

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 11993105

Frame : 213/5TC	Cooling method : IC411 - TEFC
Insulation class : F	Mounting : F-1
Duty cycle : Cont.(S1)	Rotation <sup>1</sup> : Both (CW and CCW)
Ambient temperature : -20°C to +40°C	Starting method : Direct On Line
Altitude : 1000 m.a.s.l.	Approx. weight <sup>3</sup> : 81.5 kg
Protection degree : IP55	Moment of inertia (J) : 0.0268 kgm <sup>2</sup>
Design : A	

Output [HP]	15	10	10	10	15	15	15
Poles	2	2	2	2	2	2	2
Frequency [Hz]	60	50	50	50	50	50	50
Rated voltage [V]	230/460	380	400	415	380	400	415
Rated current [A]	34.9/17.4	14.9	14.7	16.5	20.9	19.9	19.3
L. R. Amperes [A]	307/153	125	138	165	136	143	149
LRC [A]	8.8x(Code K)	8.4x(Code K)	9.4x(Code L)	10.0x(Code N)	6.5x(Code G)	7.2x(Code H)	7.7x(Code J)
No load current [A]	12.4/6.20	6.70	7.40	8.00	6.70	7.40	7.90
Rated speed [RPM]	3535	2950	2955	2960	2910	2920	2930
Slip [%]	1.81	1.67	1.50	1.33	3.00	2.67	2.33
Rated torque [kgfm]	3.08	2.46	2.46	2.45	3.74	3.73	3.72
Locked rotor torque [%]	280	300	320	340	200	220	240
Breakdown torque [%]	350	340	380	420	270	300	300
Service factor	1.25	1.15	1.15	1.15	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	105 K	105 K	105 K
Locked rotor time	12s (cold) 7s (hot)	19s (cold) 11s (hot)	18s (cold) 10s (hot)	14s (cold) 8s (hot)	7s (cold) 4s (hot)	9s (cold) 5s (hot)	9s (cold) 5s (hot)
Noise level <sup>2</sup>	68.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)
Efficiency (%)	25%						
	50%	89.0	89.5	89.0	88.0	88.5	89.0
	75%	90.5	90.1	90.1	90.1	89.0	89.5
	100%	91.0	90.1	90.1	90.1	89.0	89.7
Power Factor	25%						
	50%	0.73	0.70	0.64	0.48	0.80	0.76
	75%	0.82	0.80	0.76	0.61	0.87	0.85
	100%	0.87	0.85	0.82	0.70	0.90	0.89

Losses at normative operating points (speed;torque), in percentage of rated output power

Losses (%)	P1 (0,9;1,0)	9.8	10.9	10.9	10.9	12.2	11.4	11.0
	P2 (0,5;1,0)	8.0	8.8	8.8	8.8	9.9	9.2	8.9
	P3 (0,25;1,0)	7.0	7.8	7.8	7.8	8.8	8.2	7.9
	P4 (0,9;0,5)	5.2	5.8	5.8	5.8	6.5	6.0	5.8
	P5 (0,5;0,5)	3.4	3.7	3.7	3.7	4.2	3.9	3.8
	P6 (0,5;0,25)	2.3	2.6	2.6	2.6	2.9	2.7	2.6
	P7 (0,25;0,25)	1.5	1.7	1.7	1.7	1.9	1.7	1.7

Bearing type : 6308 ZZ	Non drive end : 6207 ZZ	Foundation loads
Sealing : V'Ring	V'Ring	Max. traction : 165 kgf
Lubrication interval : -	-	Max. compression : 247 kgf
Lubricant amount : -	-	
Lubricant type : Mobil Polyrex EM		

This revision replaces and cancel the previous one, which must be eliminated.  
(1) Looking the motor from the shaft end.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

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## Three Phase Induction Motor - Squirrel Cage



Customer :

