

THREE-PHASE SYNCHRONOUS GENERATOR MJB 250 LA 4

4 POLES

50 Hz-1500 min⁻¹ / 60 Hz-1800 min⁻¹

CONTINUOUS DUTY

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	V	190	200	208	220	190	208	220	230	240
RATING	kVA	kVA	220	220	220	210	225	235	245	255	270
	kW	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	x _d	340	305	285	240	415	360	335	320	310	
Quadrature axis synchronous	x _q	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 (T _a)	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

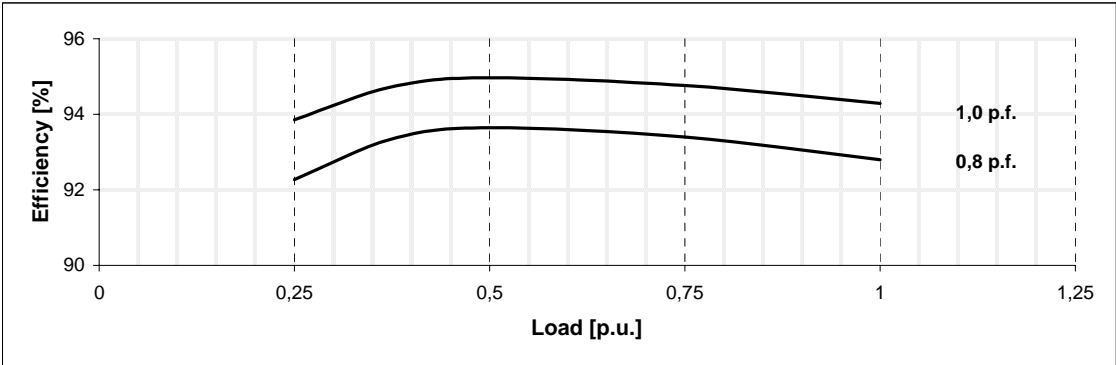
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

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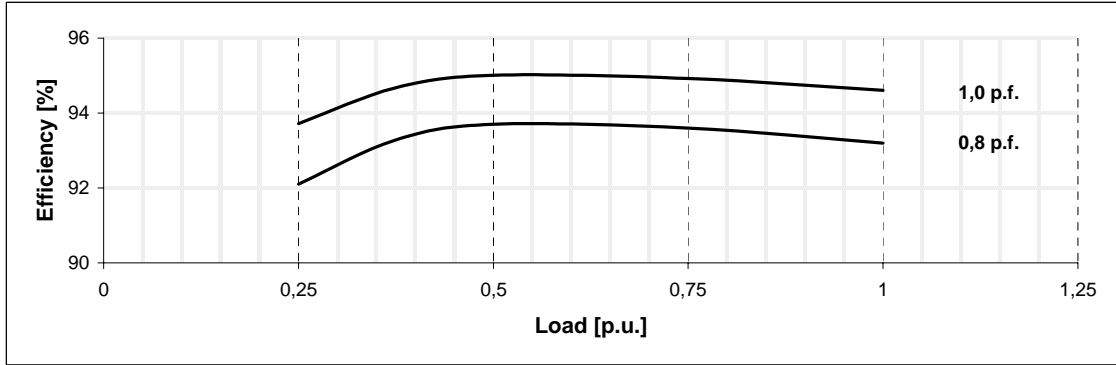
Typical efficiency curves

