

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer									
Product line		: NEMA Premium Efficiency Three-Phase			Product code :		14407417		
					Catalog # :		00509XT3E254T		
Frame : 254T				Cooling method : IC411 - TEFC					
Insulation class : F				Mounting : F-1					
Duty cycle : Cont.(S1)				Rotation ¹ : Both (CW and CCW)					
Ambient temperature : -20°C to +40°C				Starting method : Direct On Line					
Altitude : 1000 m.a.s.l.				Approx. weight ² : 322 lb					
Protection degree : IP55				Moment of inertia (J) : 3.41 sq.ft.lb					
Design : B									
Output [HP]	5		5		5		5		
Poles	8		8		8		8		
Frequency [Hz]	60		50		50		50		
Rated voltage [V]	230/460		380		400		415		
Rated current [A]	15.9/7.93		9.17		8.92		8.73		
L. R. Amperes [A]	84.0/42.0		48.6		47.3		46.3		
LRC [A]	5.3x(Code H)		5.3x(Code H)		5.3x(Code H)		5.3x(Code H)		
No load current [A]	11.0/5.50		5.44		5.77		6.03		
Rated speed [RPM]	880		720		725		730		
Slip [%]	2.22		4.00		3.33		2.67		
Rated torque [ft.lb]	29.8		36.5		36.2		36.0		
Locked rotor torque [%]	210		160		180		200		
Breakdown torque [%]	270		200		229		250		
Service factor	1.15		1.00		1.00		1.00		
Temperature rise	80 K		80 K		80 K		80 K		
Locked rotor time	37s (cold) 21s (hot)		37s (cold) 21s (hot)		37s (cold) 21s (hot)		37s (cold) 21s (hot)		
Noise level ²	55.0 dB(A)		53.0 dB(A)		53.0 dB(A)		53.0 dB(A)		
Efficiency (%)	25%	82.8	82.1	80.9	81.0				
	50%	84.0	82.5	82.5	82.5				
	75%	86.5	84.0	84.0	84.0				
	100%	87.5	84.0	85.5	85.5				
Power Factor	25%	0.25	0.30	0.28	0.26				
	50%	0.46	0.53	0.50	0.47				
	75%	0.58	0.65	0.62	0.60				
	100%	0.67	0.73	0.70	0.69				
Bearing type		Drive end : 6309 C3	Non drive end : 6209 C3	Foundation loads					
Sealing		: Oil Seal	: Lip Seal	Max. traction		: 270 lb			
Lubrication interval		: 20000 h	: 20000 h	Max. compression		: 592 lb			
Lubricant amount		: 13 g	: 9 g						
Lubricant type		: Mobil Polyrex EM							
Notes									
USABLE @208V 17.5A SF 1.15 SFA 20.2A									
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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DATA SHEET

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Customer : _____

Thermal protection

ID	Application	Type	Quantity	Sensing Temperature
1	Winding	Thermostat - 2 wires	1 x Phase	155 °C

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TORQUE AND CURRENT VS SPEED CURVE



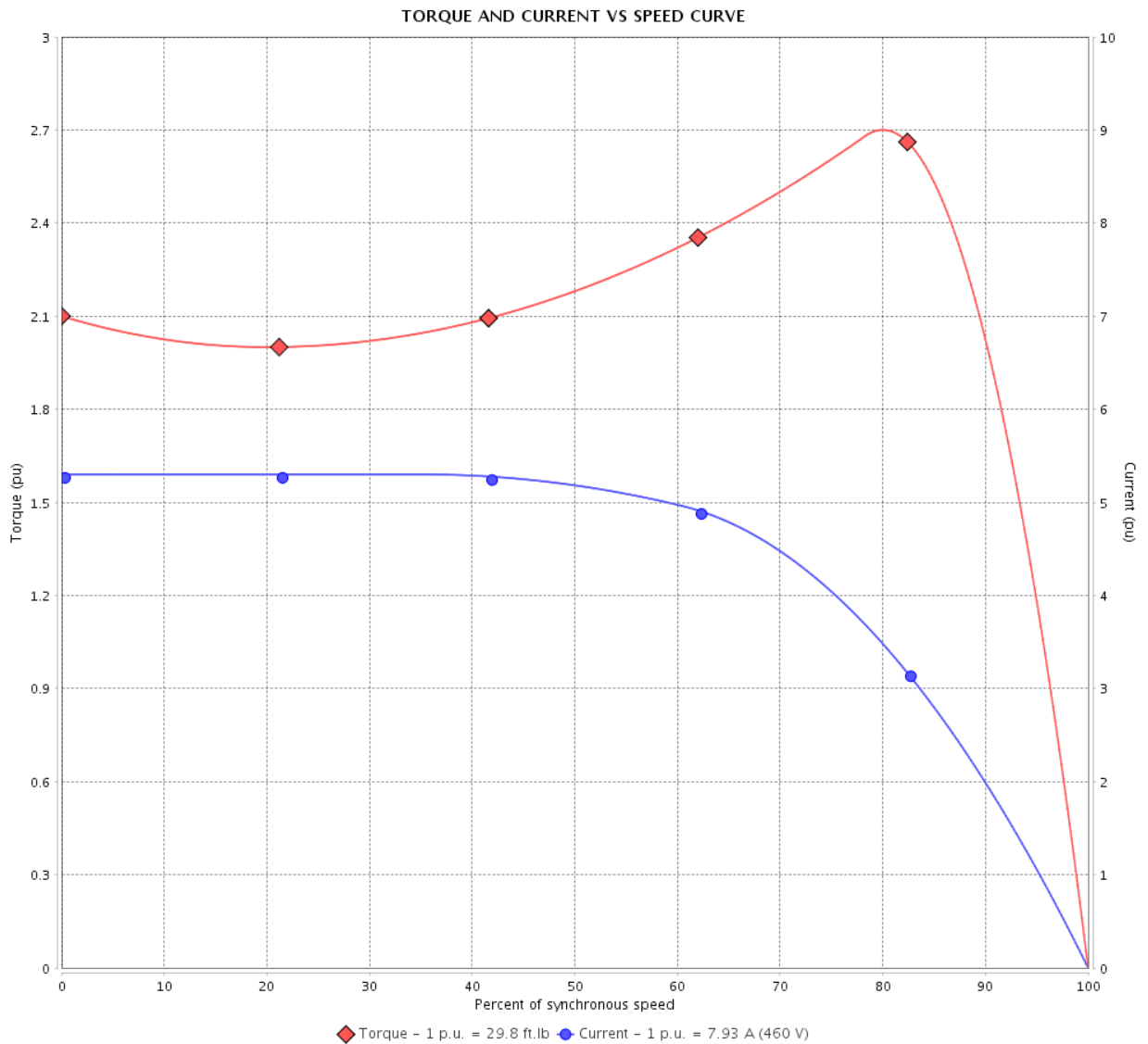
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407417

Catalog # : 00509XT3E254T



Performance : 230/460 V 60 Hz 8P

Rated current : 15.9/7.93 A
 LRC : 5.3
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 270 %
 Rated speed : 880 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 : 37s (cold) 21s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



