

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :			
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12445774
		Catalog # :	00509ET3E254T-W22
Frame	: 254/6T	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>	: 272 lb
Protection degree	: IP55	Moment of inertia (J)	: 3.41 sq.ft.lb
Design	: B		
Output [HP]	5	5	5
Poles	8	8	8
Frequency [Hz]	60	50	50
Rated voltage [V]	230/460	380	400
Rated current [A]	15.2/7.58	8.84	8.56
L. R. Amperes [A]	80.3/40.2	38.0	40.2
LRC [A]	5.3x(Code H)	4.3x(Code F)	4.7x(Code F)
No load current [A]	9.00/4.50	4.45	4.75
Rated speed [RPM]	882	725	725
Slip [%]	2.00	3.33	3.33
Rated torque [ft.lb]	29.8	36.2	36.2
Locked rotor torque [%]	220	150	170
Breakdown torque [%]	250	190	210
Service factor	1.25	1.15	1.15
Temperature rise	80 K	105 K	80 K
Locked rotor time	79s (cold) 44s (hot)	59s (cold) 33s (hot)	59s (cold) 33s (hot)
Noise level <sup>2</sup>	54.0 dB(A)	51.0 dB(A)	51.0 dB(A)
Efficiency (%)	25%		
	50%	85.5	85.5
	75%	87.5	86.5
	100%	87.5	85.5
Power Factor	25%		
	50%	0.49	0.56
	75%	0.62	0.65
	100%	0.70	0.73
Bearing type	: <u>Drive end</u> 6309 C3 <u>Non drive end</u> 6209 C3	Foundation loads	
Sealing	: V'Ring V'Ring	Max. traction	: 261 lb
Lubrication interval	: 20000 h 20000 h	Max. compression	: 532 lb
Lubricant amount	: 13 g 9 g		
Lubricant type	: Mobil Polyrex EM		
Notes USABLE @208V 16.8A SF 1.15 SFA 19.3A			
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



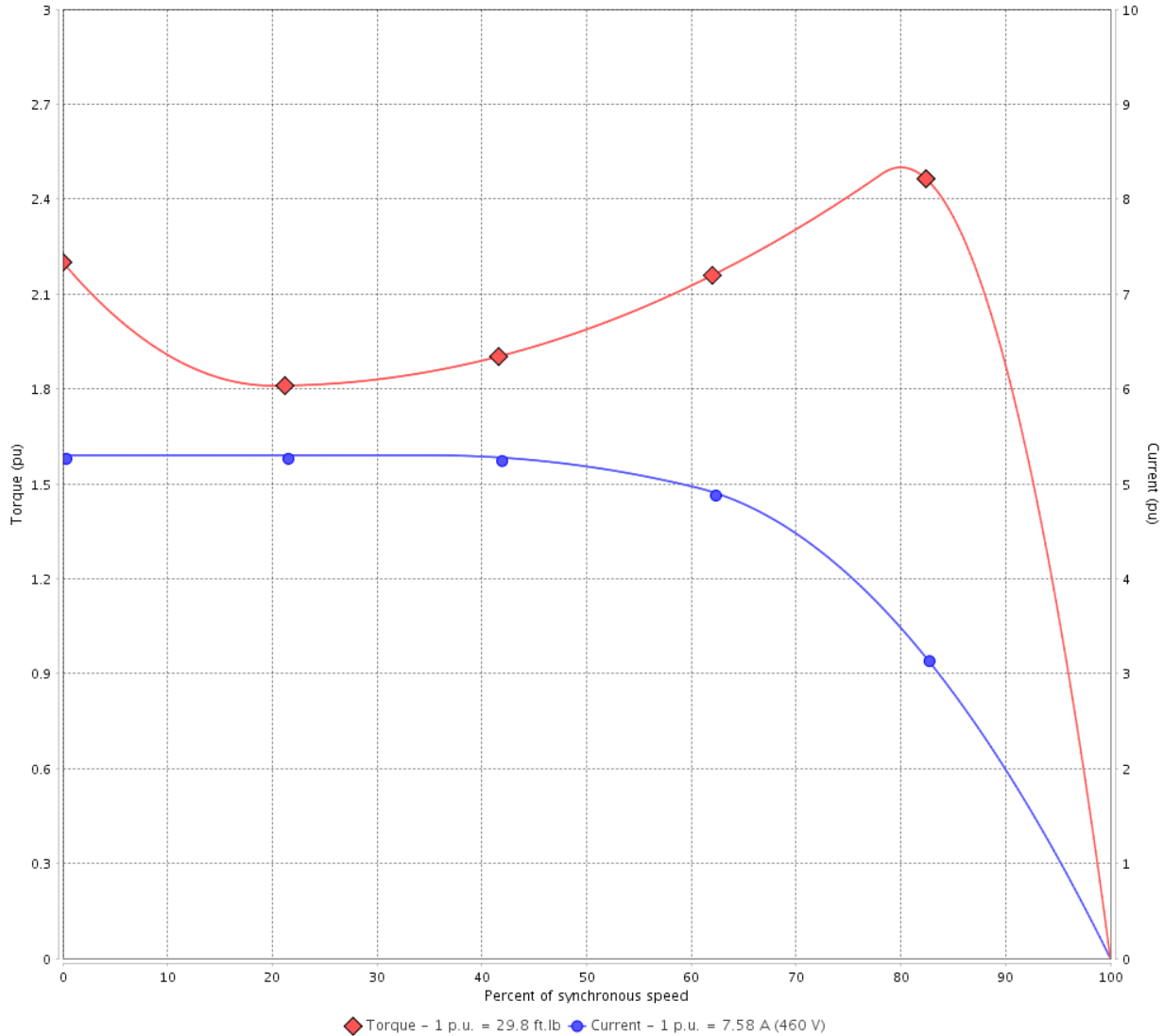
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 8P

Rated current	: 15.2/7.58 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 882 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



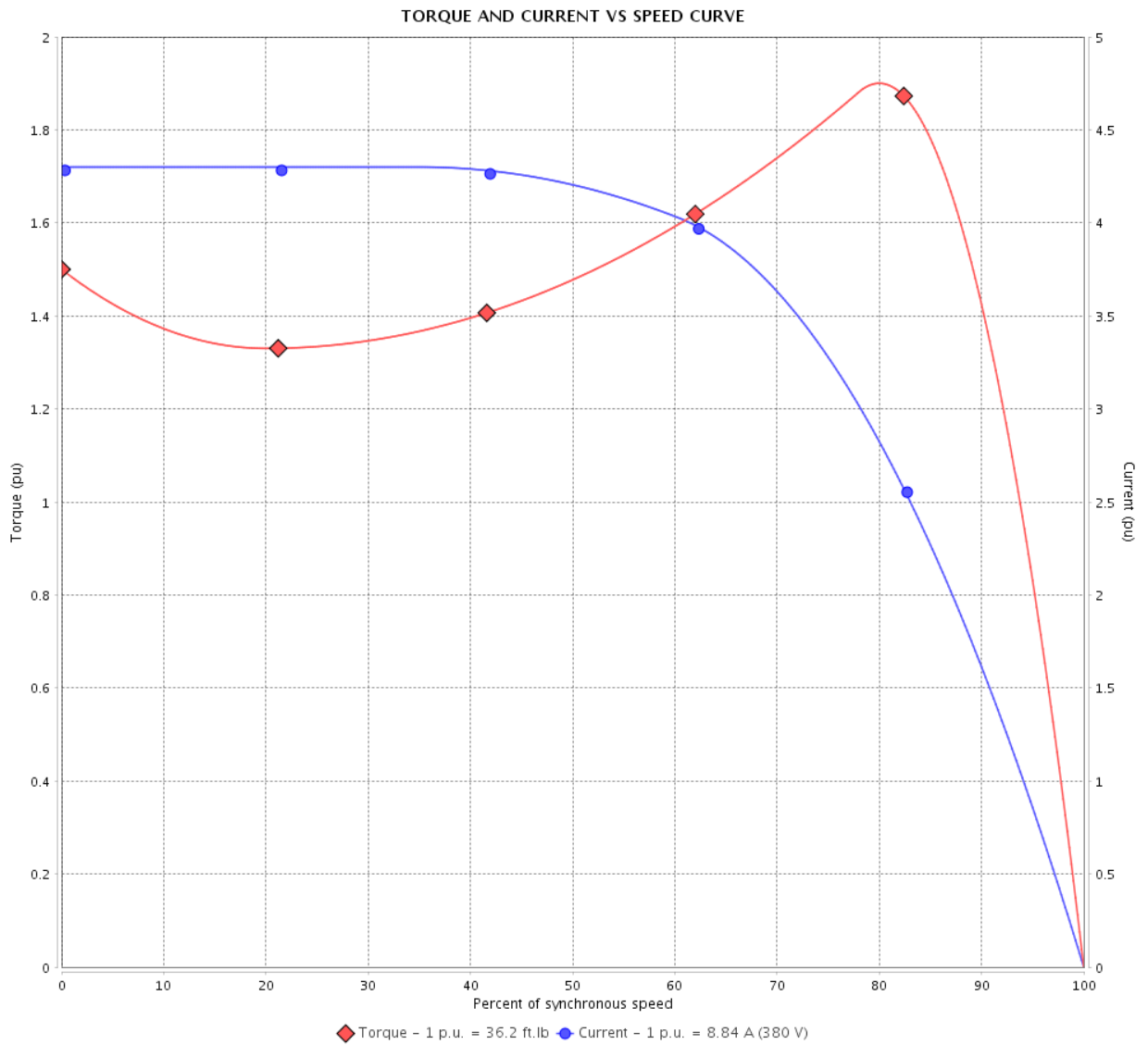
## Three Phase Induction Motor - Squirrel Cage

