

THREE-PHASE SYNCHRONOUS GENERATOR
MJB 500 MB 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					80
INSULATION CLASS		H	Number of leads					6
POWER FACTOR		0,8	Winding pitch					2/3
FREQUENCY	Hz	50			60			
VOLTAGE	Star	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	x _d	340	305	285	375	345	320	285
Quadrature axis synchronous	x _q	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 (T _a)	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

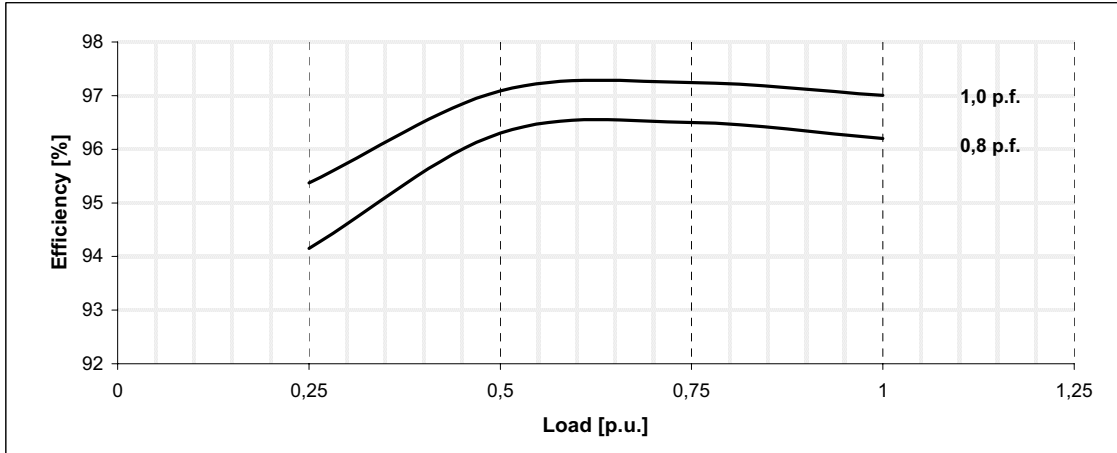
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10; NEMA MG 1.22.