Notes

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# LOAD PERFORMANCE CURVE

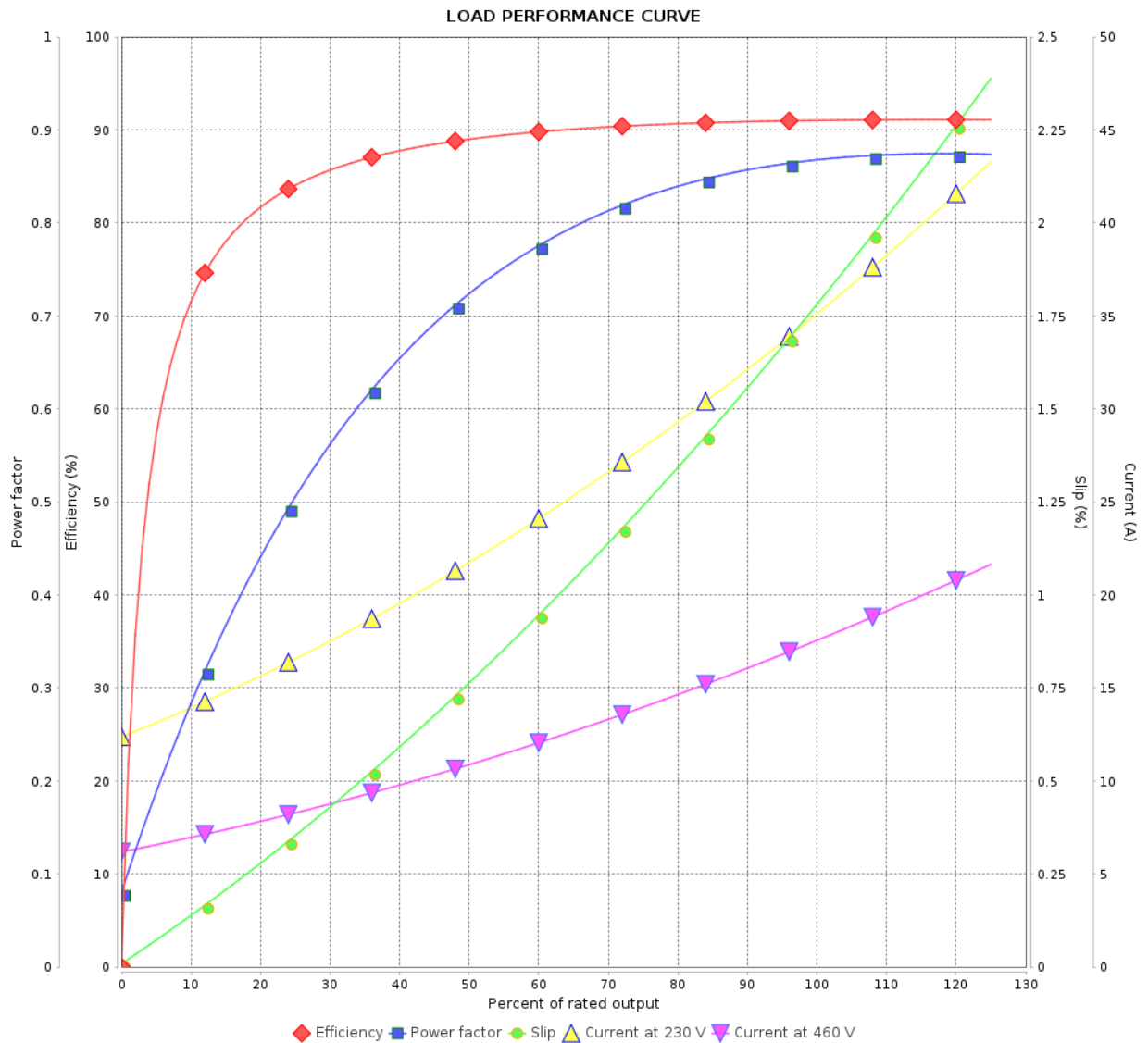
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 230/460 V 60 Hz 2P

Rated current : 34.9/17.4 A  
LRC : 8.8  
Rated torque : 3.08 kgfm  
Locked rotor torque : 280 %  
Breakdown torque : 350 %  
Rated speed : 3535 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : A