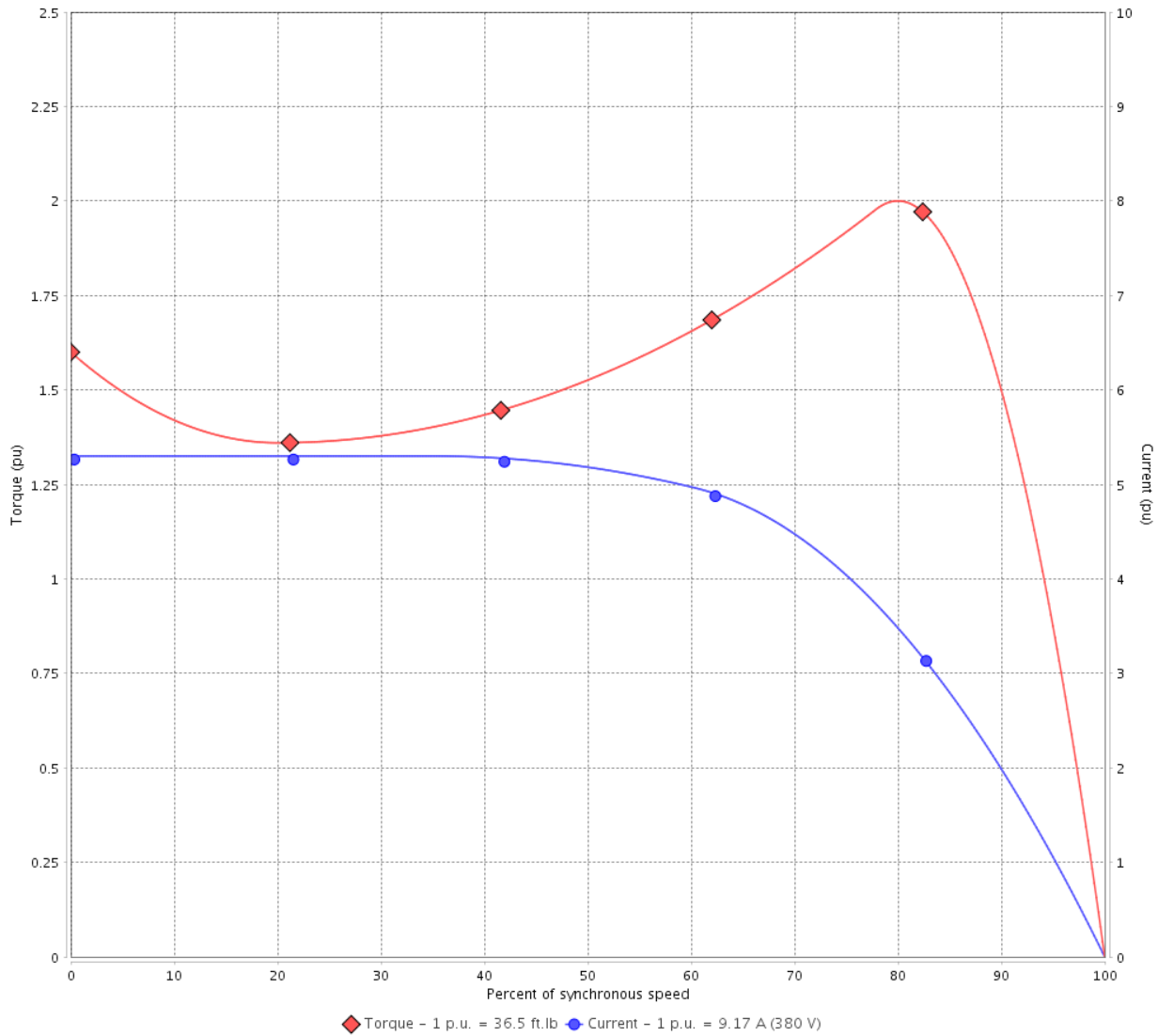
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407417

Catalog # : 00509XT3E254T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 8P IE2

Rated current	: 9.17 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.5 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Locked rotor time : 37s (cold) 21s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



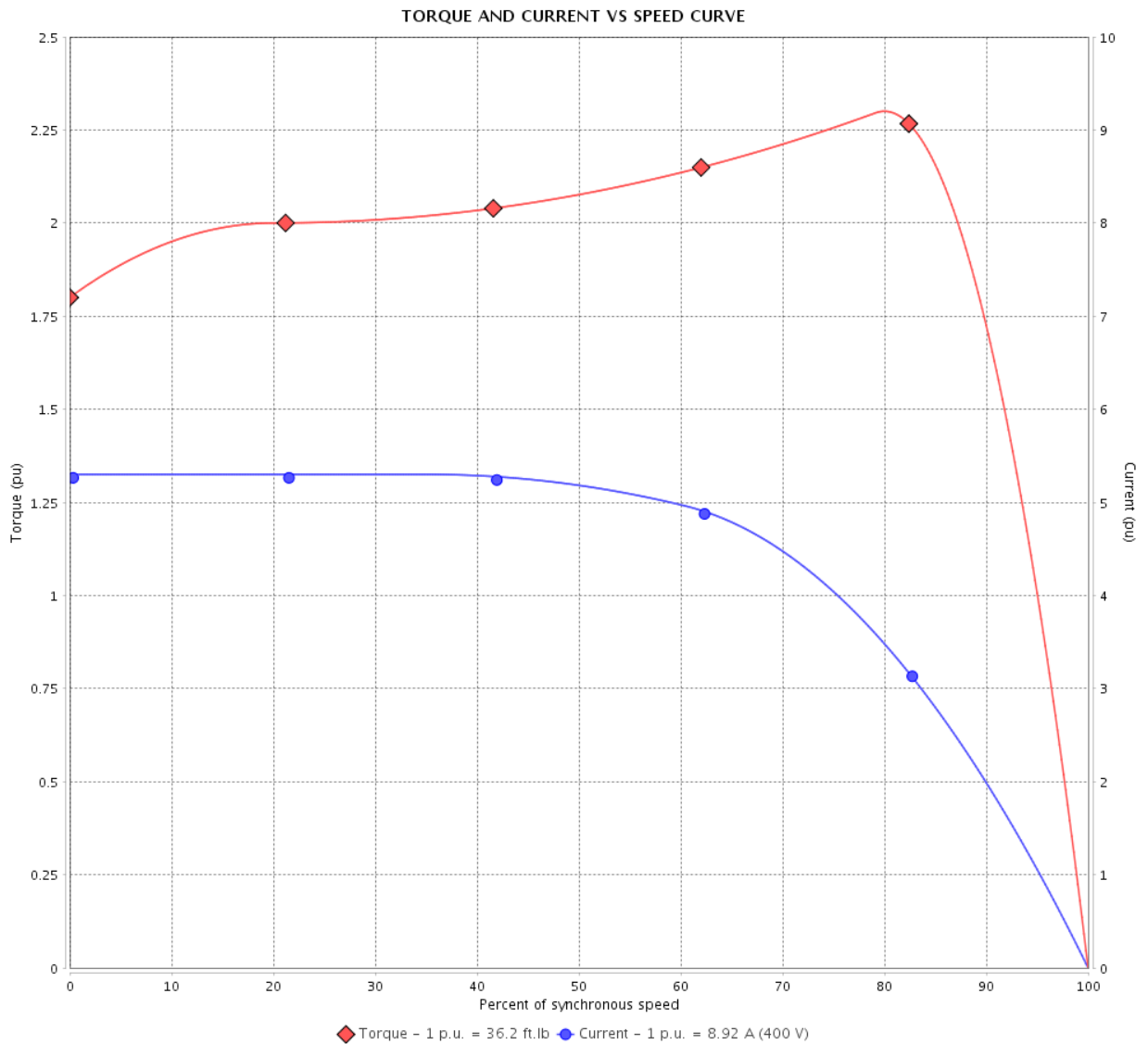
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407417

Catalog # : 00509XT3E254T



Performance : 400 V 50 Hz 8P IE3

Rated current	: 8.92 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 725 rpm	Design	: B

