

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase      Product code : 14161576

Frame : 254/6TD	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> : 144 kg
Protection degree : IP55	Moment of inertia (J) : 0.0647 kgm <sup>2</sup>
Design : B	

Output [HP]	20	15	15	15	20	20	20
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]	46.5/23.3	20.6	19.8	19.3	28.9	27.2	26.2
L. R. Amperes [A]	284/142	144	154	156	148	155	160
LRC [A]	6.1x(Code G)	7.0x(Code H)	7.8x(Code J)	8.1x(Code J)	5.1x(Code E)	5.7x(Code F)	6.1x(Code G)
No load current [A]	13.0/6.50	6.20	6.60	6.90	6.20	6.60	6.90
Rated speed [RPM]	3525	2935	2945	2950	2885	2905	2915
Slip [%]	2.08	2.17	1.83	1.67	3.83	3.17	2.83
Rated torque [kgfm]	4.12	3.71	3.70	3.69	5.03	5.00	4.98
Locked rotor torque [%]	200	220	240	270	160	180	200
Breakdown torque [%]	240	260	280	310	190	210	229
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	25s (cold) 14s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	10s (cold) 6s (hot)	16s (cold) 9s (hot)	18s (cold) 10s (hot)
Noise level <sup>2</sup>	72.0 dB(A)	67.0 dB(A)	67.0 dB(A)	67.0 dB(A)	67.0 dB(A)	67.0 dB(A)	67.0 dB(A)
Efficiency (%)	25%	0.000					
	50%	90.7	90.6	90.4	89.8	87.2	89.2
	75%	91.0	90.9	91.2	91.1	87.5	89.5
	100%	91.0	91.2	91.2	91.2	87.5	89.5
Power Factor	25%	0.00					
	50%	0.80	0.78	0.75	0.73	0.85	0.82
	75%	0.87	0.86	0.84	0.83	0.89	0.88
	100%	0.89	0.89	0.88	0.87	0.90	0.89

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

Losses (%)	P1 (0,9;1,0)	9.0	8.8	8.8	8.8	13.0	10.7	10.7
	P2 (0,5;1,0)	6.6	6.5	6.5	6.5	9.6	7.9	7.9
	P3 (0,25;1,0)	6.2	6.0	6.0	6.0	8.9	7.3	7.3
	P4 (0,9;0,5)	4.9	4.8	4.8	4.8	7.1	5.8	5.8
	P5 (0,5;0,5)	2.7	2.6	2.6	2.6	3.9	3.2	3.2
	P6 (0,5;0,25)	1.8	1.7	1.7	1.7	2.6	2.1	2.1
	P7 (0,25;0,25)	1.0	1.0	1.0	1.0	1.5	1.2	1.2

Bearing type : Sealing : Lubrication interval : Lubricant amount : Lubricant type :	Drive end	6309 C3	Non drive end	6209 C3	Foundation loads Max. traction : 108 kgf Max. compression : 252 kgf
		V'Ring		V'Ring	
		19000 h		20000 h	
		13 g		9 g	
		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.

Rev.	Changes Summary			Performed	Checked	Date
Performed by						
Checked by					Page	Revision
Date	06/02/2024				1 / 9	

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Notes  
USABLE @208V 51.3A SF 1.15 SFA 59.0A

Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	06/02/2024		2 / 9	

# LOAD PERFORMANCE CURVE

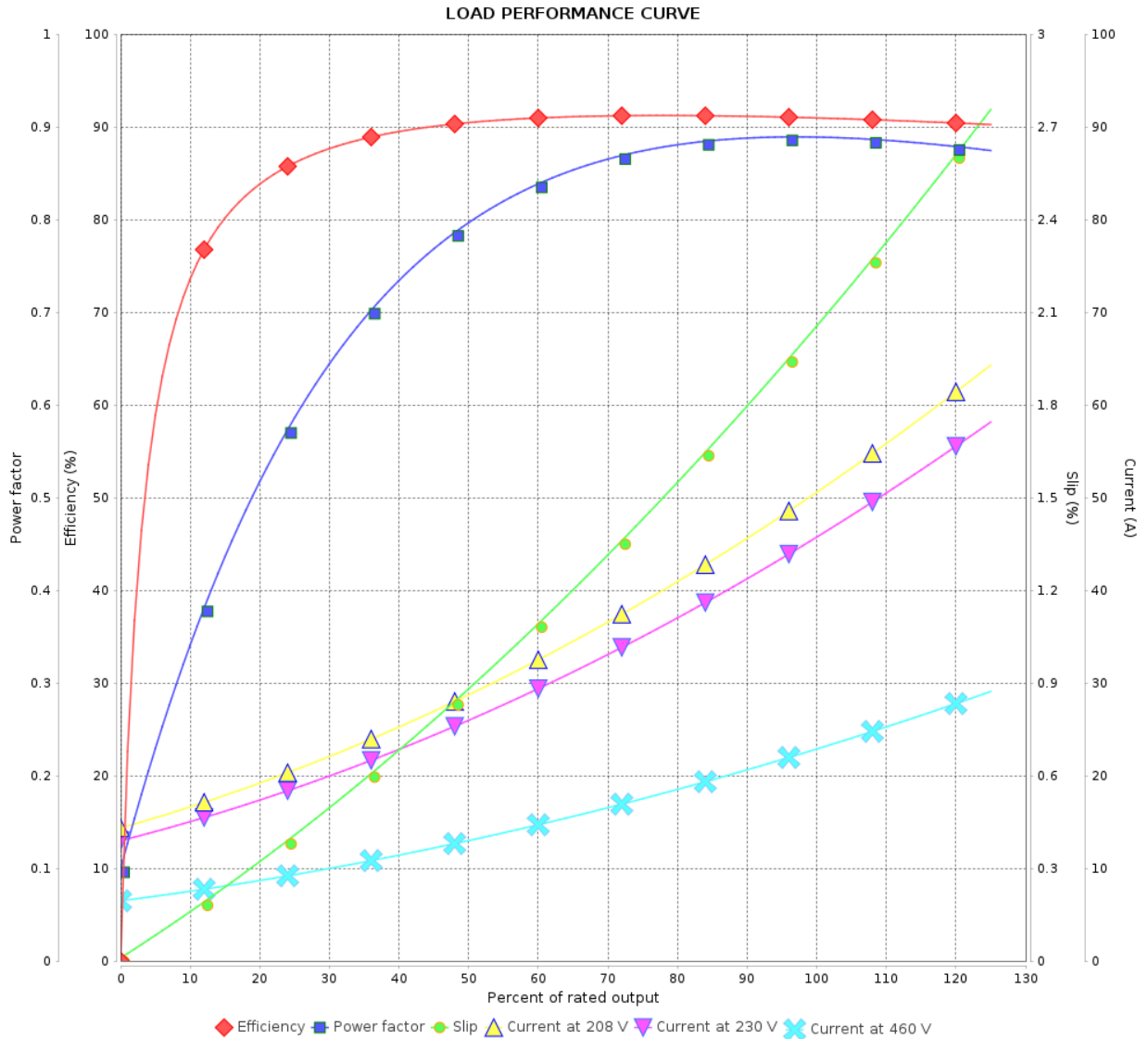
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 230/460 V 60 Hz 2P

Rated current : 46.5/23.3 A  
 LRC : 6.1  
 Rated torque : 4.12 kgfm  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 3525 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