50 Hz - 1500 min⁻¹

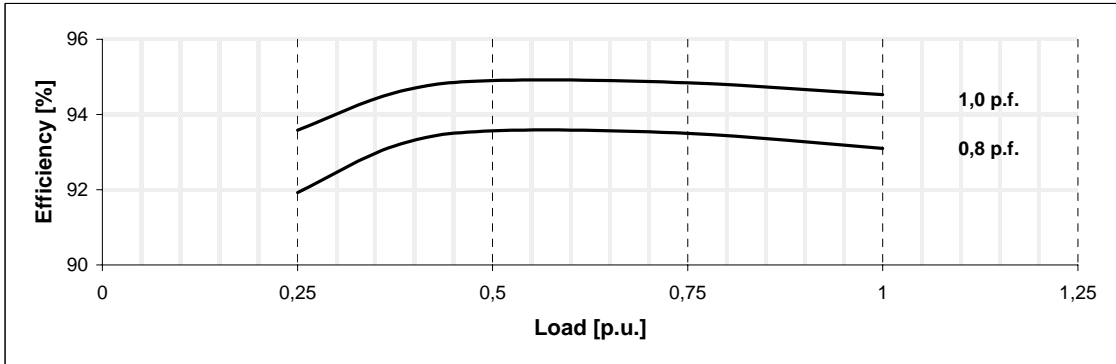
380 V



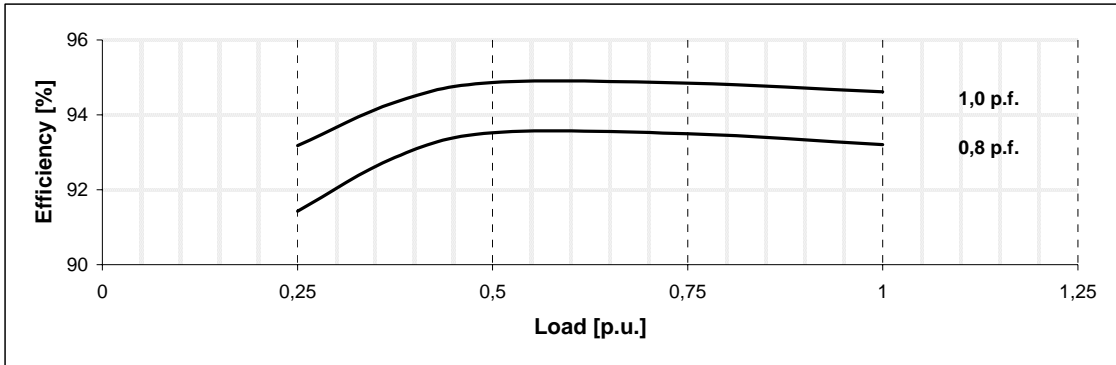
400 V



415 V



440 V



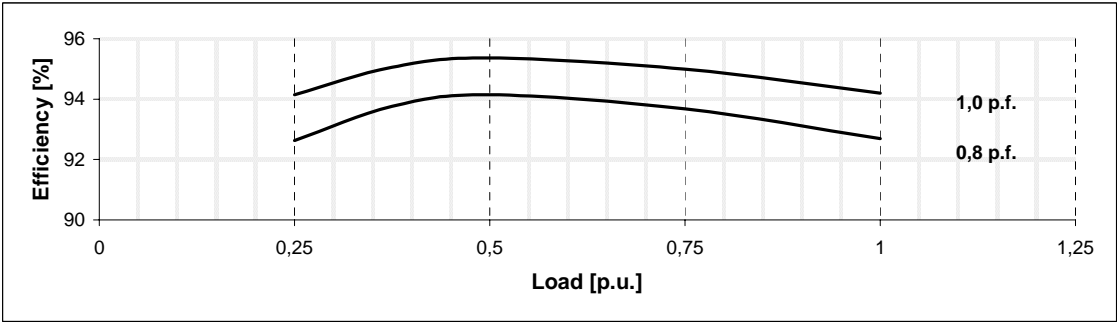
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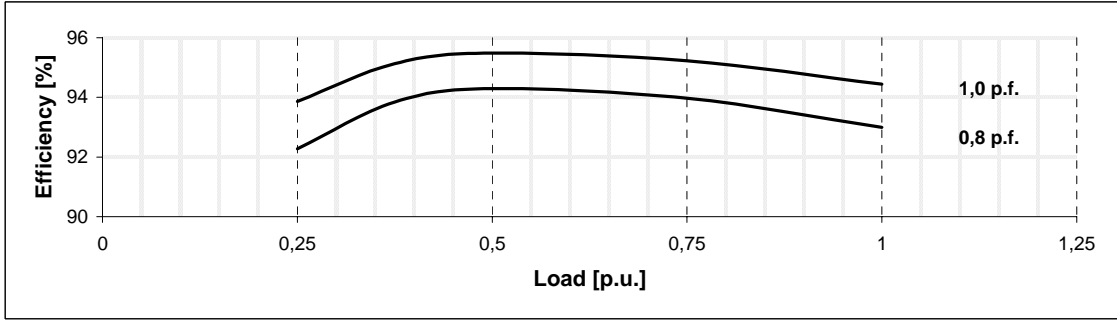
Typical efficiency curves