Locked rotor time : 37s (cold) 21s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



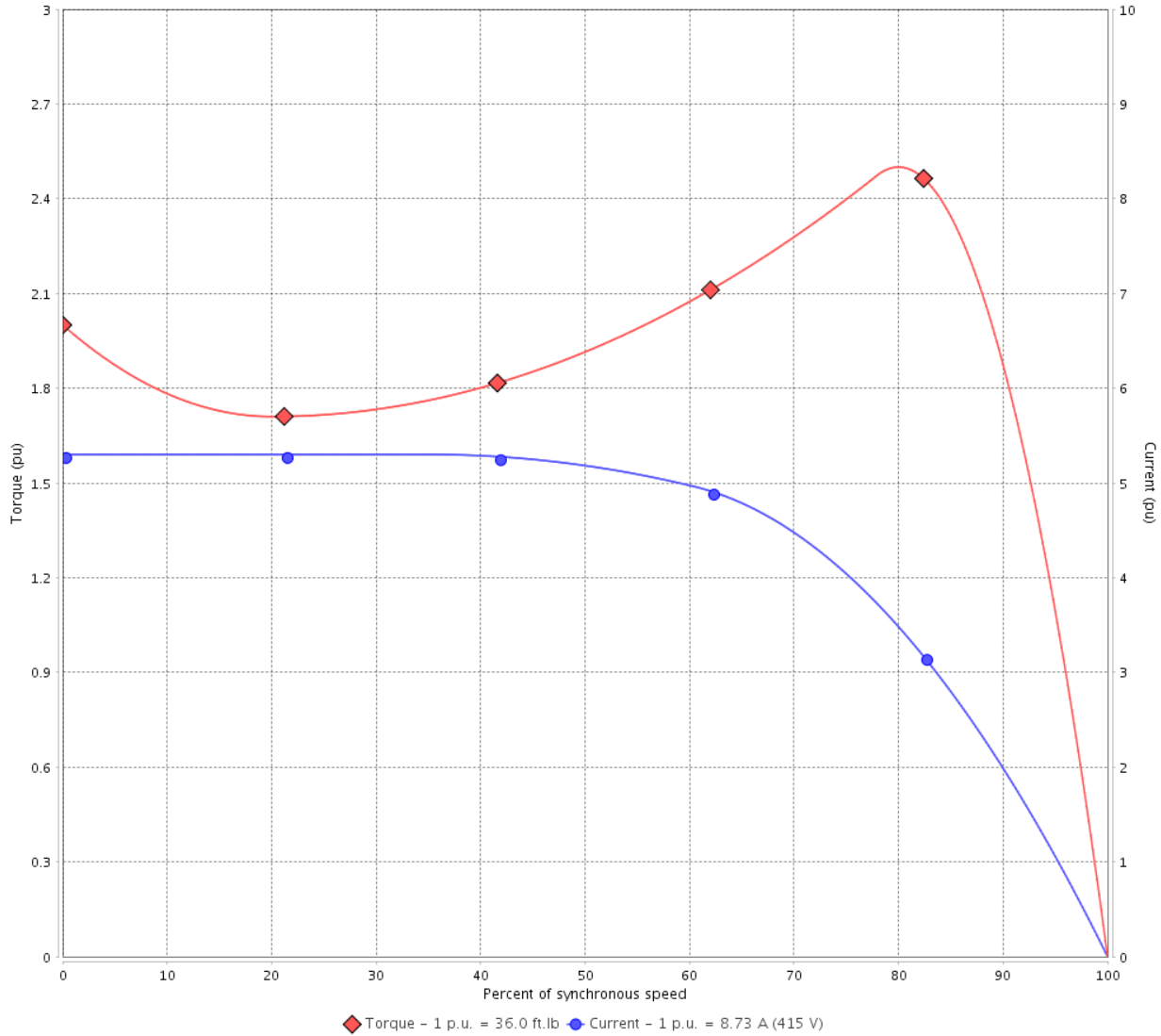
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407417

Catalog # : 00509XT3E254T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 8P IE3

Rated current	: 8.73 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.0 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 730 rpm	Design	: B

Locked rotor time : 37s (cold) 21s (hot)

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

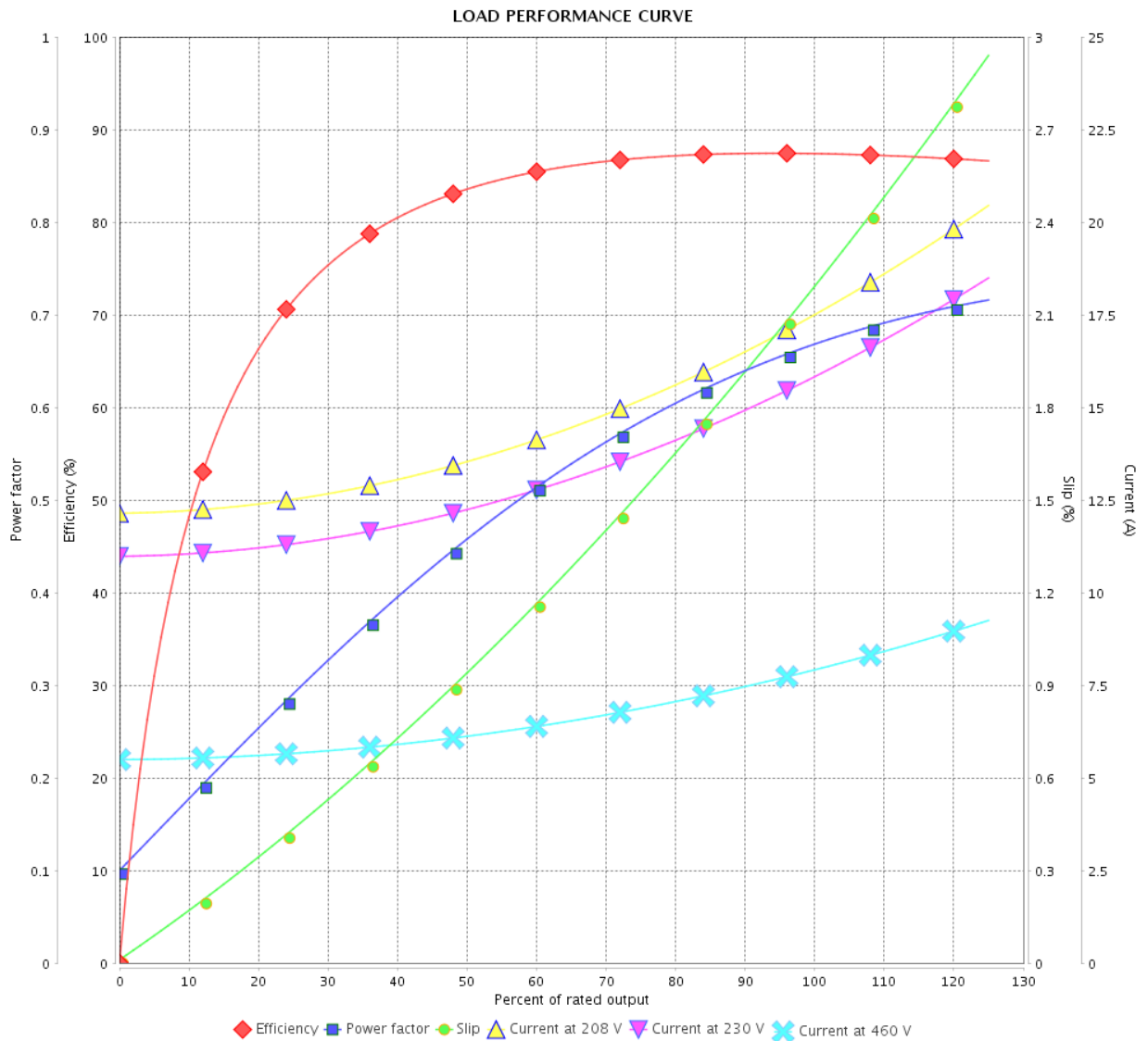


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

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Performance : 230/460 V 60 Hz 8P