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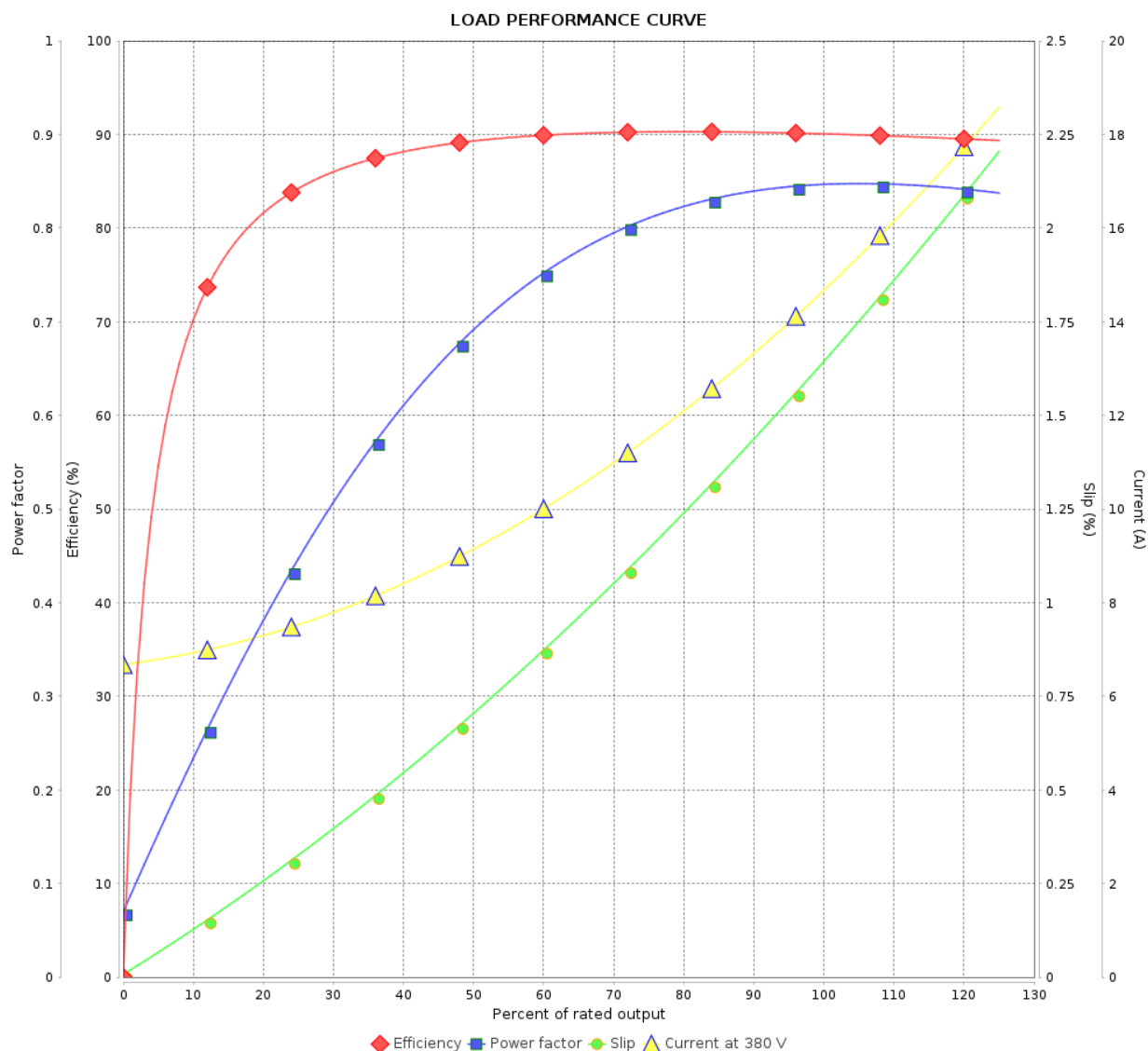
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 380 V 50 Hz 2P IE3

Rated current : 14.9 A  
LRC : 8.4  
Rated torque : 2.46 kgfm  
Locked rotor torque : 300 %  
Breakdown torque : 340 %  
Rated speed : 2950 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.15  
Temperature rise : 80 K  
Design : A

