

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase Product code : 11460176

Frame	: 254/6TC	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>	: 158 kg
Protection degree	: IP56	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
Design	: B		

Output [HP]	20	15	15	15	20	20	20
Poles	4	4	4	4	4	4	4
Frequency [Hz]	60	50	50	50	50	50	50
Rated voltage [V]	460	380	400	415	380	400	415
Rated current [A]	24.1	21.8	21.2	20.6	29.4	28.0	27.1
L. R. Amperes [A]	157	161	167	173	167	174	179
LRC [A]	6.5x(Code G)	7.4x(Code H)	7.9x(Code J)	8.4x(Code K)	5.7x(Code F)	6.2x(Code G)	6.6x(Code H)
No load current [A]	8.80	8.60	9.10	9.60	8.60	9.10	9.60
Rated speed [RPM]	1770	1475	1477	1479	1455	1460	1465
Slip [%]	1.67	1.67	1.53	1.40	3.00	2.67	2.33
Rated torque [kgfm]	8.20	7.38	7.37	7.36	9.98	9.94	9.91
Locked rotor torque [%]	240	250	280	300	190	210	229
Breakdown torque [%]	250	290	320	340	210	229	260
Service factor	1.25	1.00	1.00	1.00	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	41s (cold) 23s (hot)	41s (cold) 23s (hot)	39s (cold) 22s (hot)	37s (cold) 21s (hot)	21s (cold) 12s (hot)	23s (cold) 13s (hot)	23s (cold) 13s (hot)
Noise level <sup>2</sup>	64.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)
Efficiency (%)	25%						
	50%	91.7	91.0	89.8	89.8	91.7	91.0
	75%	92.4	91.5	91.0	91.3	91.0	91.7
	100%	93.0	91.4	91.4	91.7	90.2	91.7
Power Factor	25%						
	50%	0.68	0.65	0.62	0.60	0.75	0.72
	75%	0.79	0.78	0.75	0.73	0.83	0.81
	100%	0.84	0.84	0.82	0.81	0.86	0.85

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

Losses (%)	P1 (0,9;1,0)	7.4	9.3	9.3	8.9	10.7	9.7	8.9
	P2 (0,5;1,0)	6.4	8.0	8.0	7.7	9.2	8.4	7.7
	P3 (0,25;1,0)	5.9	7.3	7.3	7.0	8.4	7.7	7.0
	P4 (0,9;0,5)	3.5	4.3	4.3	4.2	5.0	4.6	4.2
	P5 (0,5;0,5)	2.4	3.1	3.1	2.9	3.5	3.2	2.9
	P6 (0,5;0,25)	1.6	2.0	2.0	1.9	2.3	2.1	1.9
	P7 (0,25;0,25)	1.1	1.4	1.4	1.3	1.6	1.4	1.3

