

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12445719		
		Catalog # :	00209ET3E213T-W22		
Frame	: 213/5T	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>	: 166 lb		
Protection degree	: IP55	Moment of inertia (J)	: 1.79 sq.ft.lb		
Design	: B				
Output [HP]	2	2	2	2	
Poles	8	8	8	8	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	6.78/3.39	3.91	3.80	3.78	
L. R. Amperes [A]	51.5/25.7	29.7	28.9	28.7	
LRC [A]	7.6x(Code M)	7.6x(Code L)	7.6x(Code M)	7.6x(Code M)	
No load current [A]	4.60/2.30	2.30	2.42	2.54	
Rated speed [RPM]	875	715	720	720	
Slip [%]	2.78	4.67	4.00	4.00	
Rated torque [ft.lb]	12.0	14.7	14.6	14.6	
Locked rotor torque [%]	240	190	229	270	
Breakdown torque [%]	290	210	250	280	
Service factor	1.25	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	70s (cold) 39s (hot)	70s (cold) 39s (hot)	70s (cold) 39s (hot)	70s (cold) 39s (hot)	
Noise level <sup>2</sup>	52.0 dB(A)	48.0 dB(A)	48.0 dB(A)	48.0 dB(A)	
Efficiency (%)	25%				
	50%	82.5	81.5	81.5	
	75%	84.0	82.0	82.5	
	100%	85.5	82.0	82.5	
Power Factor	25%				
	50%	0.45	0.52	0.49	
	75%	0.55	0.62	0.59	
	100%	0.65	0.71	0.69	
Bearing type	: <u>Drive end</u> 6308 ZZ <u>Non drive end</u> 6207 ZZ	Foundation loads			
Sealing	: V'Ring V'Ring	Max. traction	: 147 lb		
Lubrication interval	: - -	Max. compression	: 313 lb		
Lubricant amount	: - -				
Lubricant type	: Mobil Polyrex EM				
Notes USABLE @208V 7.49A SF 1.15 SFA 8.62A					
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



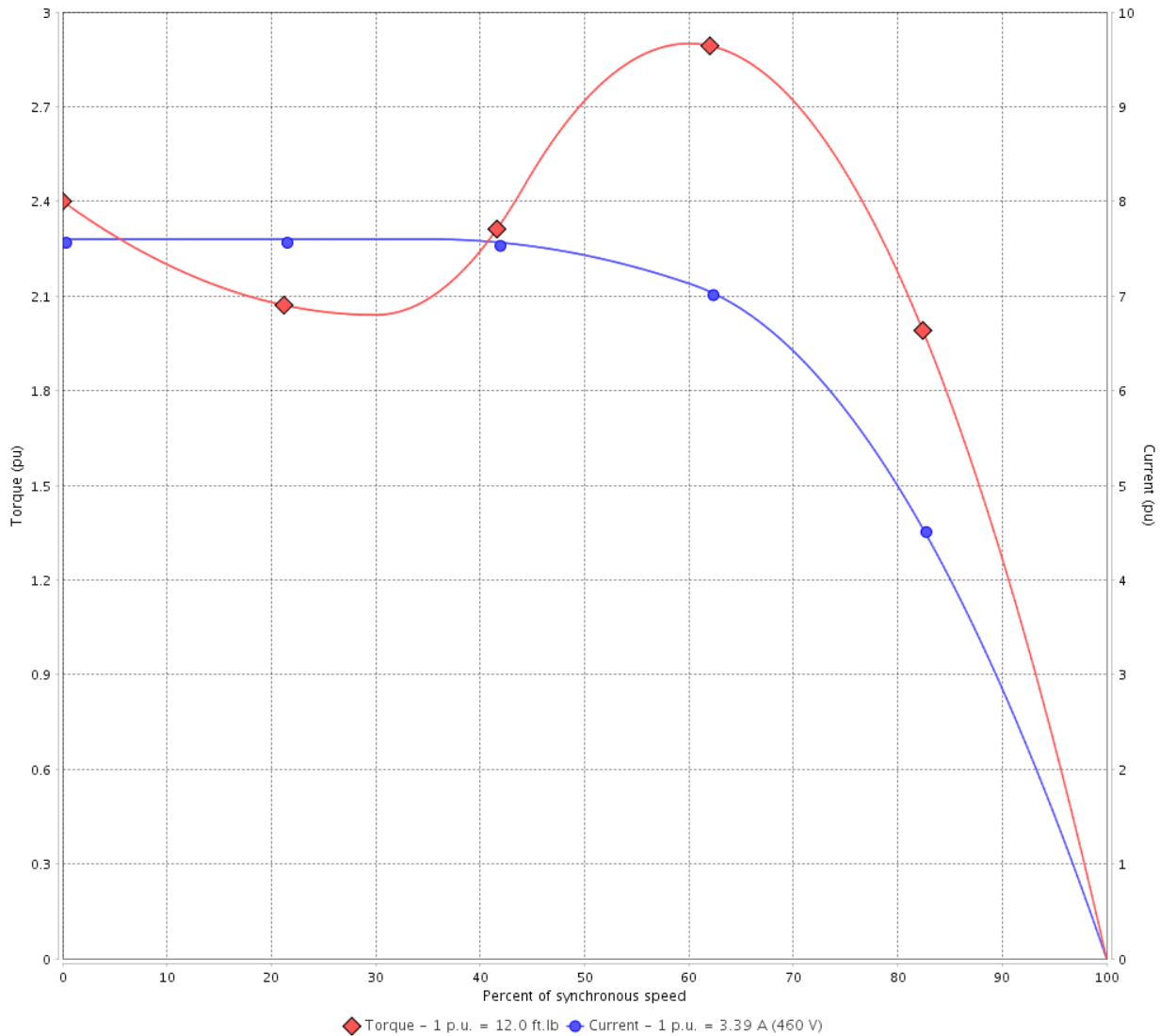
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 8P

Rated current	: 6.78/3.39 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 12.0 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.25
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 875 rpm	Design	: B

Locked rotor time : 70s (cold) 39s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



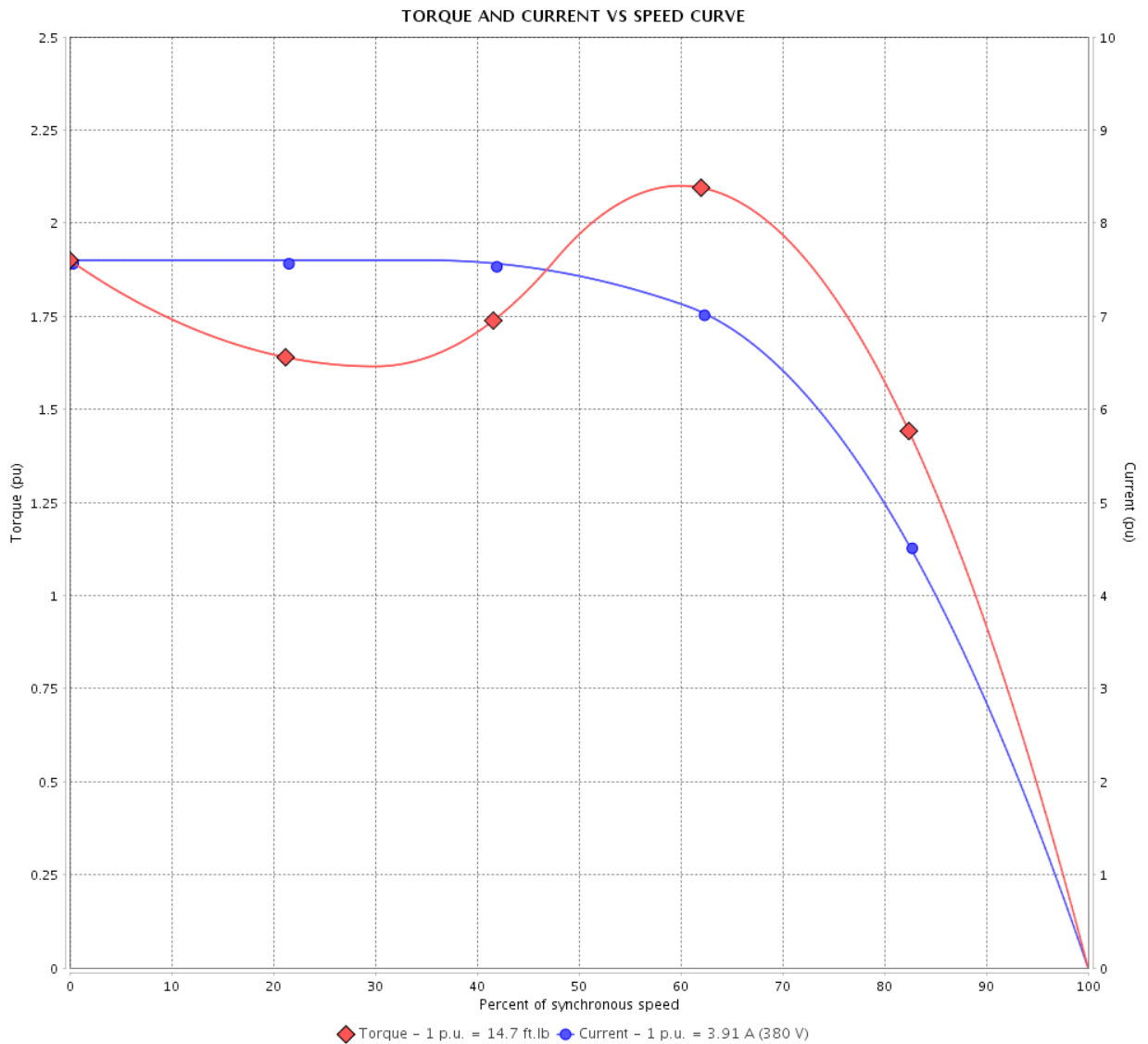
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 3.91 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.7 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