# LOAD PERFORMANCE CURVE

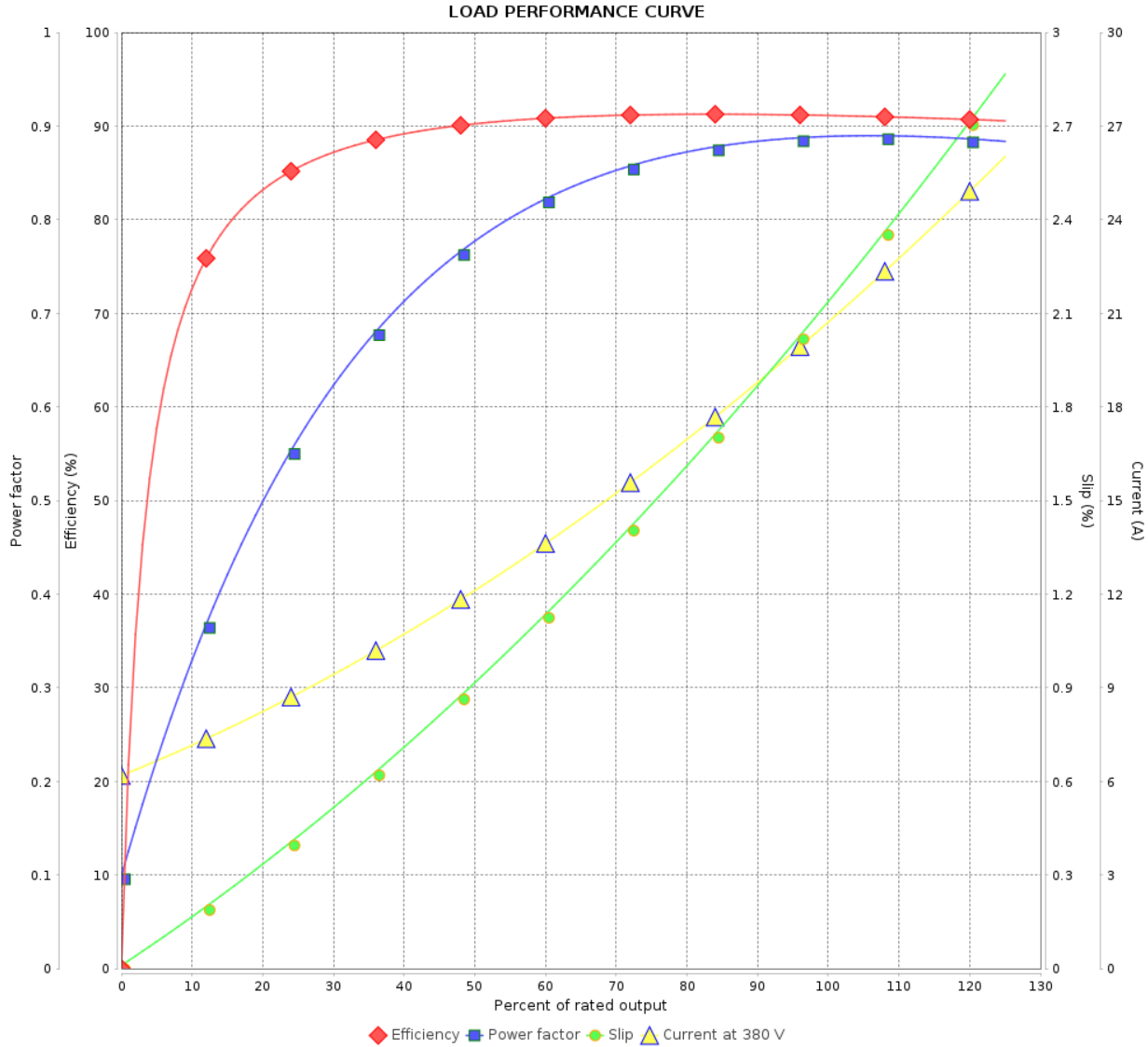
Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 380 V 50 Hz 2P IE3

Rated current : 20.6 A  
 LRC : 7.0  
 Rated torque : 3.71 kgfm  
 Locked rotor torque : 220 %  
 Breakdown torque : 260 %  
 Rated speed : 2935 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