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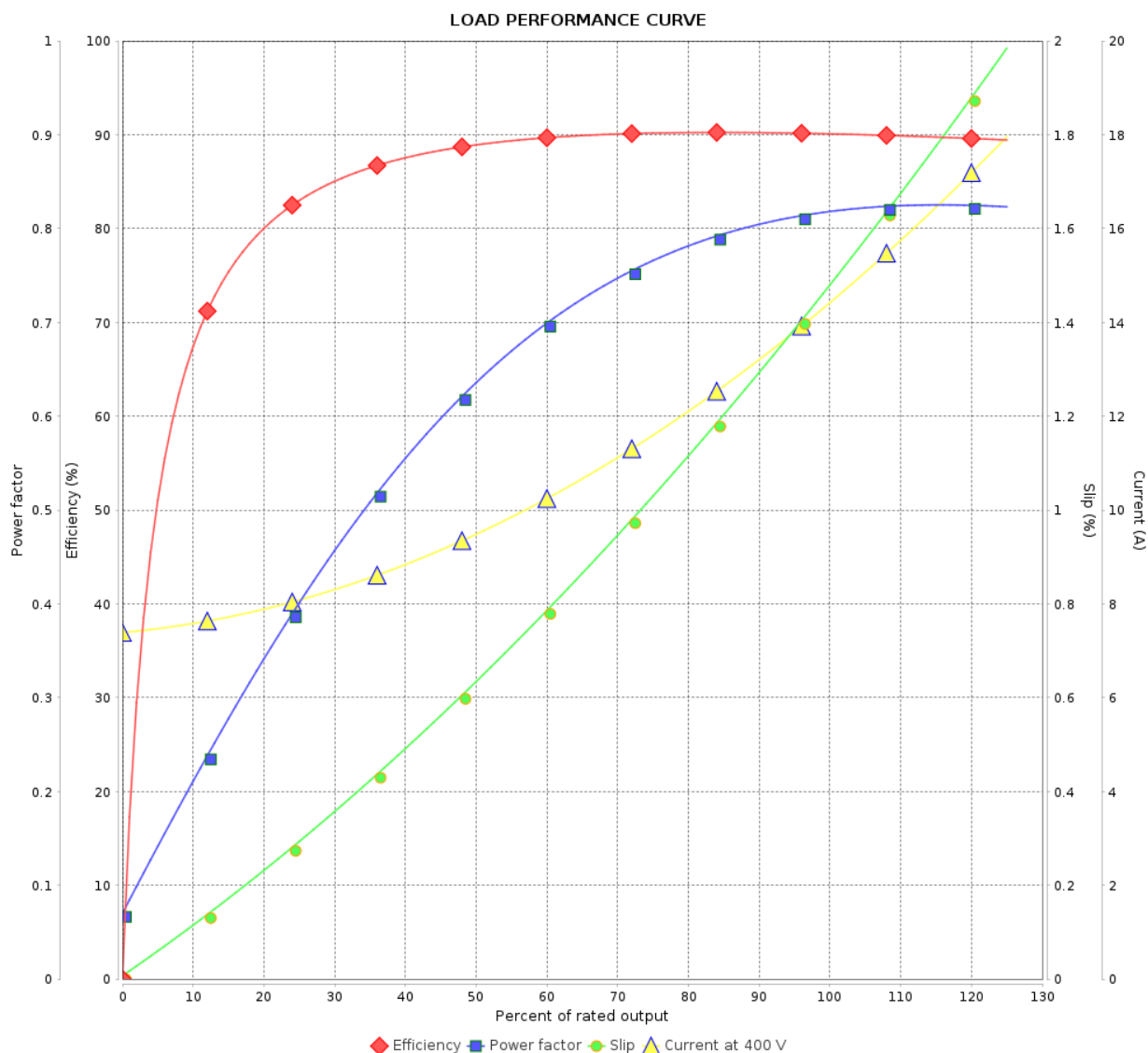
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 400 V 50 Hz 2P IE3

Rated current : 14.7 A  
LRC : 9.4  
Rated torque : 2.46 kgfm  
Locked rotor torque : 320 %  
Breakdown torque : 380 %  
Rated speed : 2955 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.15  
Temperature rise : 80 K  
Design : A