Bearing type	Drive end	6309 C3	Non drive end	6209 C3	Foundation loads	Max. traction	: 326 kgf
	Sealing	Inpro/Seal	Inpro/Seal	Max. compression		: 484 kgf	
	Lubrication interval	: 20000 h	: 20000 h				
	Lubricant amount	: 13 g	: 9 g				
	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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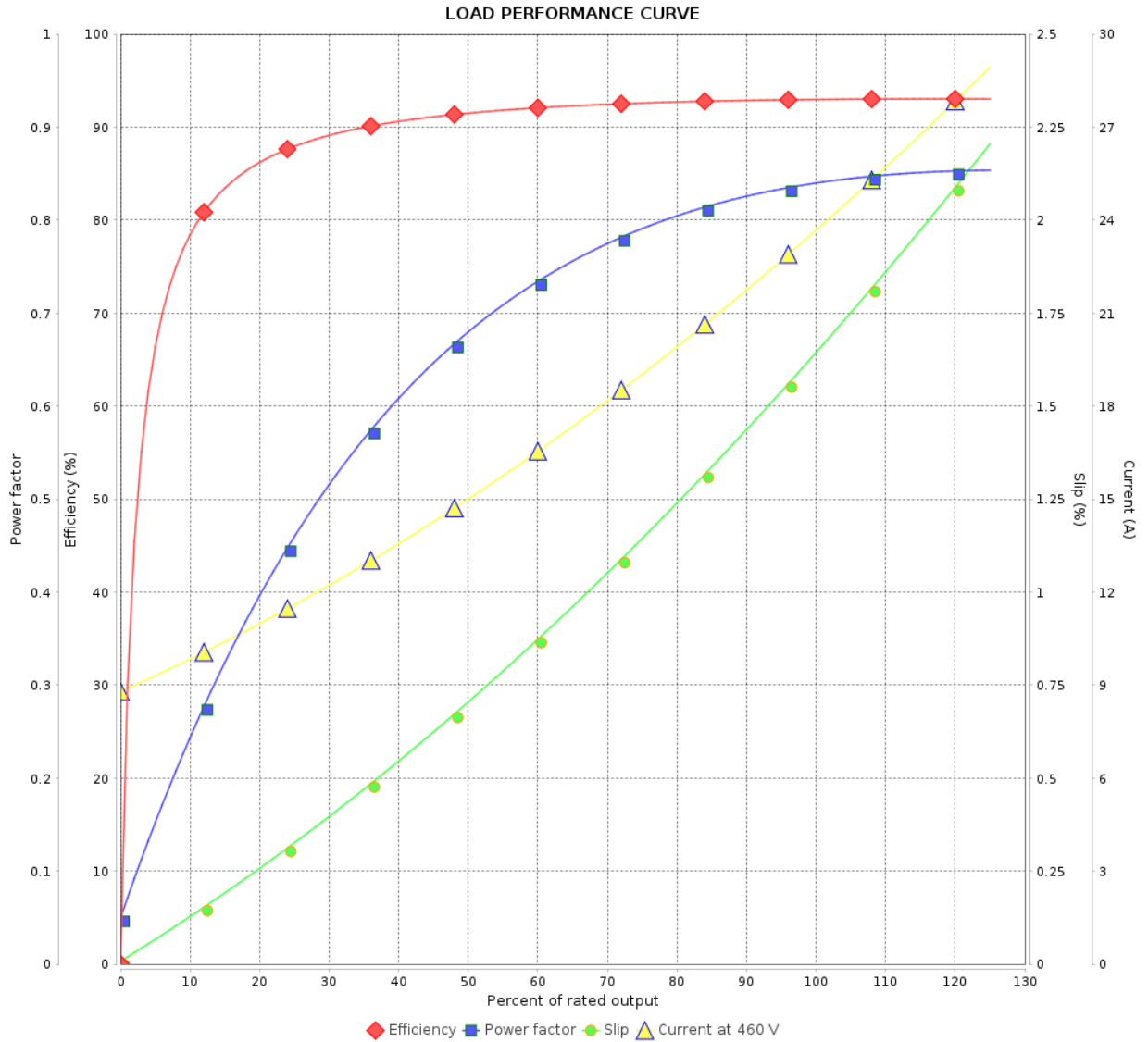
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 11460176