**THREE-PHASE SYNCHRONOUS GENERATOR
MJB 500 MB 4**

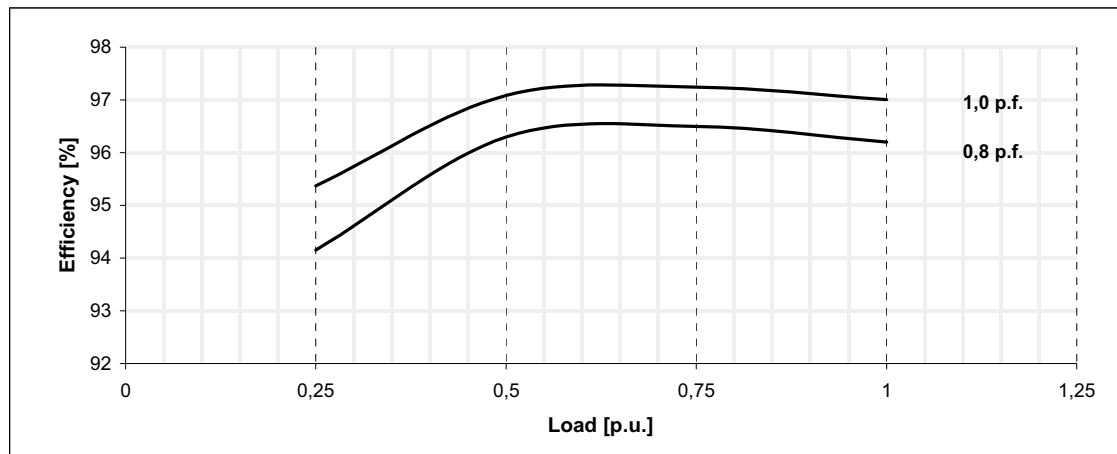
Typical efficiency curves

50 Hz - 1500 min⁻¹

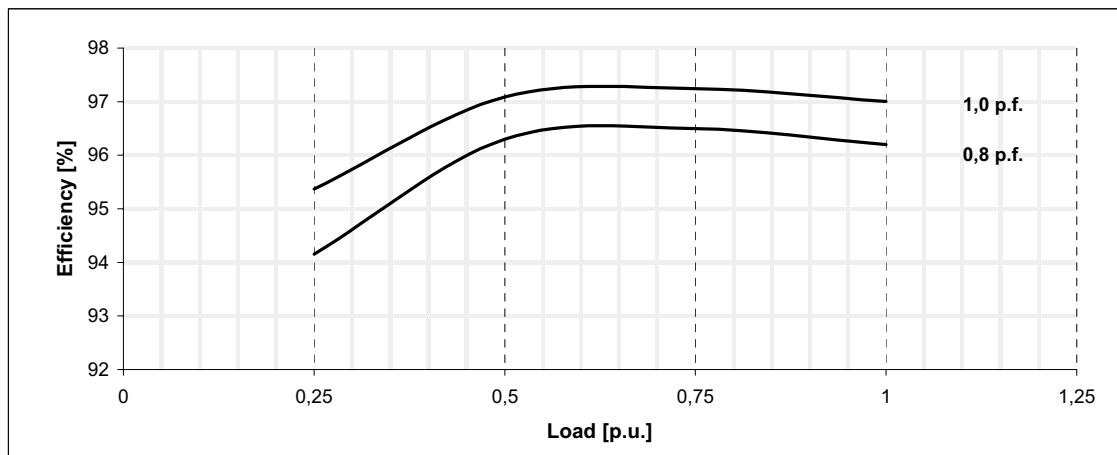