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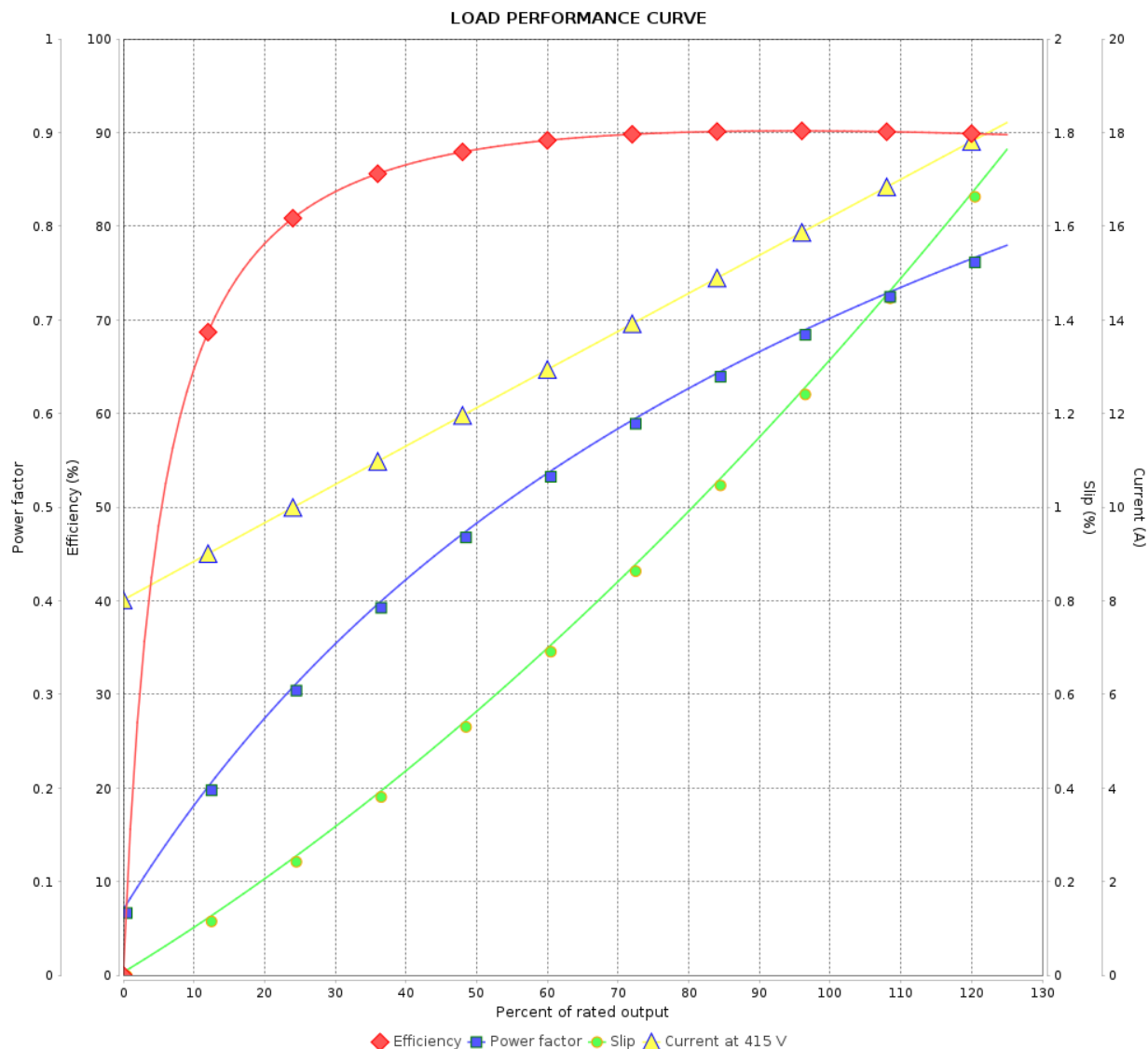
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 415 V 50 Hz 2P IE3

Rated current : 16.5 A  
LRC : 10.0  
Rated torque : 2.45 kgfm  
Locked rotor torque : 340 %  
Breakdown torque : 420 %  
Rated speed : 2960 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.15  
Temperature rise : 80 K  
Design : A