# LOAD PERFORMANCE CURVE

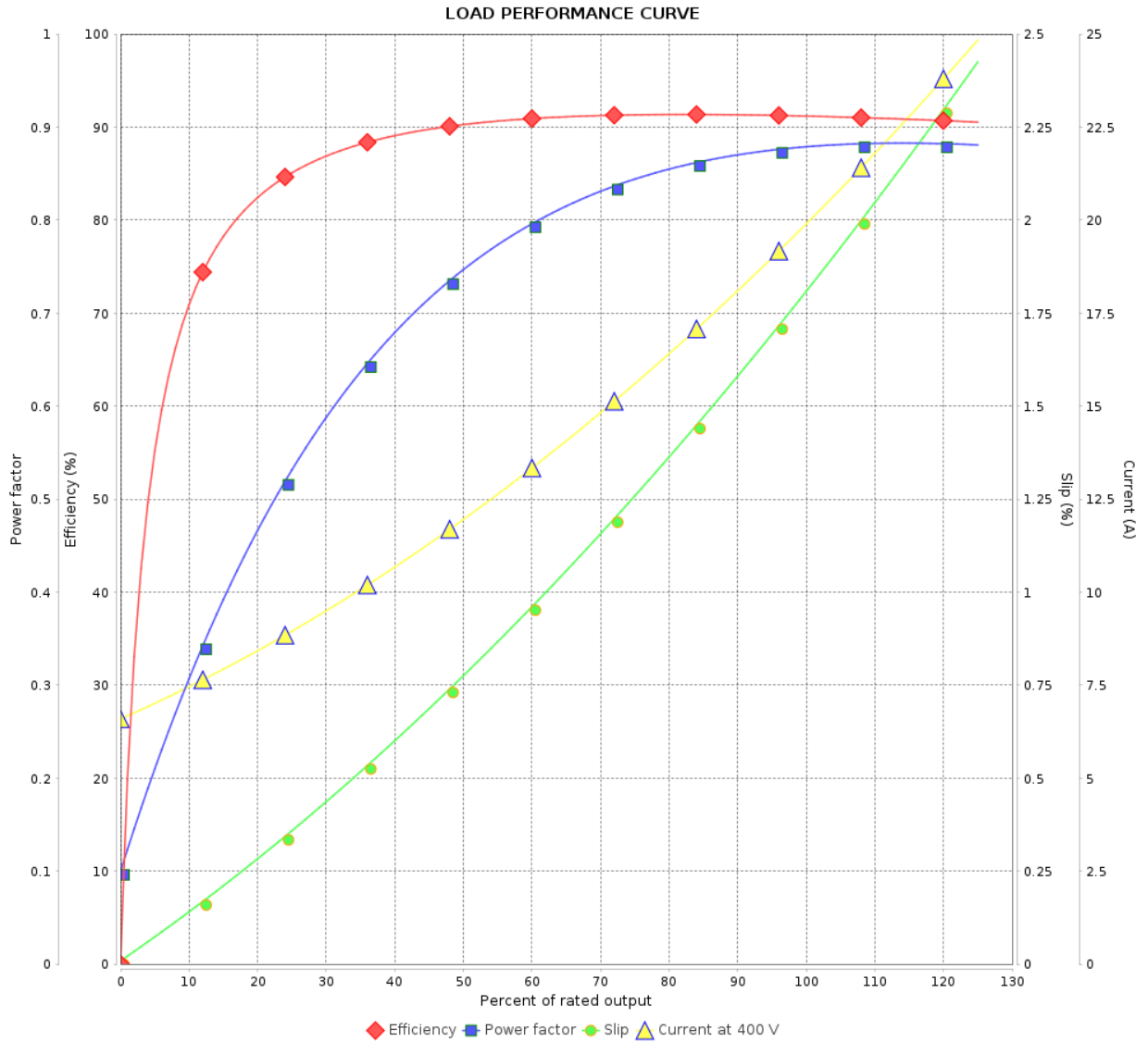
## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 400 V 50 Hz 2P IE3

Rated current : 19.8 A  
 LRC : 7.8  
 Rated torque : 3.70 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 280 %  
 Rated speed : 2945 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