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

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 8.84 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 4.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.15
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 725 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



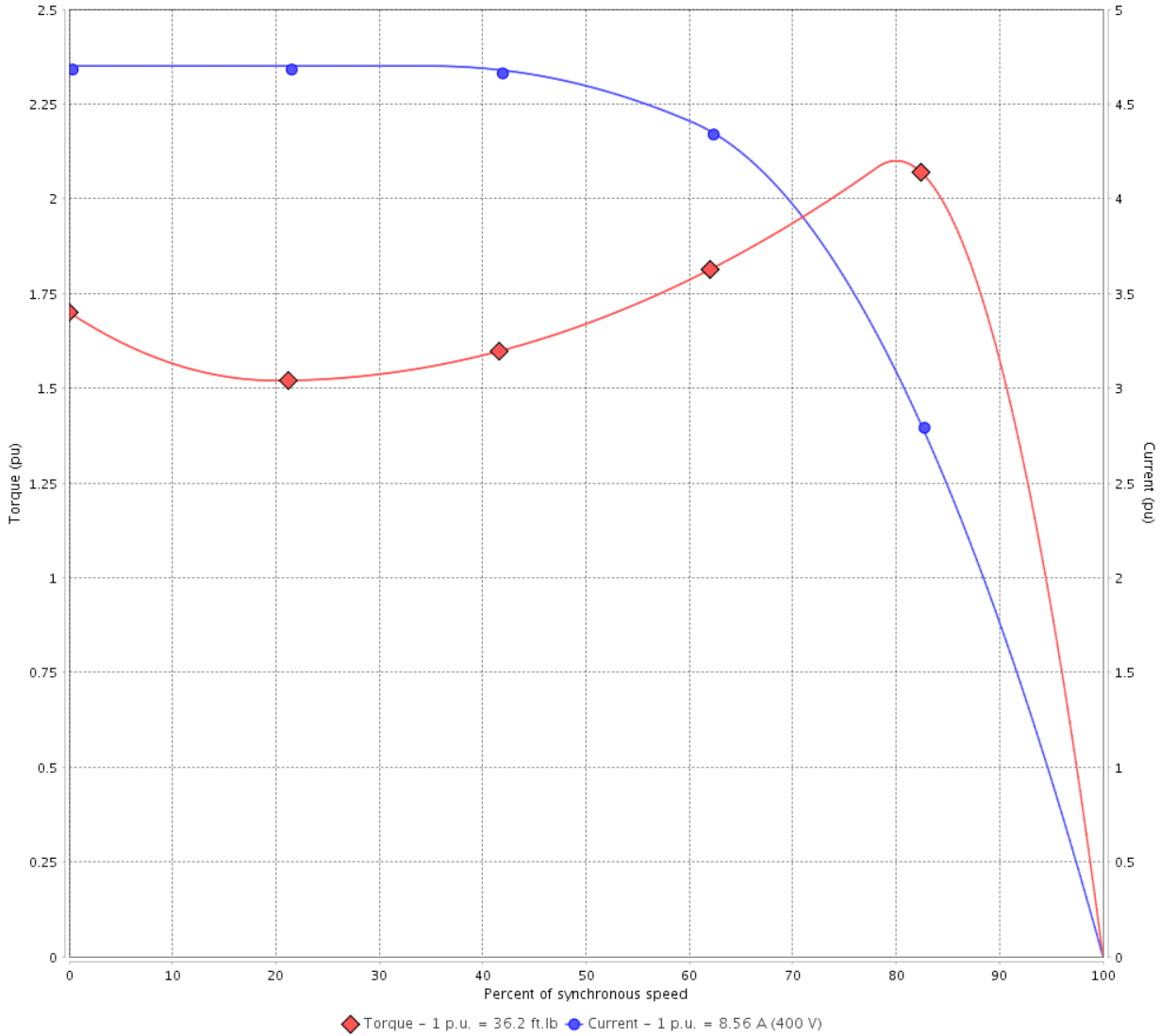
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 8.56 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.15
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 725 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



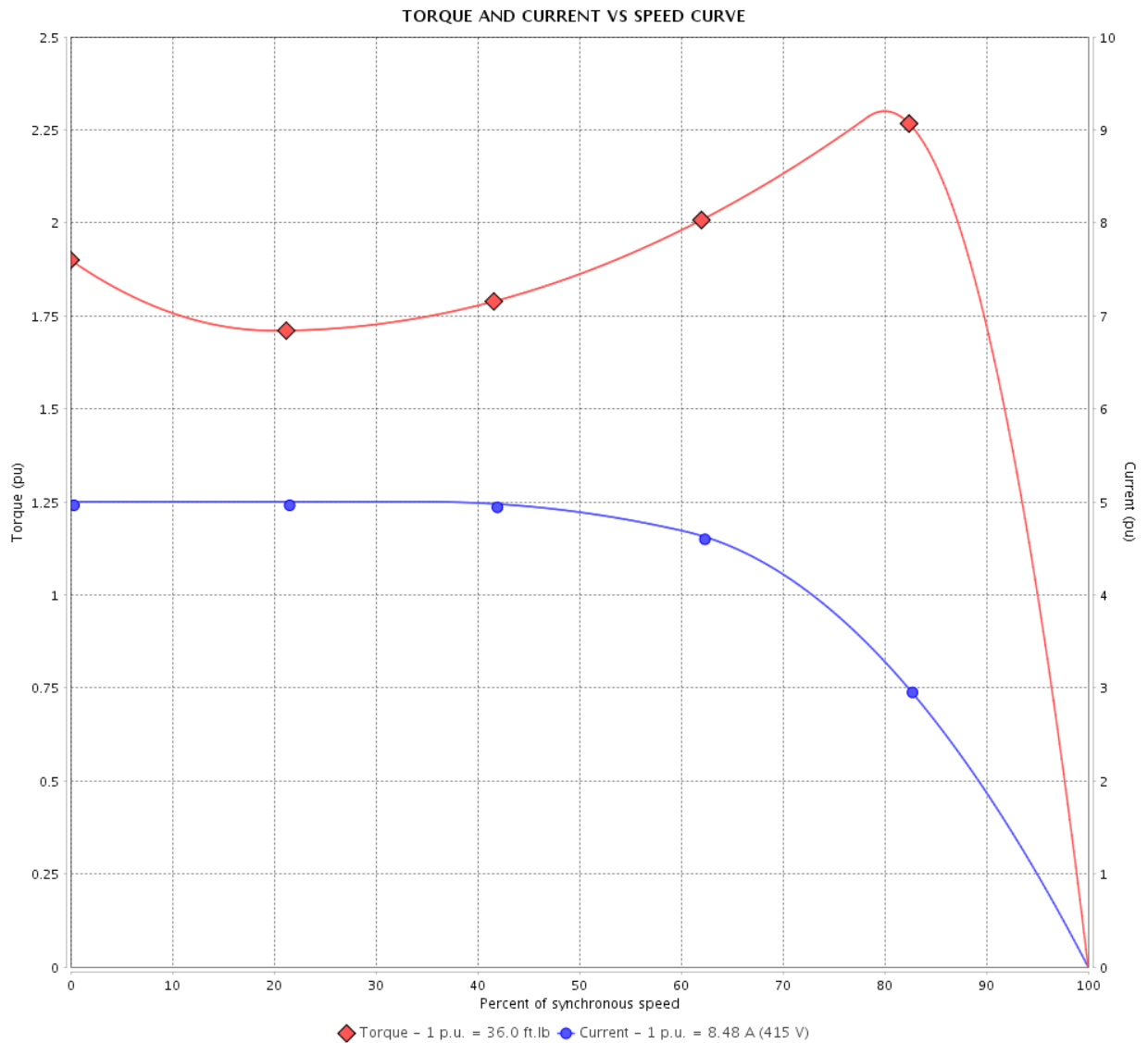
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 8.48 A  
 LRC : 5.0  
 Rated torque : 36.0 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 229 %  
 Rated speed : 730 rpm

Moment of inertia (J) : 3.41 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