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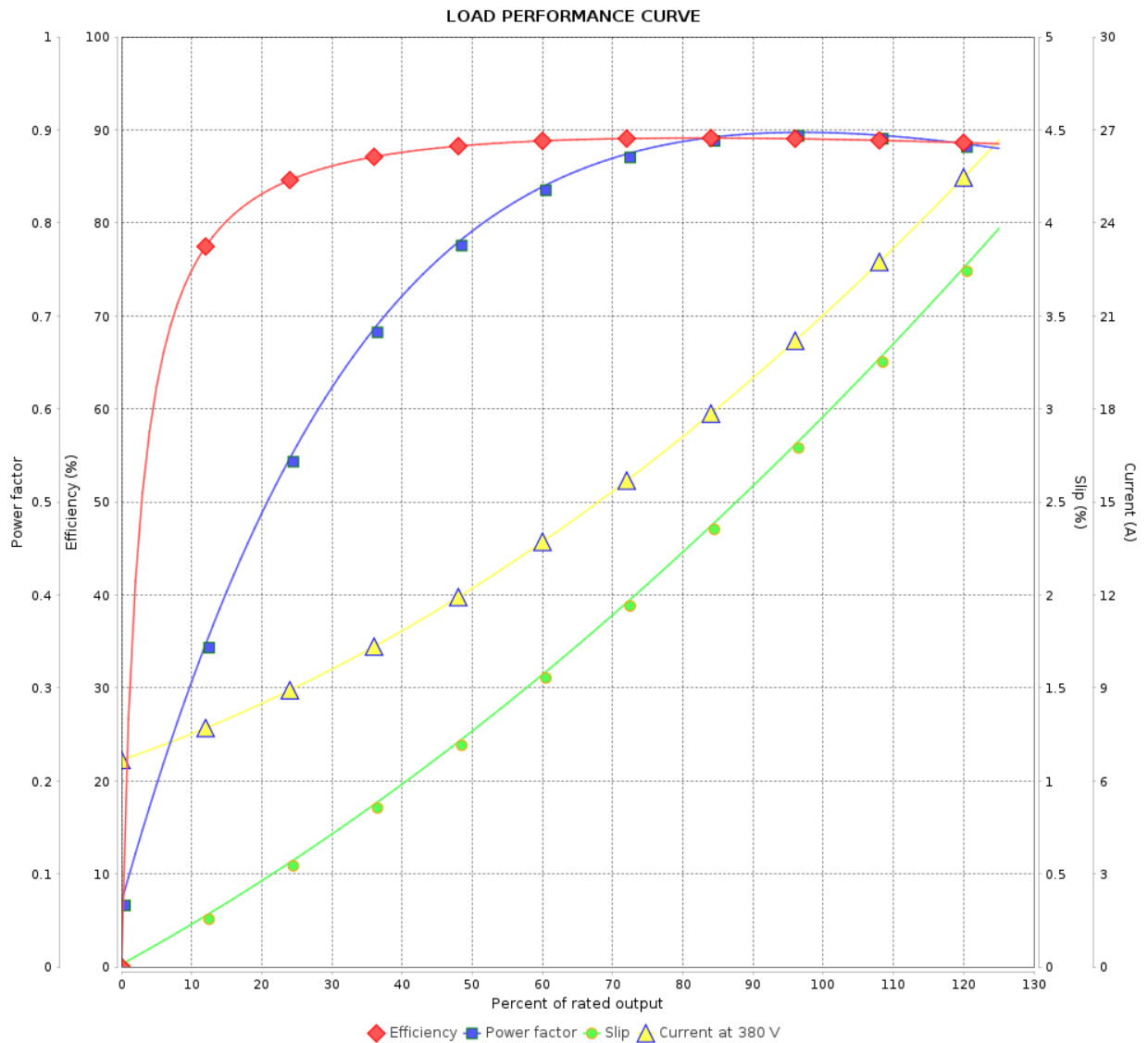
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 380 V 50 Hz 2P IE1

Rated current	: 20.9 A	Moment of inertia (J)	: 0.0268 kgm <sup>2</sup>
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 3.74 kgfm	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 105 K
Rated speed	: 2910 rpm	Design	: A