380 V

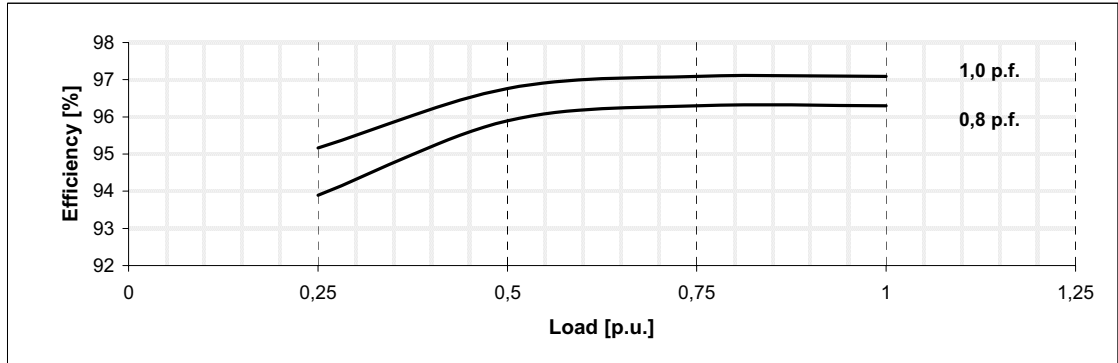
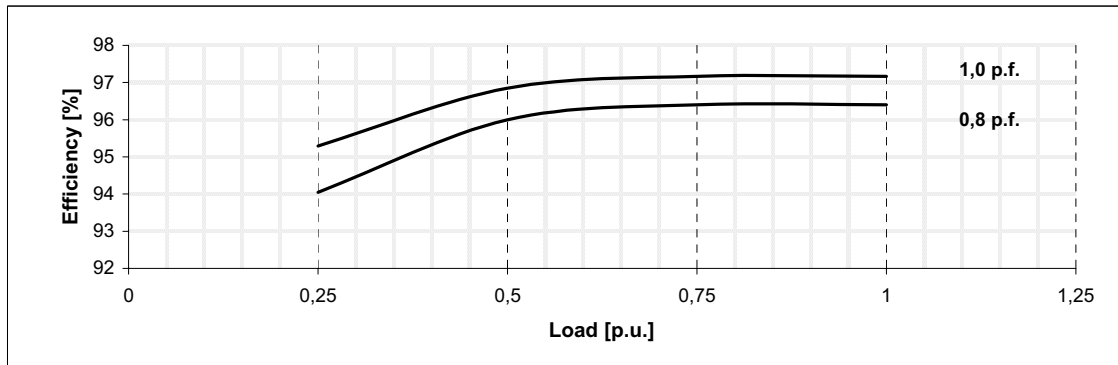
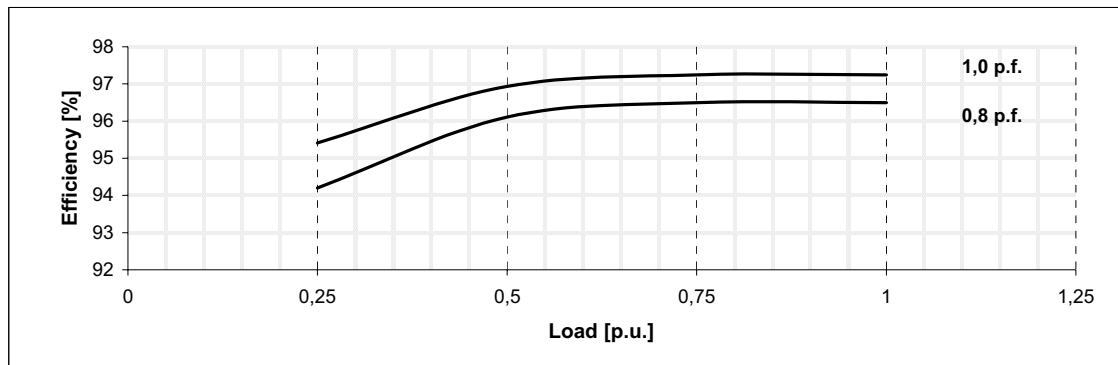
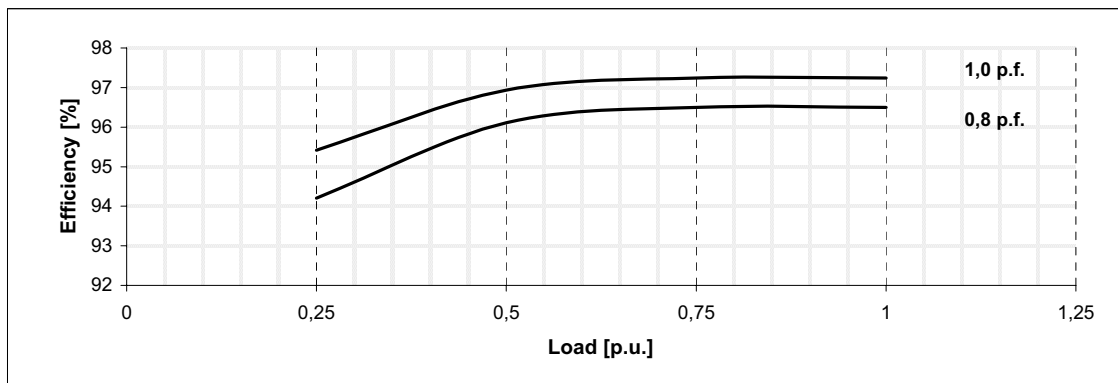