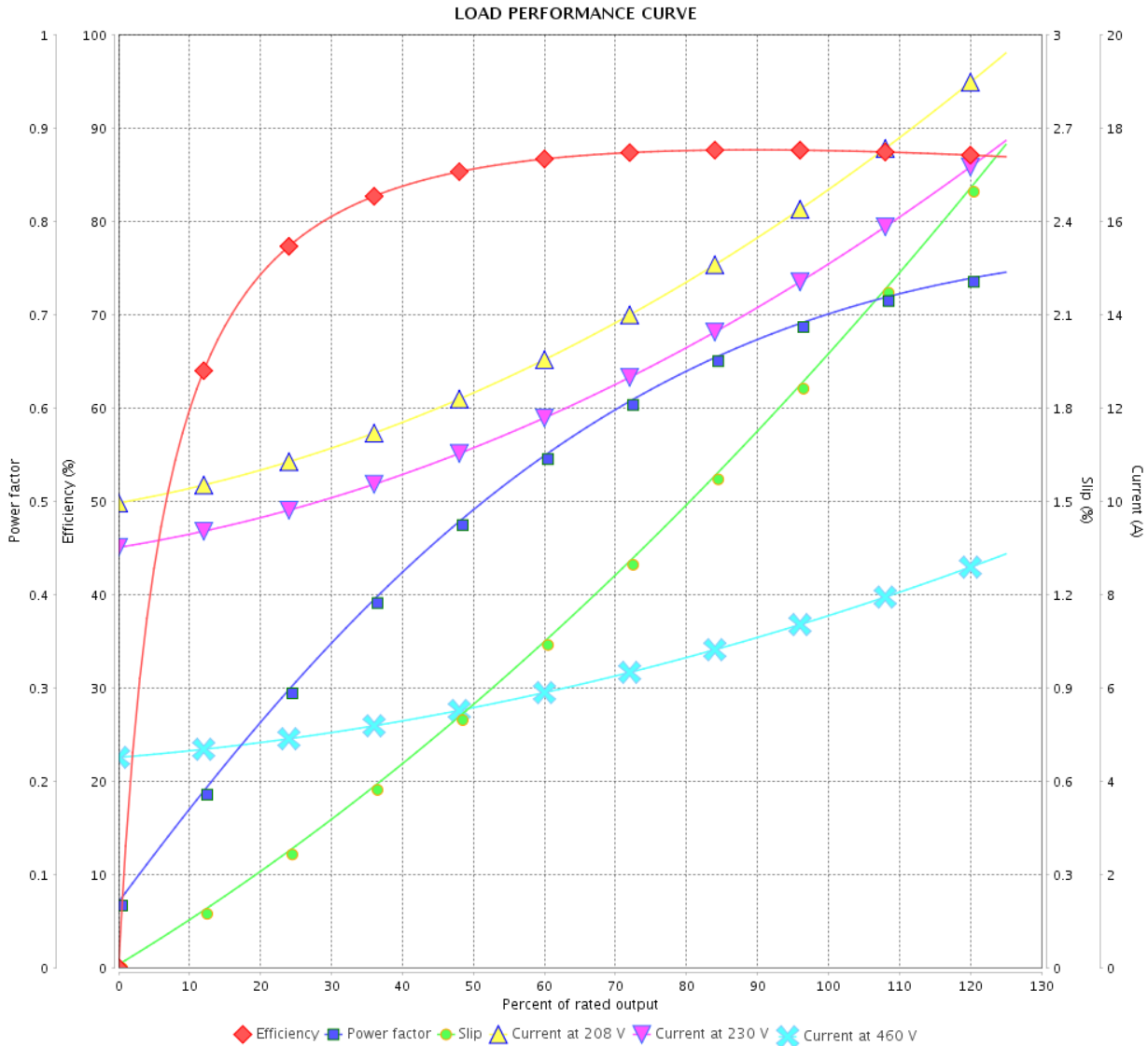


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22



Performance : 230/460 V 60 Hz 8P

Rated current : 15.2/7.58 A  
 LRC : 5.3  
 Rated torque : 29.8 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 250 %  
 Rated speed : 882 rpm

Moment of inertia (J) : 3.41 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

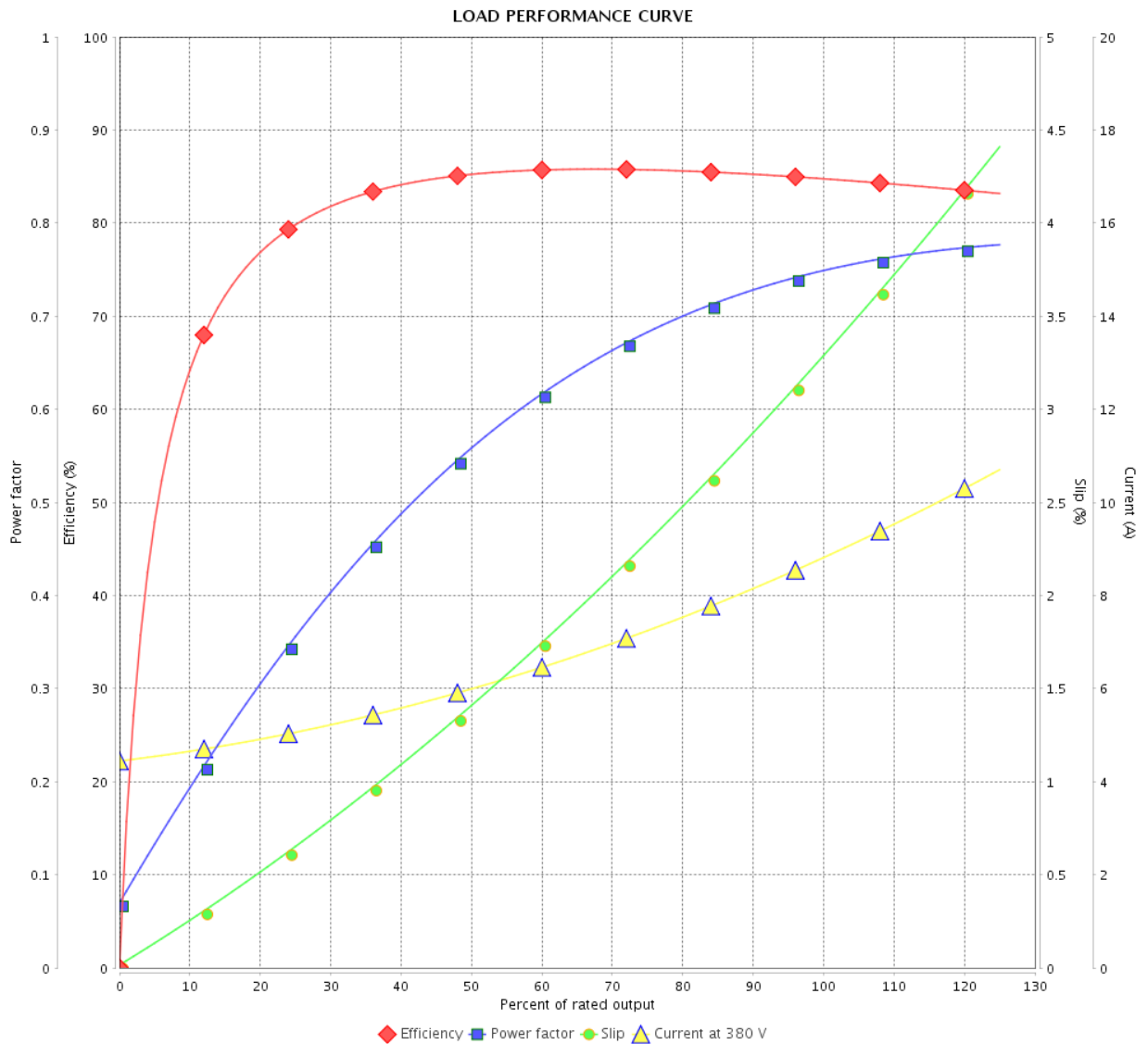


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 8.84 A  
 LRC : 4.3  
 Rated torque : 36.2 ft.lb  
 Locked rotor torque : 150 %  
 Breakdown torque : 190 %  
 Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 105 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