Performance : 460 V 60 Hz 4P

Rated current : 24.1 A  
 LRC : 6.5  
 Rated torque : 8.20 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 250 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 0.1305 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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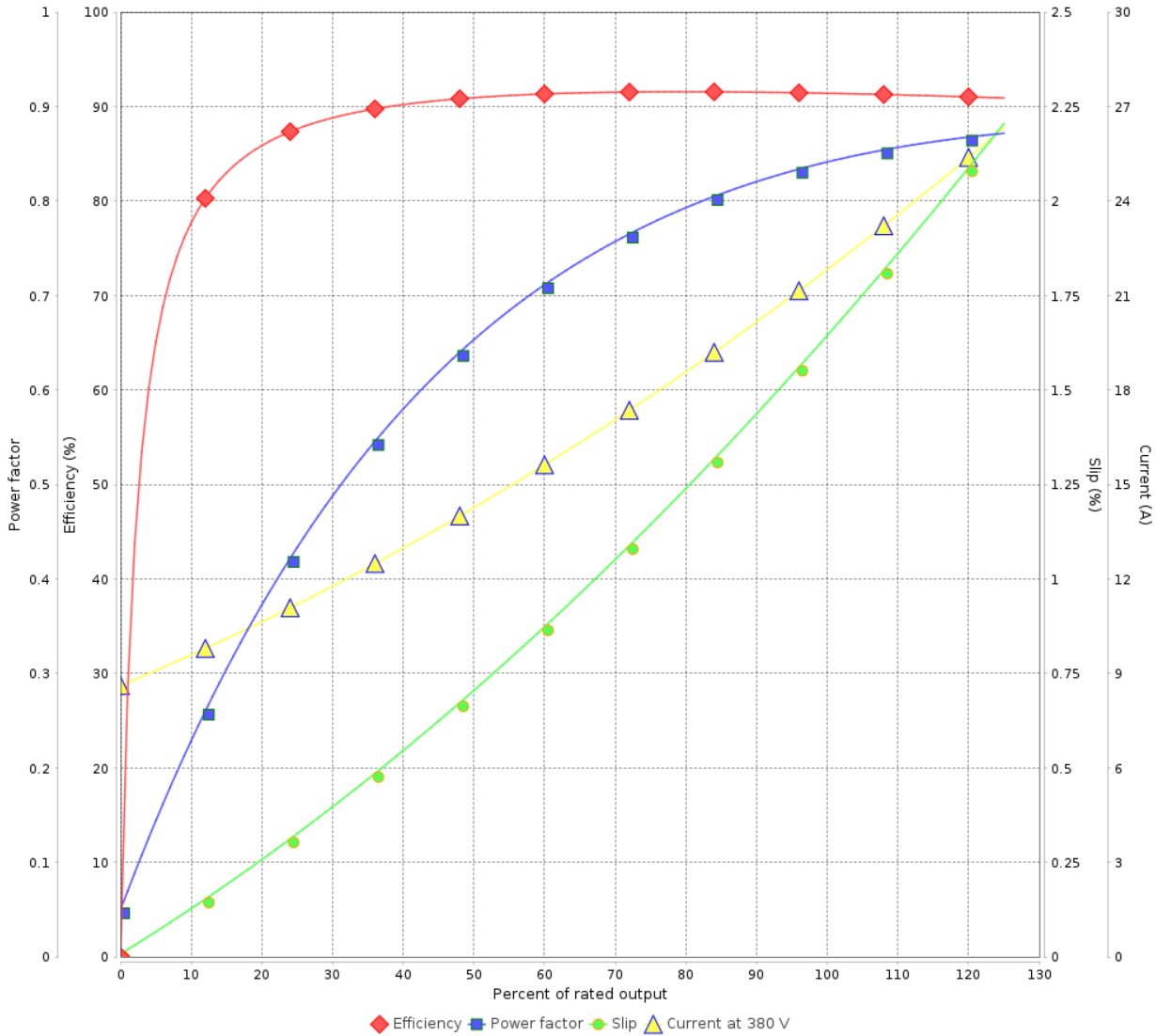
Three Phase Induction Motor - Squirrel Cage



Customer :

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Performance : 380 V 50 Hz 4P IE3

Rated current	: 21.8 A	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 7.38 kgfm	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

