

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer									
Product line		: NEMA Premium Efficiency Three-Phase			Product code :		14022422		
					Catalog # :		00309ST3QIE215TC-W22		
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>2</sup> : 201 lb					
Protection degree : IP55				Moment of inertia (J) : 2.11 sq.ft.lb					
Design : B									
Output [HP]	3		3		3		3		
Poles	8		8		8		8		
Frequency [Hz]	60		50		50		50		
Rated voltage [V]	460		380		400		415		
Rated current [A]	4.55		5.33		5.20		5.06		
L. R. Amperes [A]	30.9		28.2		31.2		32.9		
LRC [A]	6.8x(Code K)		5.3x(Code G)		6.0x(Code J)		6.5x(Code J)		
No load current [A]	2.71		2.68		2.86		3.00		
Rated speed [RPM]	870		710		715		720		
Slip [%]	3.33		5.33		4.67		4.00		
Rated torque [ft.lb]	18.1		22.2		22.0		21.9		
Locked rotor torque [%]	229		180		220		260		
Breakdown torque [%]	275		200		240		270		
Service factor	1.25		1.25		1.25		1.25		
Temperature rise	80 K		80 K		80 K		80 K		
Locked rotor time	79s (cold) 44s (hot)		59s (cold) 33s (hot)		59s (cold) 33s (hot)		59s (cold) 33s (hot)		
Noise level <sup>2</sup>	52.0 dB(A)		52.0 dB(A)		52.0 dB(A)		52.0 dB(A)		
Efficiency (%)	25%	83.7	85.0	85.0	85.0	82.1			
	50%	84.0	84.0	84.0	84.0	82.5			
	75%	85.5	84.0	84.0	84.0	84.0			
	100%	85.5	82.5	82.5	82.5	84.0			
Power Factor	25%	0.29	0.34	0.31	0.29				
	50%	0.50	0.57	0.54	0.51				
	75%	0.63	0.70	0.67	0.64				
	100%	0.71	0.76	0.74	0.72				
Bearing type		Drive end : 6308 C3	Non drive end : 6207 C3	Foundation loads					
Sealing		: Inpro/Seal	: Inpro/Seal	Max. traction		: 232 lb			
Lubrication interval		: 20000 h	: 20000 h	Max. compression		: 434 lb			
Lubricant amount		: 11 g	: 7 g						
Lubricant type		: Mobil Polyrex EM							
Notes									
This revision replaces and cancel the previous one, which must be eliminated. (1) Looking the motor from the shaft end. (2) Measured at 1m and with tolerance of +3dB(A). (3) Approximate weight subject to changes after manufacturing process. (4) At 100% of full load.					These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.				
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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



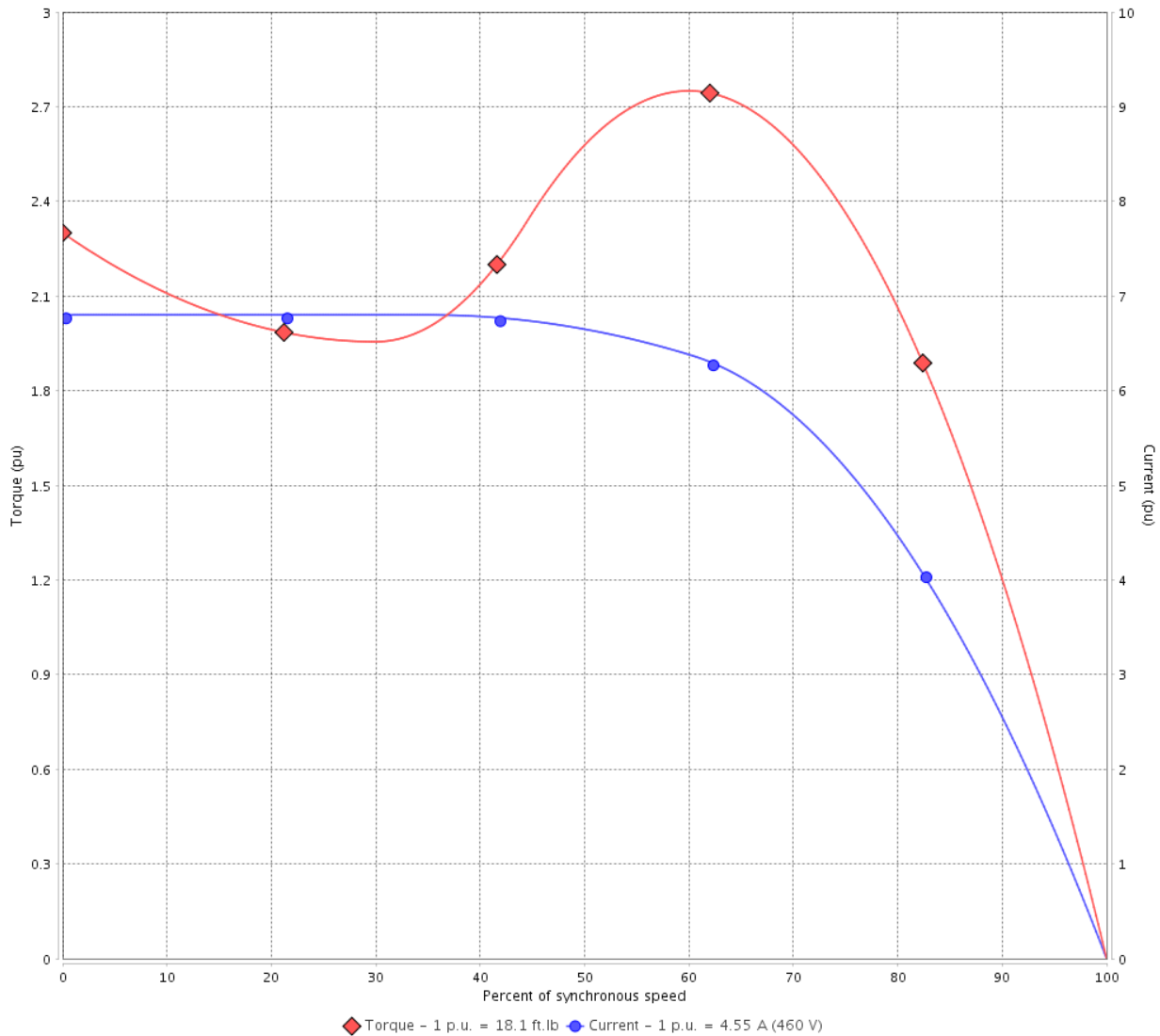
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 8P

Rated current	: 4.55 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 18.1 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 275 %	Temperature rise	: 80 K
Rated speed	: 870 rpm	Design	: B

Locked rotor time : 79s (cold) 44s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



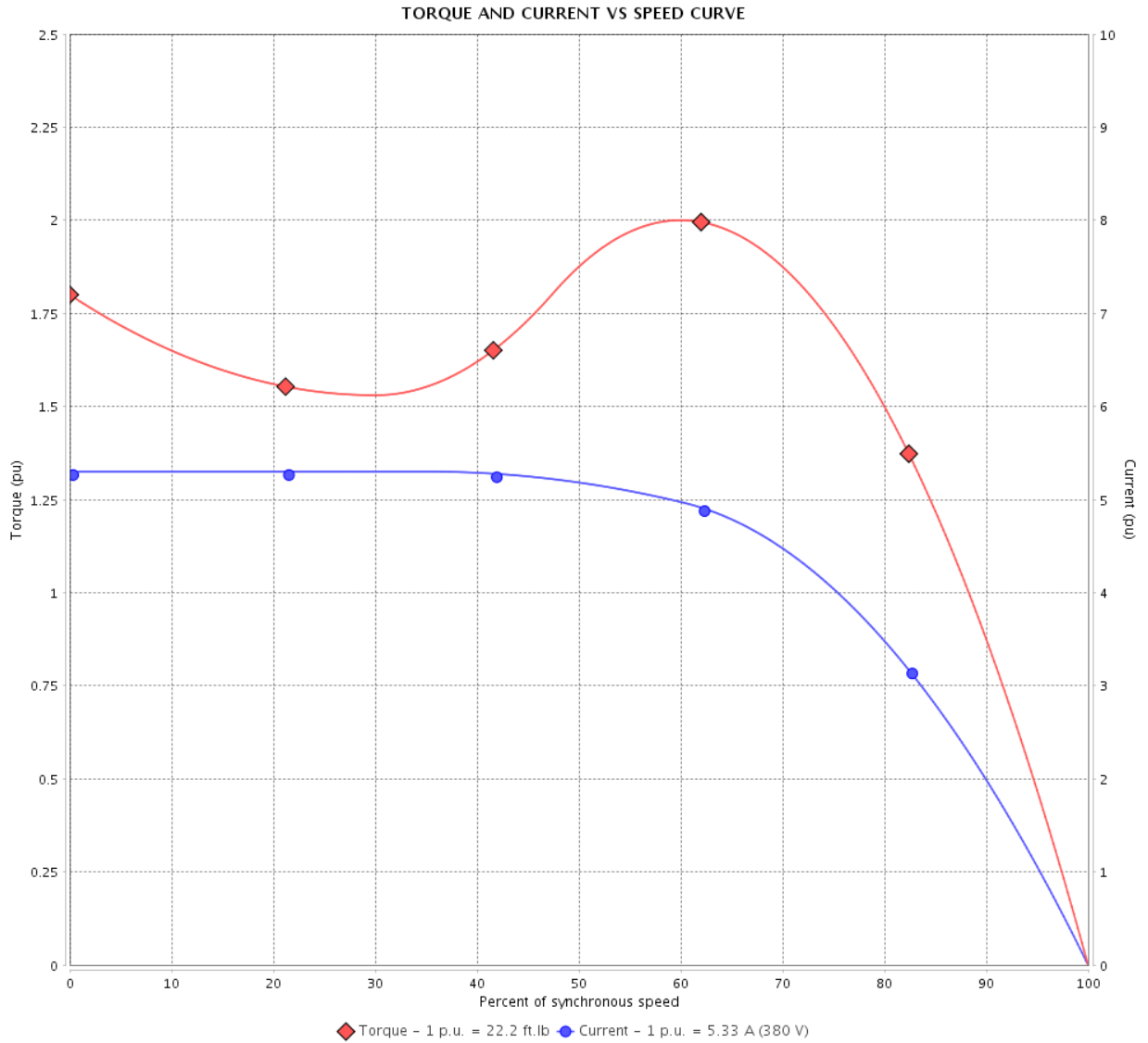
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 5.33 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 22.2 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.25
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 710 rpm	Design	: B