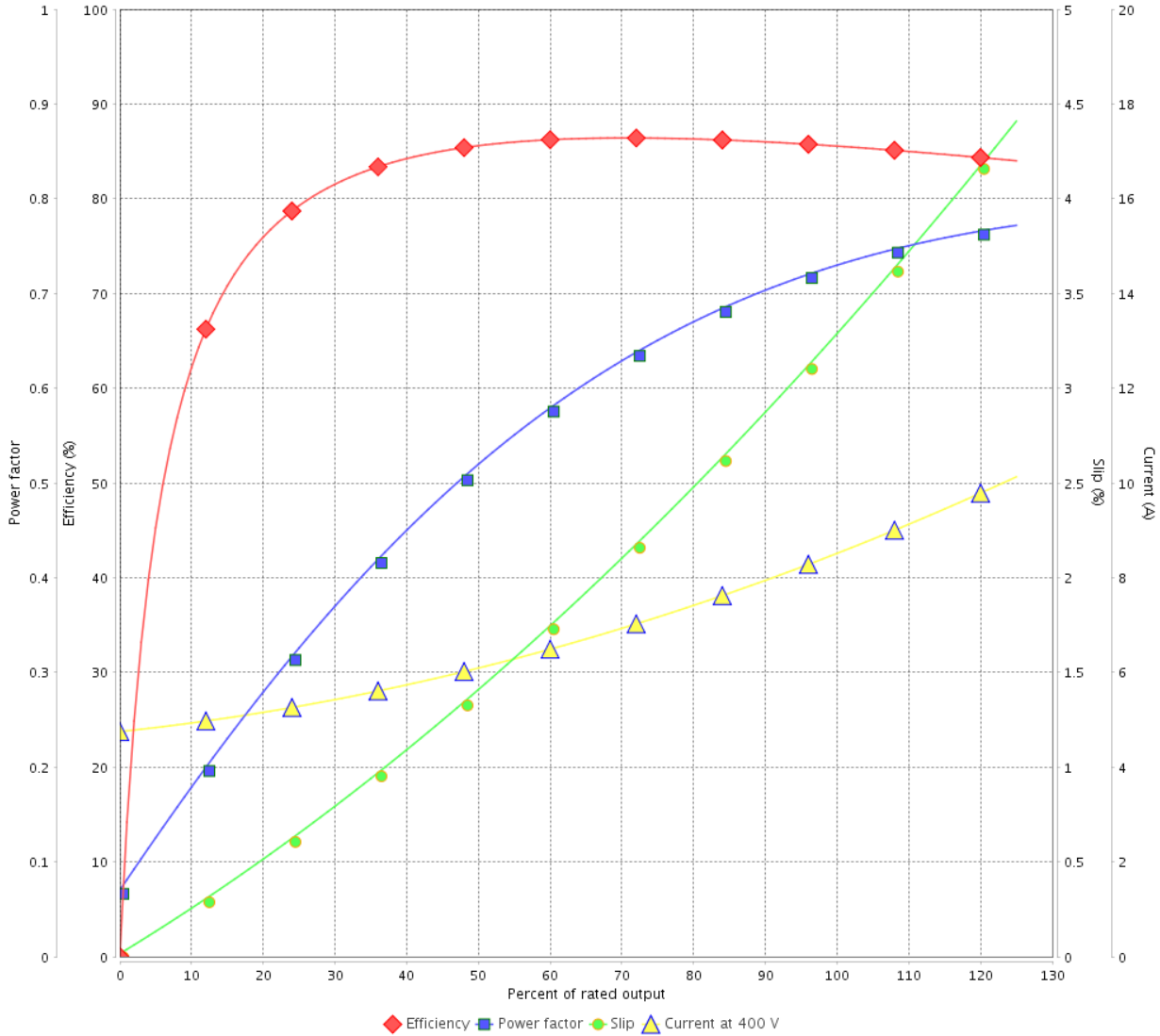
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current : 8.56 A  
 LRC : 4.7  
 Rated torque : 36.2 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 210 %  
 Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

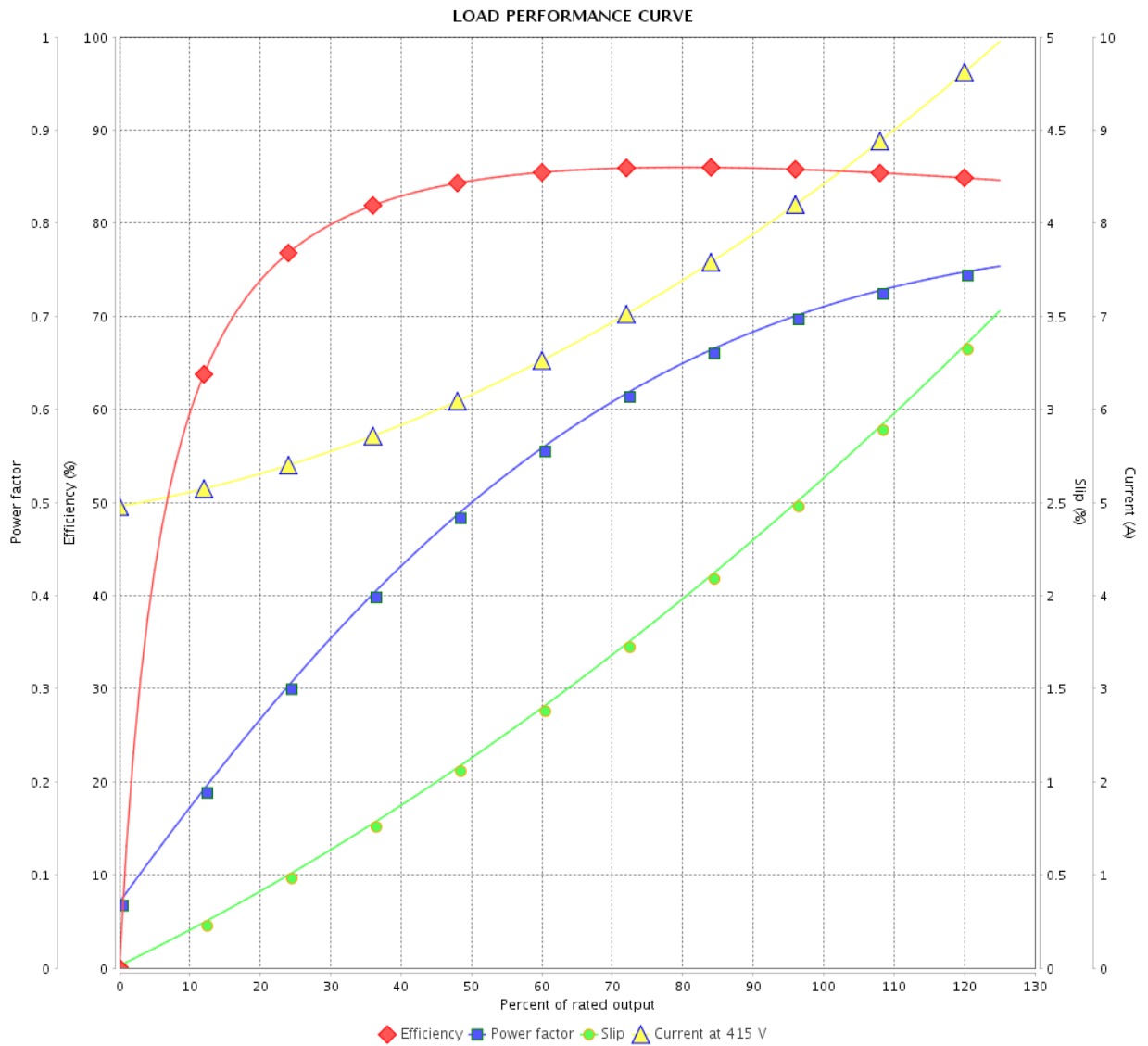


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Performance : 415 V 50 Hz 8P IE3

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 Locked rotor torque : 190 %  
 Breakdown torque : 229 %  
 Rated speed : 730 rpm

Moment of inertia (J) : 3.41 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE

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LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 882 rpm	Design	: B

Heating constant

Cooling constant

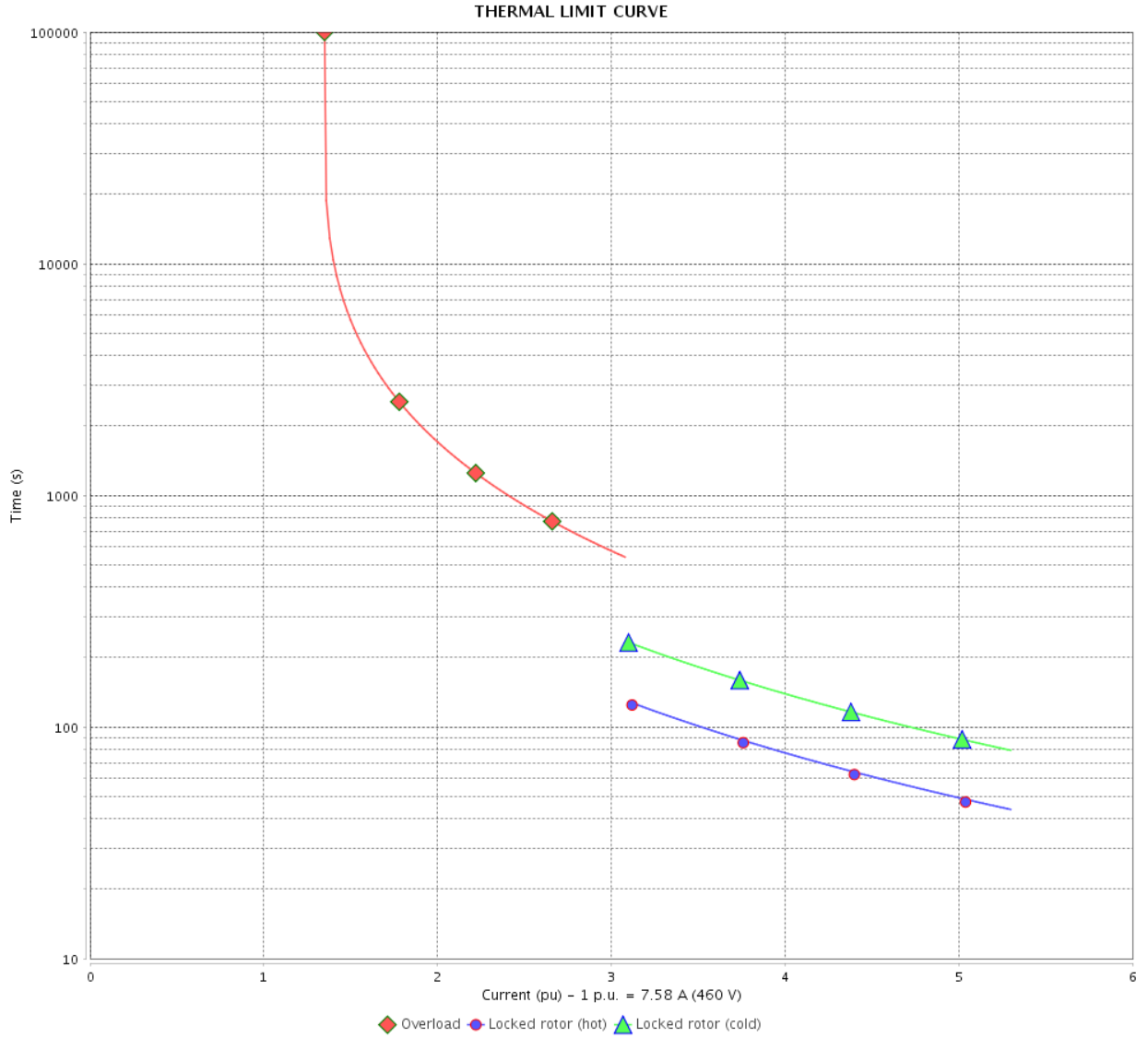
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Three Phase Induction Motor - Squirrel Cage