Locked rotor time : 70s (cold) 39s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



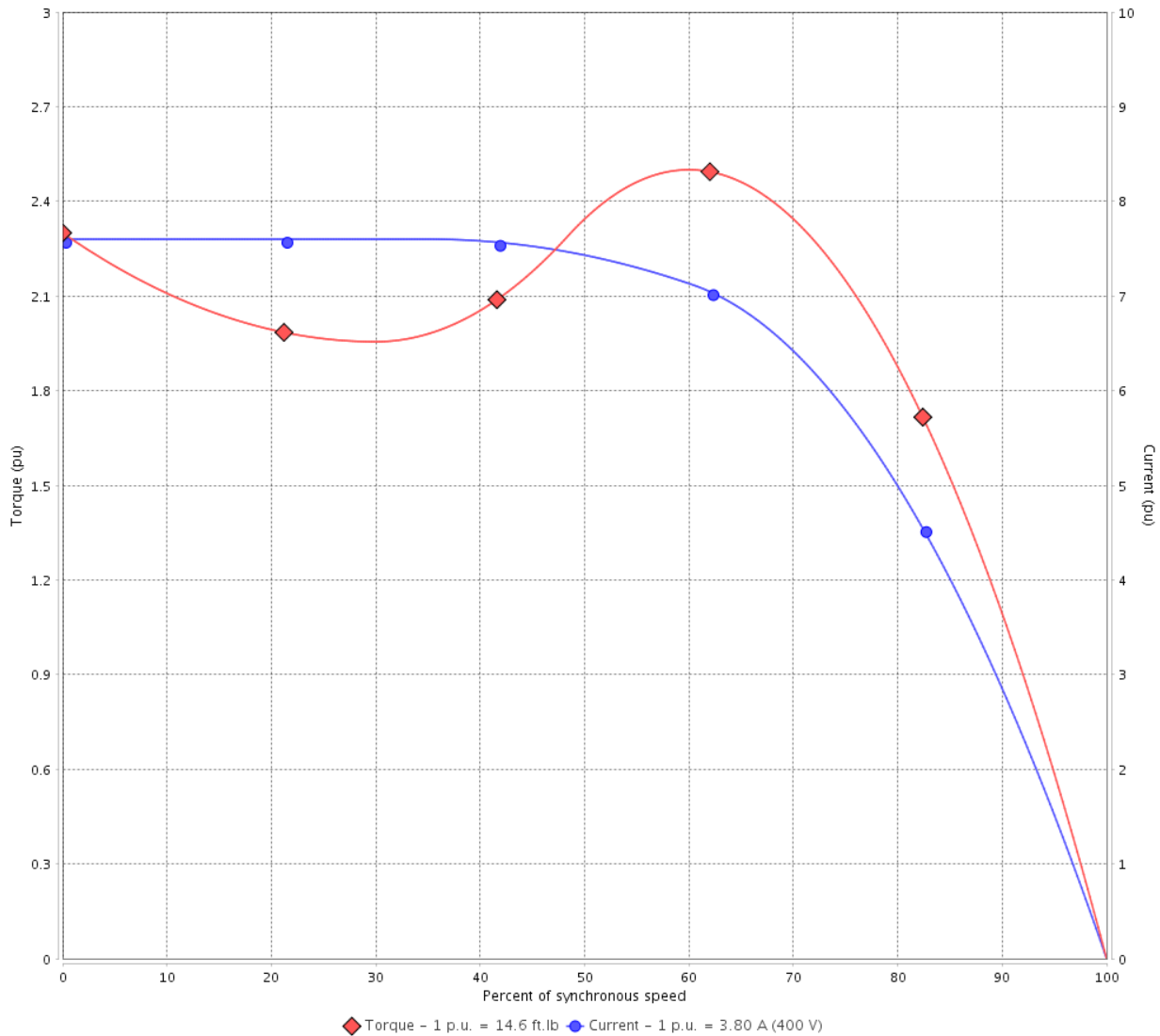
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 3.80 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.6 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Locked rotor time : 70s (cold) 39s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



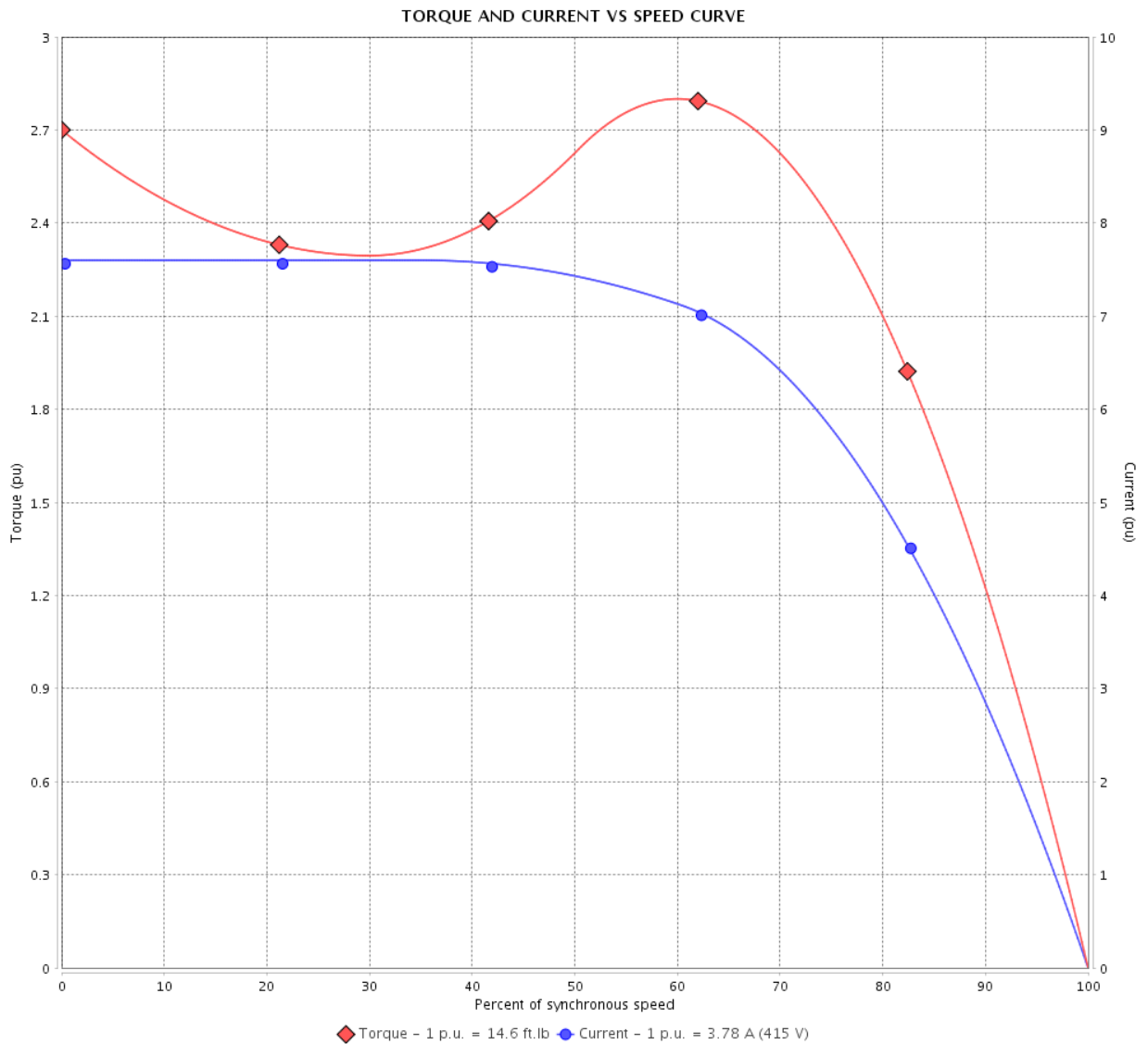
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current	: 3.78 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.6 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Locked rotor time : 70s (cold) 39s (hot)