Locked rotor time : 59s (cold) 33s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage

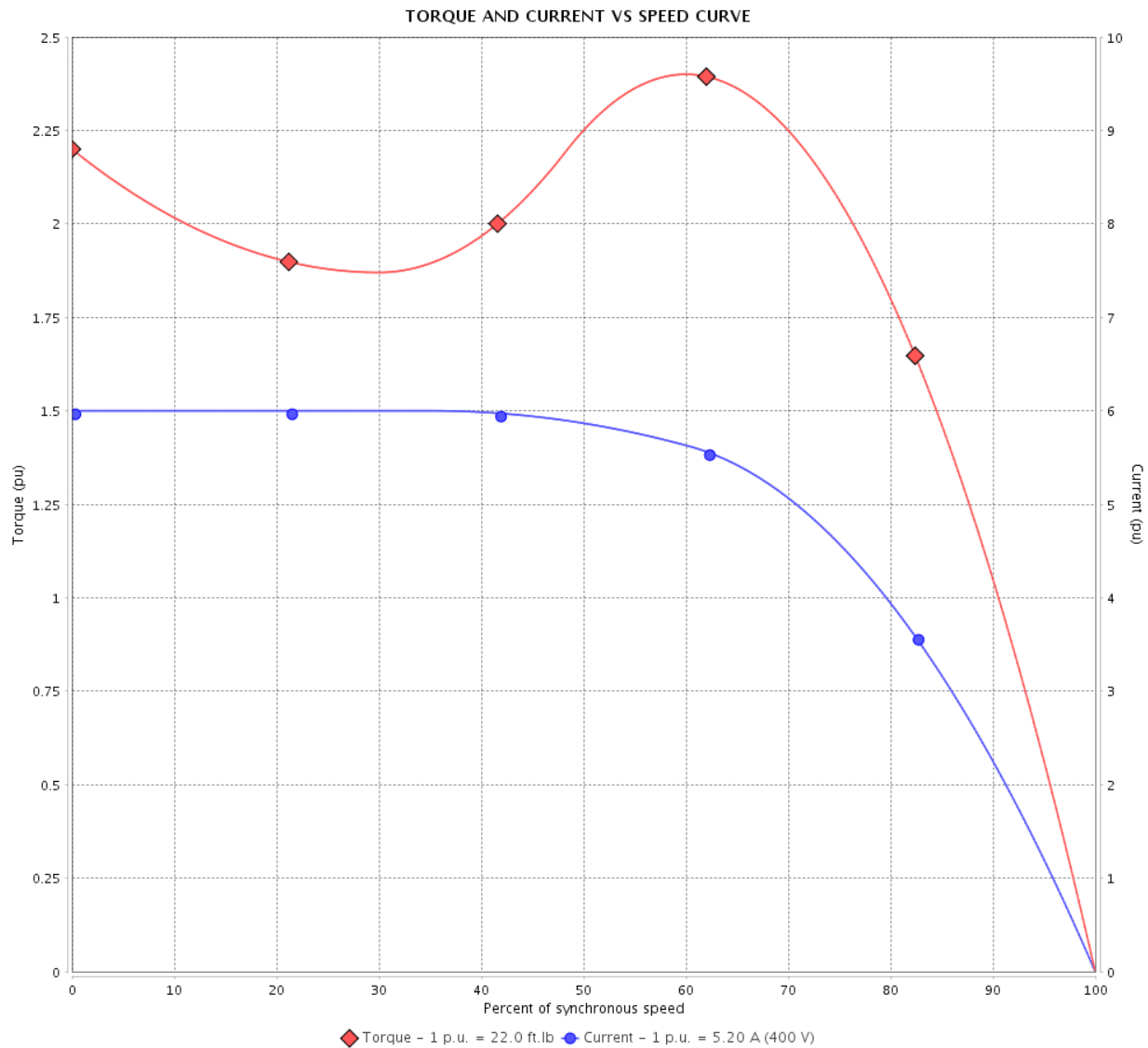


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 400 V 50 Hz 8P IE3

Rated current	: 5.20 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 22.0 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

Locked rotor time : 59s (cold) 33s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



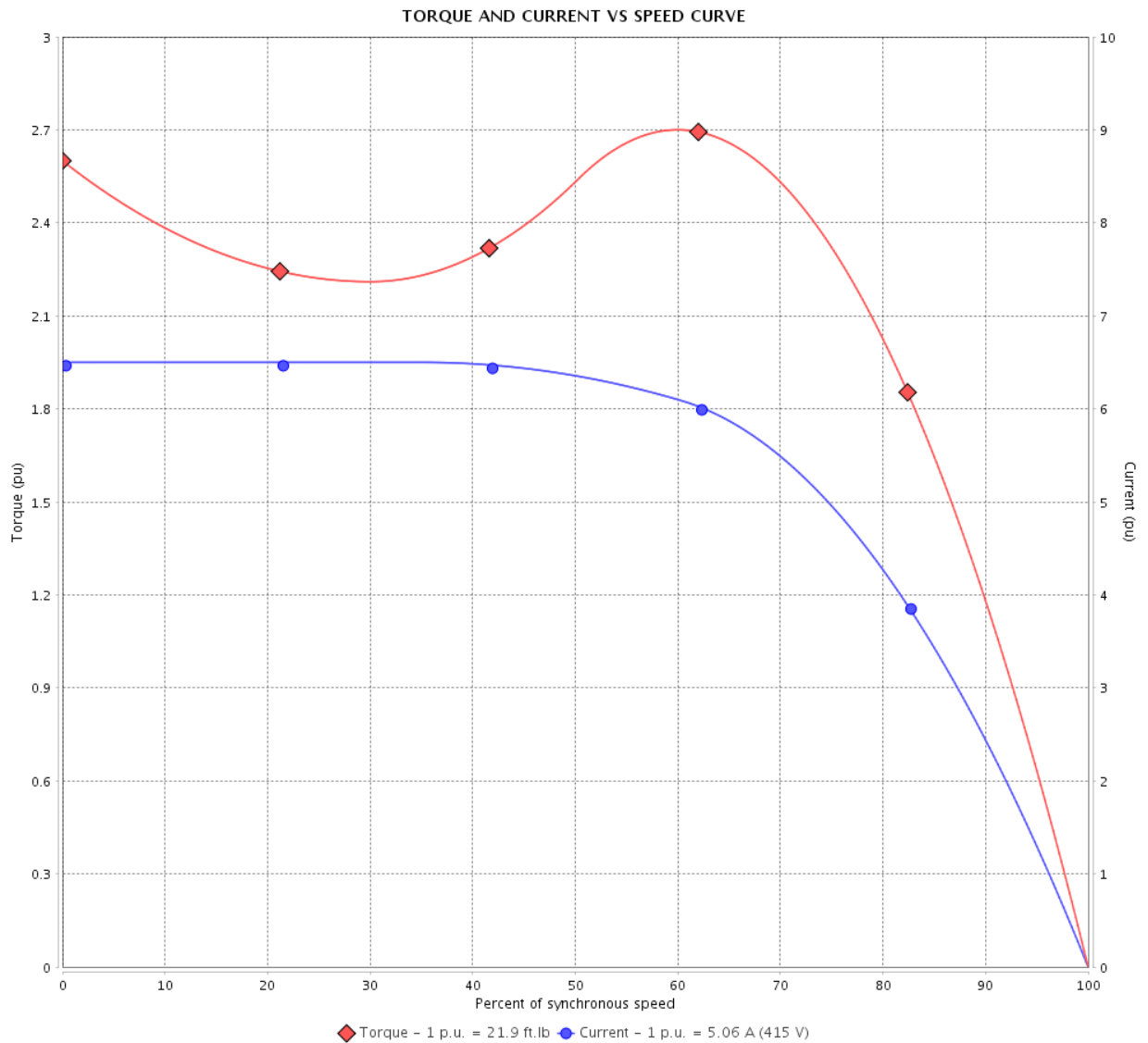
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 415 V 50 Hz 8P IE3

