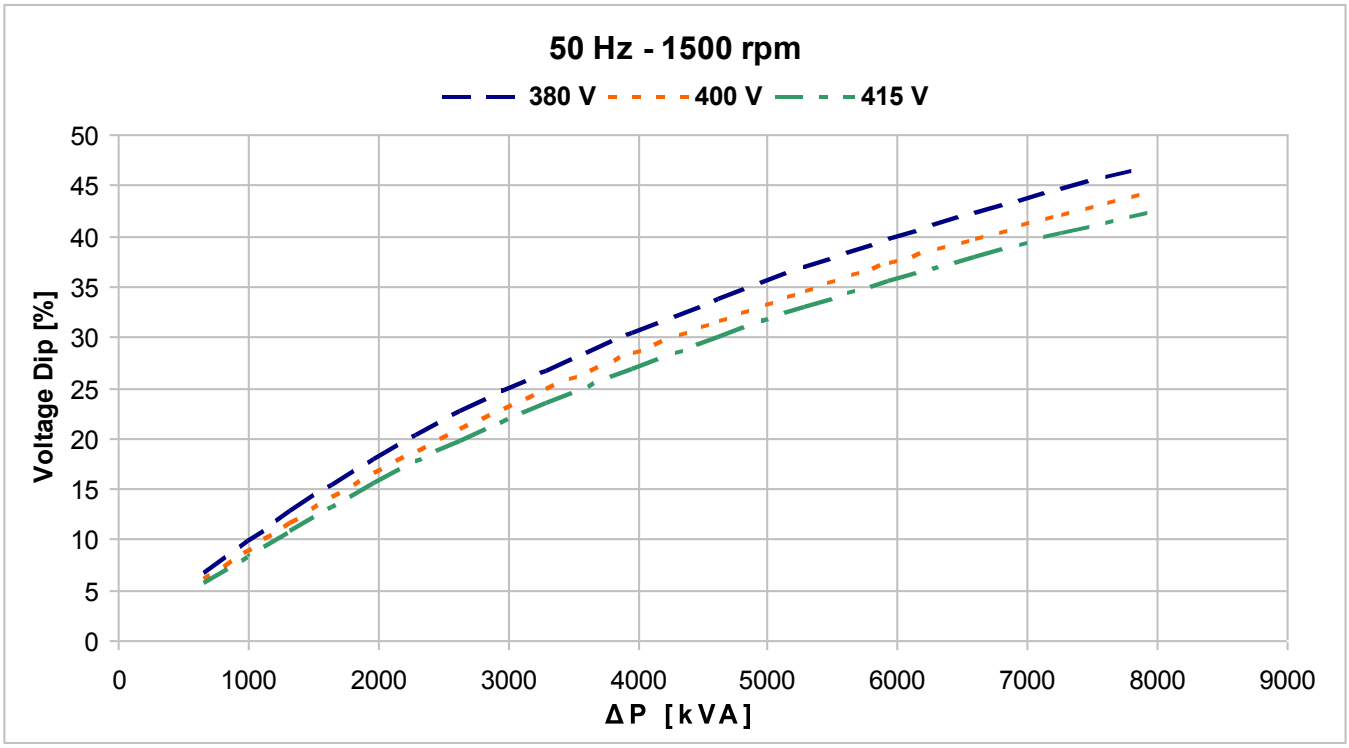
460 V

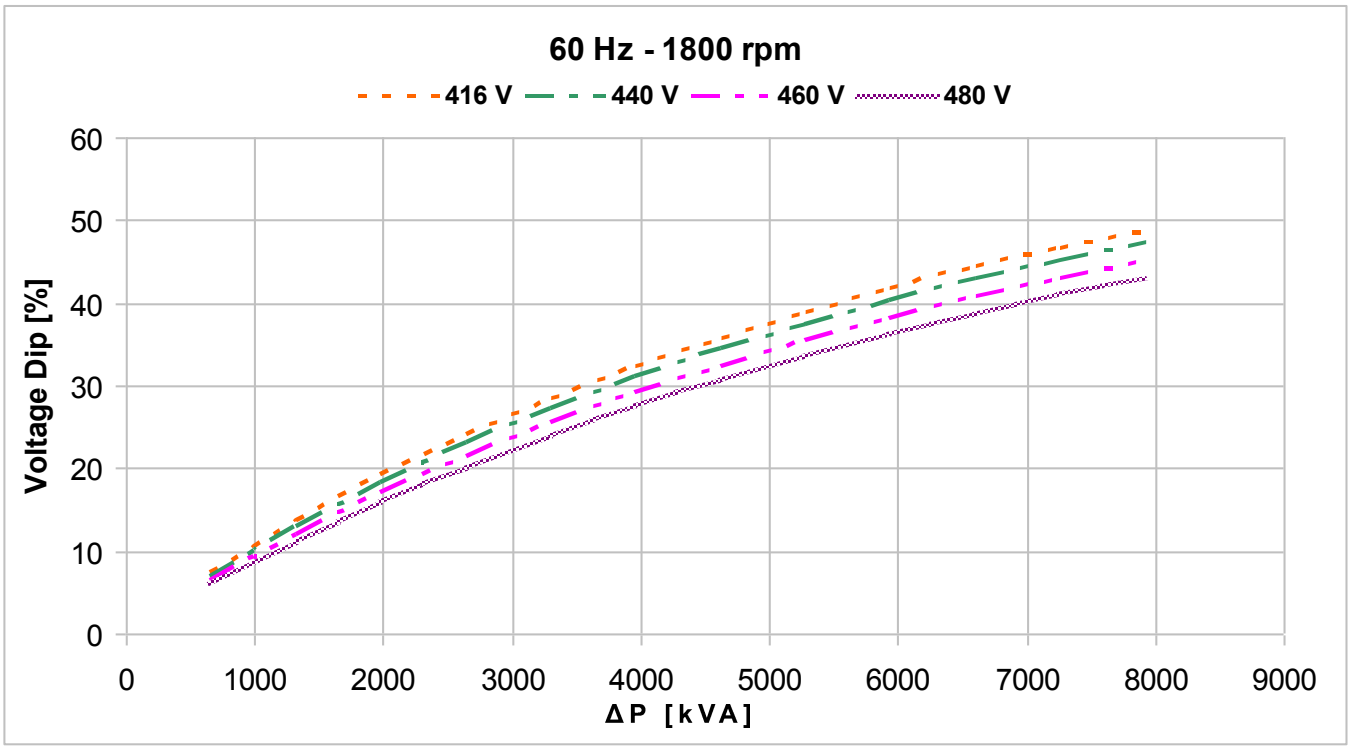


480 V



Locked rotor motor starting curves (*)





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

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