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

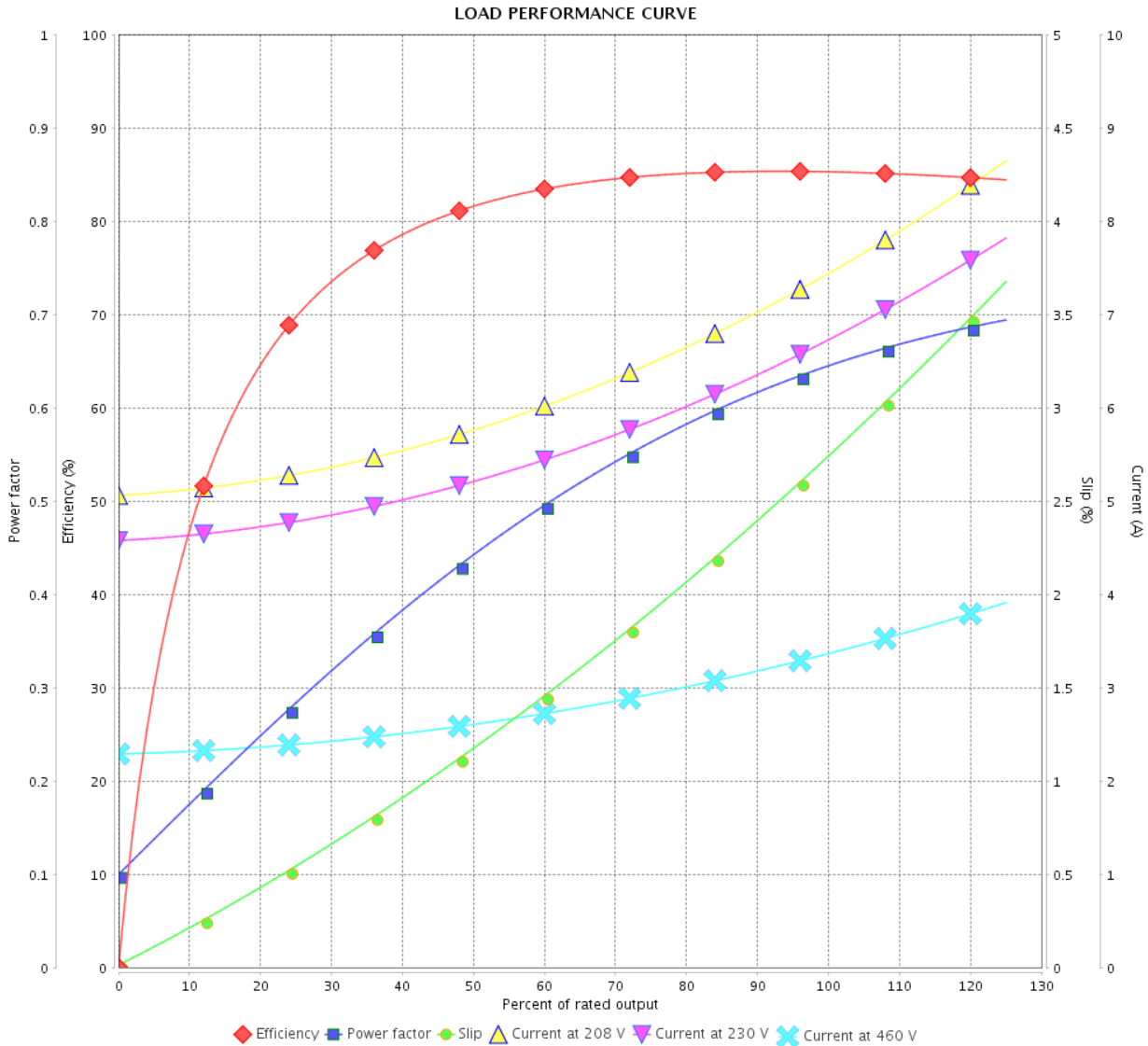


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22



Performance : 230/460 V 60 Hz 8P

Rated current : 6.78/3.39 A  
 LRC : 7.6  
 Rated torque : 12.0 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 290 %  
 Rated speed : 875 rpm

Moment of inertia (J) : 1.79 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

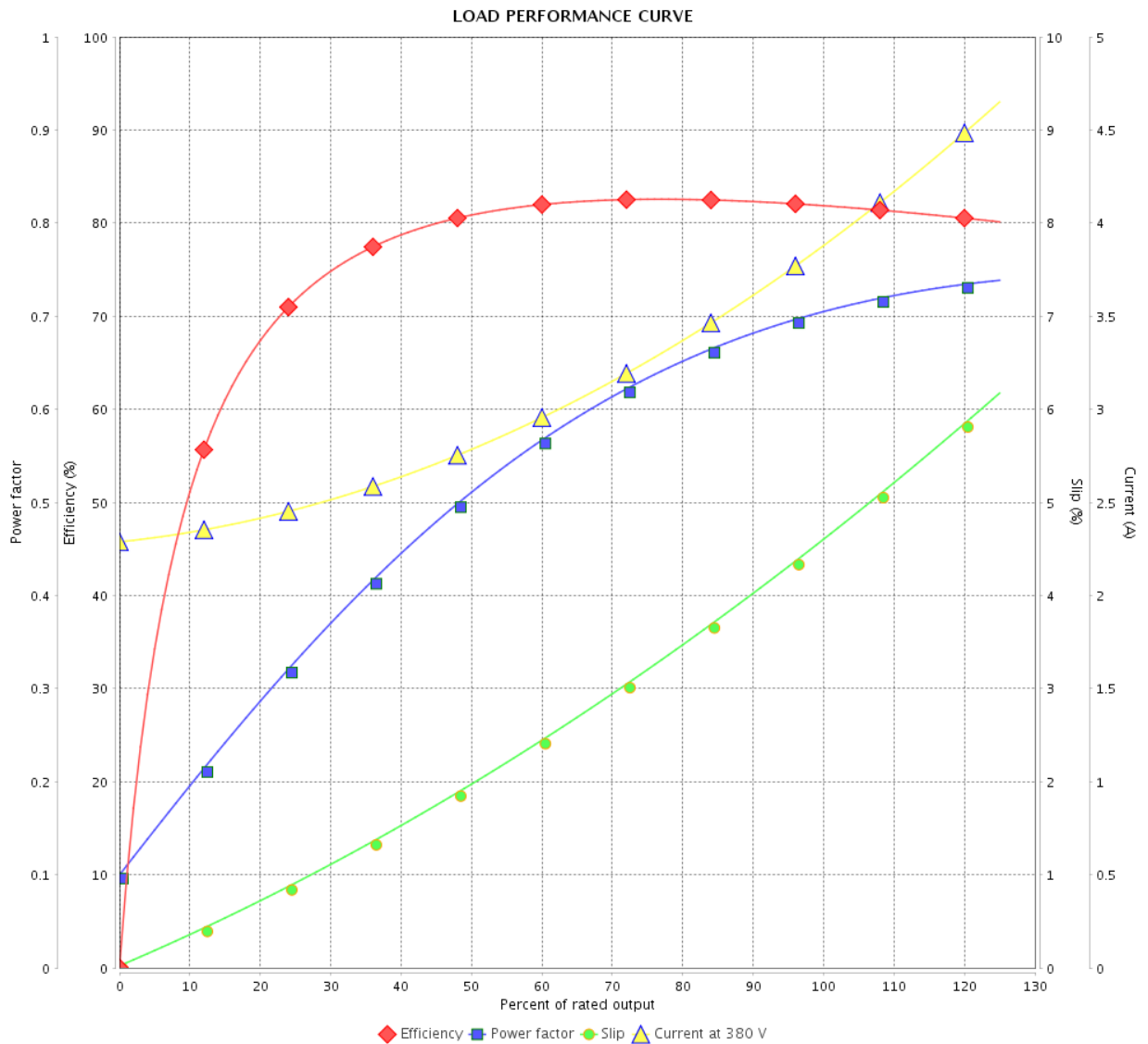


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 3.91 A  
 LRC : 7.6  
 Rated torque : 14.7 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 210 %  
 Rated speed : 715 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