Rated current	: 5.06 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 21.9 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.25
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Locked rotor time : 59s (cold) 33s (hot)

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



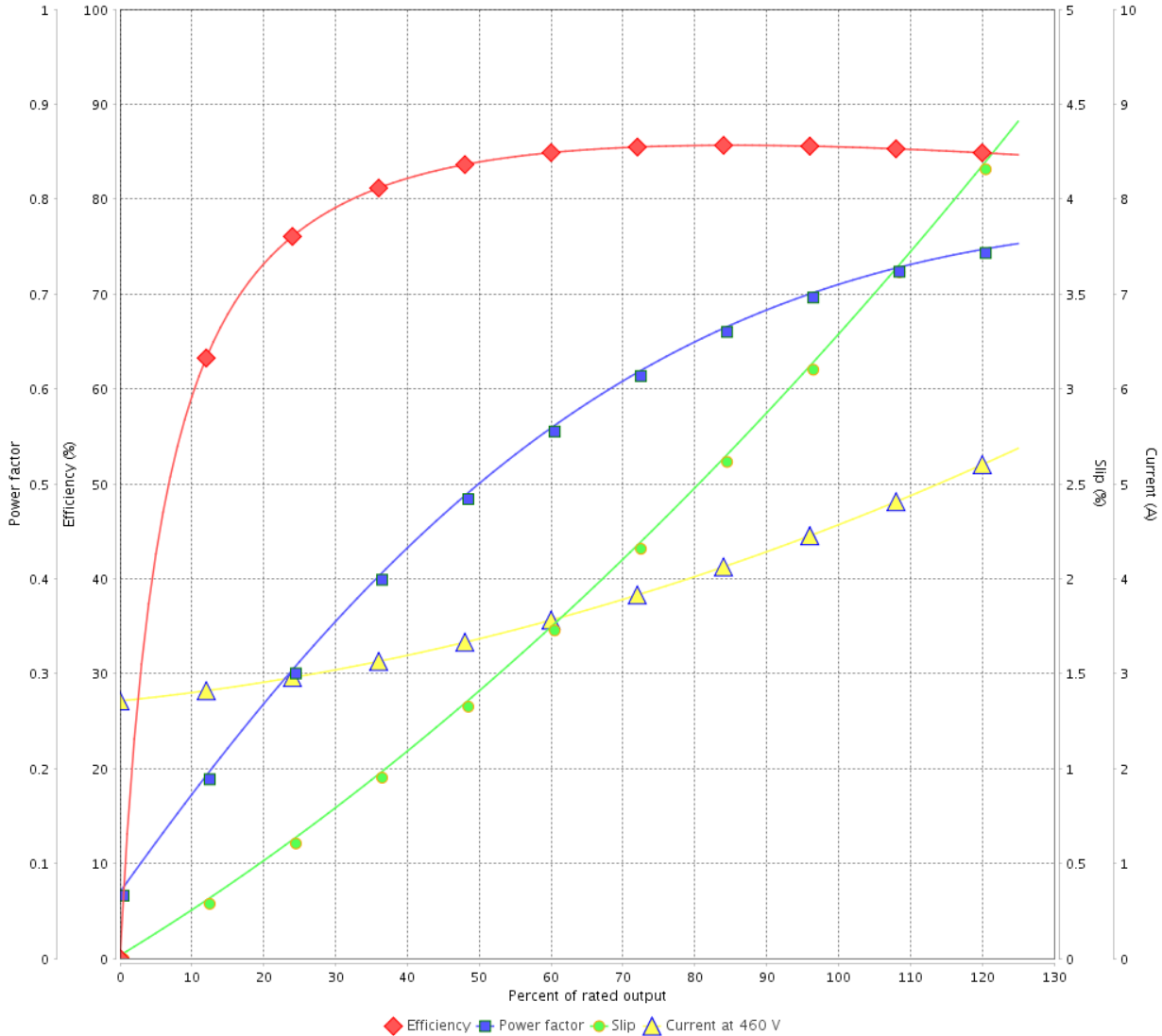
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22

LOAD PERFORMANCE CURVE



Performance : 460 V 60 Hz 8P

Rated current	: 4.55 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 18.1 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 275 %	Temperature rise	: 80 K
Rated speed	: 870 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

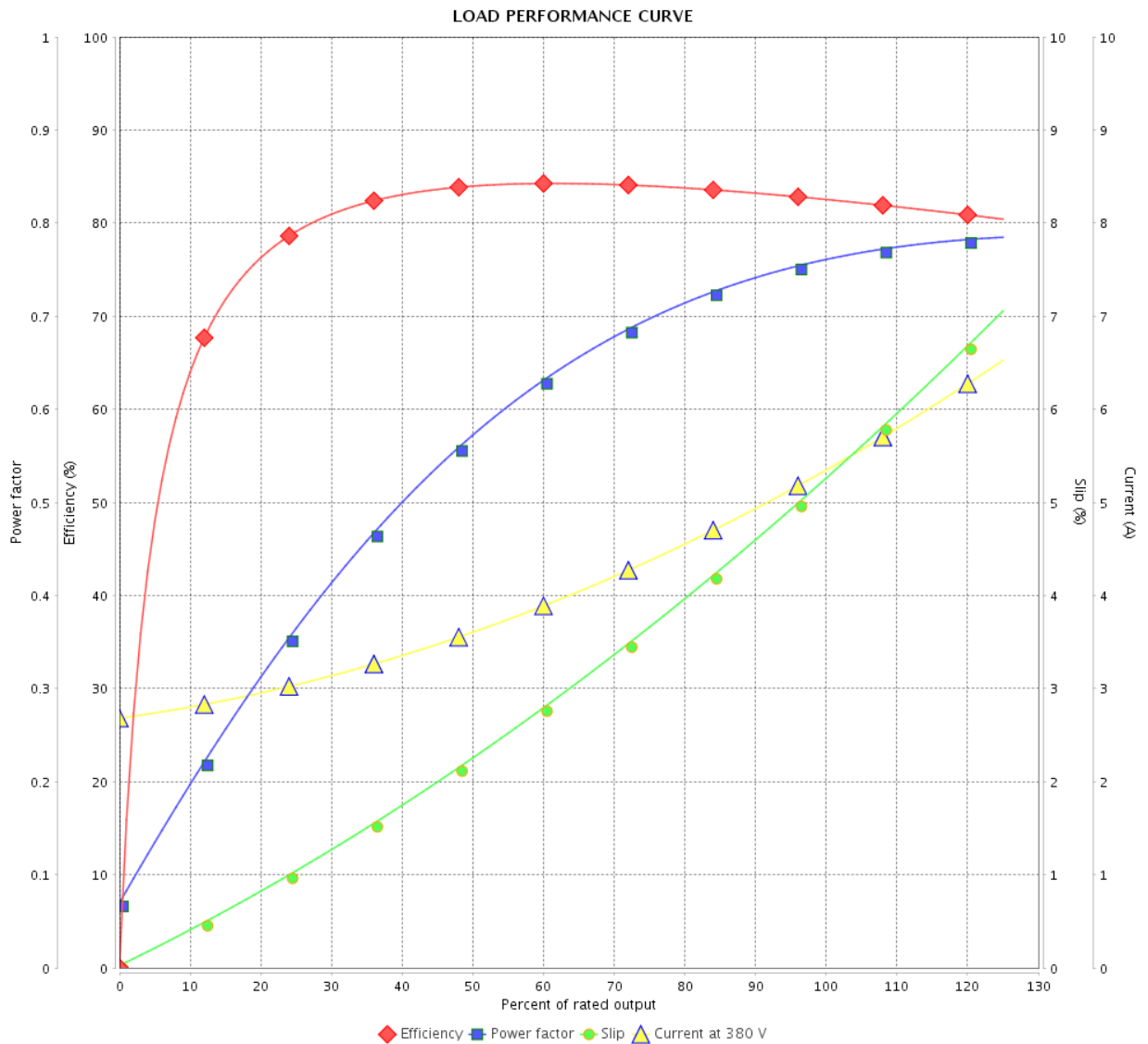


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 5.33 A  
 LRC : 5.3  
 Rated torque : 22.2 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 200 %  
 Rated speed : 710 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