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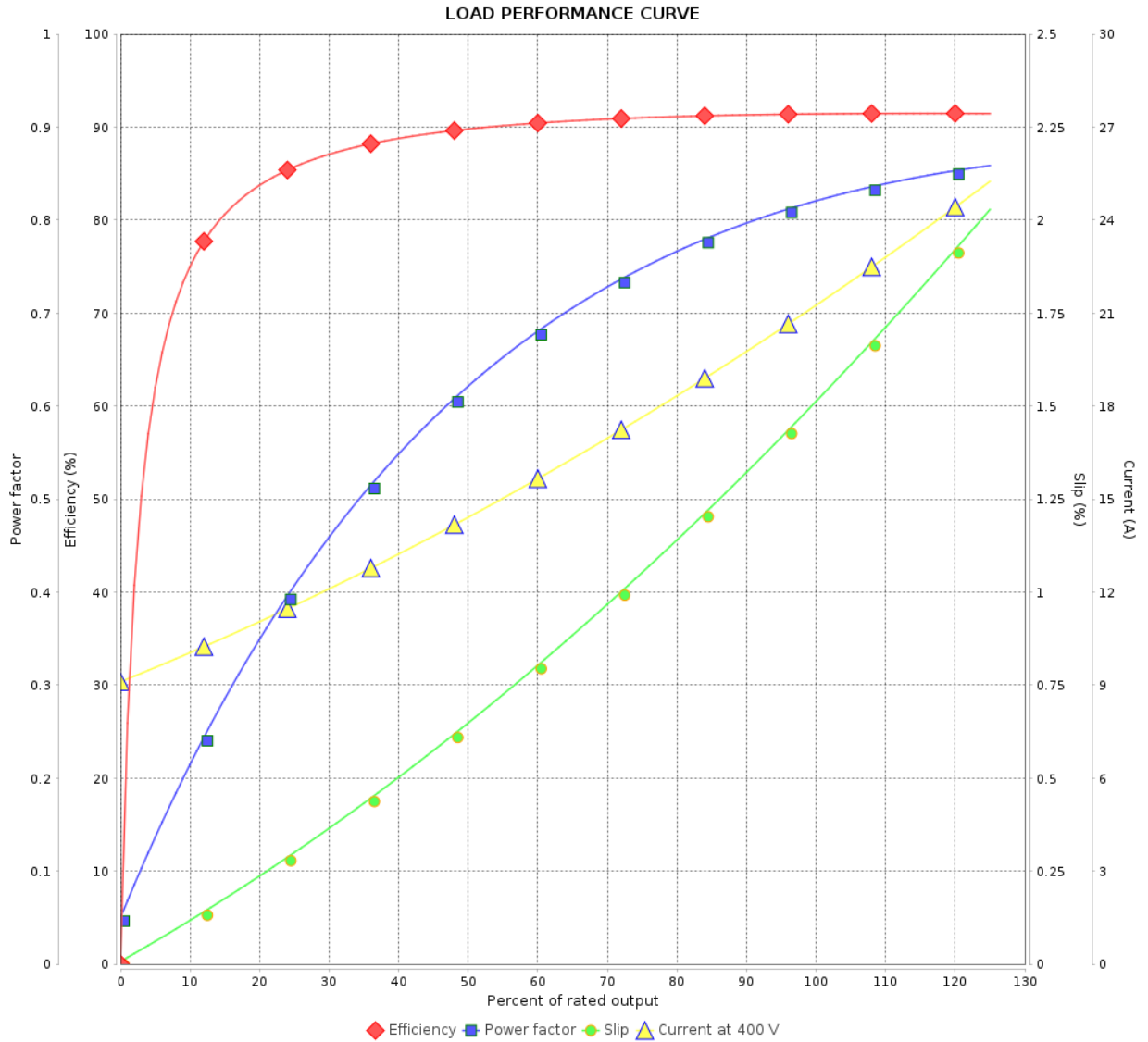
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## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11460176



Performance : 400 V 50 Hz 4P IE3

Rated current	: 21.2 A	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
LRC	: 7.9	Duty cycle	: Cont.(S1)
Rated torque	: 7.37 kgfm	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1477 rpm	Design	: B