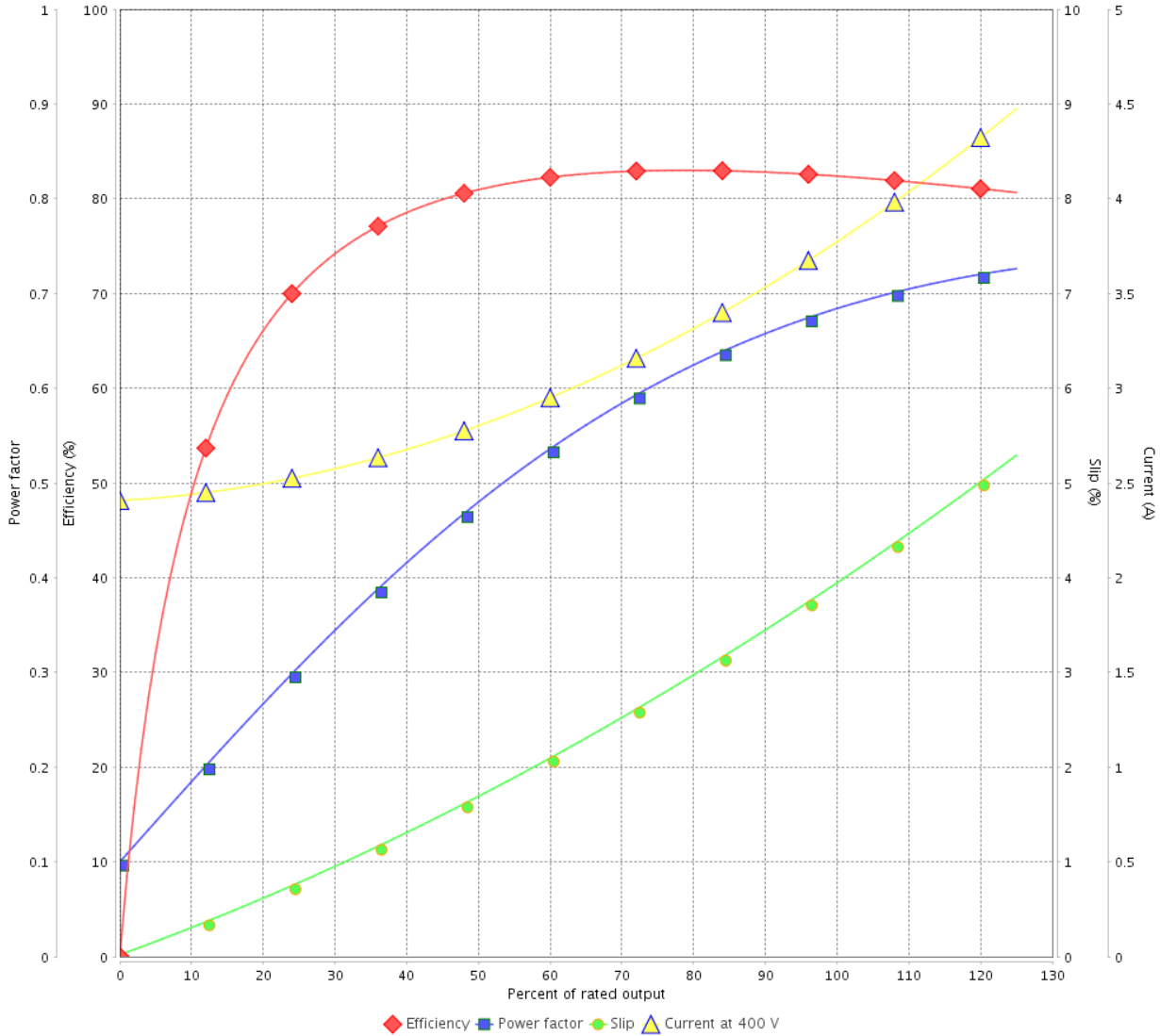
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current : 3.80 A  
 LRC : 7.6  
 Rated torque : 14.6 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 250 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

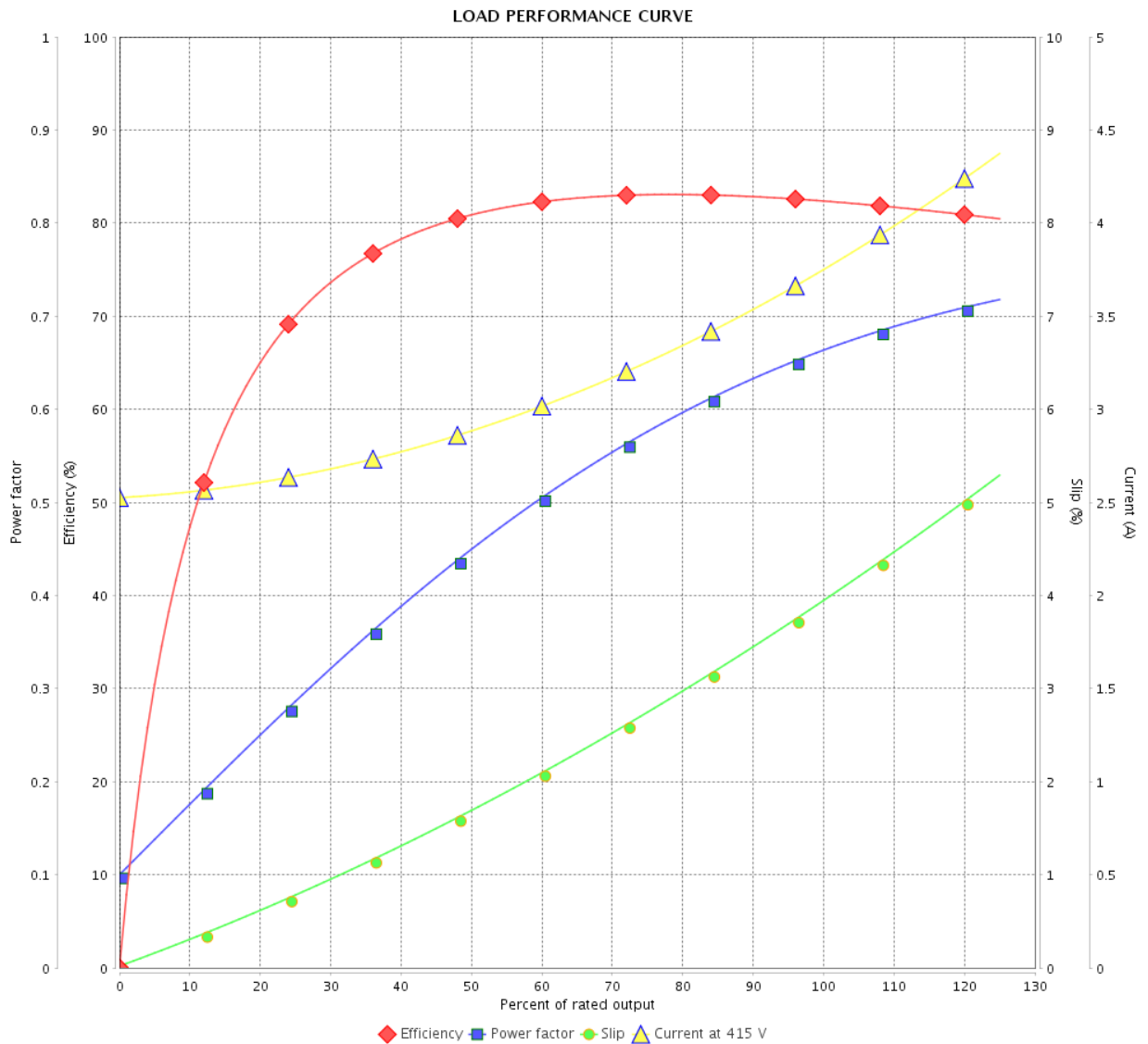


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 3.78 A  
 LRC : 7.6  
 Rated torque : 14.6 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 280 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445719  
Catalog # : 00209ET3E213T-W22

Performance : 230/460 V 60 Hz 8P

Rated current	: 6.78/3.39 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 12.0 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.25
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 875 rpm	Design	: B

Heating constant

Cooling constant

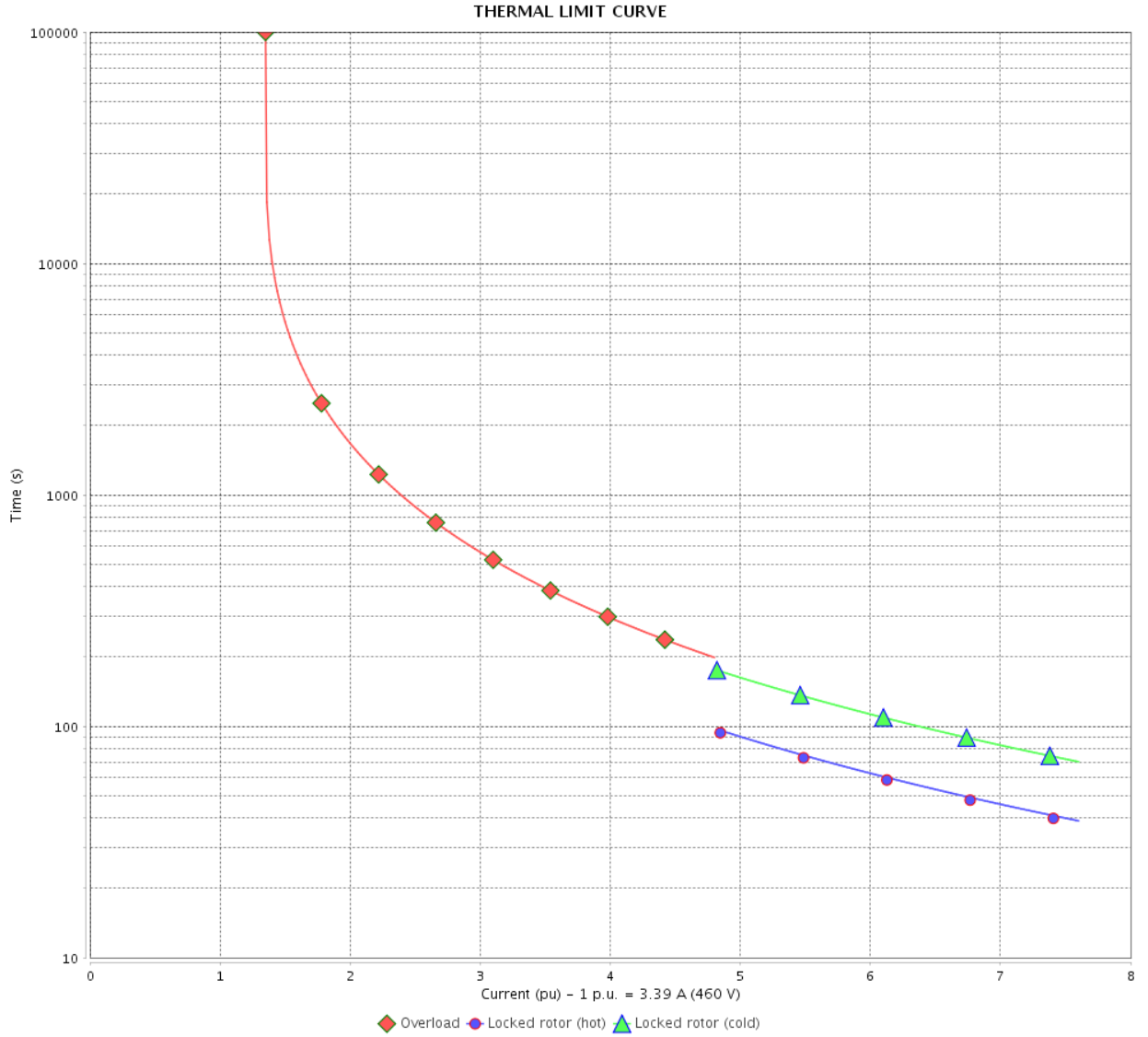
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445719  
Catalog # : 00209ET3E213T-W22