60 Hz - 1800 min⁻¹

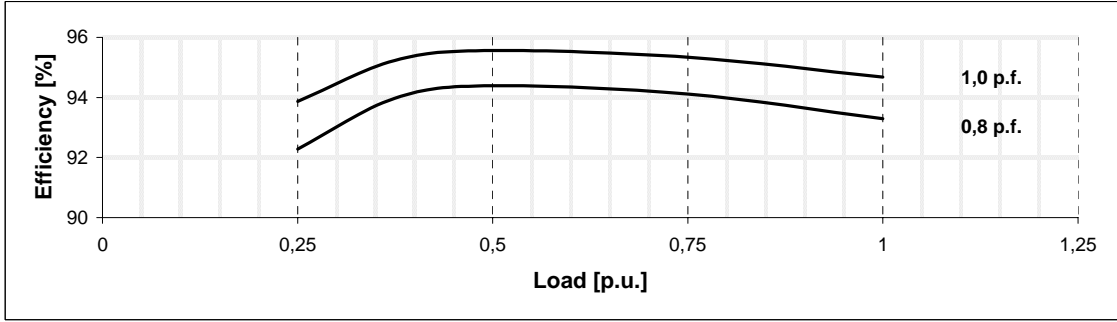
380 V



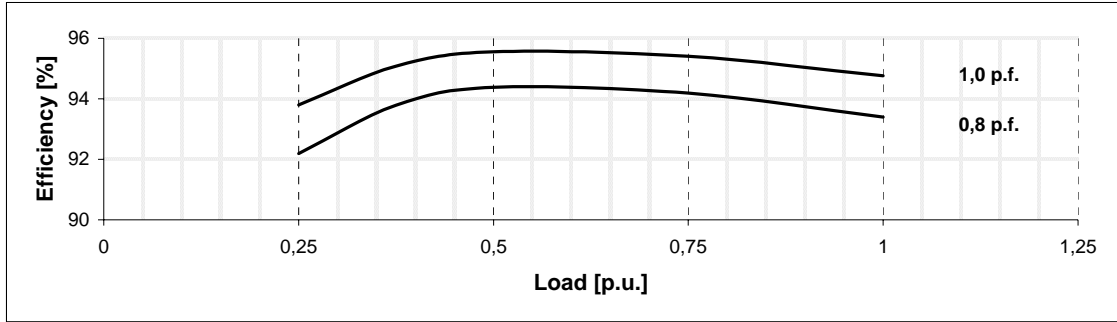
416 V



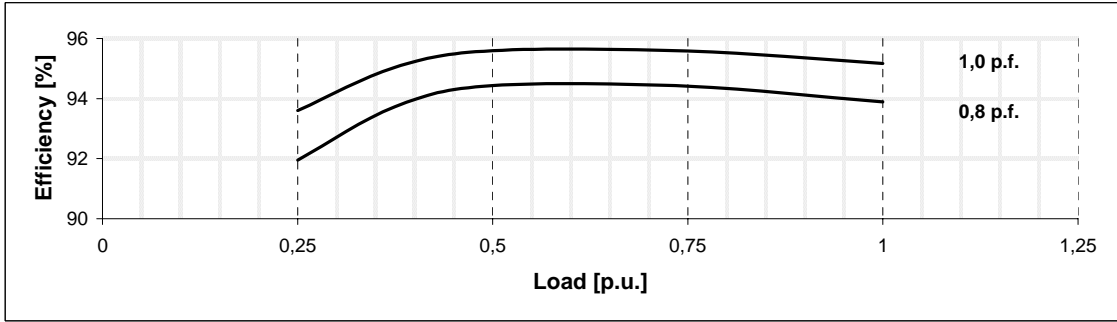
440 V



460 V



480 V

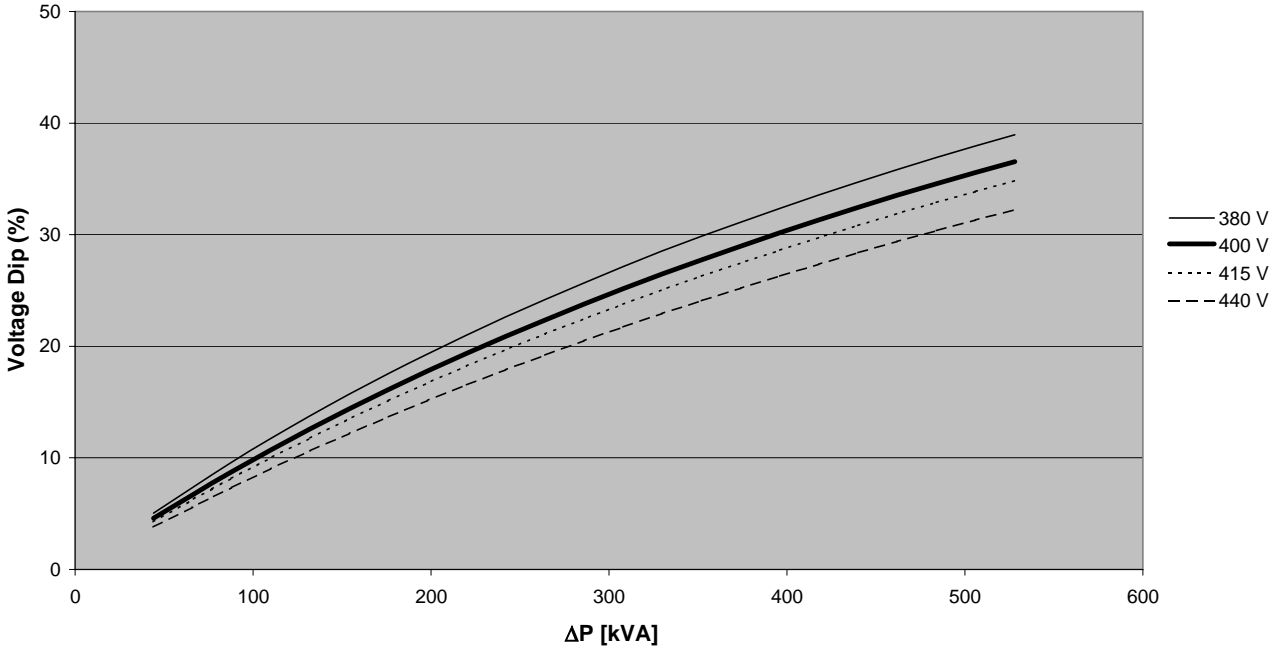