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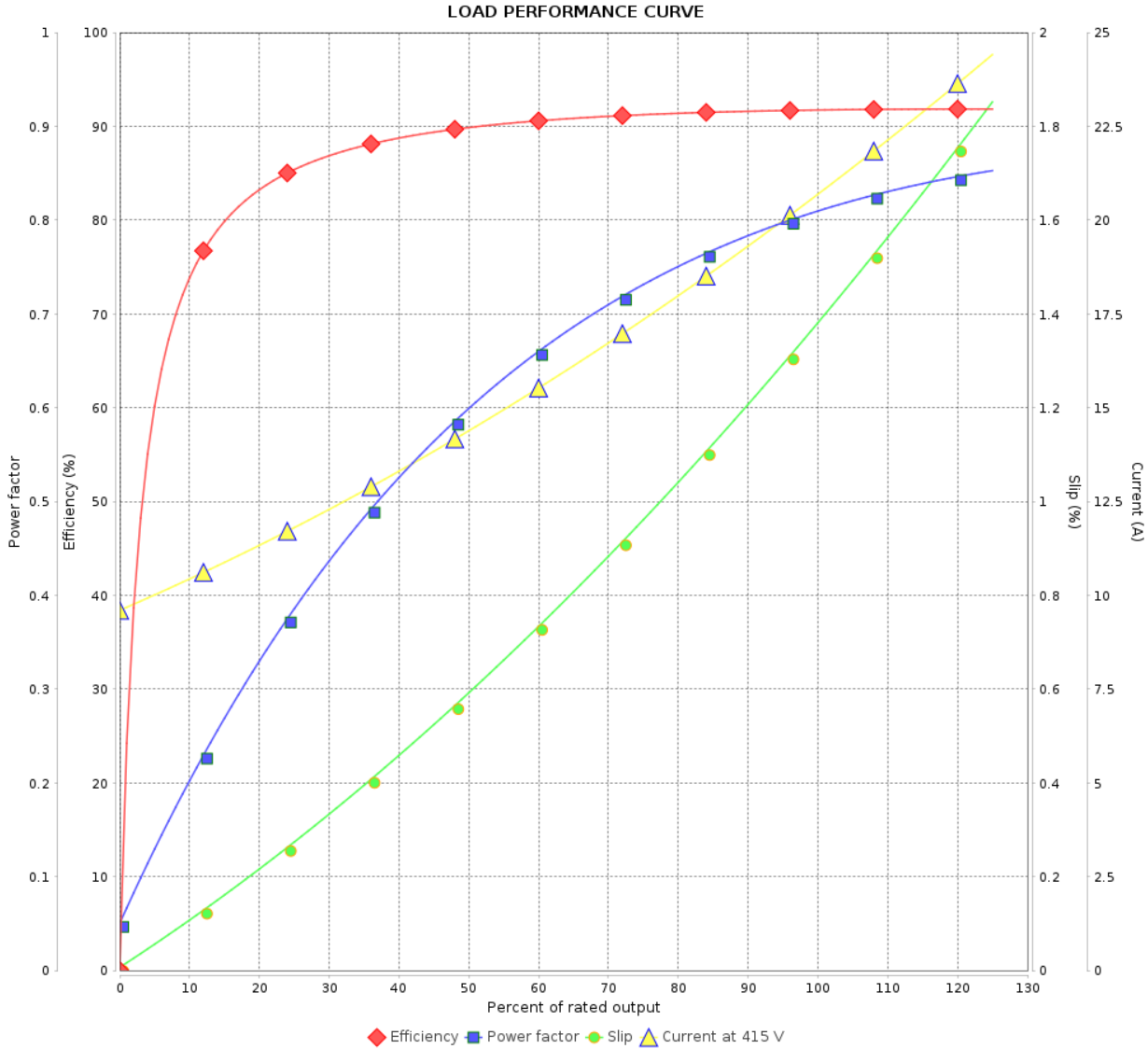
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Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11460176



Performance : 415 V 50 Hz 4P IE3

Rated current	: 20.6 A	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 7.36 kgfm	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1479 rpm	Design	: B