Performance : 380 V 50 Hz 8P IE3

Rated current	: 3.91 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.7 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

Heating constant

Cooling constant

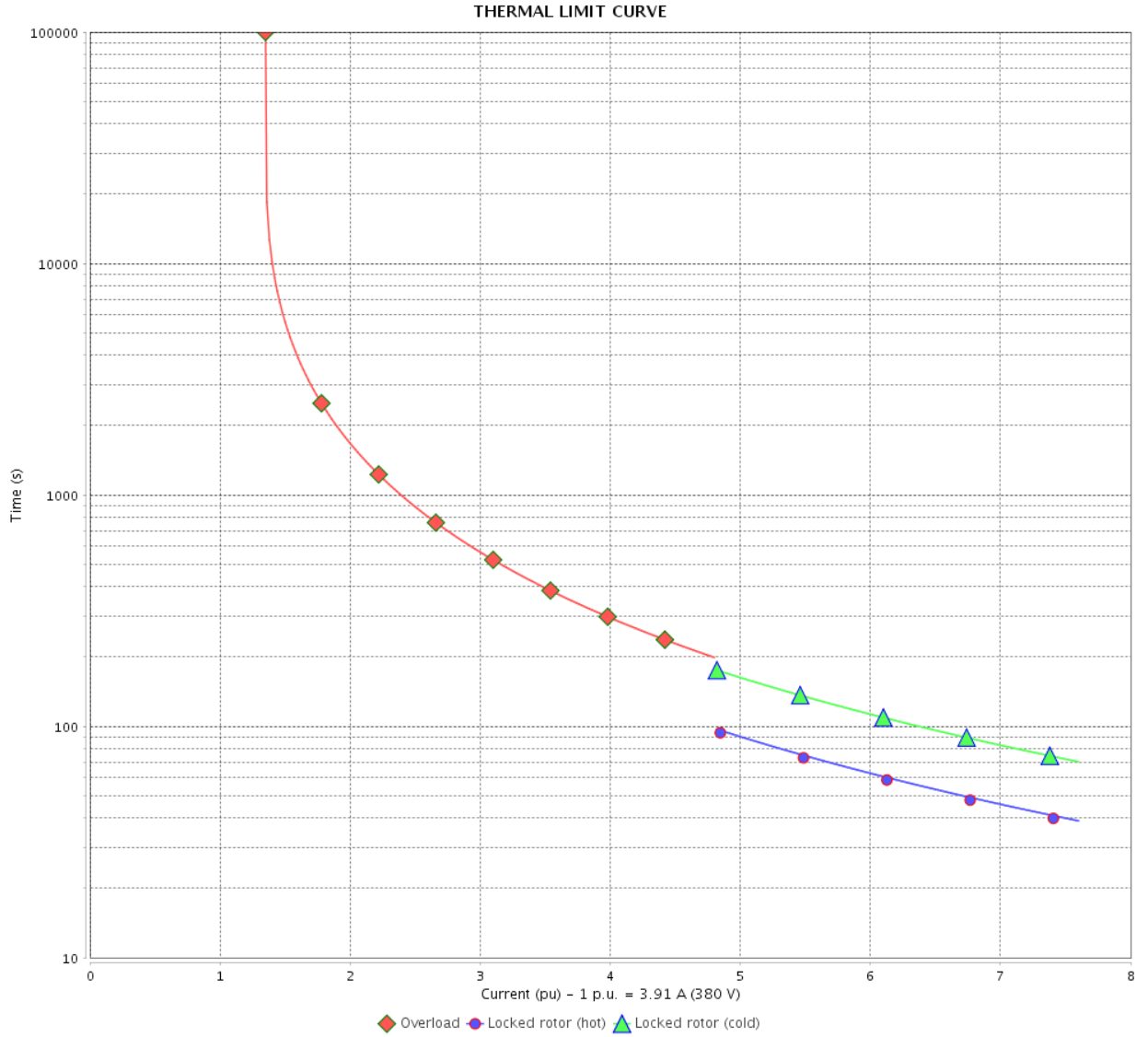
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445719  
Catalog # : 00209ET3E213T-W22

Performance : 400 V 50 Hz 8P IE3

Rated current	: 3.80 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.6 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Heating constant

Cooling constant

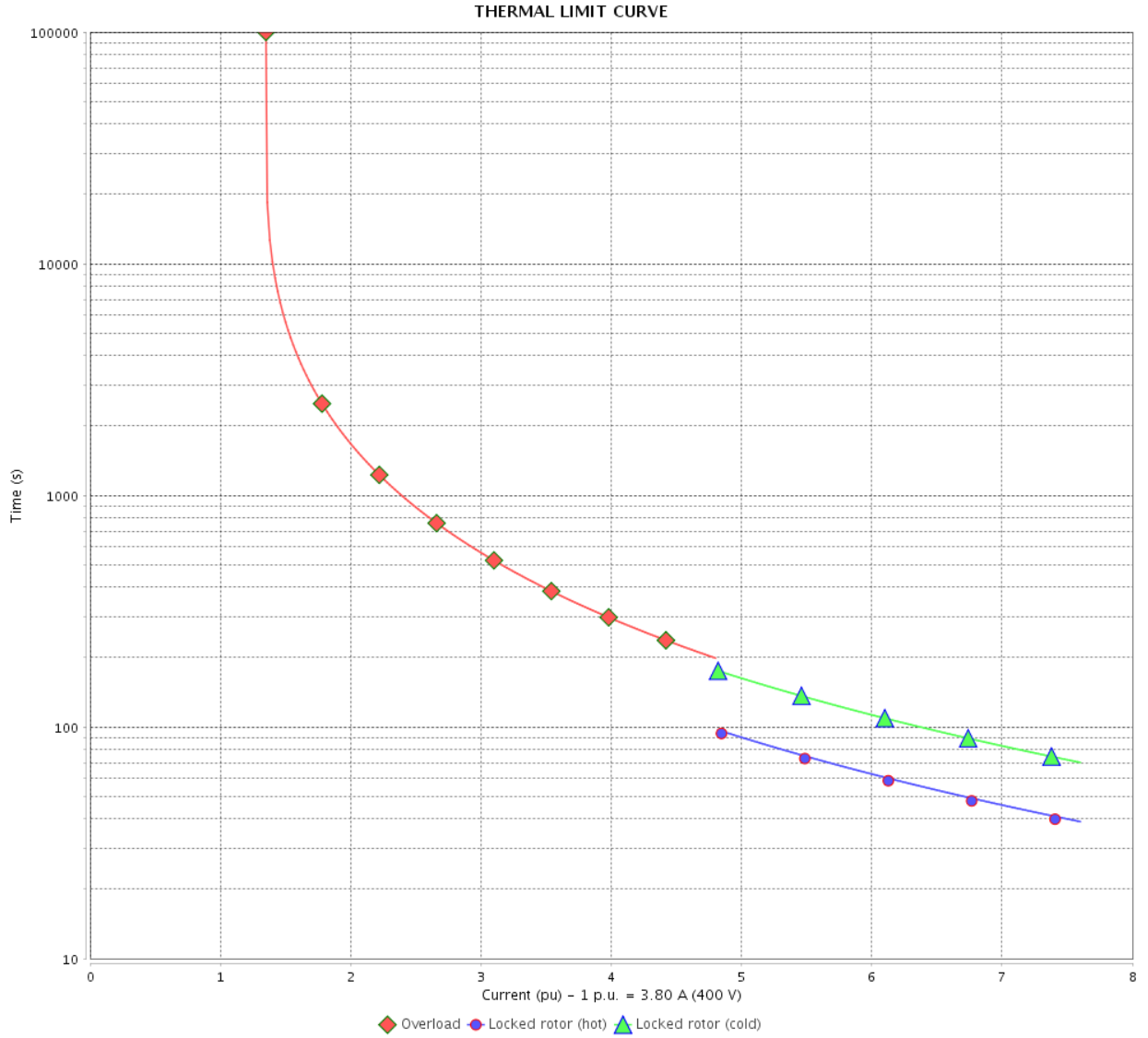
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445719  
Catalog # : 00209ET3E213T-W22