# LOAD PERFORMANCE CURVE

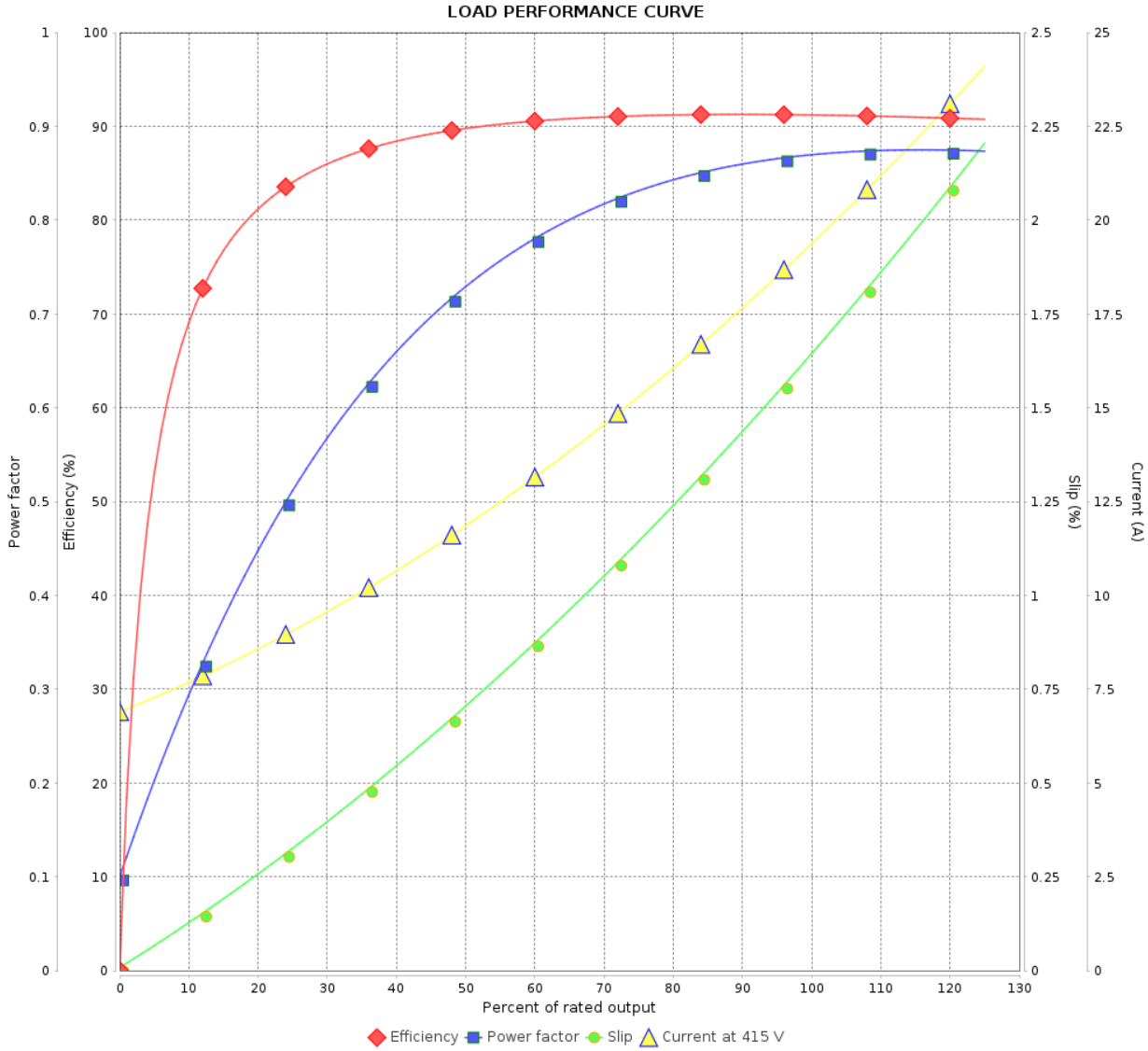
Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 415 V 50 Hz 2P IE3

Rated current : 19.3 A  
 LRC : 8.1  
 Rated torque : 3.69 kgfm  
 Locked rotor torque : 270 %  
 Breakdown torque : 310 %  
 Rated speed : 2950 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