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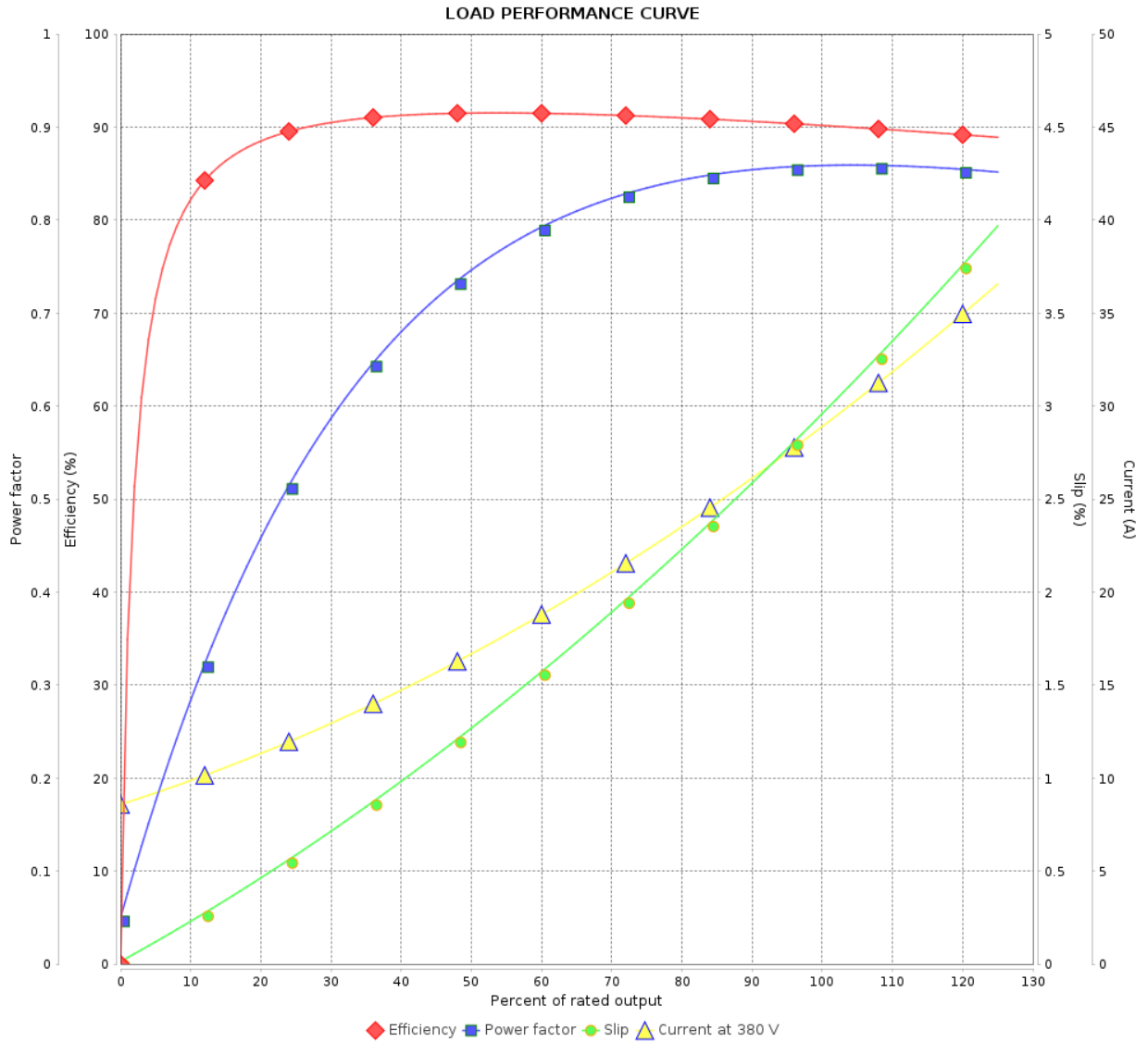
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## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11460176



Performance : 380 V 50 Hz 4P IE1

Rated current	: 29.4 A	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 9.98 kgfm	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 1455 rpm	Design	: B