Performance : 415 V 50 Hz 8P IE3

Rated current	: 3.78 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.6 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Heating constant

Cooling constant

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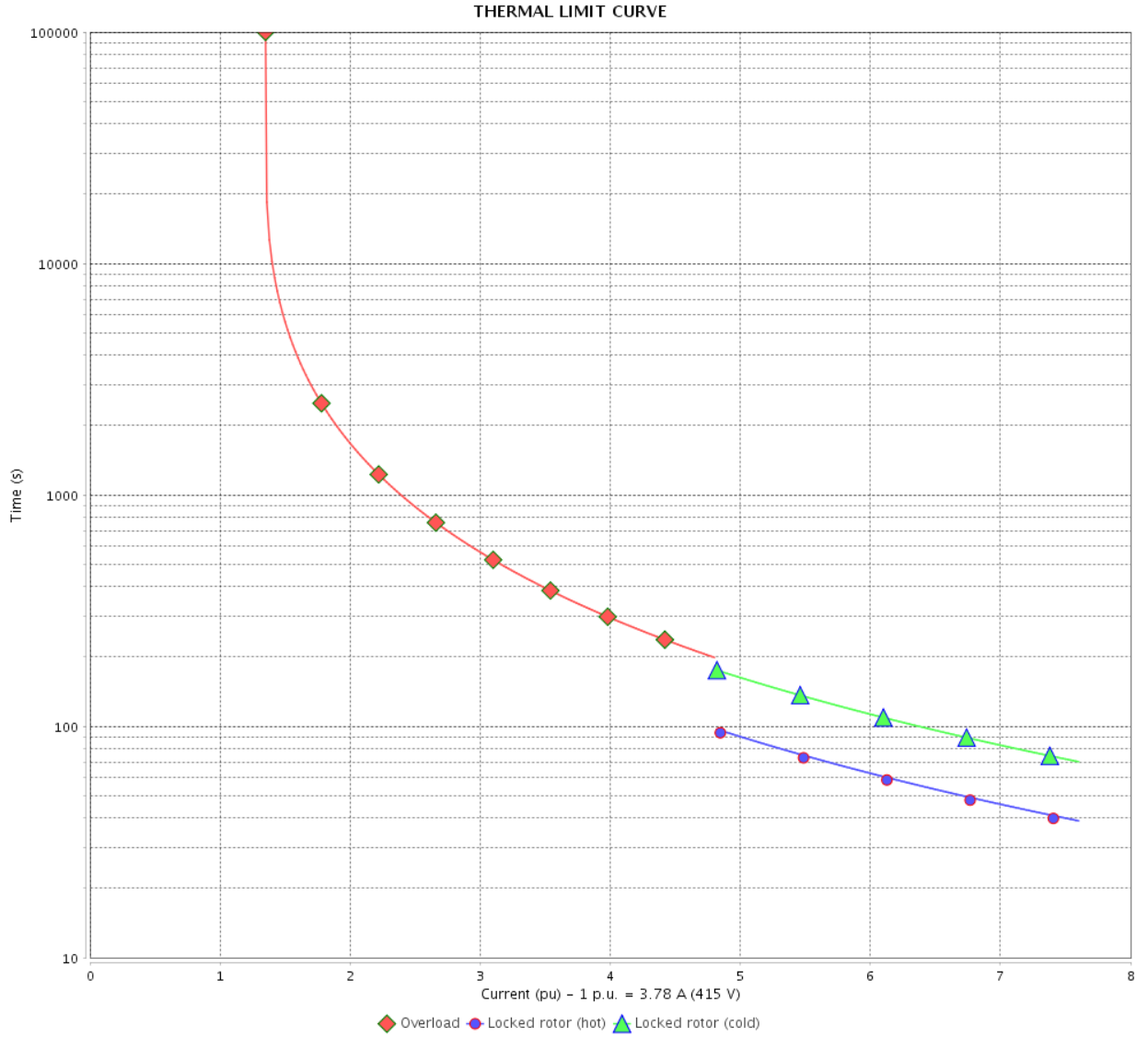


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



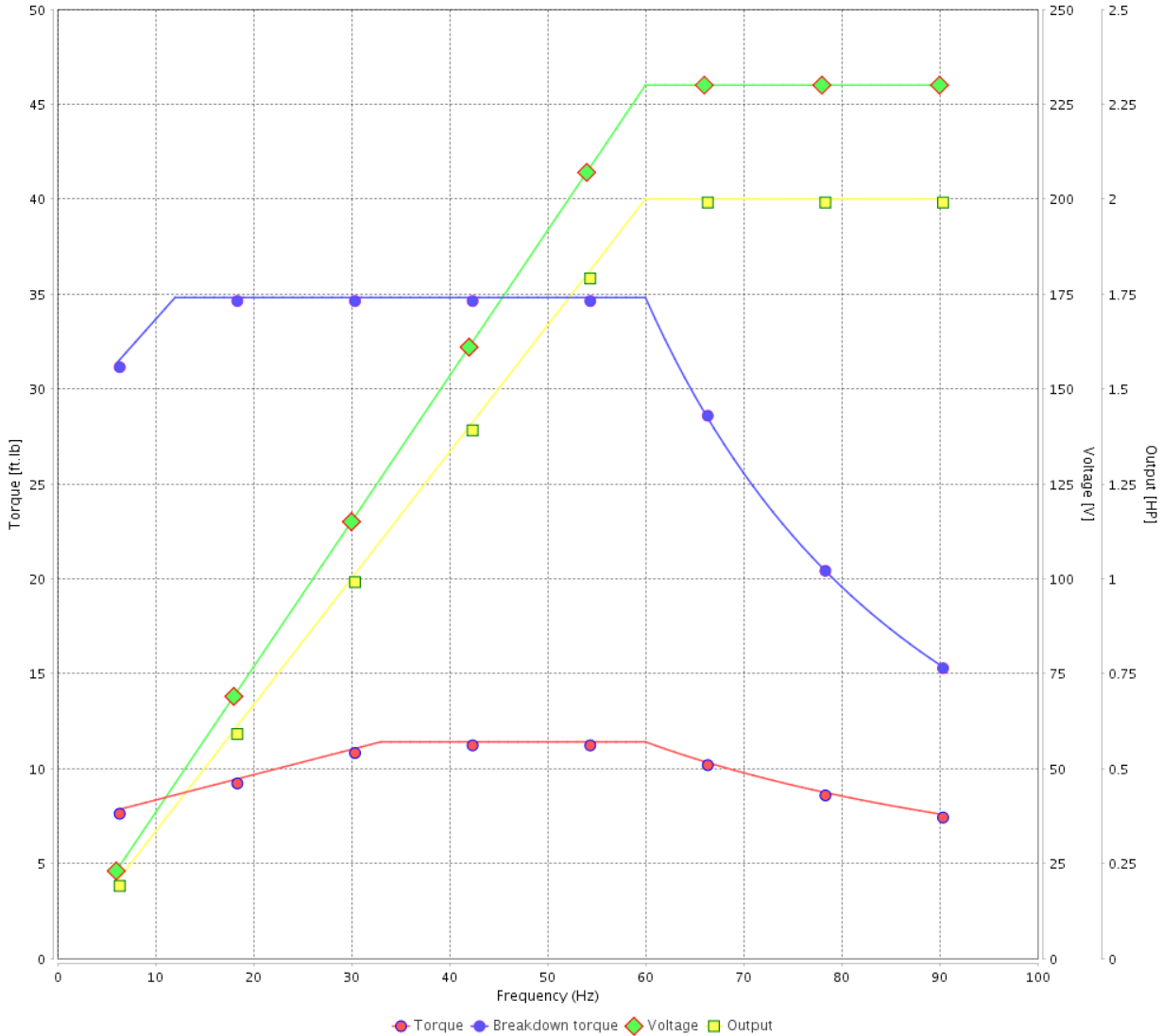
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22