Rated current : 15.9/7.93 A
 LRC : 5.3
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 270 %
 Rated speed : 880 rpm

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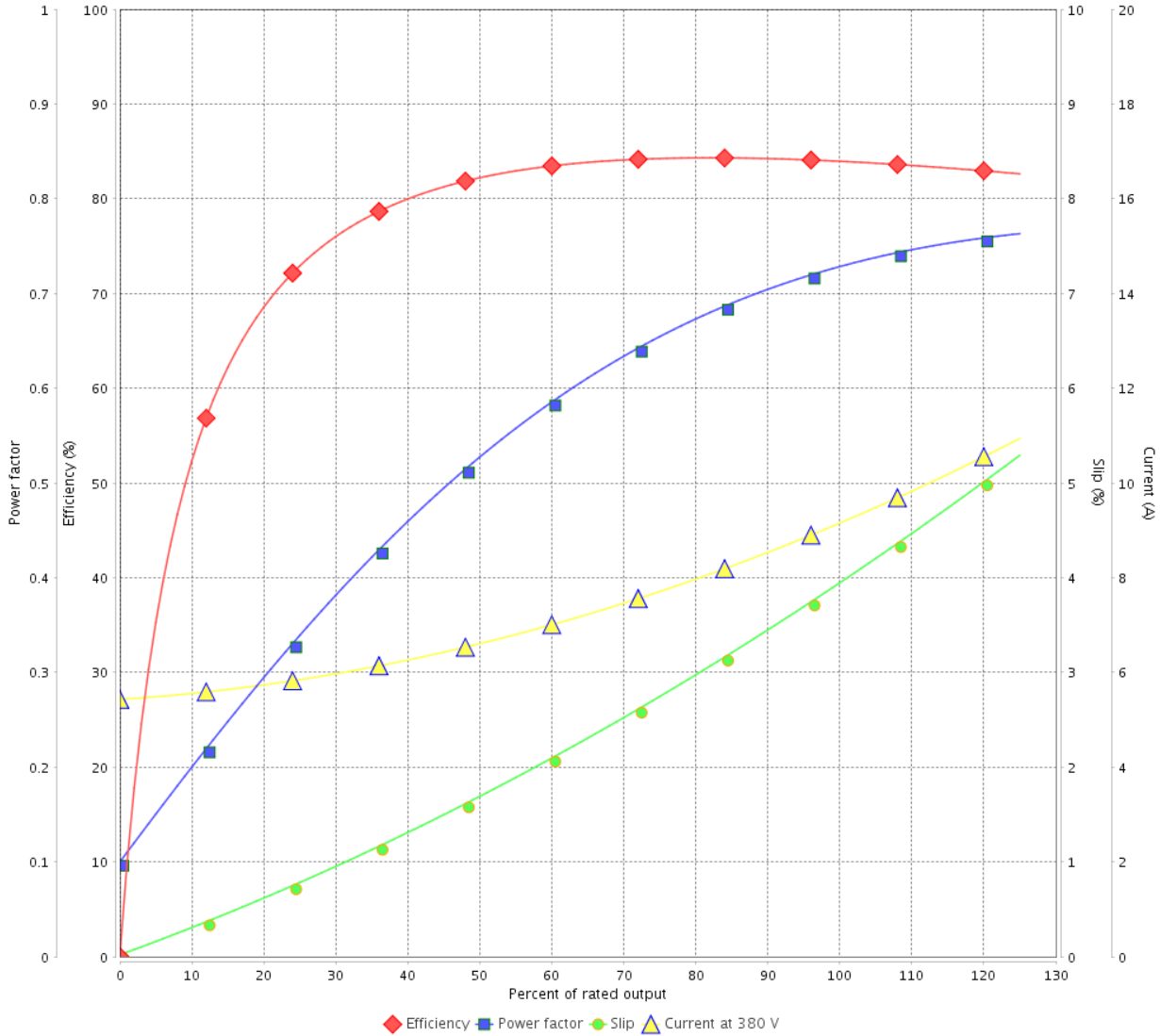
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Performance : 380 V 50 Hz 8P IE2

Rated current : 9.17 A
 LRC : 5.3
 Rated torque : 36.5 ft.lb
 Locked rotor torque : 160 %
 Breakdown torque : 200 %
 Rated speed : 720 rpm

Moment of inertia (J) : 3.41 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage