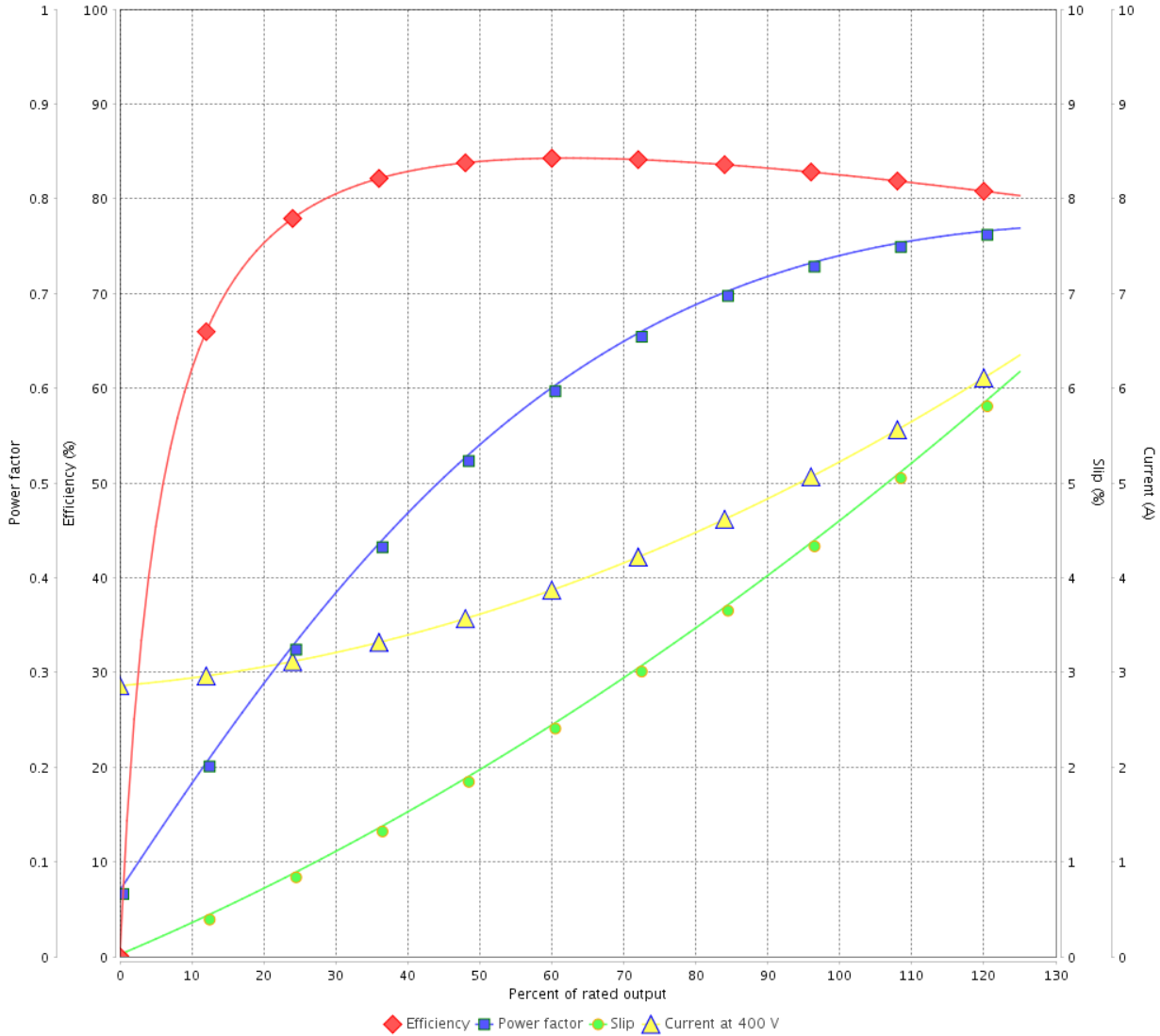
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current : 5.20 A  
 LRC : 6.0  
 Rated torque : 22.0 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 240 %  
 Rated speed : 715 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

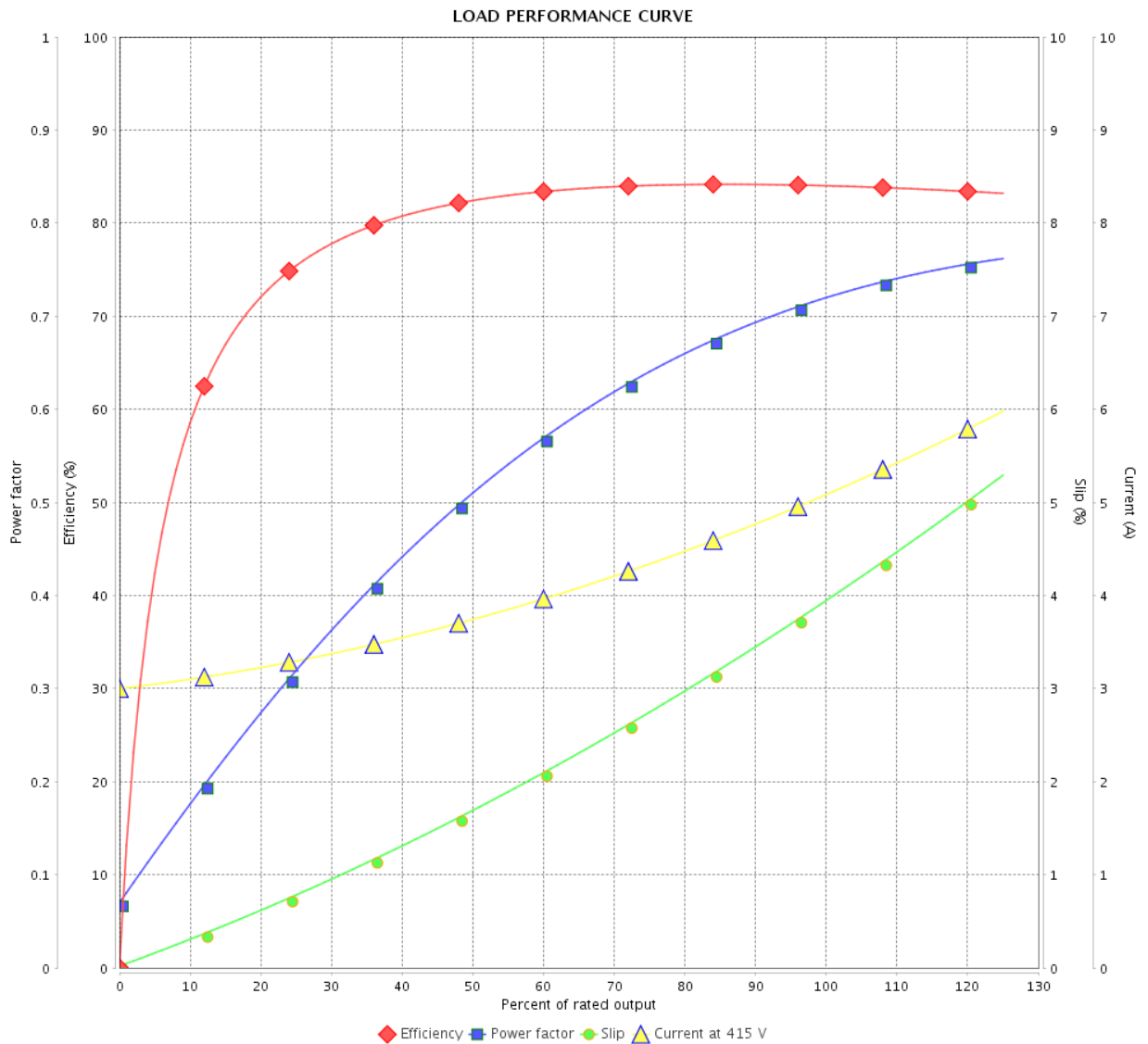


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 5.06 A  
 LRC : 6.5  
 Rated torque : 21.9 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 270 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

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Product code : 14022422  
Catalog # : 00309ST3QIE215TC-W22

Performance : 460 V 60 Hz 8P

Rated current	: 4.55 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 18.1 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 275 %	Temperature rise	: 80 K
Rated speed	: 870 rpm	Design	: B