VFD OPERATION CURVE



Performance : 230/460 V 60 Hz 8P

Rated current : 6.78/3.39 A  
 LRC : 7.6  
 Rated torque : 12.0 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 290 %  
 Rated speed : 875 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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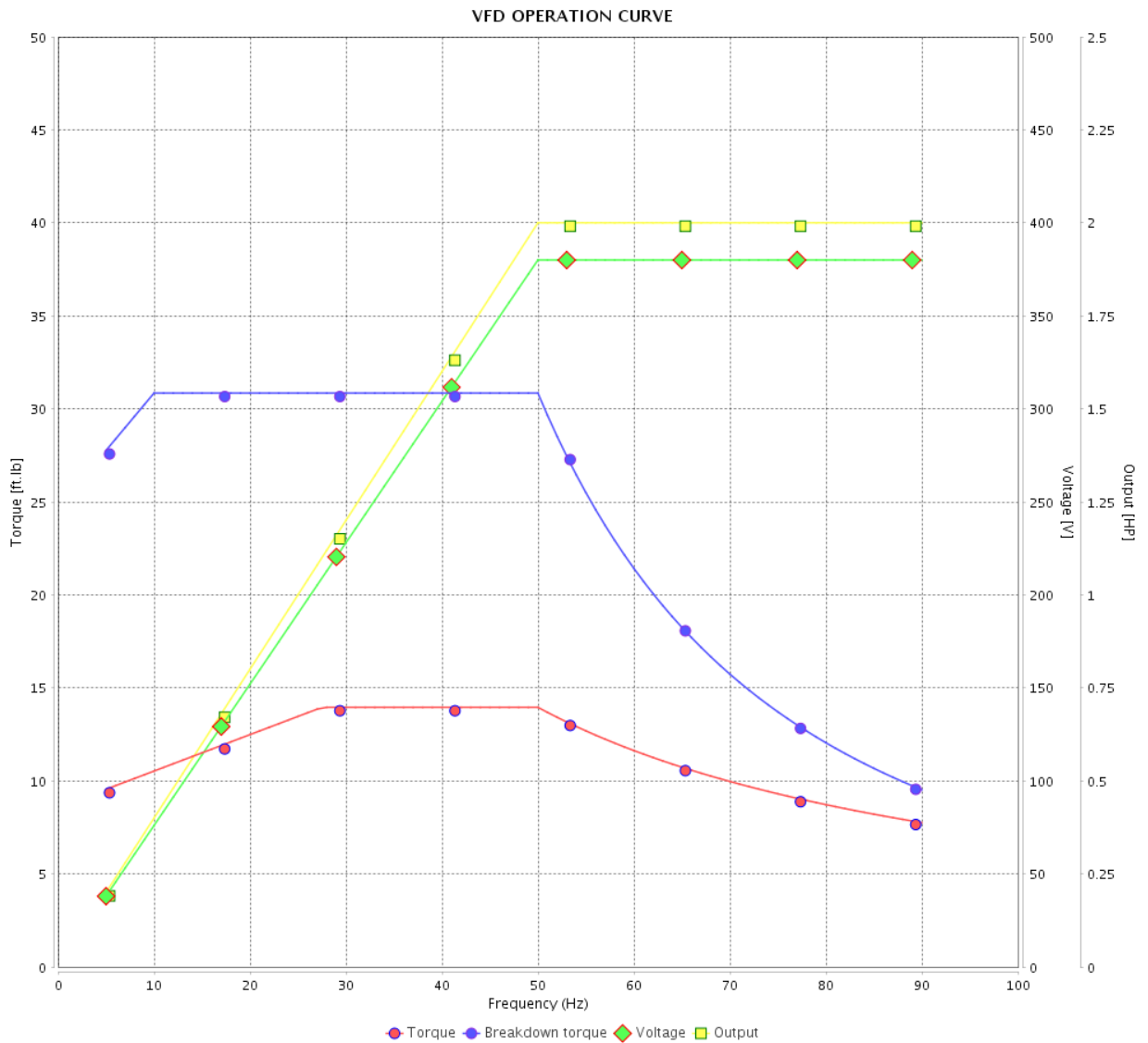
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12445719  
 Catalog # : 00209ET3E213T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 3.91 A	Moment of inertia (J)	: 1.79 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 14.7 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 715 rpm	Design	: B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



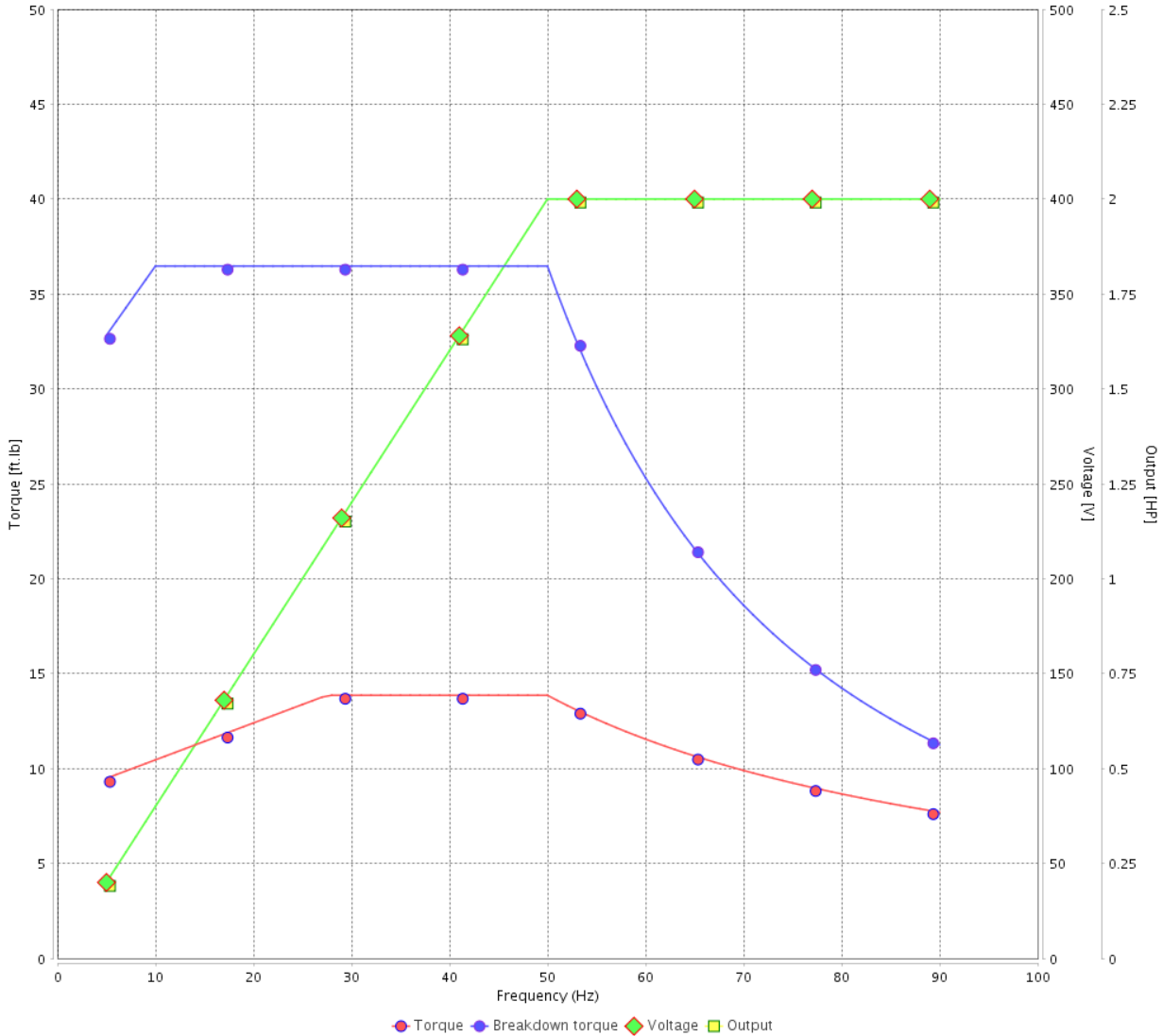
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445719

Catalog # : 00209ET3E213T-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current : 3.80 A  
 LRC : 7.6  
 Rated torque : 14.6 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 250 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