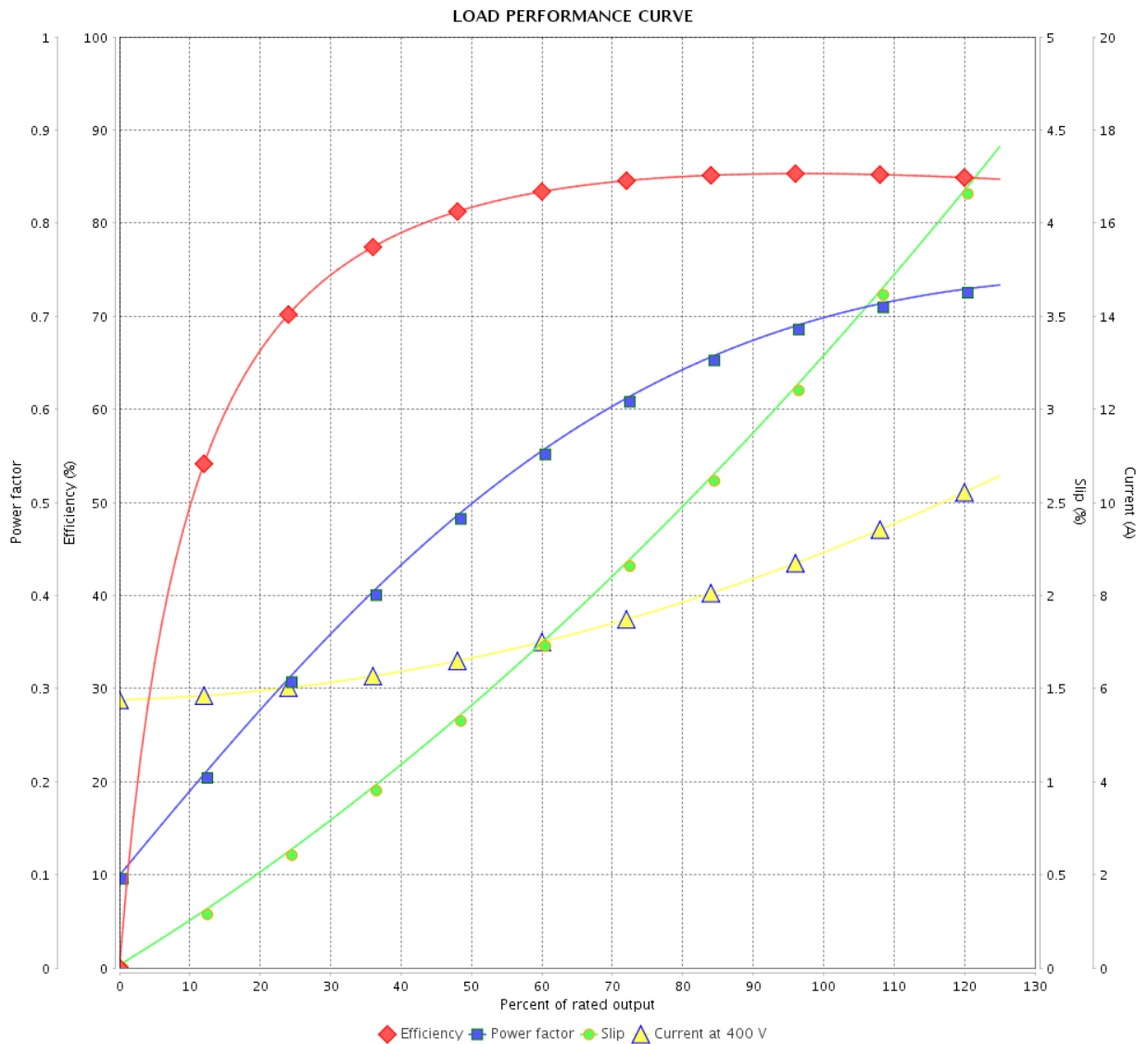


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407417

Catalog # : 00509XT3E254T



Performance : 400 V 50 Hz 8P IE3

Rated current : 8.92 A
 LRC : 5.3
 Rated torque : 36.2 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 229 %
 Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage



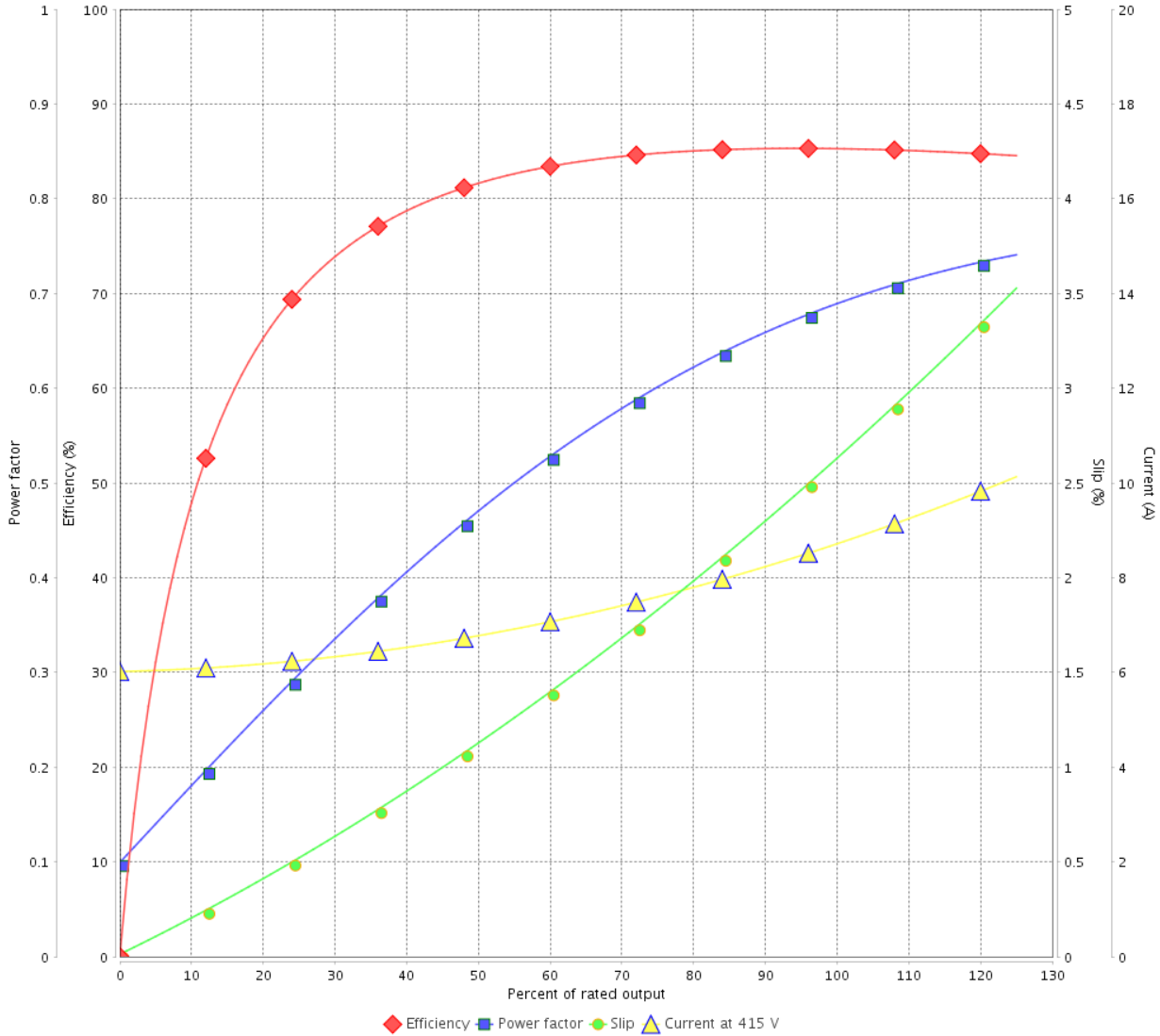
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LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 8P IE3

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 Rated torque : 36.0 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 250 %
 Rated speed : 730 rpm

Moment of inertia (J) : 3.41 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



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Locked rotor torque : 210 %	Service factor : 1.15
Breakdown torque : 270 %	Temperature rise : 80 K
Rated speed : 880 rpm	Design : B

Heating constant

Cooling constant

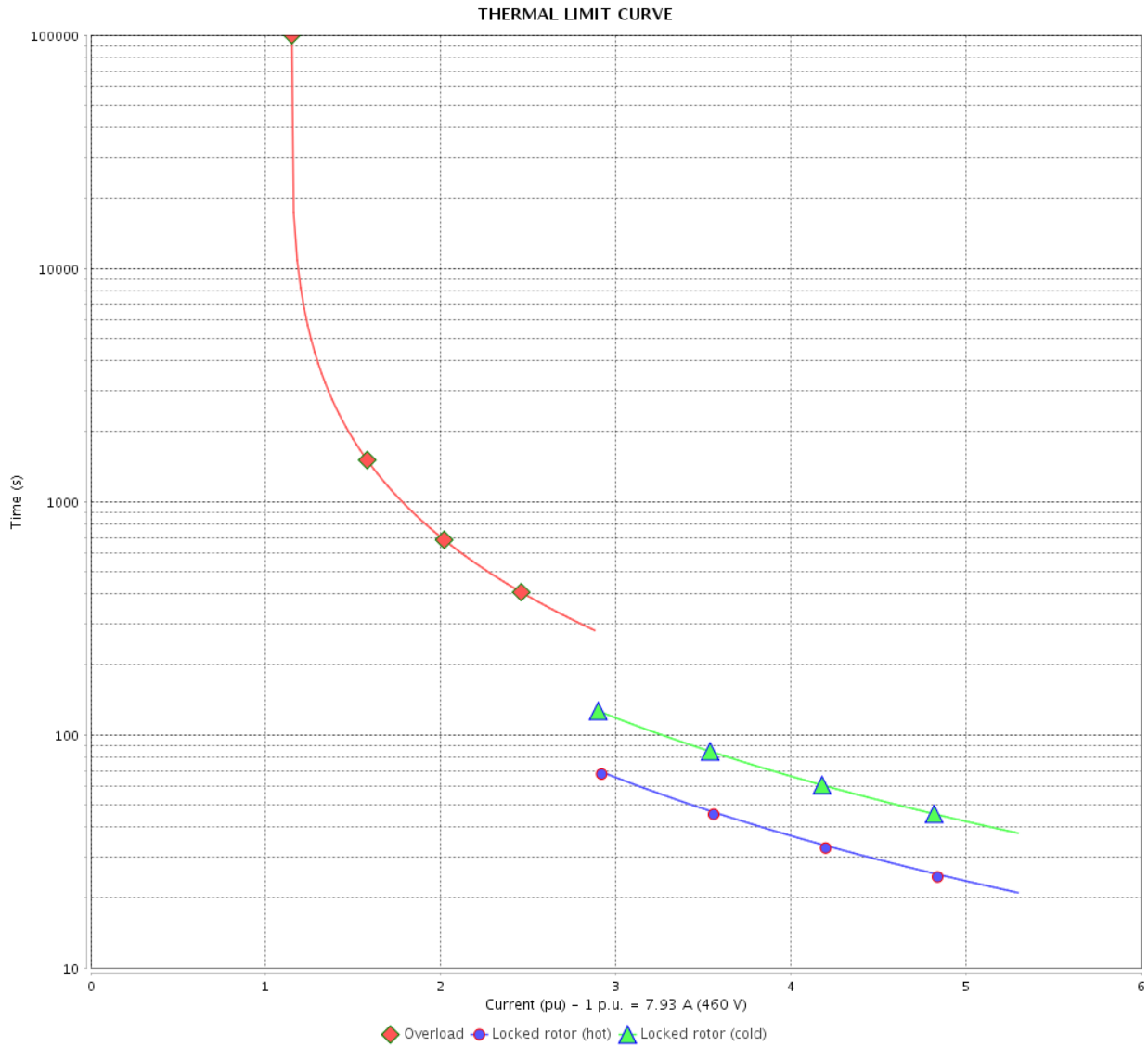
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Date				

THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

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Performance : 380 V 50 Hz 8P IE2

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LRC : 5.3	Duty cycle : Cont.(S1)
Rated torque : 36.5 ft.lb	Insulation class : F
Locked rotor torque : 160 %	Service factor : 1.00
Breakdown torque : 200 %	Temperature rise : 80 K
Rated speed : 720 rpm	Design : B

Heating constant

Cooling constant

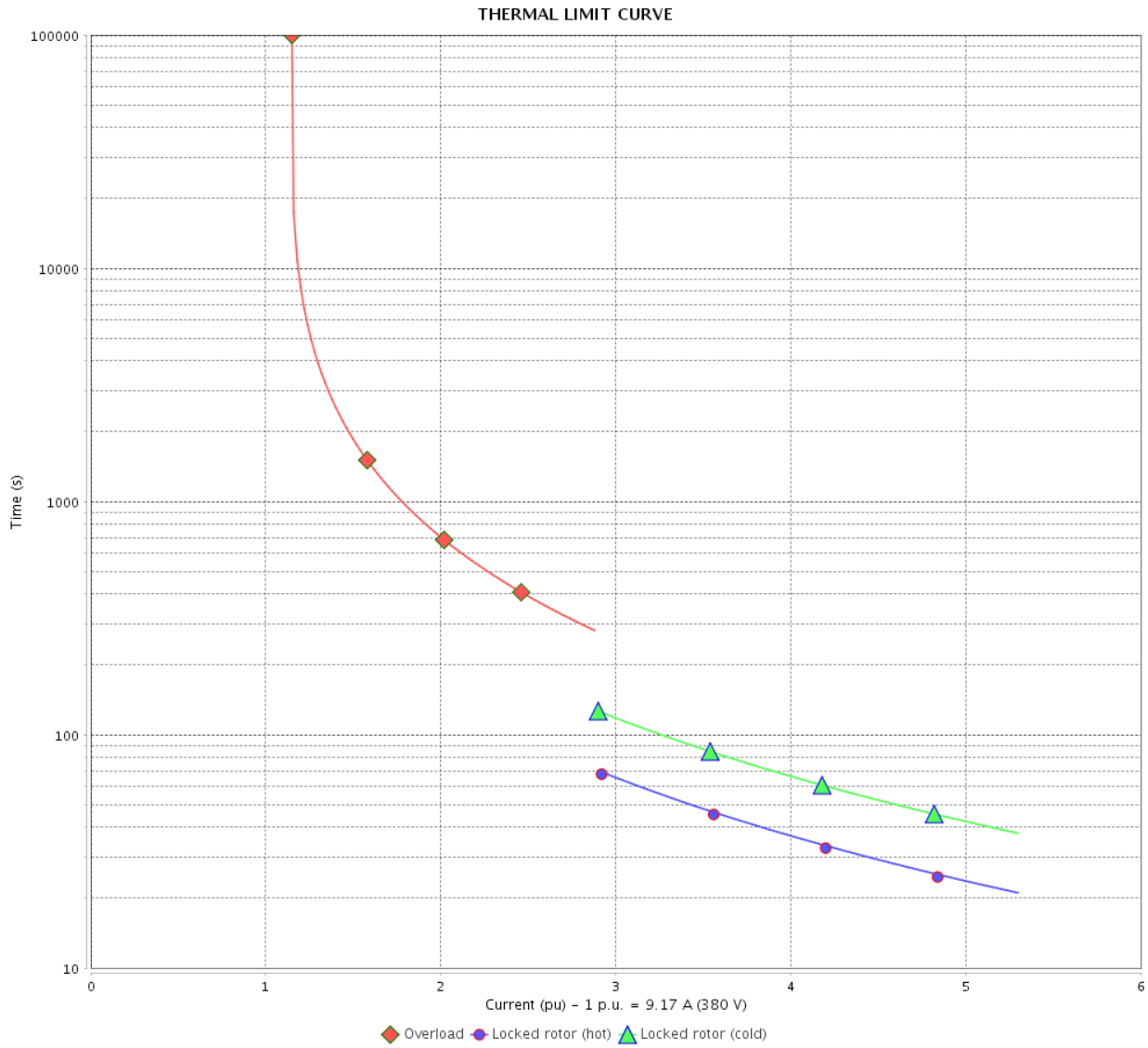
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Customer :

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Performance : 400 V 50 Hz 8P IE3

Rated current : 8.92 A
LRC : 5.3
Rated torque : 36.2 ft.lb
Locked rotor torque : 180 %
Breakdown torque : 229 %
Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