Heating constant

Cooling constant

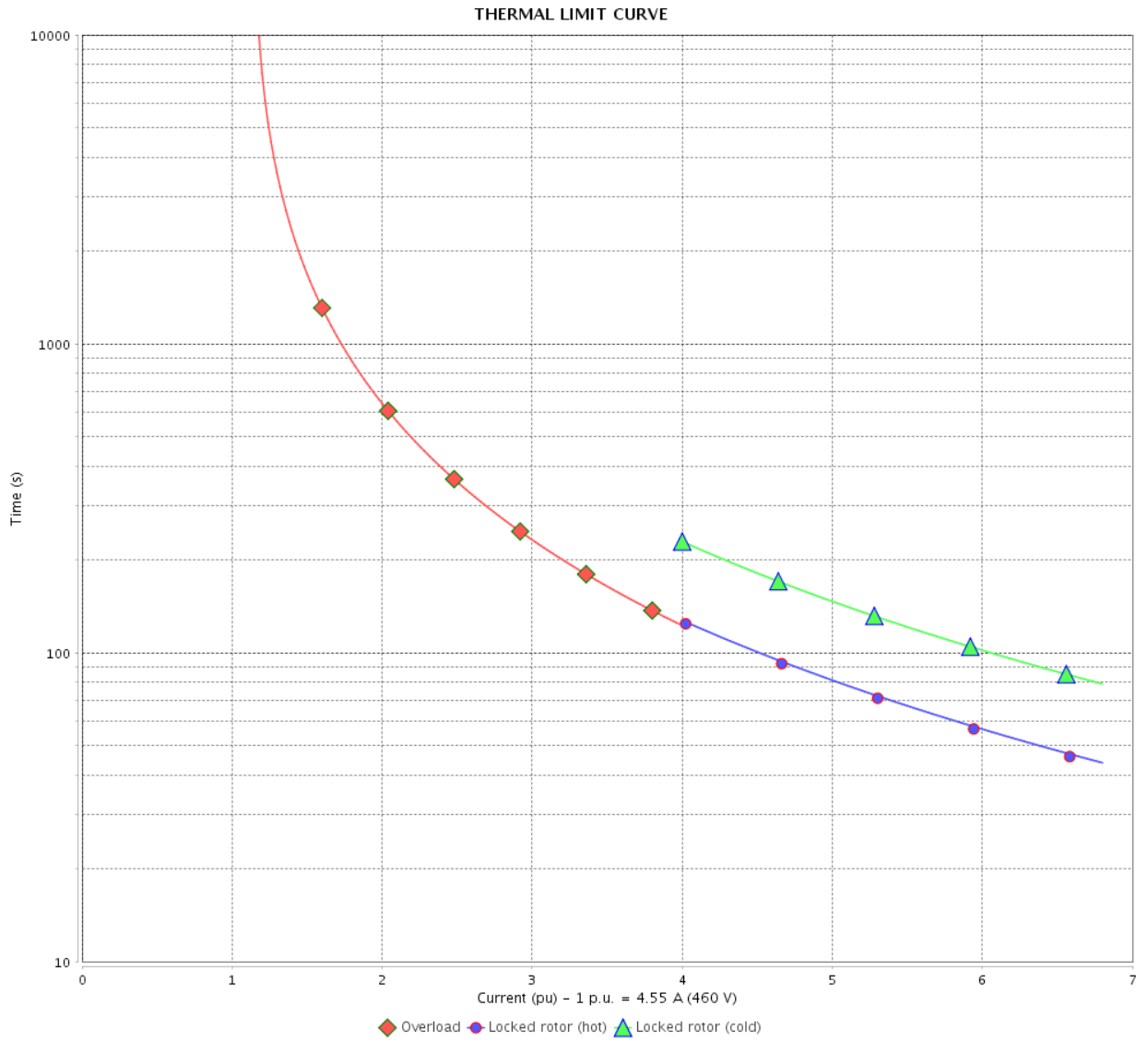
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date		13/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22

Performance : 380 V 50 Hz 8P IE3

Rated current	: 5.33 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 22.2 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.25
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 710 rpm	Design	: B

Heating constant

Cooling constant

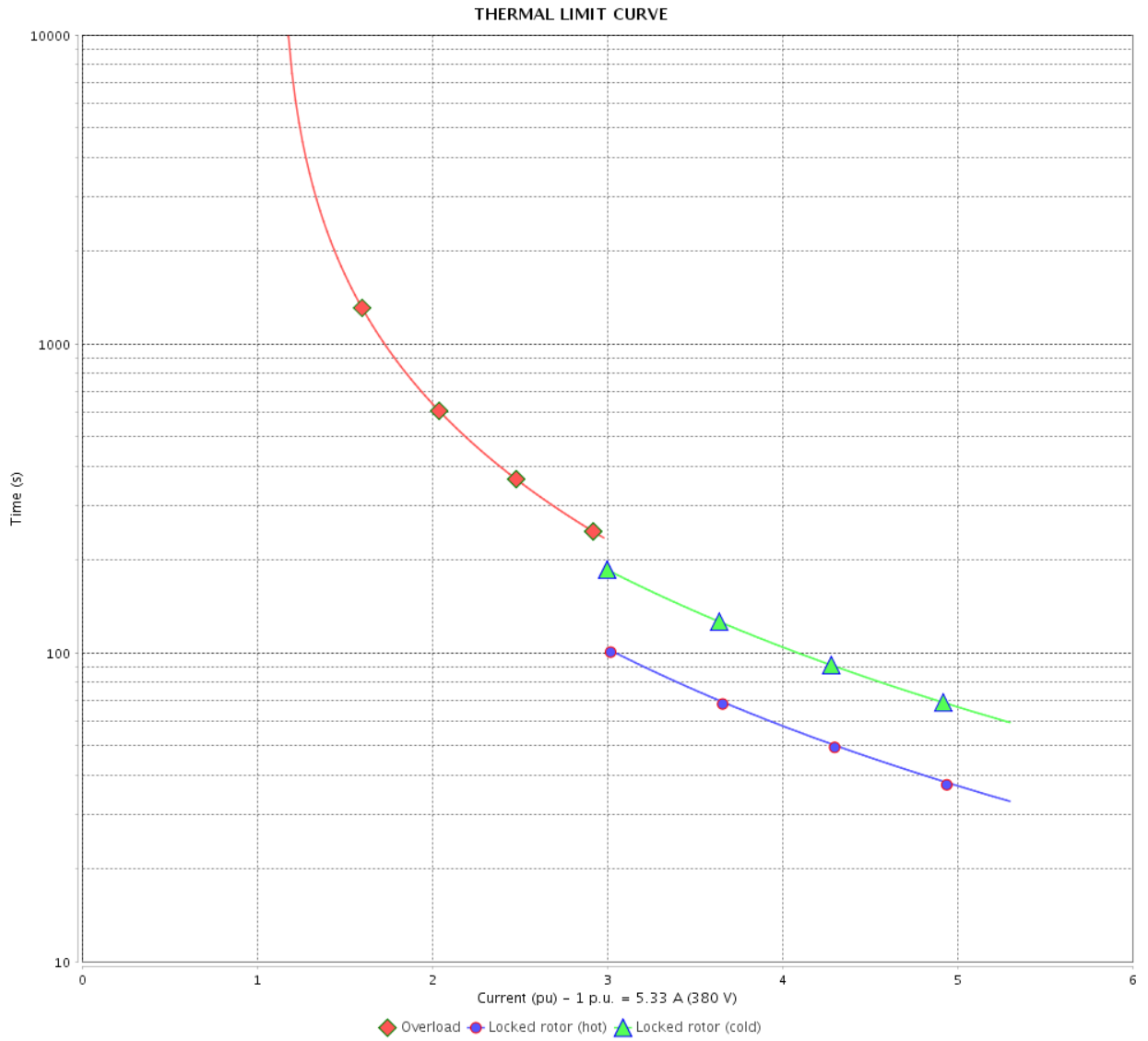
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Performed by				
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Checked by		13 / 21		
Date		13/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14022422  
Catalog # : 00309ST3QIE215TC-W22

Performance : 400 V 50 Hz 8P IE3

Rated current	: 5.20 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 22.0 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

Heating constant

Cooling constant

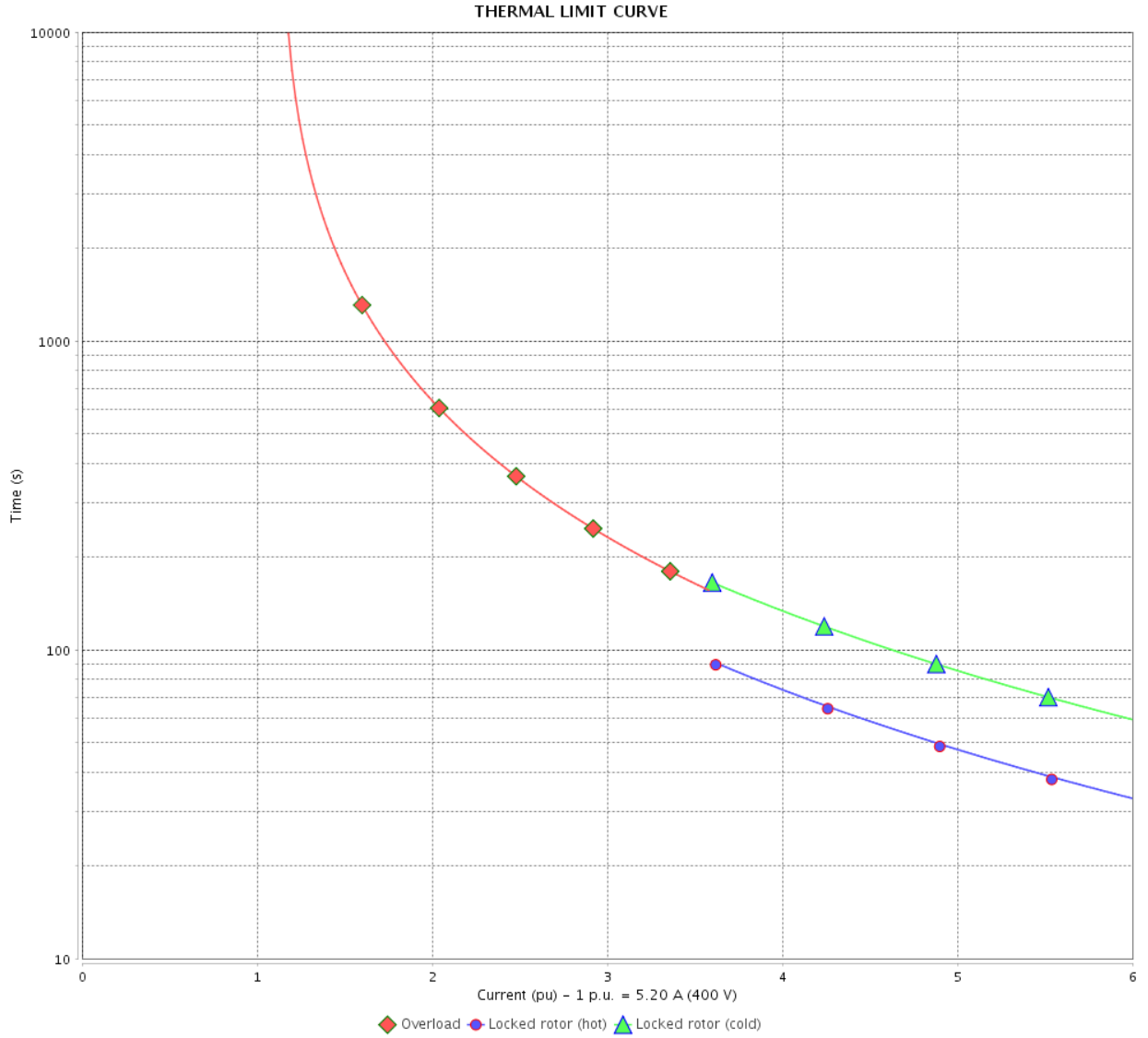
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Performed by				
Checked by			Page	Revision
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date		13/04/2022		