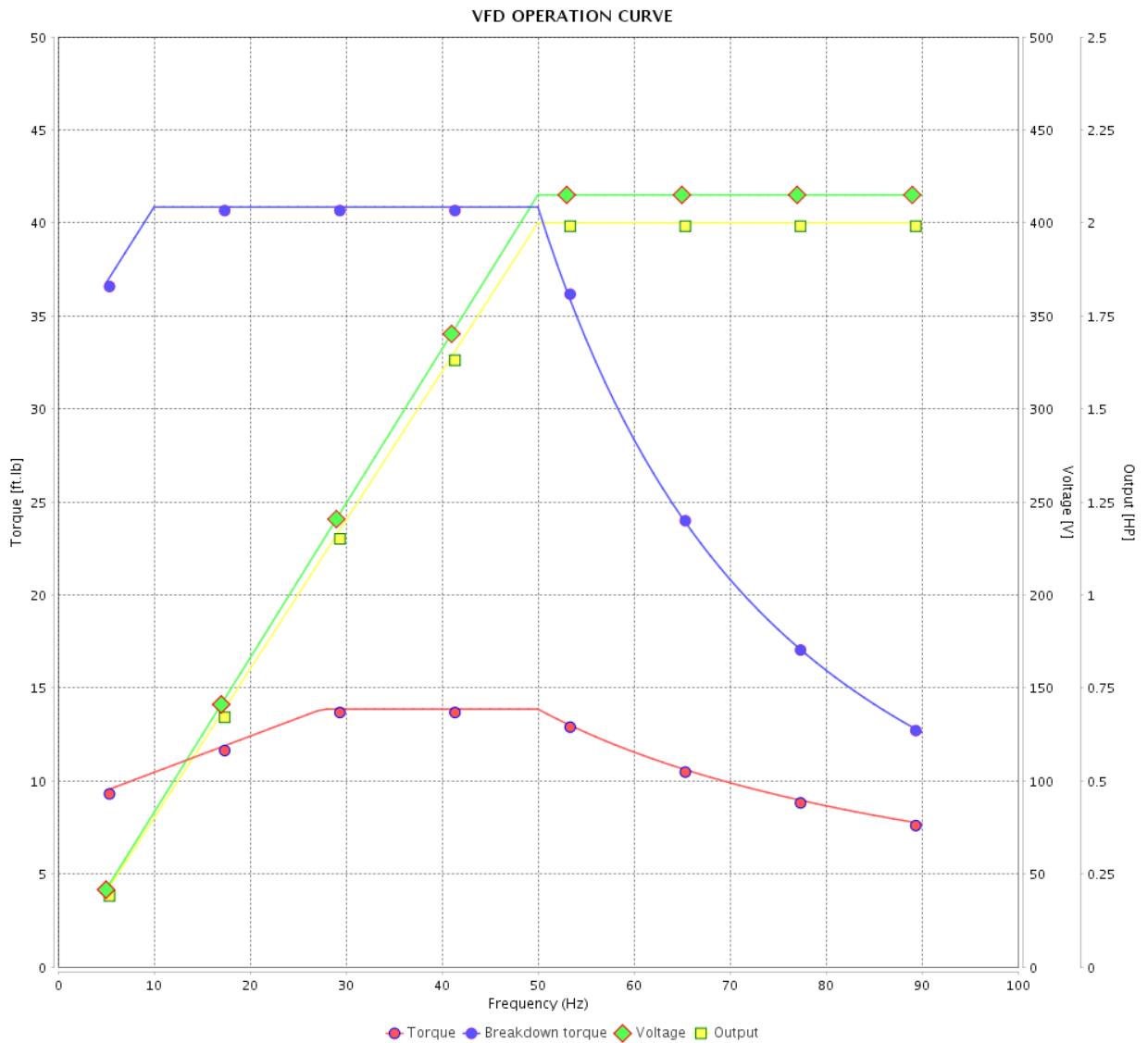


Customer :

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Catalog # : 00209ET3E213T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 3.78 A  
 LRC : 7.6  
 Rated torque : 14.6 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 280 %  
 Rated speed : 720 rpm

Moment of inertia (J) : 1.79 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

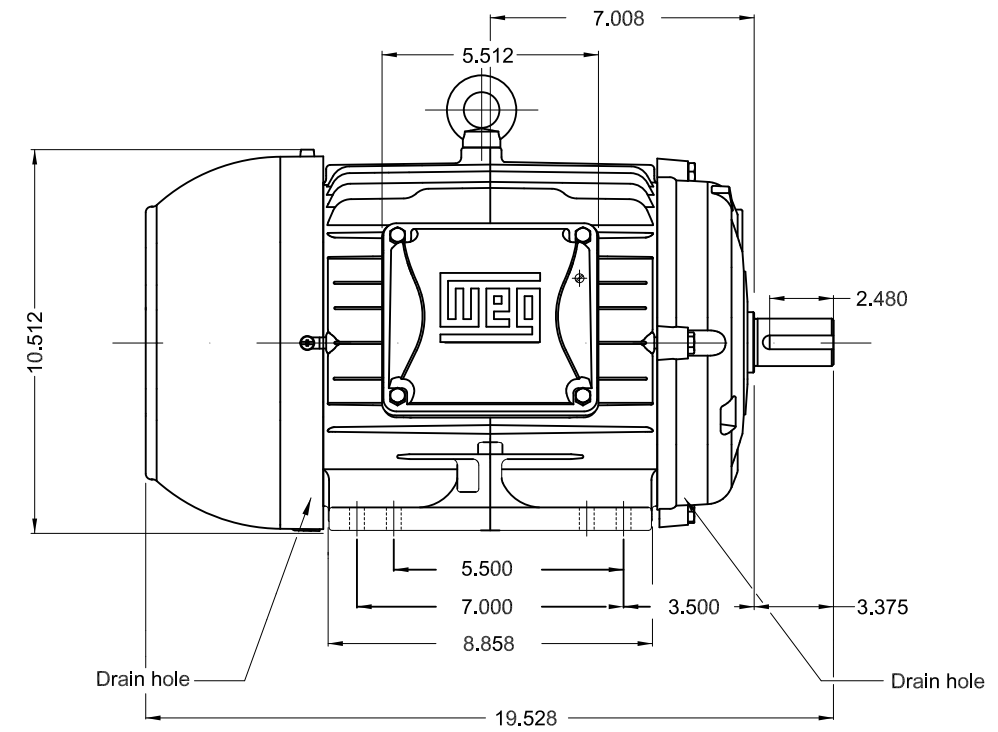
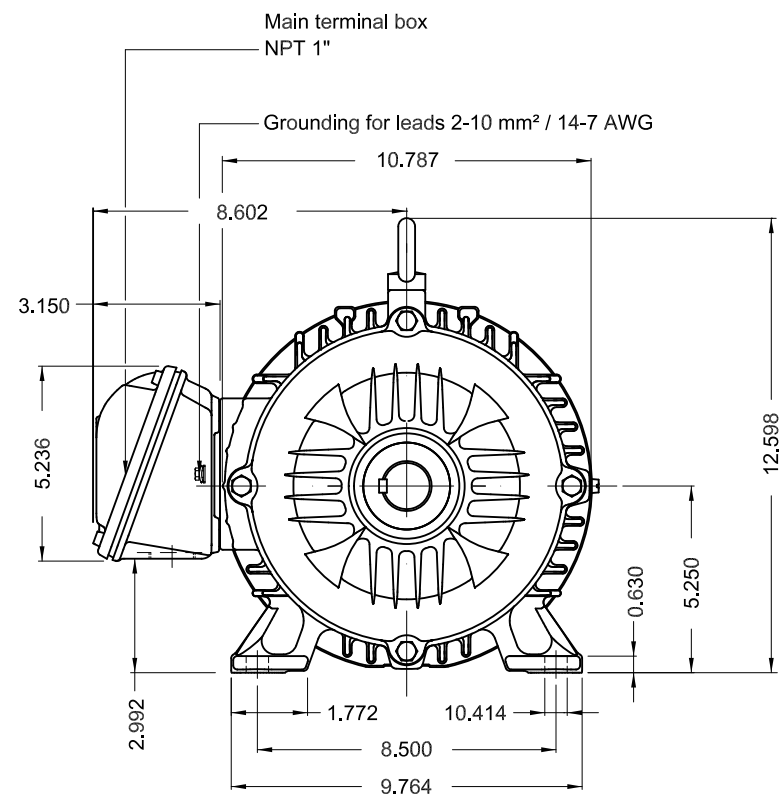
Rev.	Changes Summary	Performed	Checked	Date
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A

B

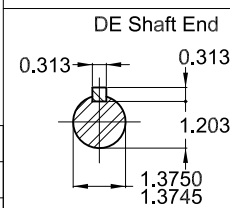
C



D

E

Color RAL 5009  
 Painting plan 207A  
 Mounting B3R(D)



2 HP 08 Poles 60 Hz A

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

**PREVIEW**  
 WDD



SHEET 1 / 1

Dimensions in inches

XME A3

MADE IN BRAZIL  
12445719



MODEL 00209ET3E213T-W22

Inverter Duty Motor  
Severe Duty



For use on 60Hz  
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



FOR SAFE AREA  
Mod. TE1BFOXON  
CC029A

PH3 60Hz Fr. 213/5T 1000m.a.s.l. IP55 TEFC 166lb

V 230/460

A 6.78/3.39

HP 2.0

kW 1.5

SF 1.25

SFA 8.47/4.24

RPM 875

PF 0.65

AMB 40°C

INS cl. F DT80K

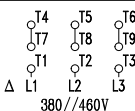
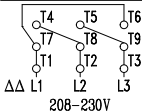
NEMA NOM EFF 85.5%

DUTY CONT.

DES B Code M

USABLE @208V 7.49A SF 1.15 SFA 8.61

2.0HP 1.5kW 50Hz 380V 3.91A 715RPM SF 1.00 EFF 82.0% (IE3)



MOBIL POLYREX EM