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Performance : 380 V 50 Hz 8P IE3

Rated current	: 8.84 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 4.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.15
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

Heating constant

Cooling constant

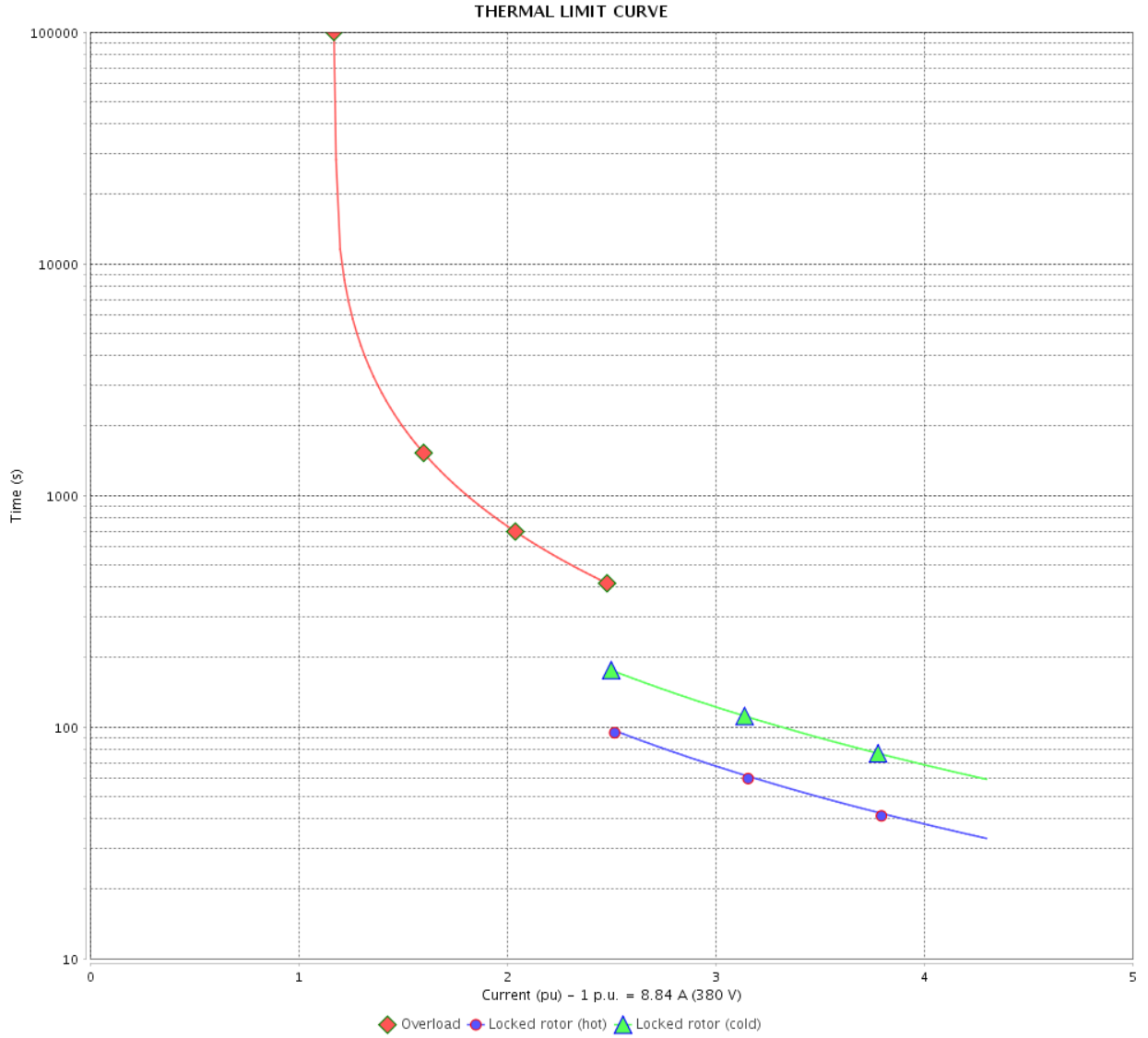
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LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.15
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 725 rpm	Design	: B

Heating constant

Cooling constant

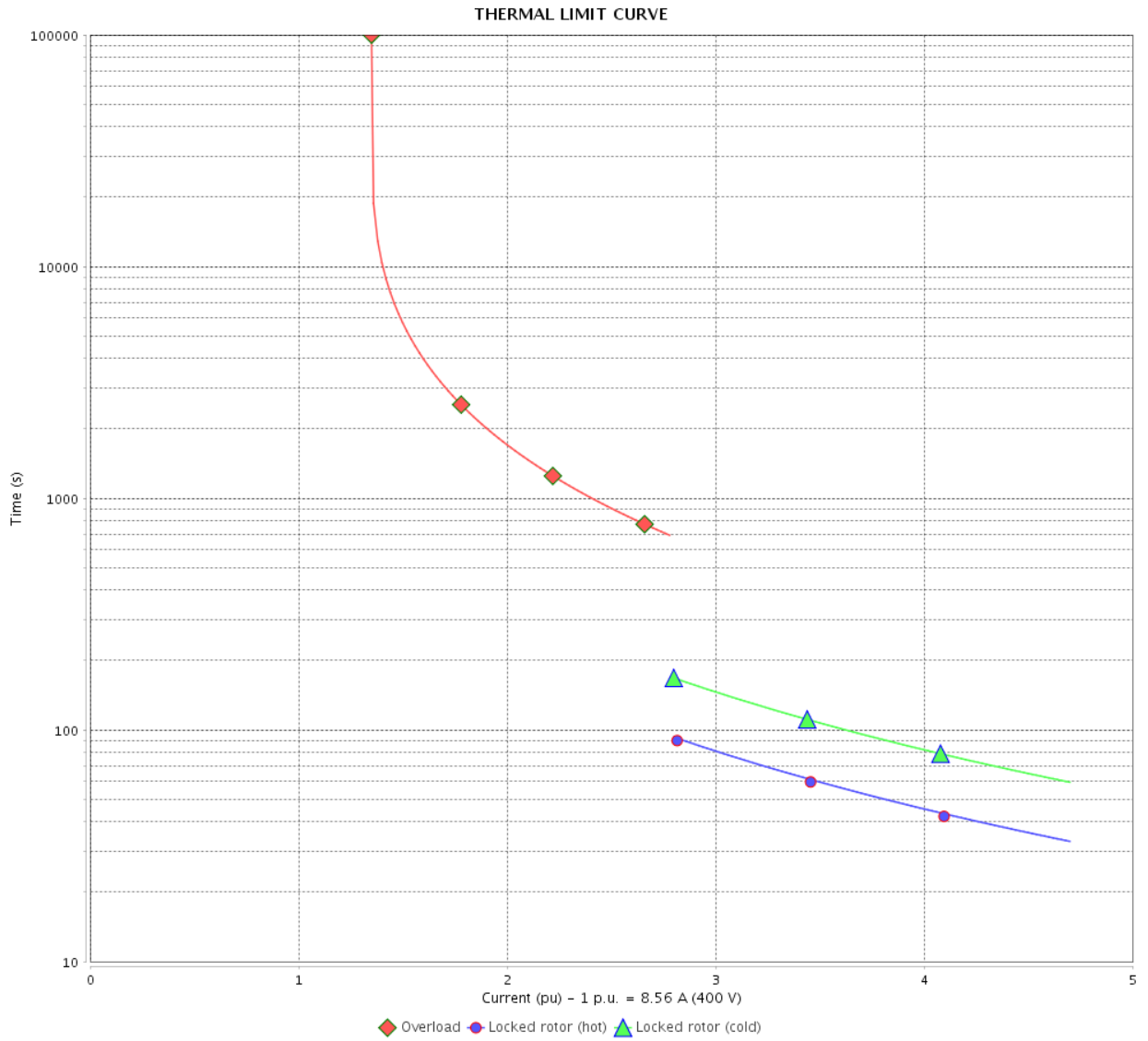
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Three Phase Induction Motor - Squirrel Cage