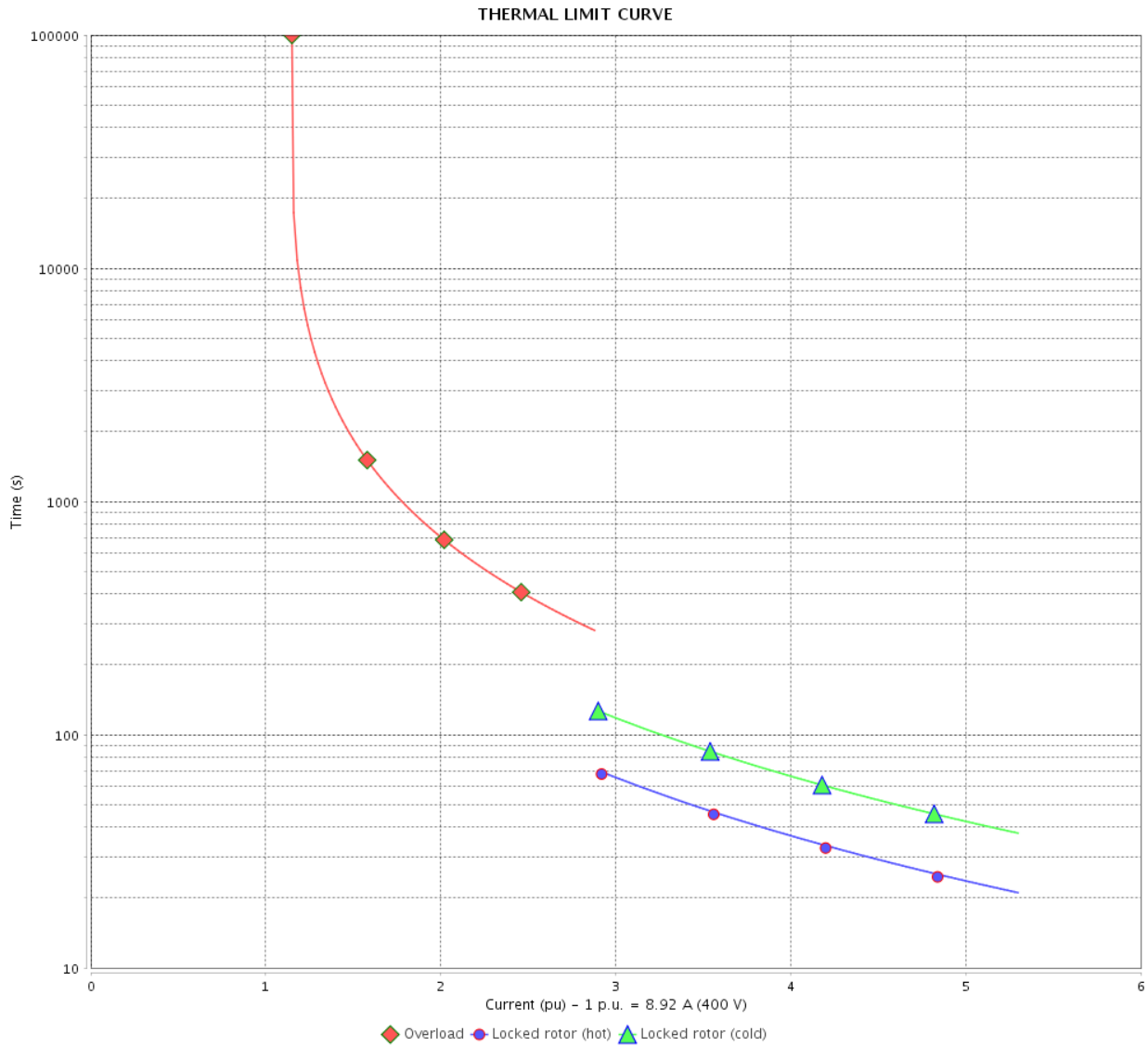
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 14407417
 Catalog # : 00509XT3E254T

Performance : 415 V 50 Hz 8P IE3

Rated current : 8.73 A	Moment of inertia (J) : 3.41 sq.ft.lb
LRC : 5.3	Duty cycle : Cont.(S1)
Rated torque : 36.0 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.00
Breakdown torque : 250 %	Temperature rise : 80 K
Rated speed : 730 rpm	Design : B

Heating constant

Cooling constant

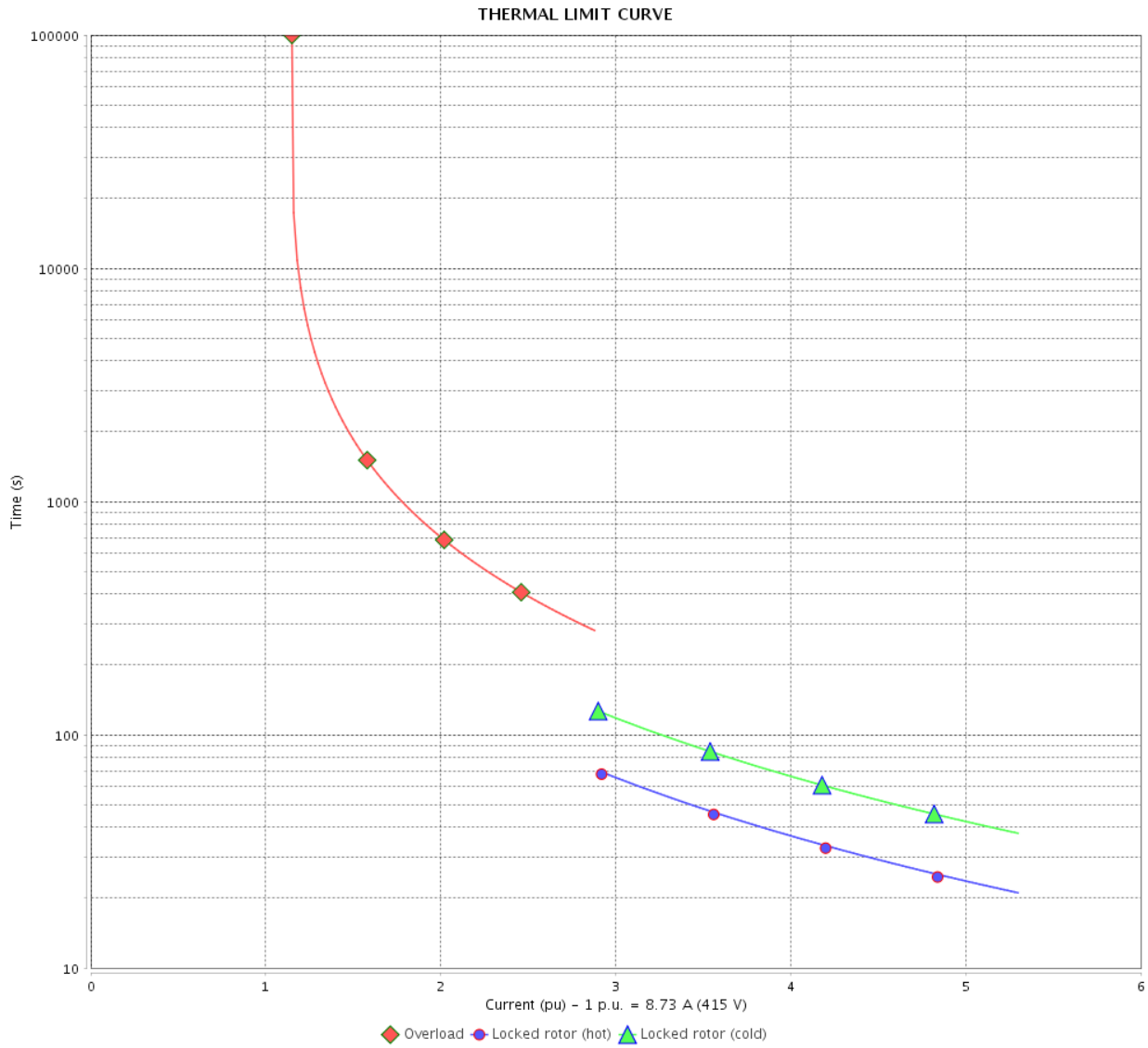
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