# LOAD PERFORMANCE CURVE

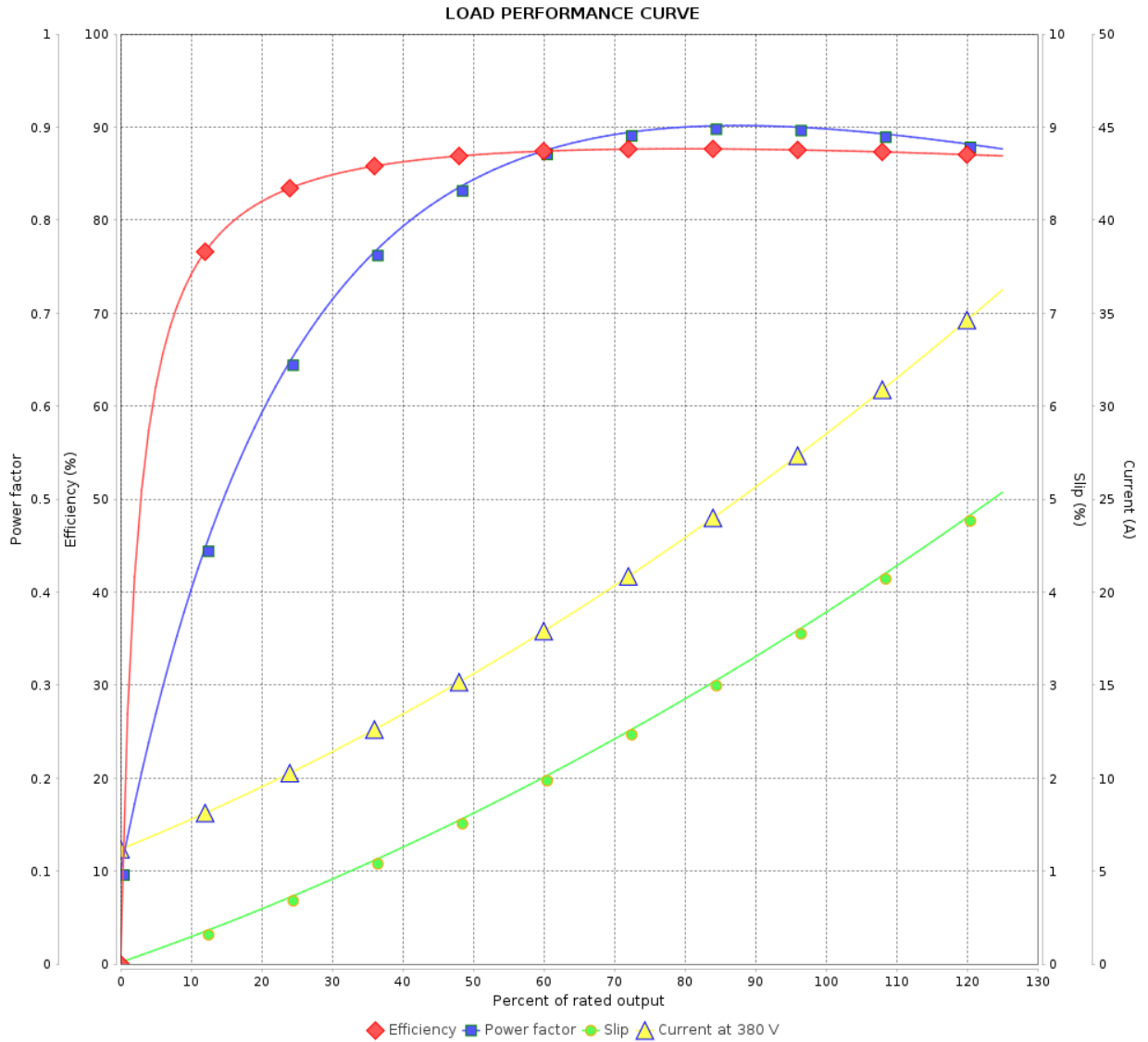
## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 380 V 50 Hz 2P

Rated current : 28.9 A  
 LRC : 5.1  
 Rated torque : 5.03 kgfm  
 Locked rotor torque : 160 %  
 Breakdown torque : 190 %  
 Rated speed : 2885 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				
			7 / 9	