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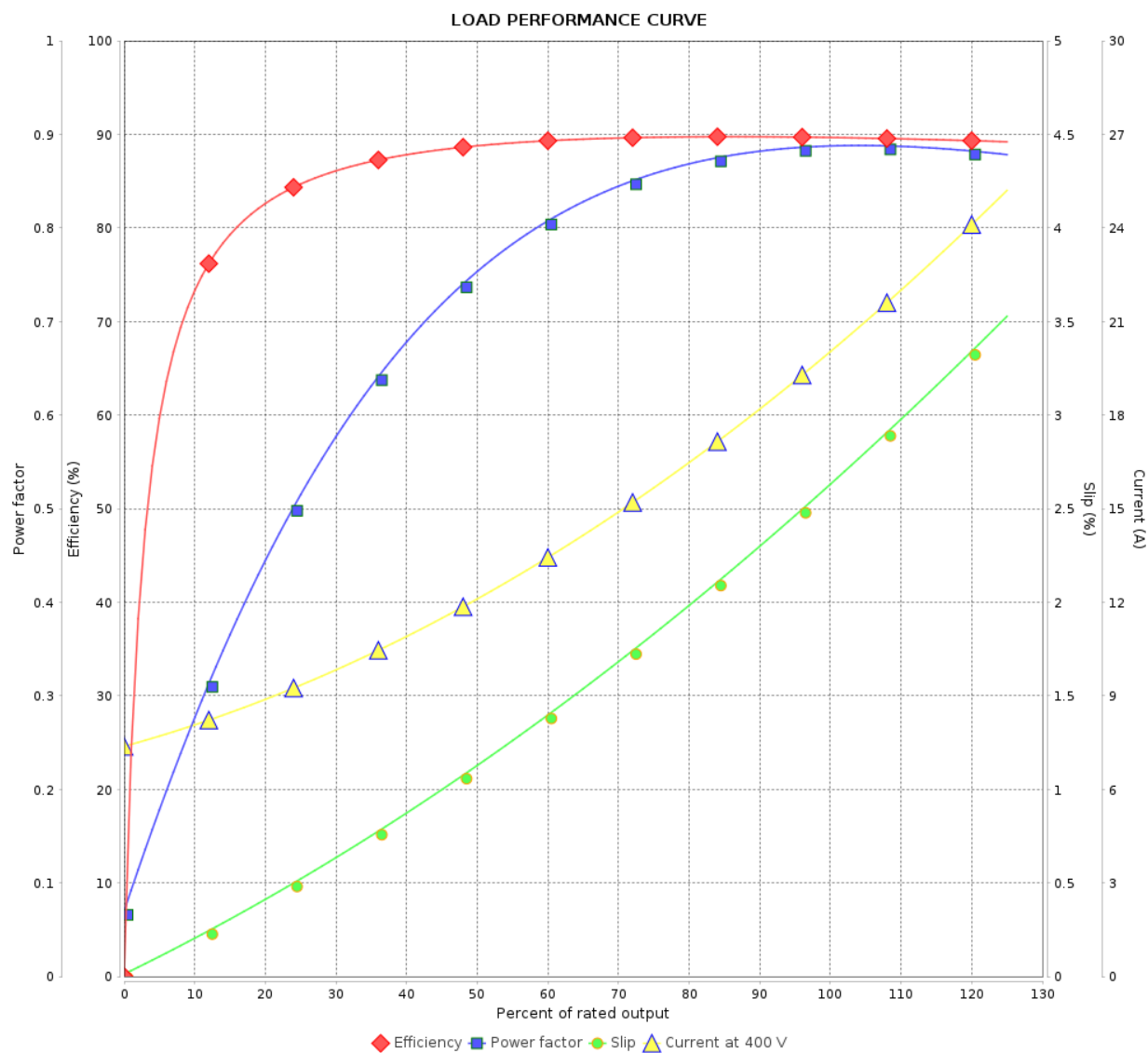
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 400 V 50 Hz 2P IE2

Rated current : 19.9 A  
LRC : 7.2  
Rated torque : 3.73 kgfm  
Locked rotor torque : 220 %  
Breakdown torque : 300 %  
Rated speed : 2920 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 105 K  
Design : A