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LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 36.0 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.15
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 730 rpm	Design	: B

Heating constant

Cooling constant

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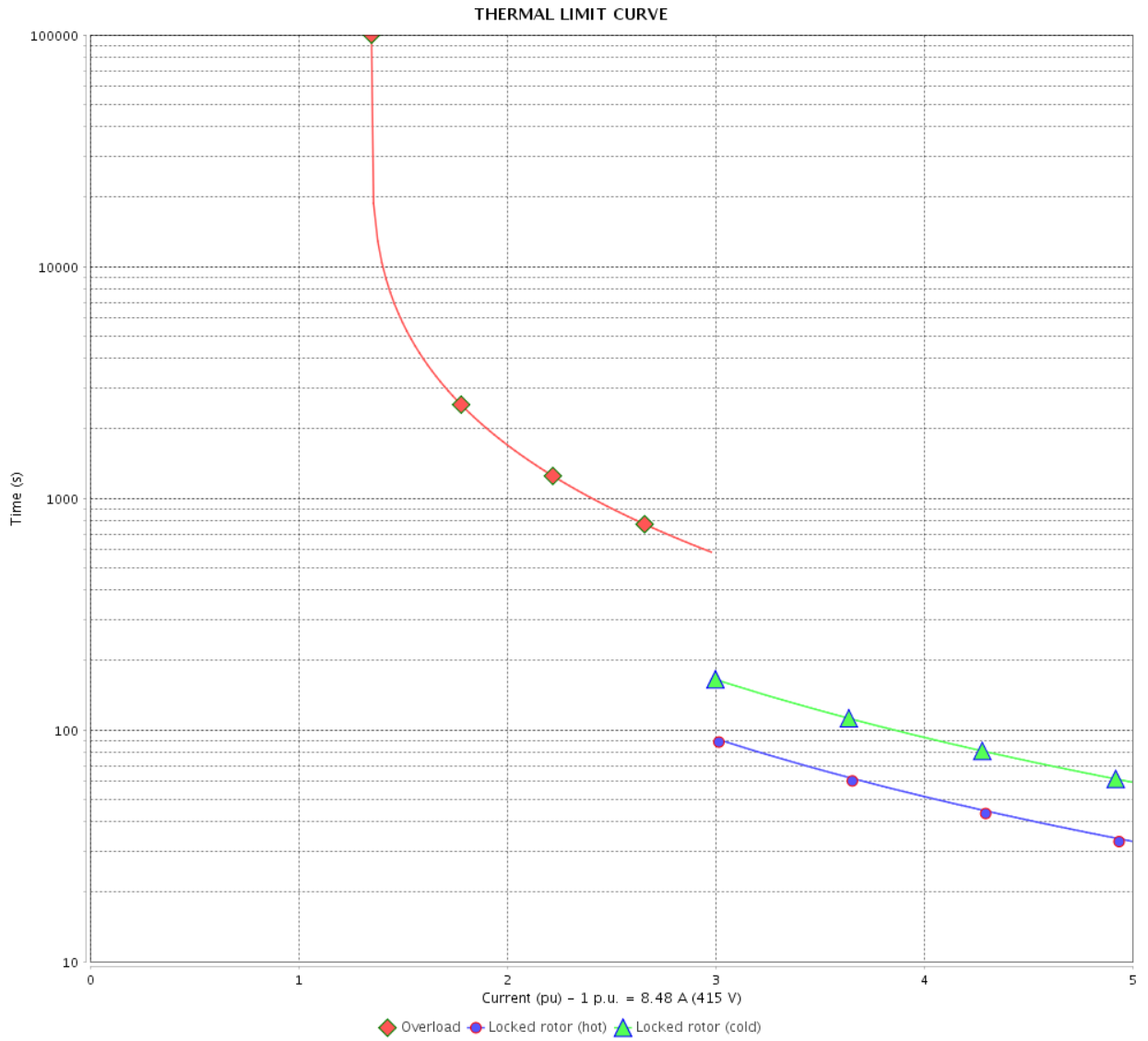


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



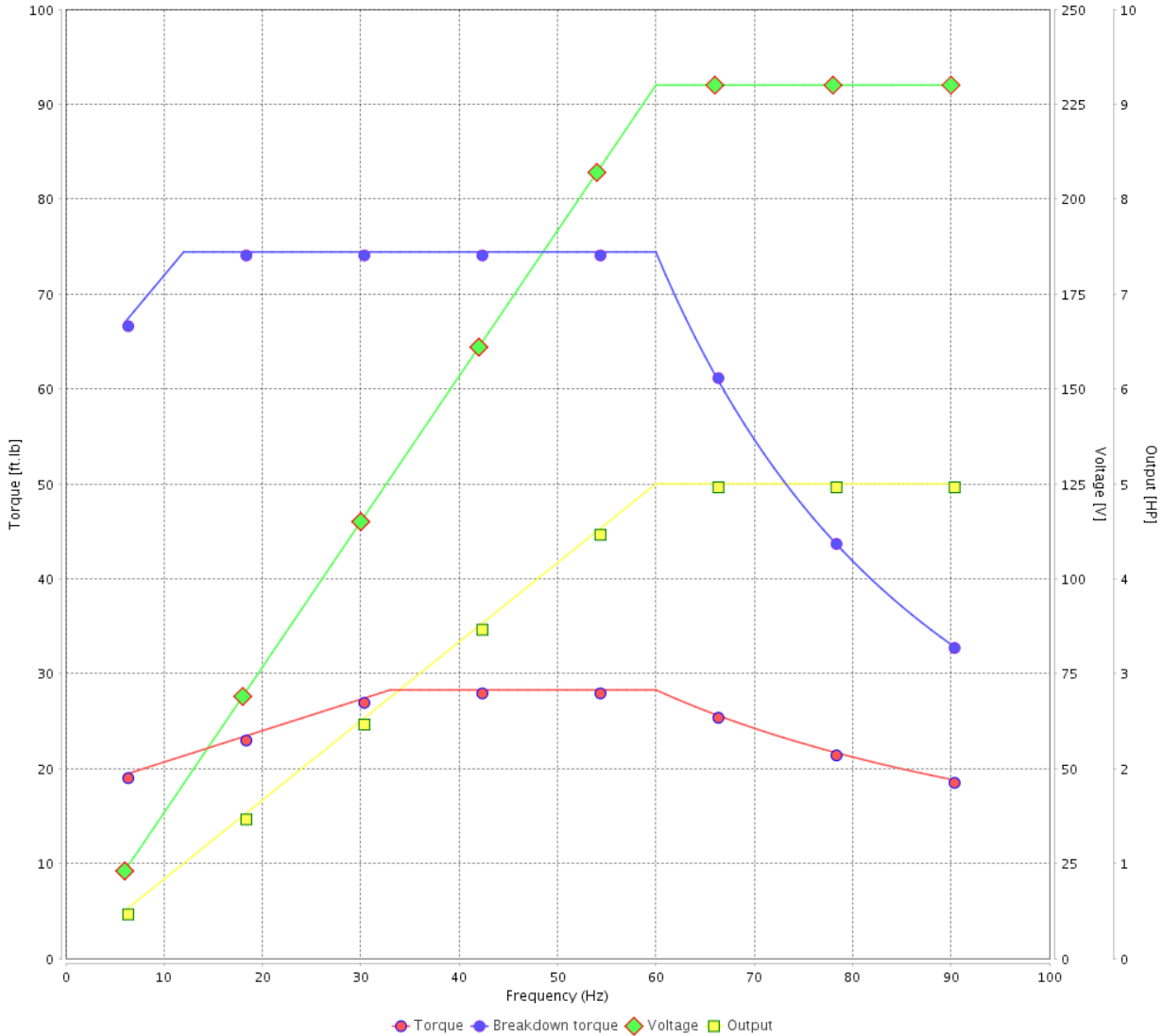
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22

VFD OPERATION CURVE



Performance : 230/460 V 60 Hz 8P

Rated current : 15.2/7.58 A  
 LRC : 5.3  
 Rated torque : 29.8 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 250 %  
 Rated speed : 882 rpm

Moment of inertia (J) : 3.41 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