# LOAD PERFORMANCE CURVE

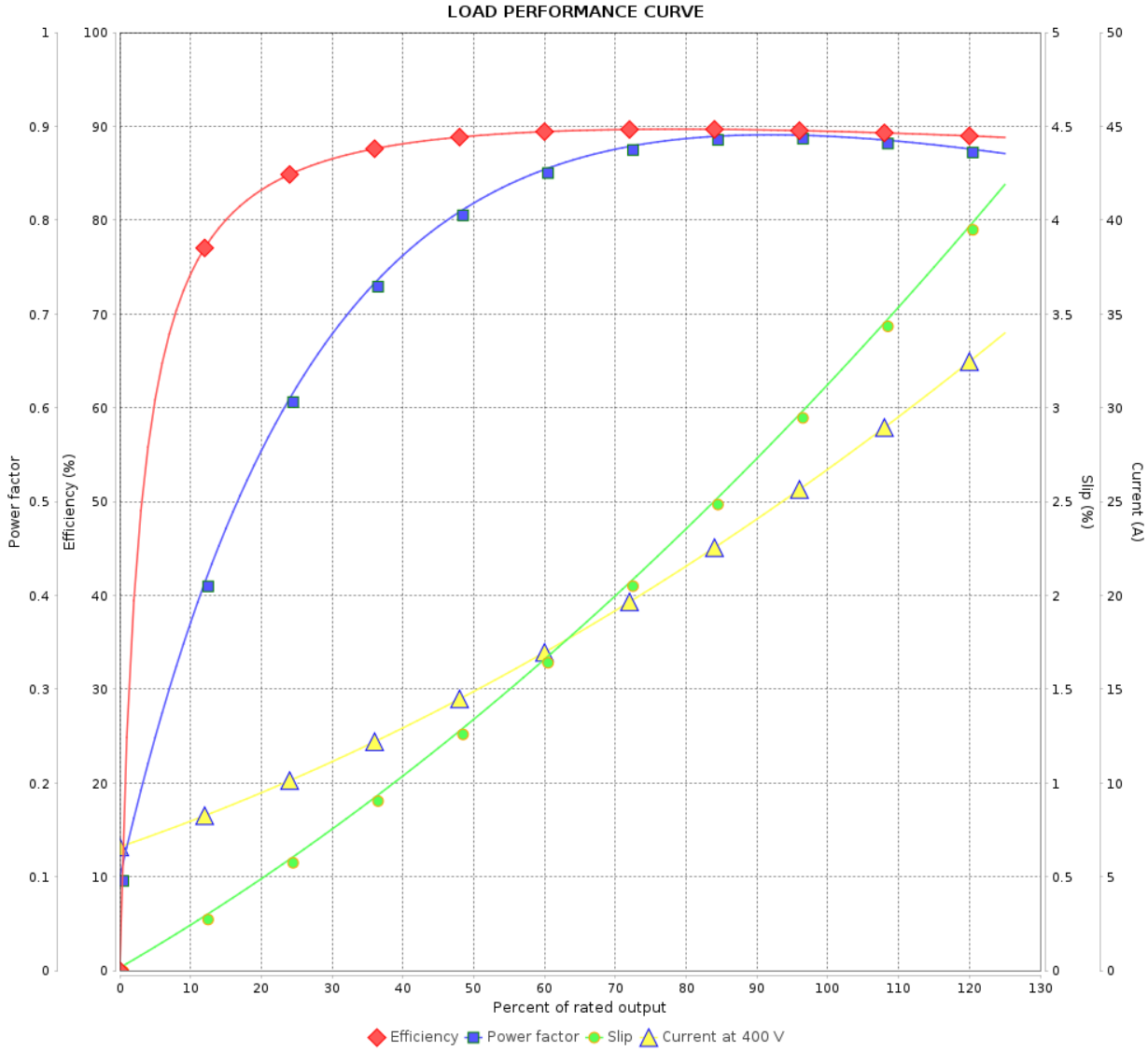
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 400 V 50 Hz 2P IE1

Rated current : 27.2 A  
 LRC : 5.7  
 Rated torque : 5.00 kgfm  
 Locked rotor torque : 180 %  
 Breakdown torque : 210 %  
 Rated speed : 2905 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 9	Revision
Checked by				
Date	06/02/2024			