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14022422  
Catalog # : 00309ST3QIE215TC-W22

Performance : 415 V 50 Hz 8P IE3

Rated current	: 5.06 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 21.9 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.25
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Heating constant

Cooling constant

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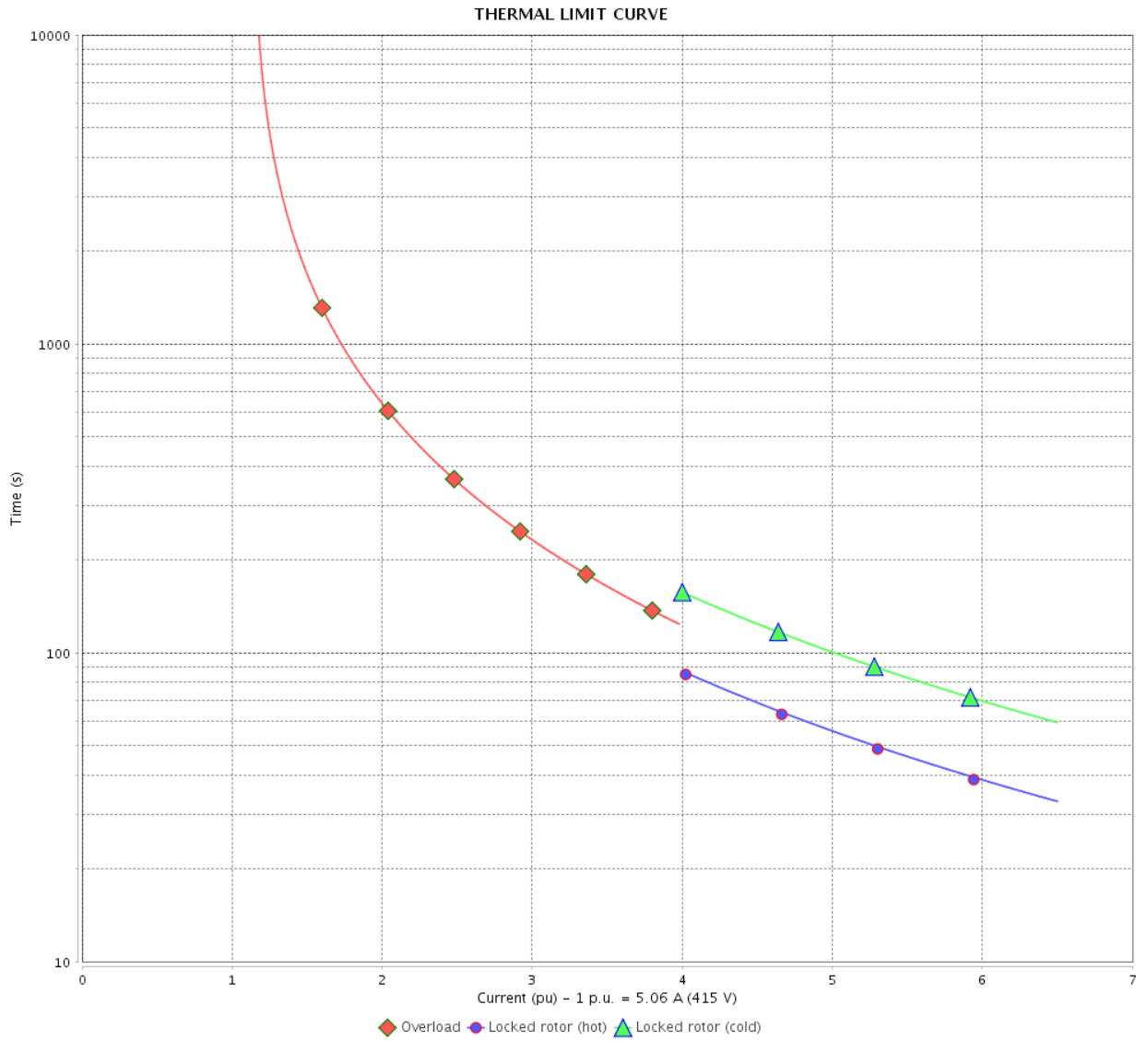


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
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Date				

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

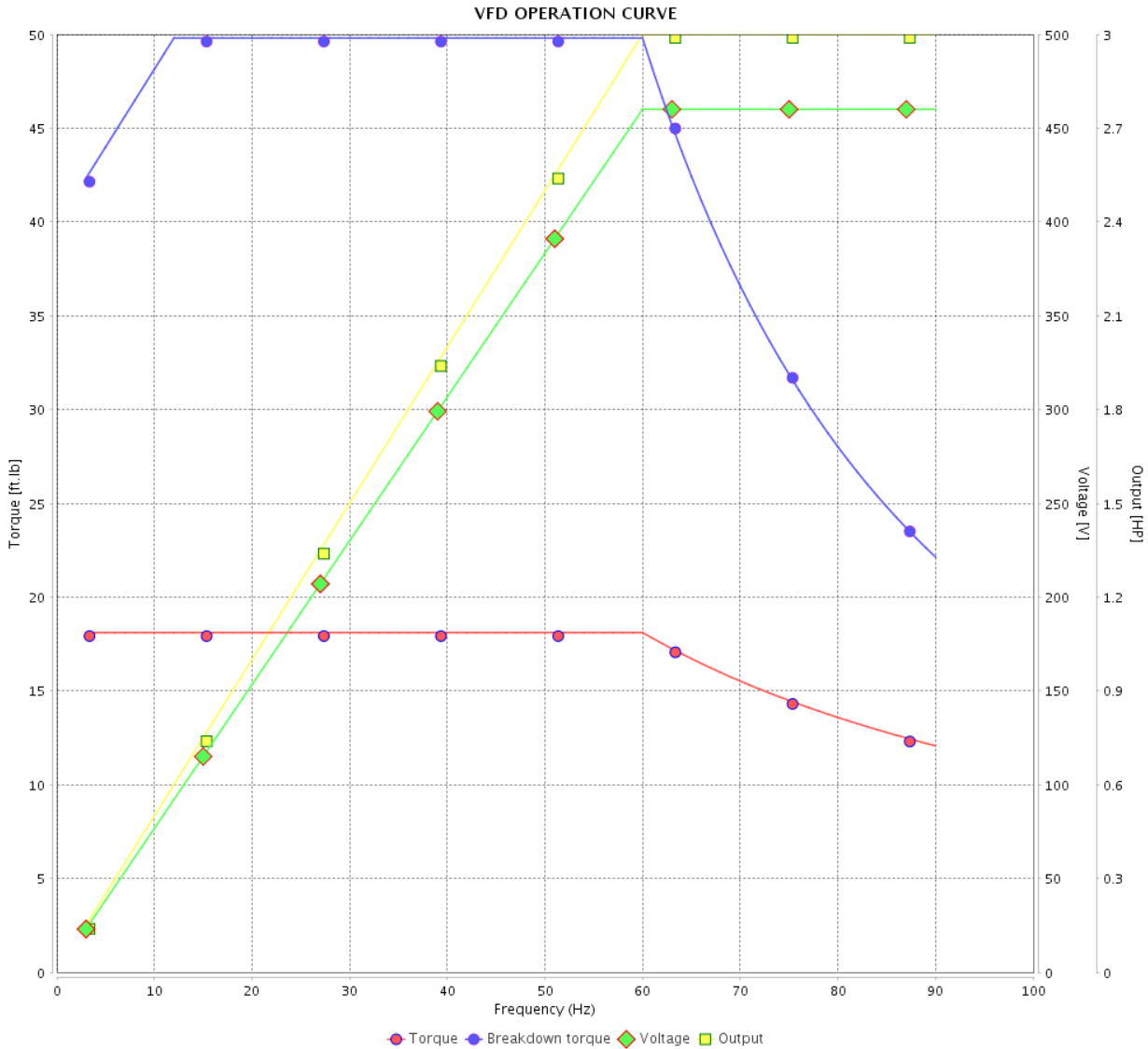


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 460 V 60 Hz 8P

Rated current : 4.55 A  
 LRC : 6.8  
 Rated torque : 18.1 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 275 %  
 Rated speed : 870 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 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				