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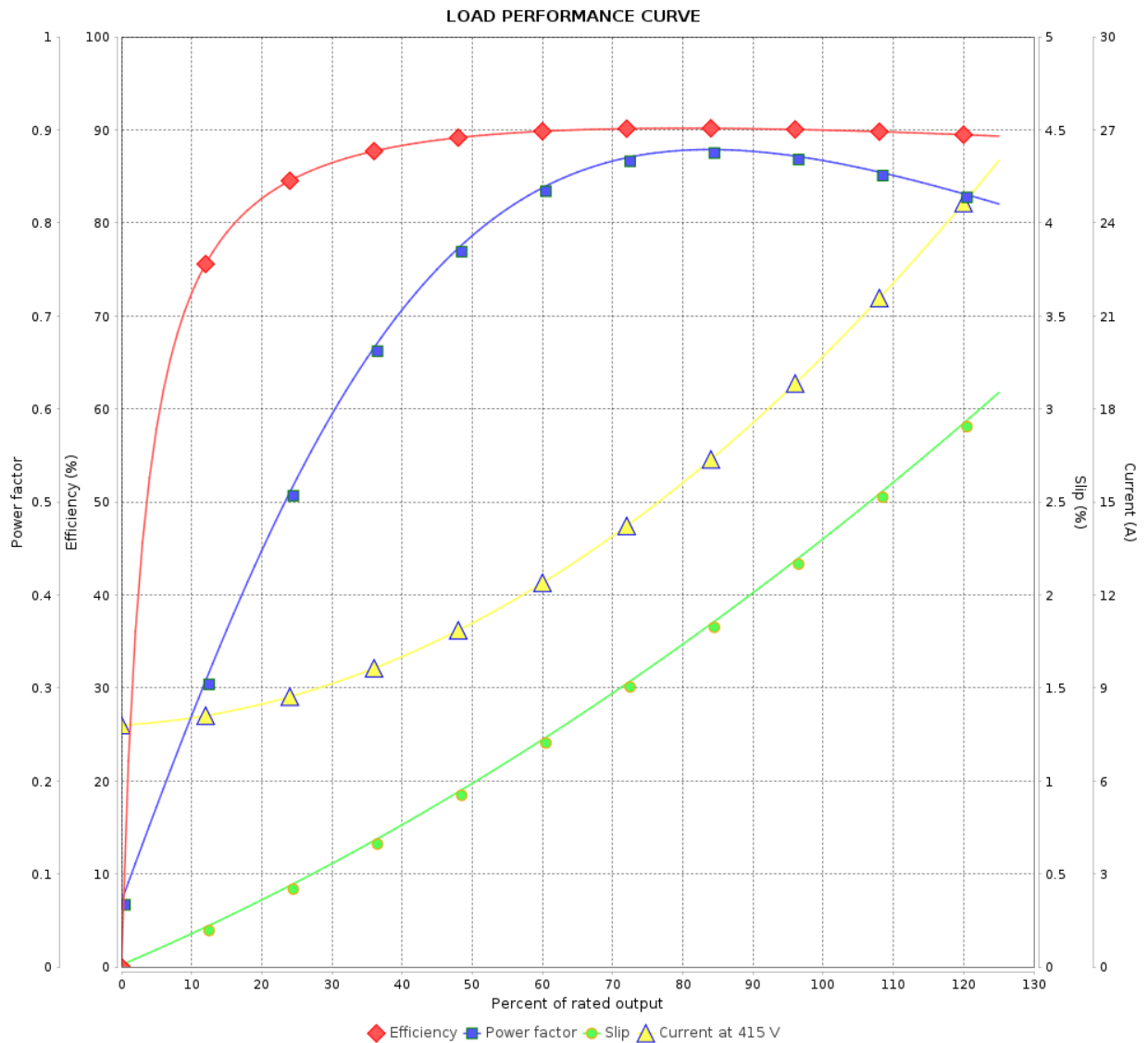
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11993105



Performance : 415 V 50 Hz 2P IE2

Rated current : 19.3 A  
LRC : 7.7  
Rated torque : 3.72 kgfm  
Locked rotor torque : 240 %  
Breakdown torque : 300 %  
Rated speed : 2930 rpm

Moment of inertia (J) : 0.0268 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 105 K  
Design : A

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