# LOAD PERFORMANCE CURVE

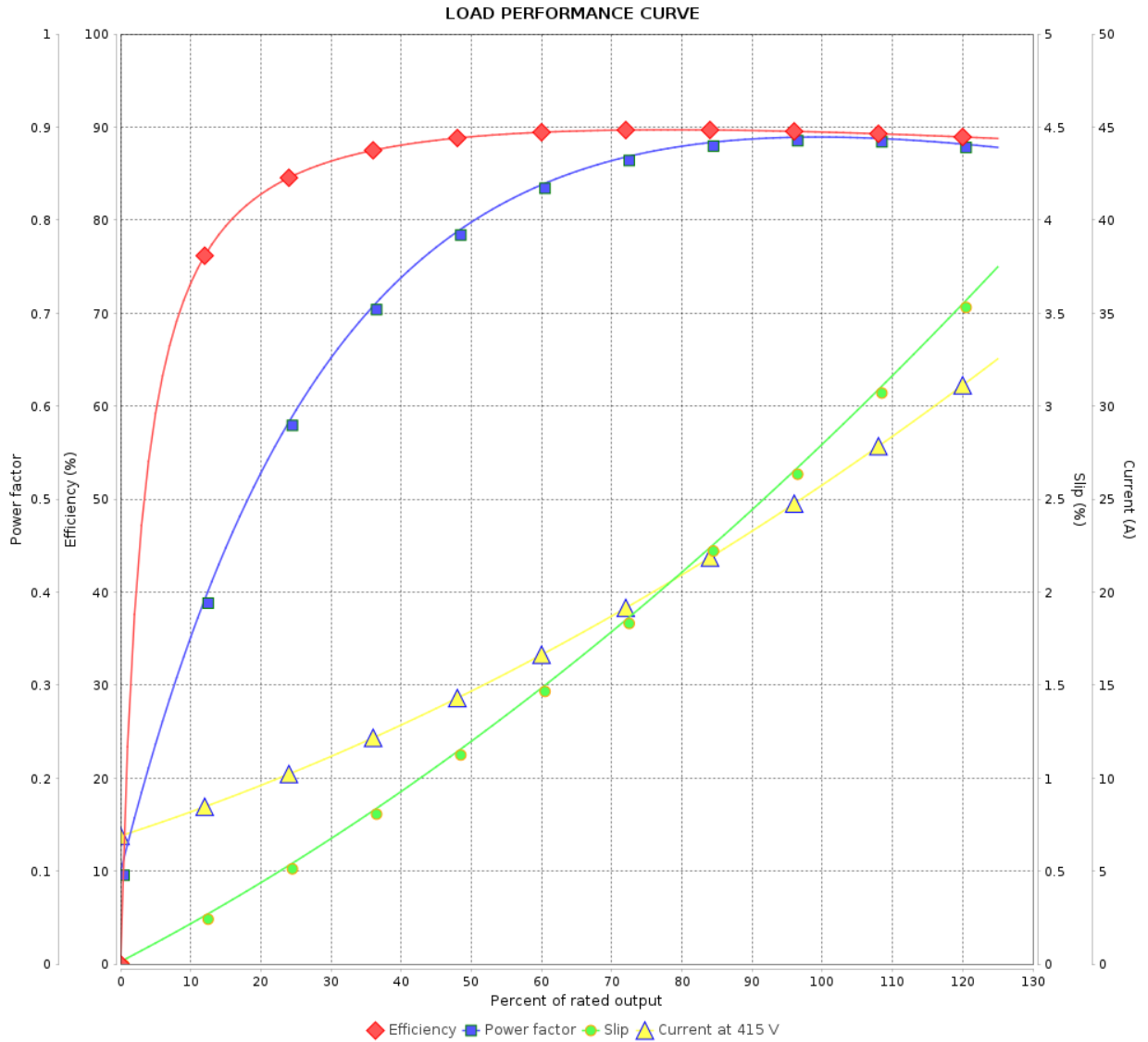
## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 NEMA Premium Efficiency Three-Phase

Product code : 14161576



Performance : 415 V 50 Hz 2P IE1

Rated current : 26.2 A  
 LRC : 6.1  
 Rated torque : 4.98 kgfm  
 Locked rotor torque : 200 %  
 Breakdown torque : 229 %  
 Rated speed : 2915 rpm

Moment of inertia (J) : 0.0647 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
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