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

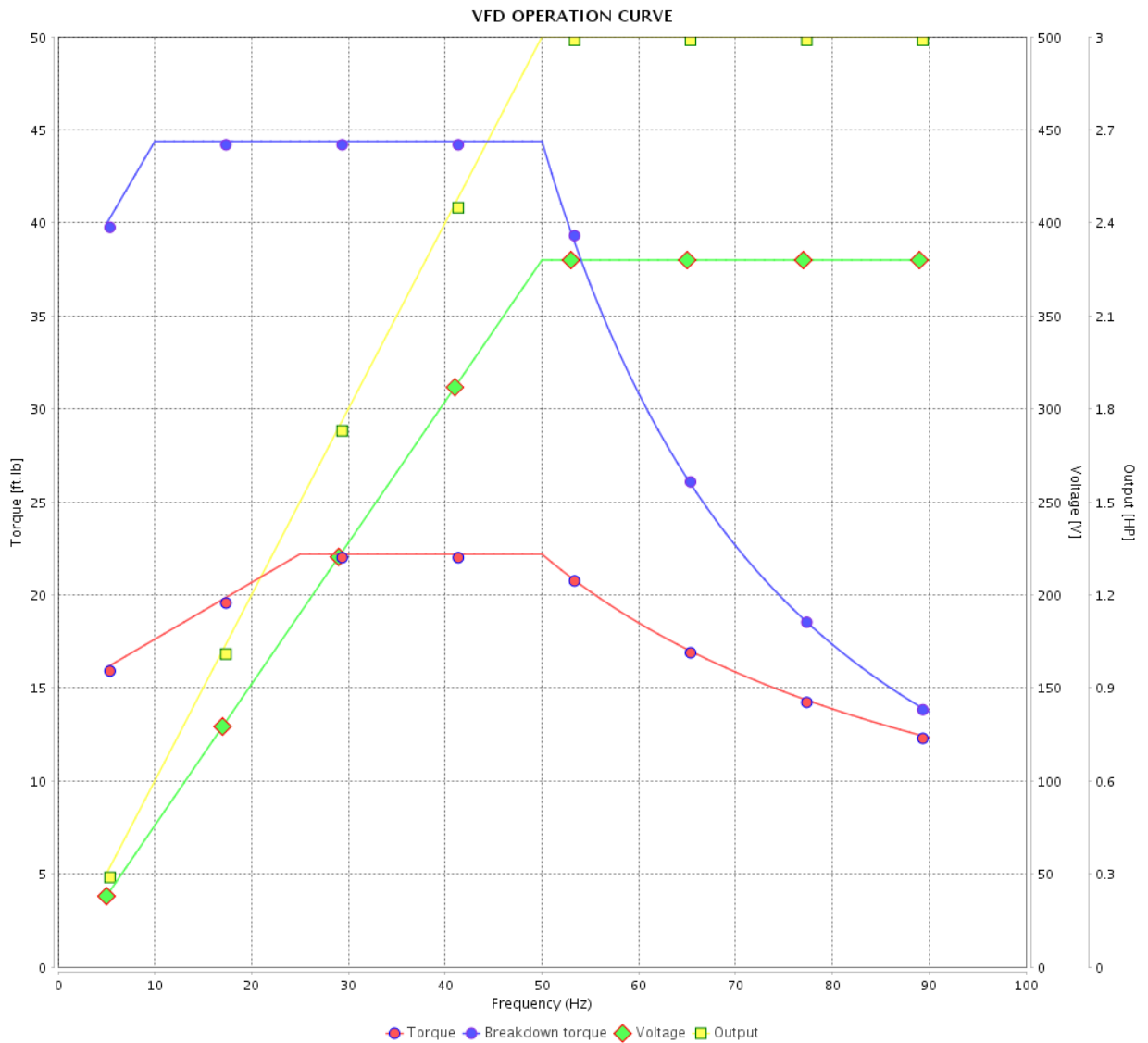


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Performance : 380 V 50 Hz 8P IE3

Rated current : 5.33 A  
 LRC : 5.3  
 Rated torque : 22.2 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 200 %  
 Rated speed : 710 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

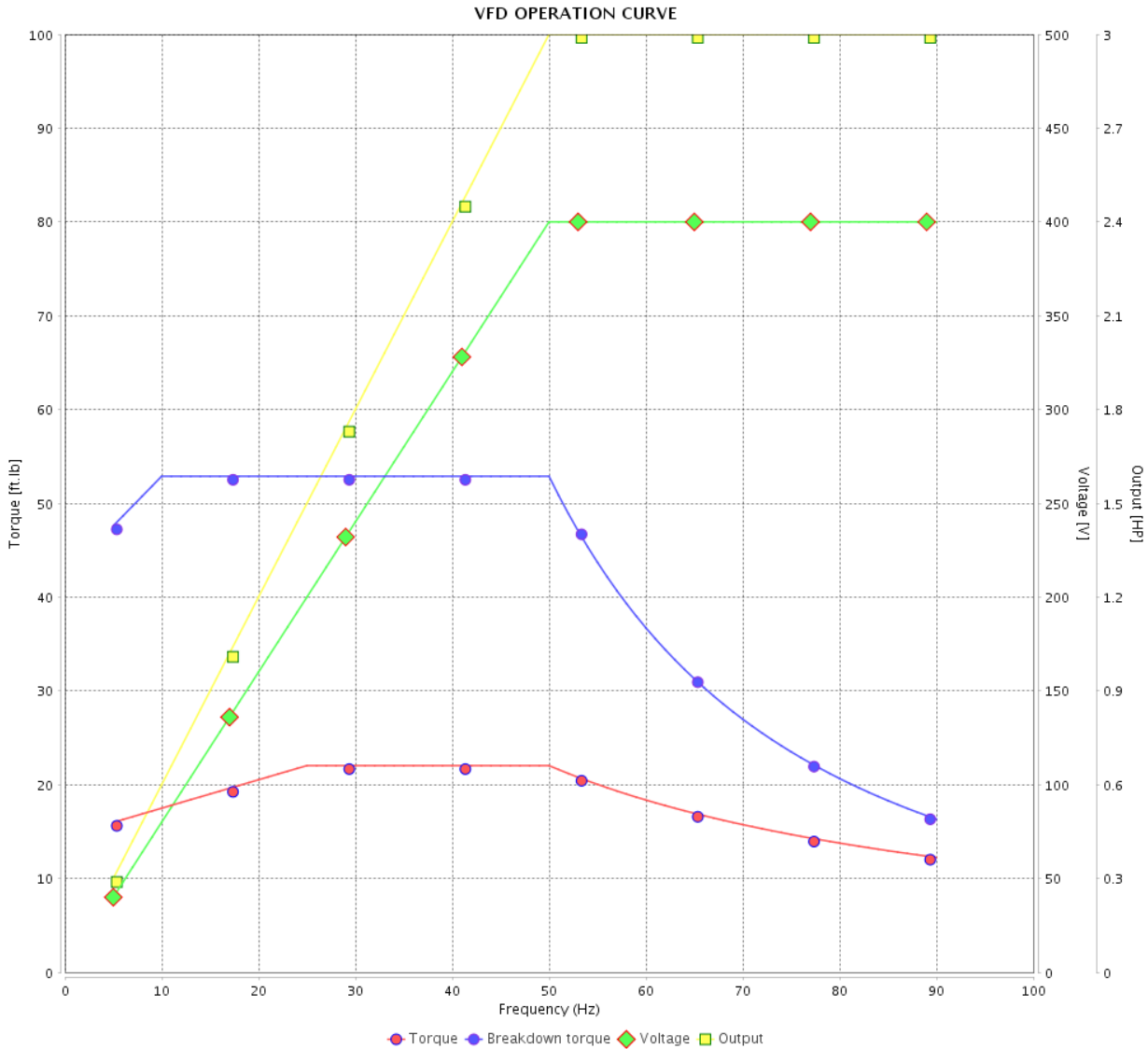


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 400 V 50 Hz 8P IE3

Rated current	: 5.20 A	Moment of inertia (J)	: 2.11 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 22.0 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