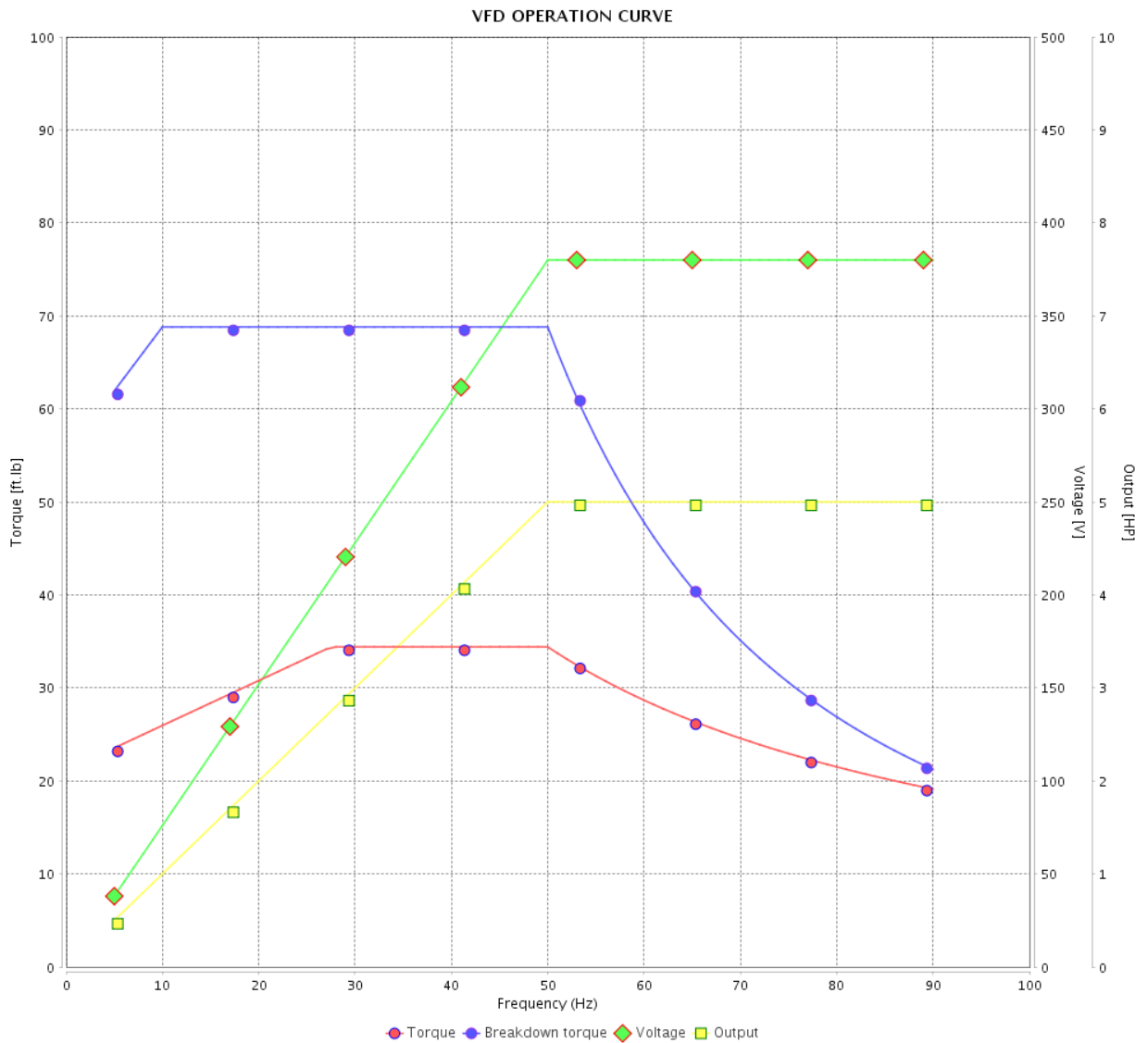


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 Insulation class : F  
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 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



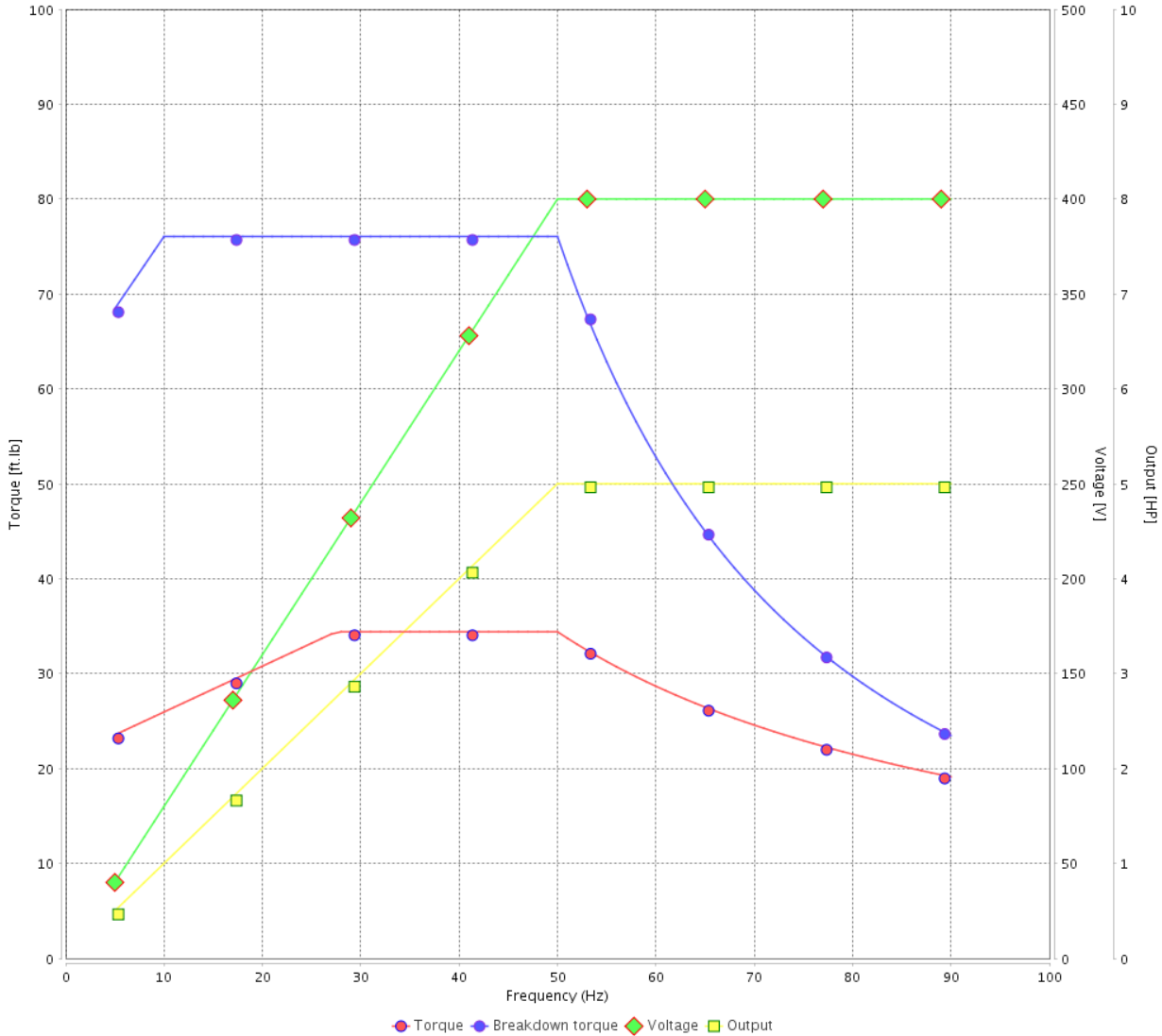
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445774

Catalog # : 00509ET3E254T-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current : 8.56 A  
 LRC : 4.7  
 Rated torque : 36.2 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 210 %  
 Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage

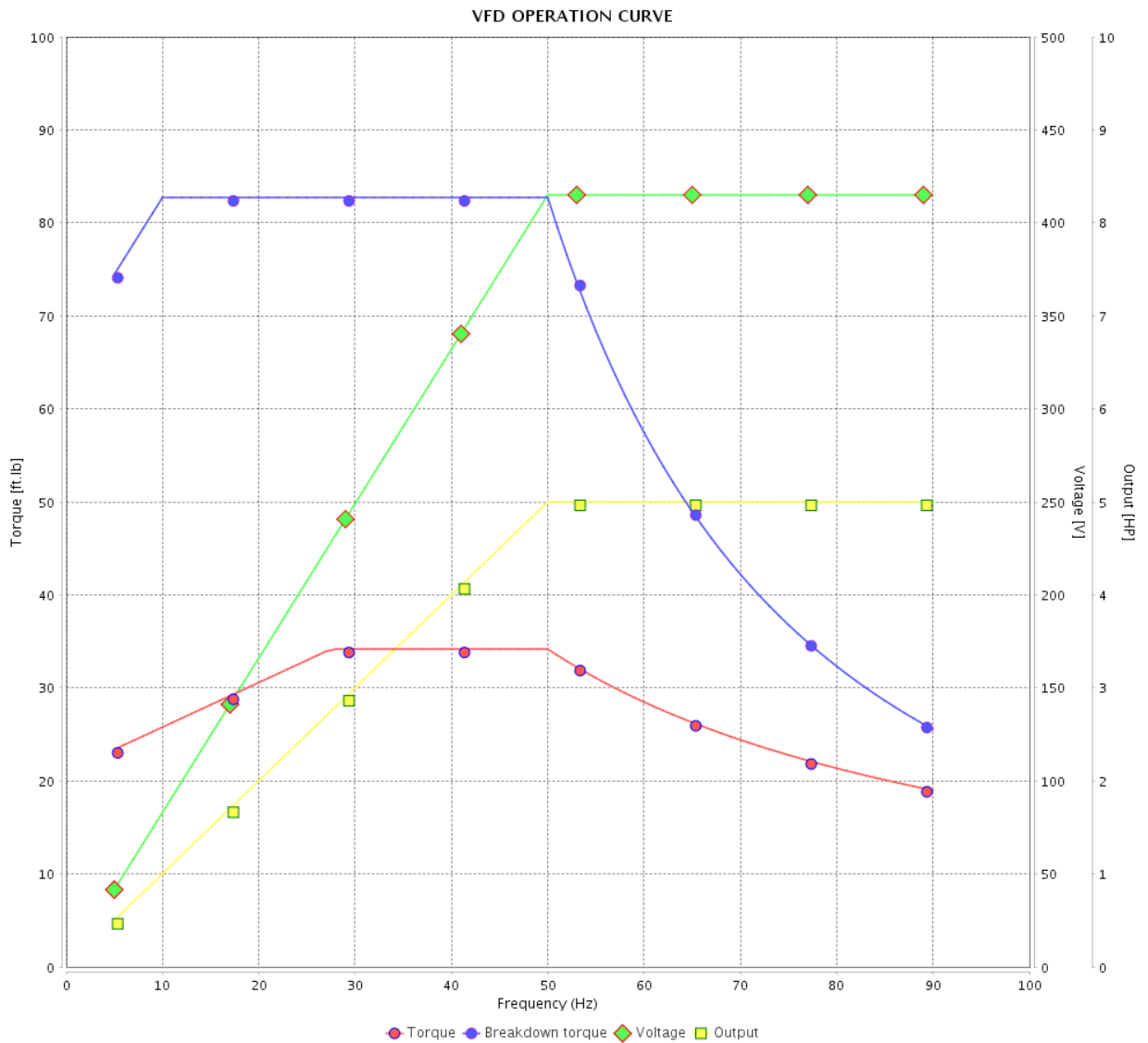


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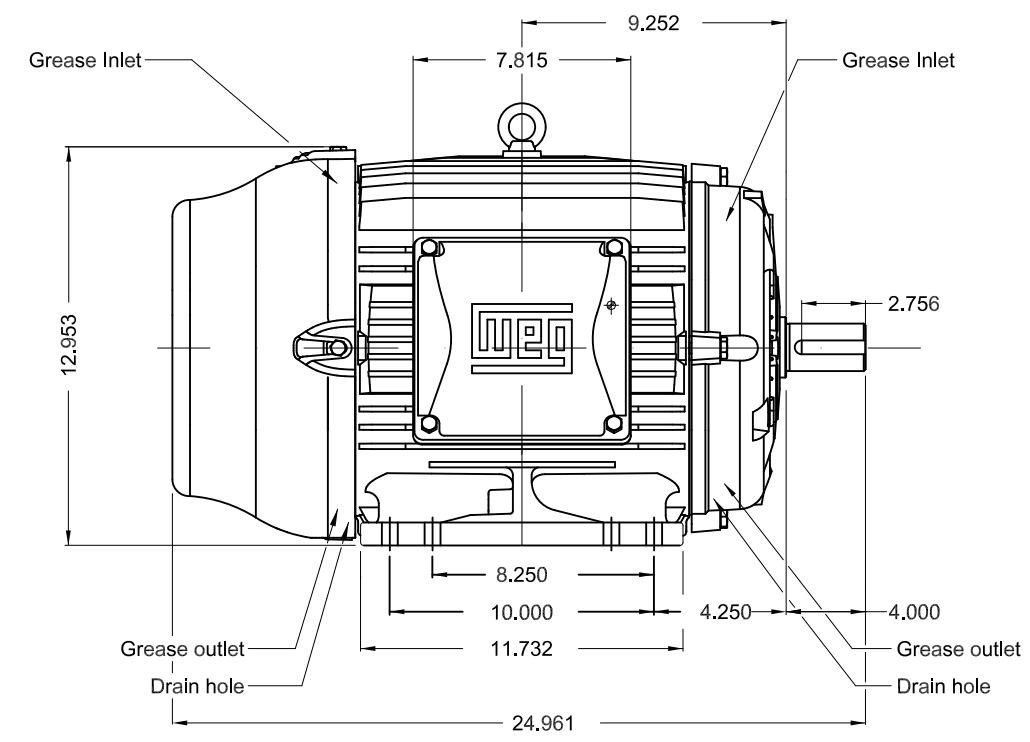
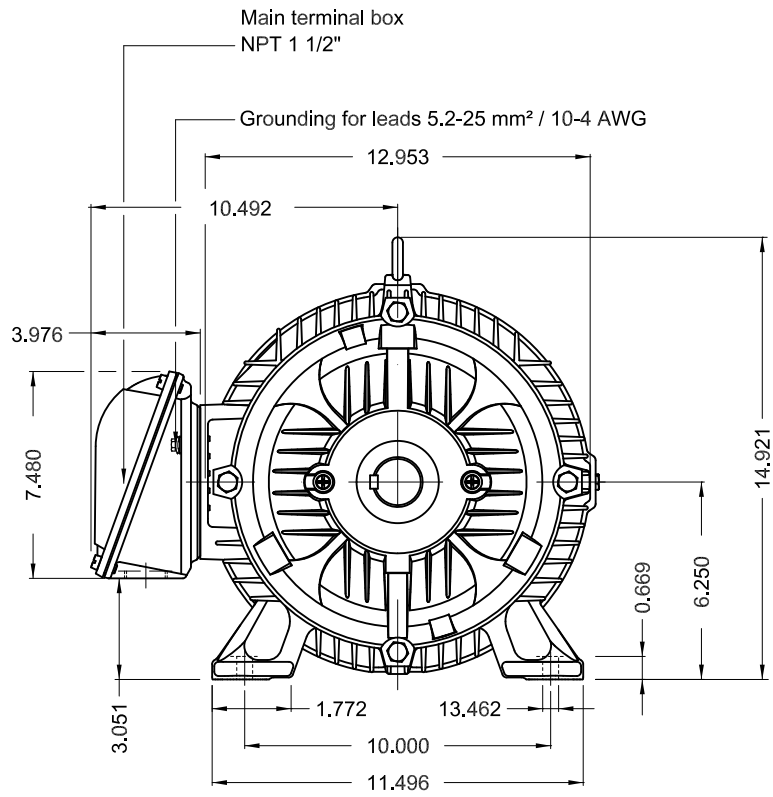
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1 2 3 4 5 6

A

B

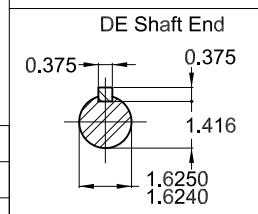
C



D

E

Color RAL 5009  
 Painting plan 203A  
 Mounting B3R(D)



5 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 254/6T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

**PREVIEW**  
 WDD



Dimensions in inches XME A3

MADE IN MEXICO  
12445774



FOR SAFE AREA  
Mod.TE1BFOXON  
CC029A

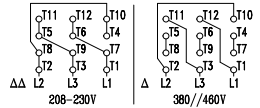


For use on 60Hz  
Class I, Div 2, Gr A, B, C and D - T3  
Class I, Zone 2, IIC - T3  
Class II, Div 2, Gr F and G - T4  
For use on PWM: Gr. A, B, C, D and F,  
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 00509ET3E254T-W22

Inverter Duty Motor  
Severe Duty

PH3	60Hz	Fr. 254/6T	1000m.a.s.l.	IP55	TEFC	271lb
V	230/460			A	15.2/7.58	
HP	5.0			kW	3.7	
SF	1.25			SFA	19.0/9.47	
RPM	882			PF	0.70	
AMB	40°C	INS	cl. F DT80K	NEMA NOM EFF	87.5%	
DUTY CONT.		DES	B Code H			
USABLE @208V	16.8A	SF	1.15	SFA	19.3	
5.0HP	3.7kW	50Hz	380V	8.84A	725RPM	SF 1.15 SFA 10.2 EFF 84.8% (IE3)



- 6309-C3 (13g)
- 6209-C3 (9g)



MOBIL POLYREX EM (20000h)