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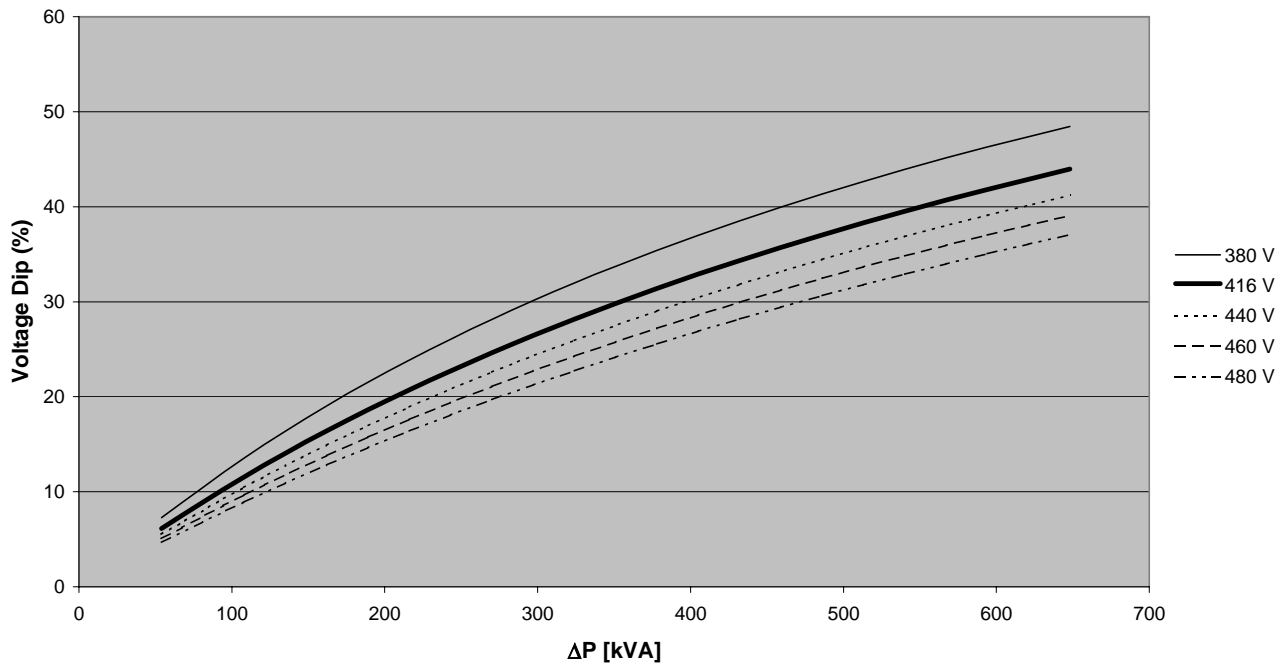
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Locked rotor motor starting curves (*)

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.

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