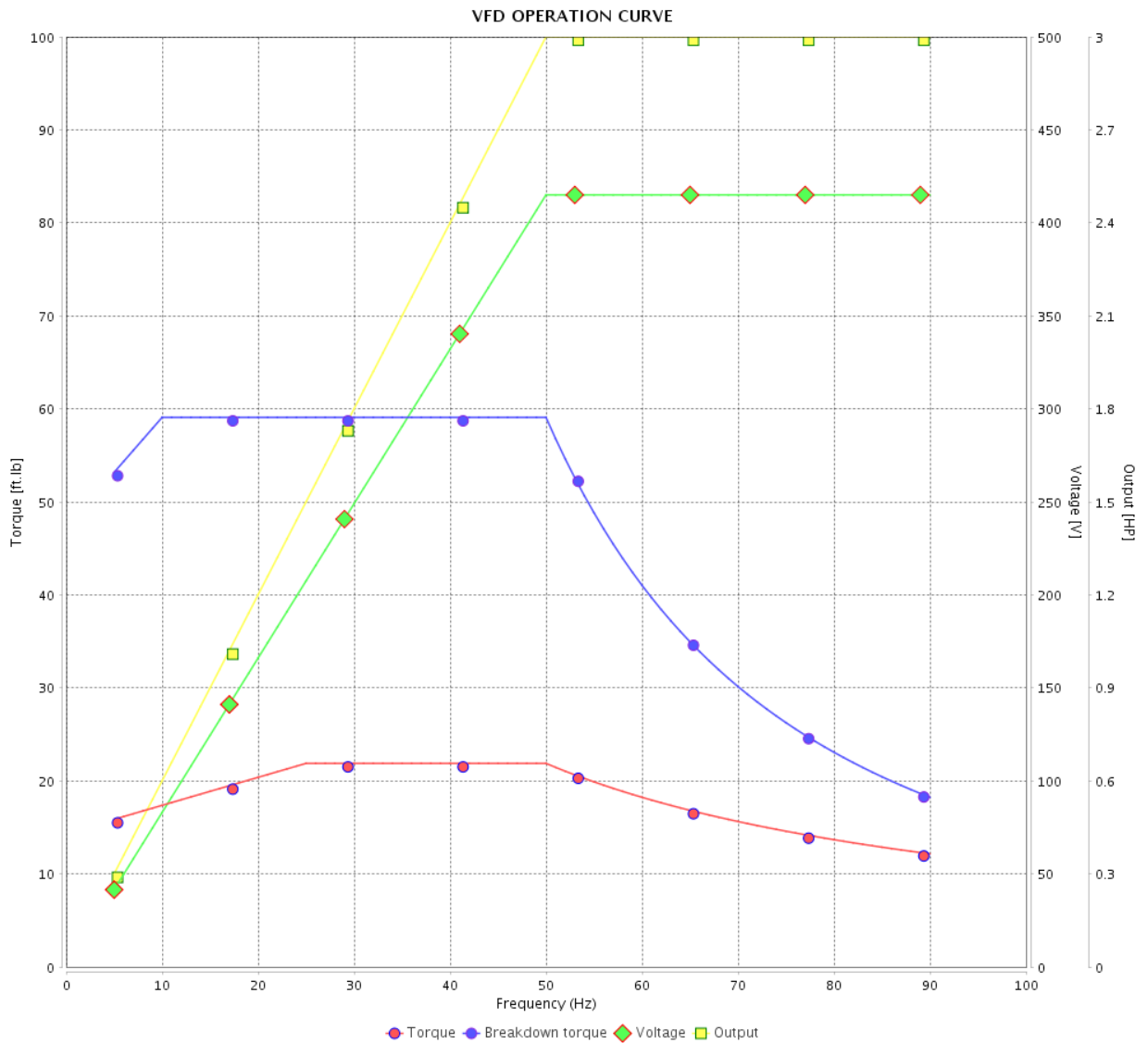


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14022422

Catalog # : 00309ST3QIE215TC-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 5.06 A  
 LRC : 6.5  
 Rated torque : 21.9 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 270 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 2.11 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

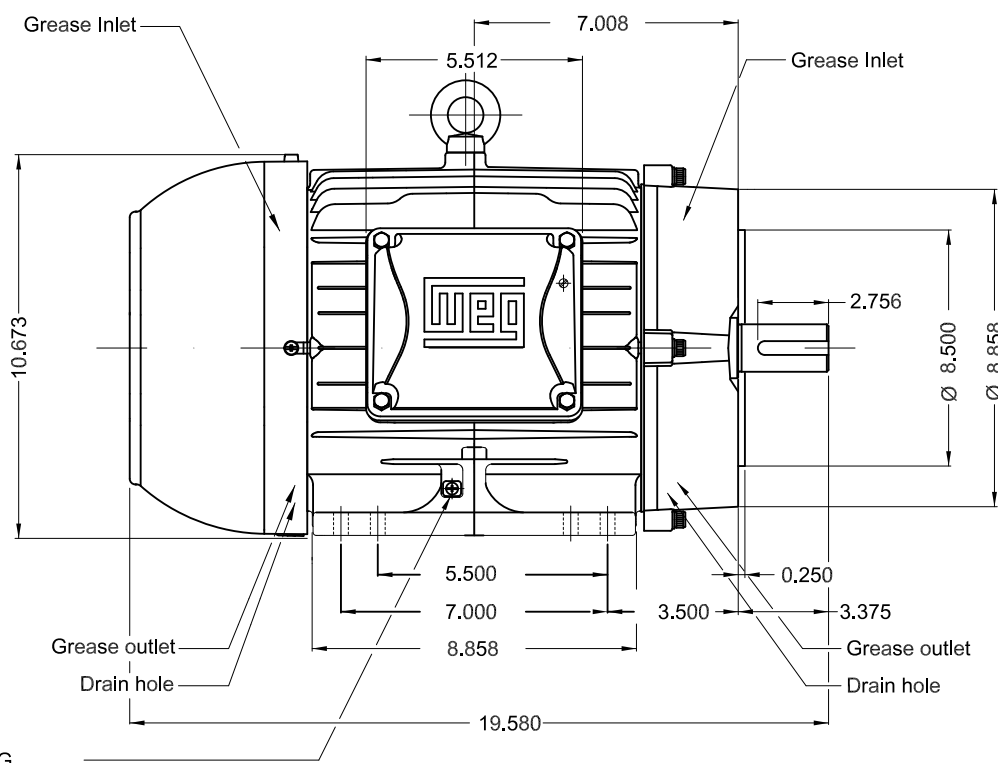
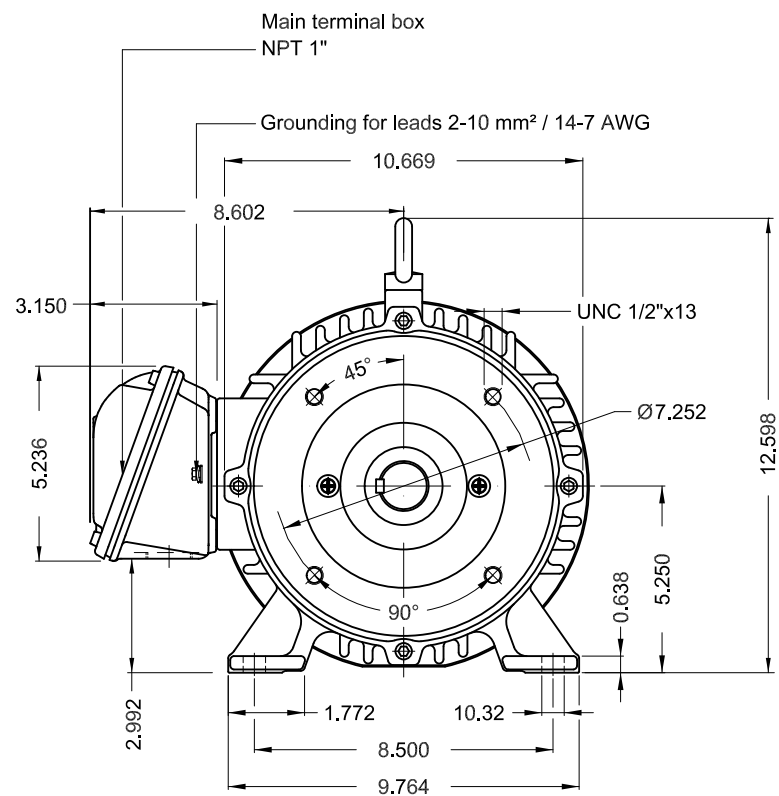
Rev.	Changes Summary	Performed	Checked	Date
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1 2 3 4 5 6

A

B

C

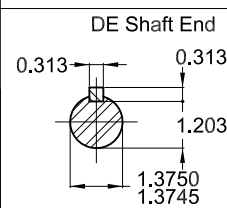


Grounding for leads 2-10 mm² / 14-7 AWG

D

E

Color RAL 5009  
 Painting plan 202E  
 Mounting NEMA F-1  
 Mounting B34R(D)



3 HP 08 Poles 60 Hz

A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 213/5TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW  
 WDD



Dimensions in inches

XME A3

MADE IN BRAZIL  
14022422



**NEMA**  
Premium



Class I, Div 2, Gr A, B, C and D - T3  
Class I, Zone 2, IIC - T3  
Class II, Div 2, Gr F and G - T4  
For use on PWM: Gr. A, B, C, D and F,  
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 00309ST3QIE215TC-W22

Inverter Duty Motor  
Severe Duty

**IEEE**  
841-2009



FOR SAFE AREA  
Mod. TE1BFOXON  
CC029A

PH3 60Hz Fr. 213/5TC 1000m.a.s.l. IP55 TEFC 2011b

V 460

A 4.55

HP 3.0

kW 2.2

SF 1.25

SFA 5.69

RPM 870

PF 0.71

AMB 40°C

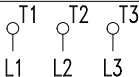
INS cl. F DT80K

NEMA NOM EFF 85.5%

DUTY CONT.

DES B Code K

GUARANT. EFF 82.5%



460V



→ 6308-C3 (11g) 40BC03X30

→ 6207-C3 (7g) 35BC02X30

MOBIL POLYREX EM (20000h)