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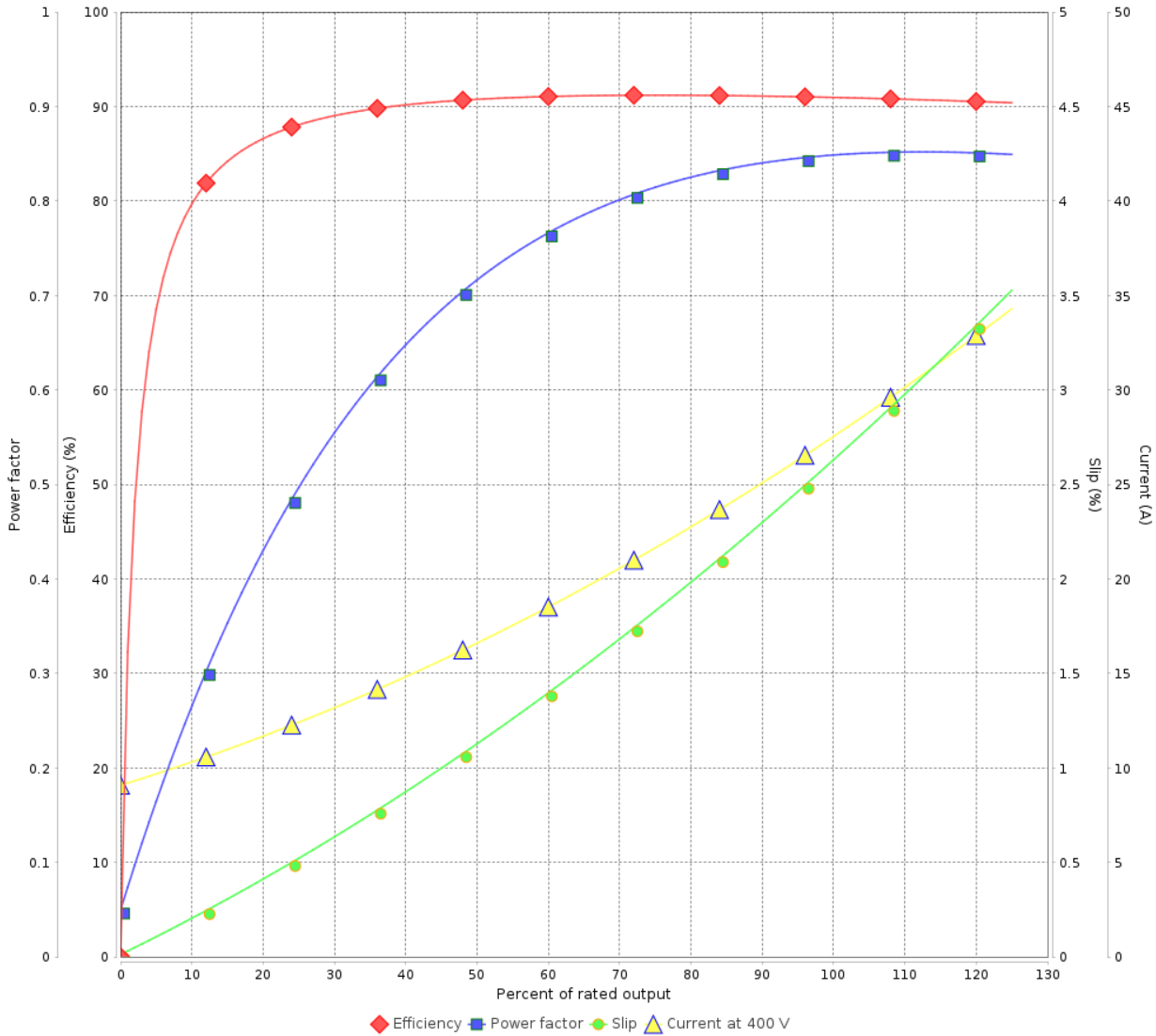
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11460176

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Performance : 400 V 50 Hz 4P IE2

Rated current	: 28.0 A	Moment of inertia (J)	: 0.1305 kgm <sup>2</sup>
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 9.94 kgfm	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