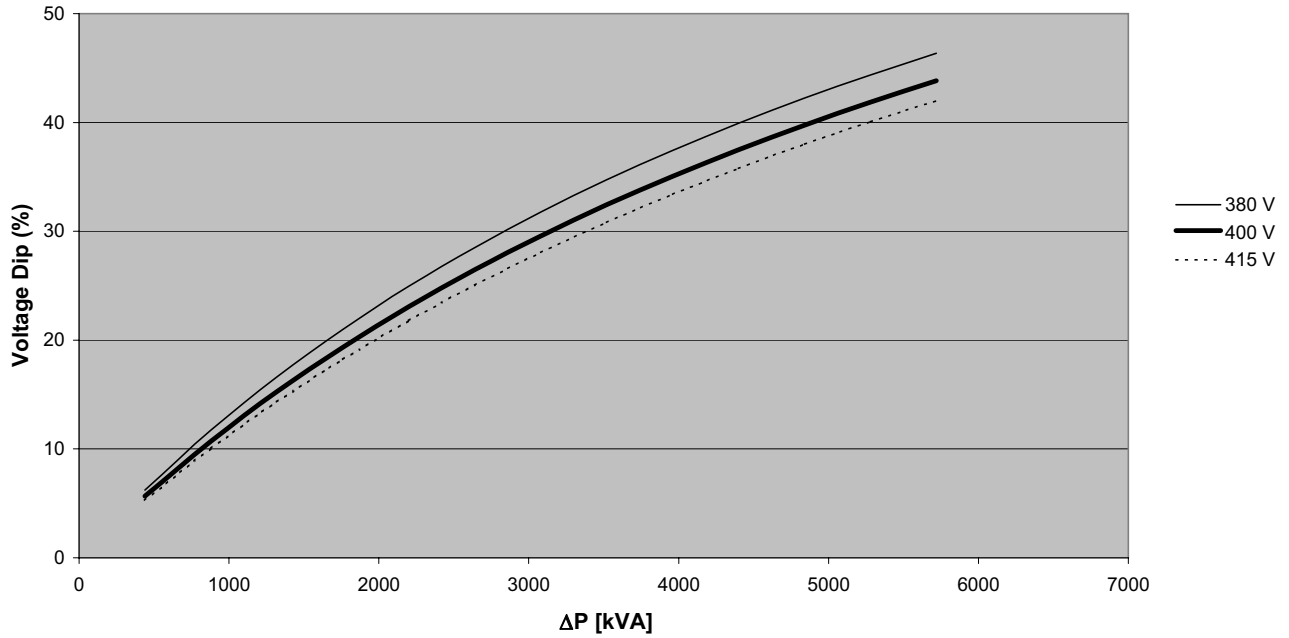
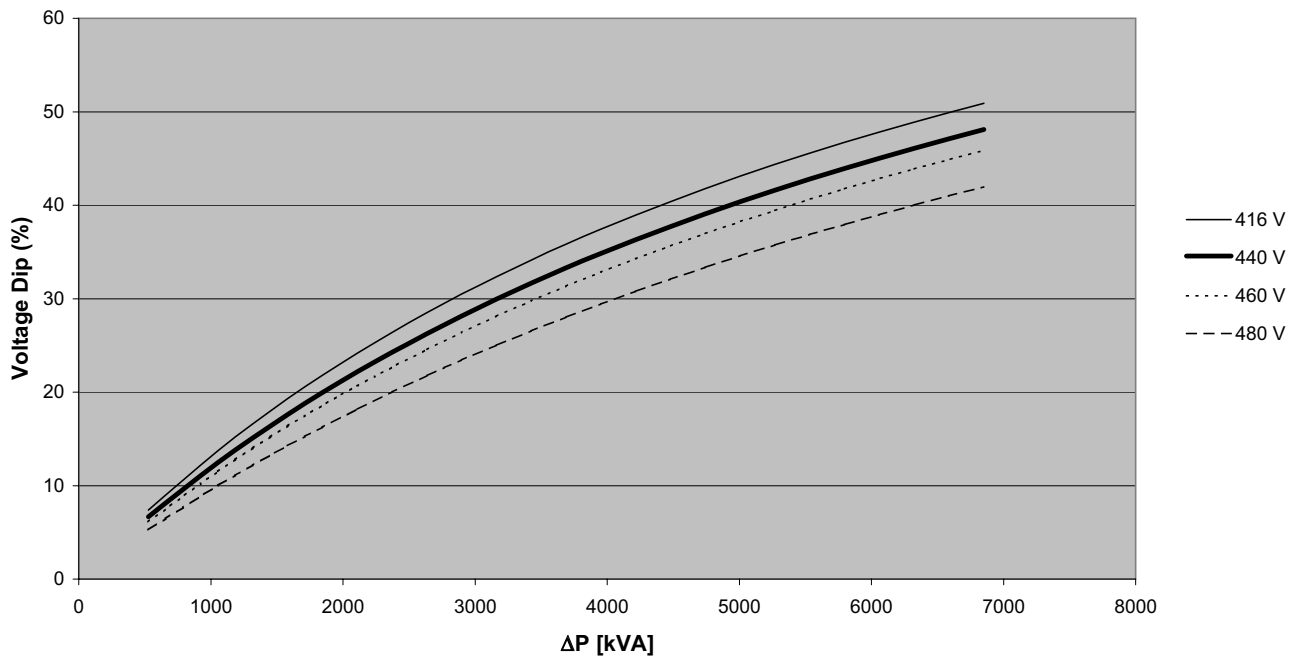
400 V



415 V



THREE-PHASE SYNCHRONOUS GENERATOR
MJB 500 MB 4
Typical efficiency curves
60 Hz - 1800 min⁻¹
416 V

440 V

460 V

480 V


**THREE-PHASE SYNCHRONOUS GENERATOR
MJB 500 MB 4**
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.