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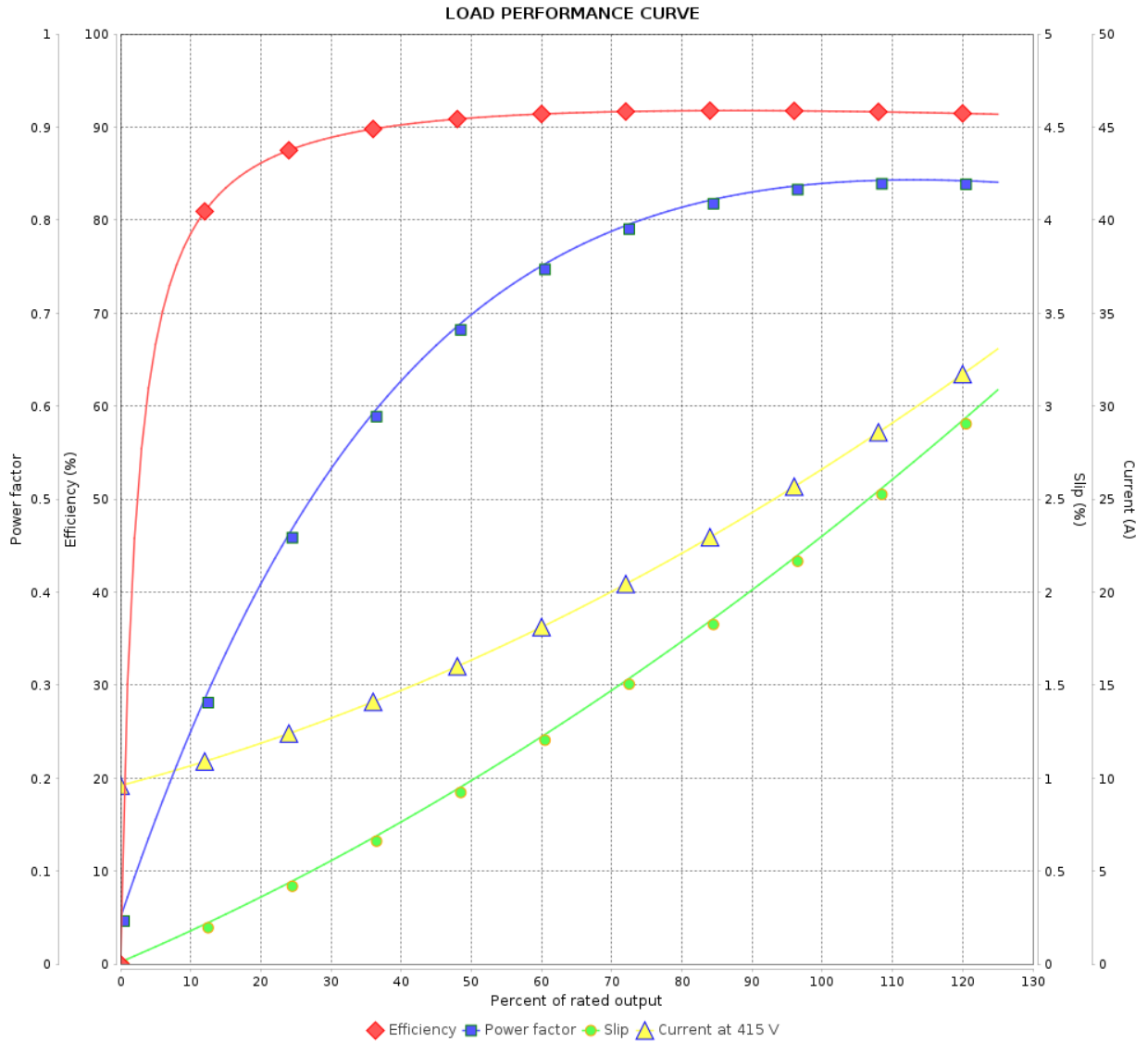
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 11460176



Performance : 415 V 50 Hz 4P IE2

Rated current : 27.1 A  
 LRC : 6.6  
 Rated torque : 9.91 kgfm  
 Locked rotor torque : 229 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 0.1305 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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