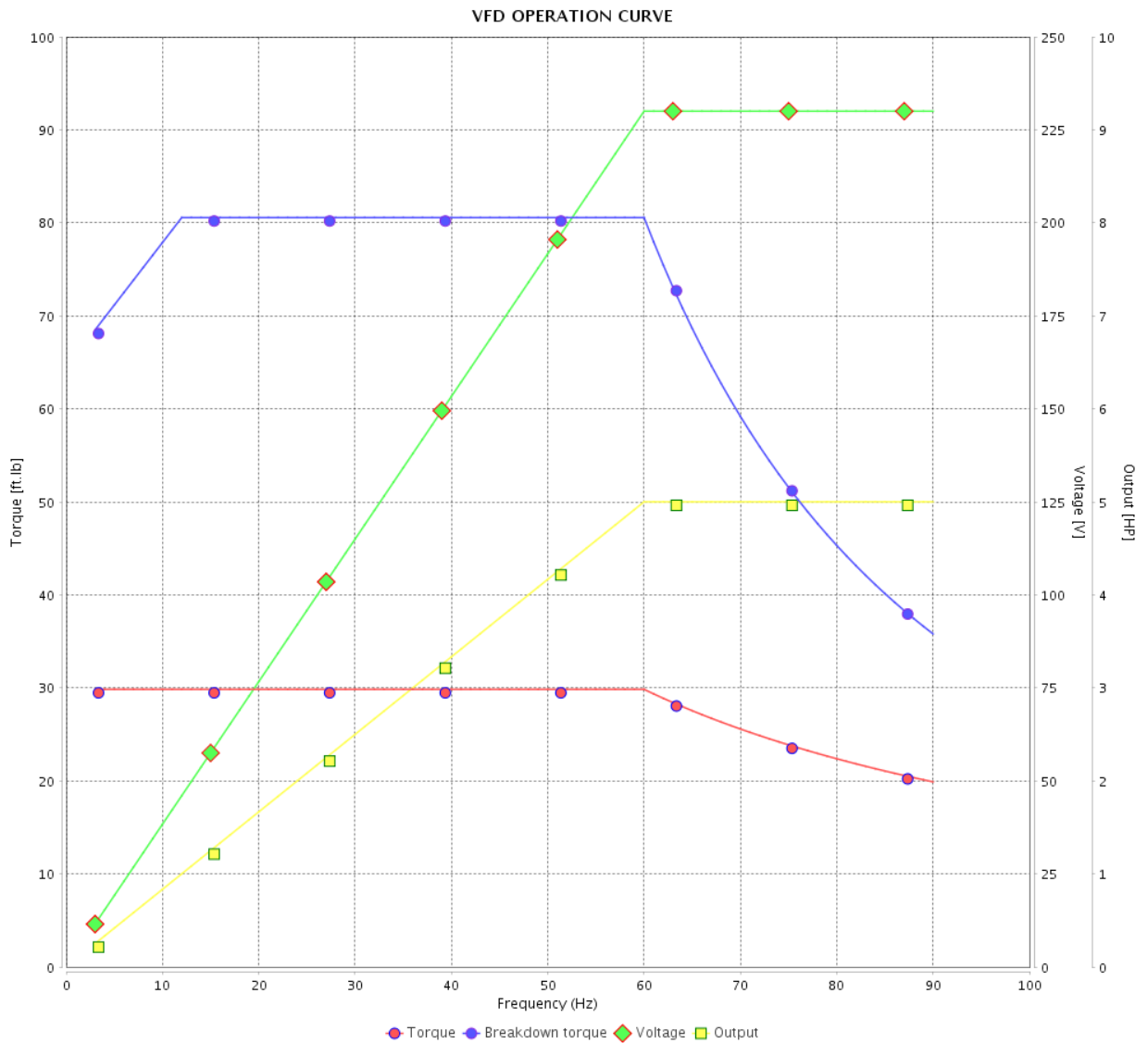


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Product code : 14407417

Catalog # : 00509XT3E254T



Performance : 230/460 V 60 Hz 8P

Rated current : 15.9/7.93 A
 LRC : 5.3
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 270 %
 Rated speed : 880 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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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



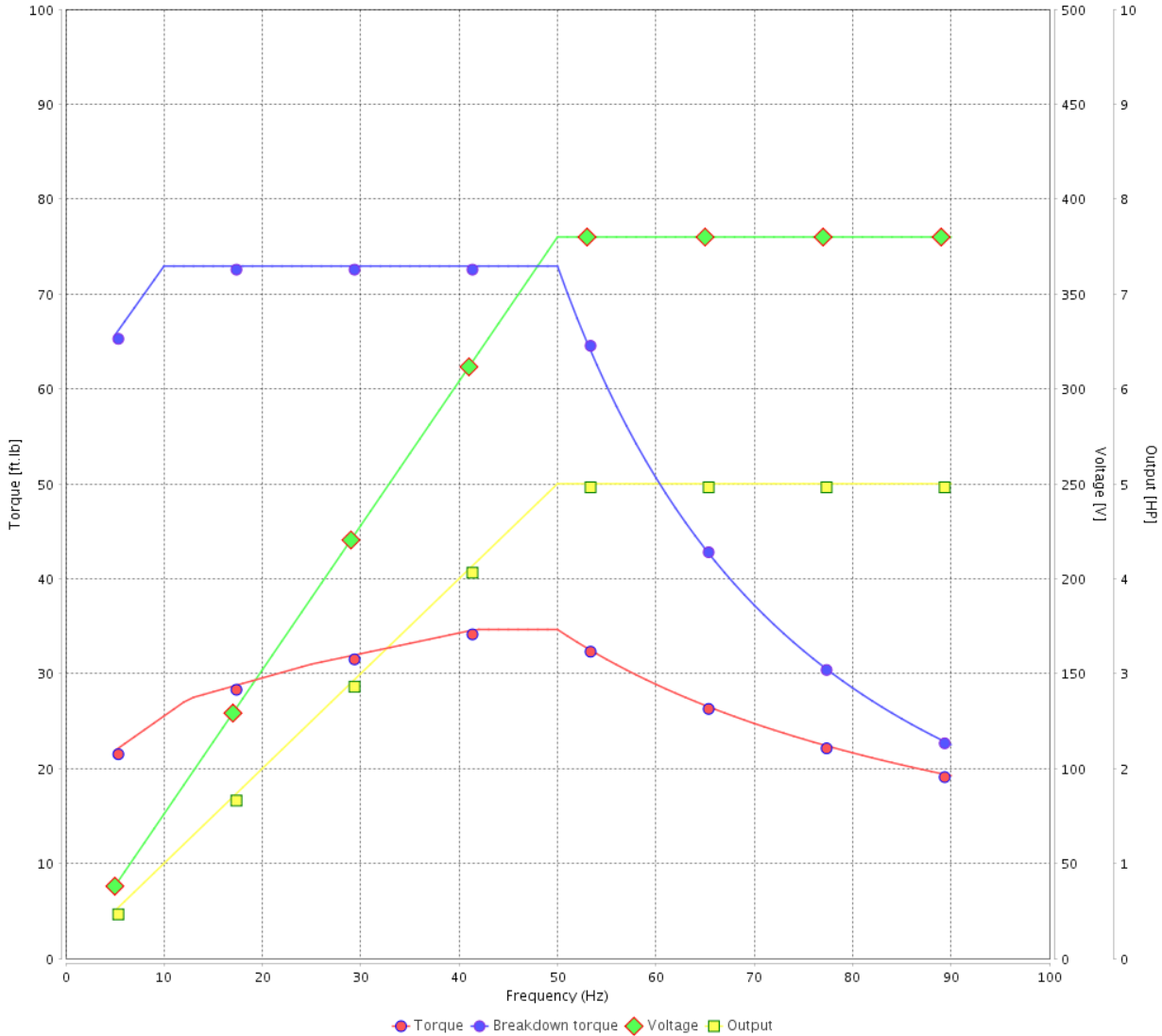
Customer :

Product line : NEMA Premium Efficiency Three-Phase

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Catalog # : 00509XT3E254T

VFD OPERATION CURVE



Performance : 380 V 50 Hz 8P IE2

Rated current	: 9.17 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.5 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 720 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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Date	13/04/2022			

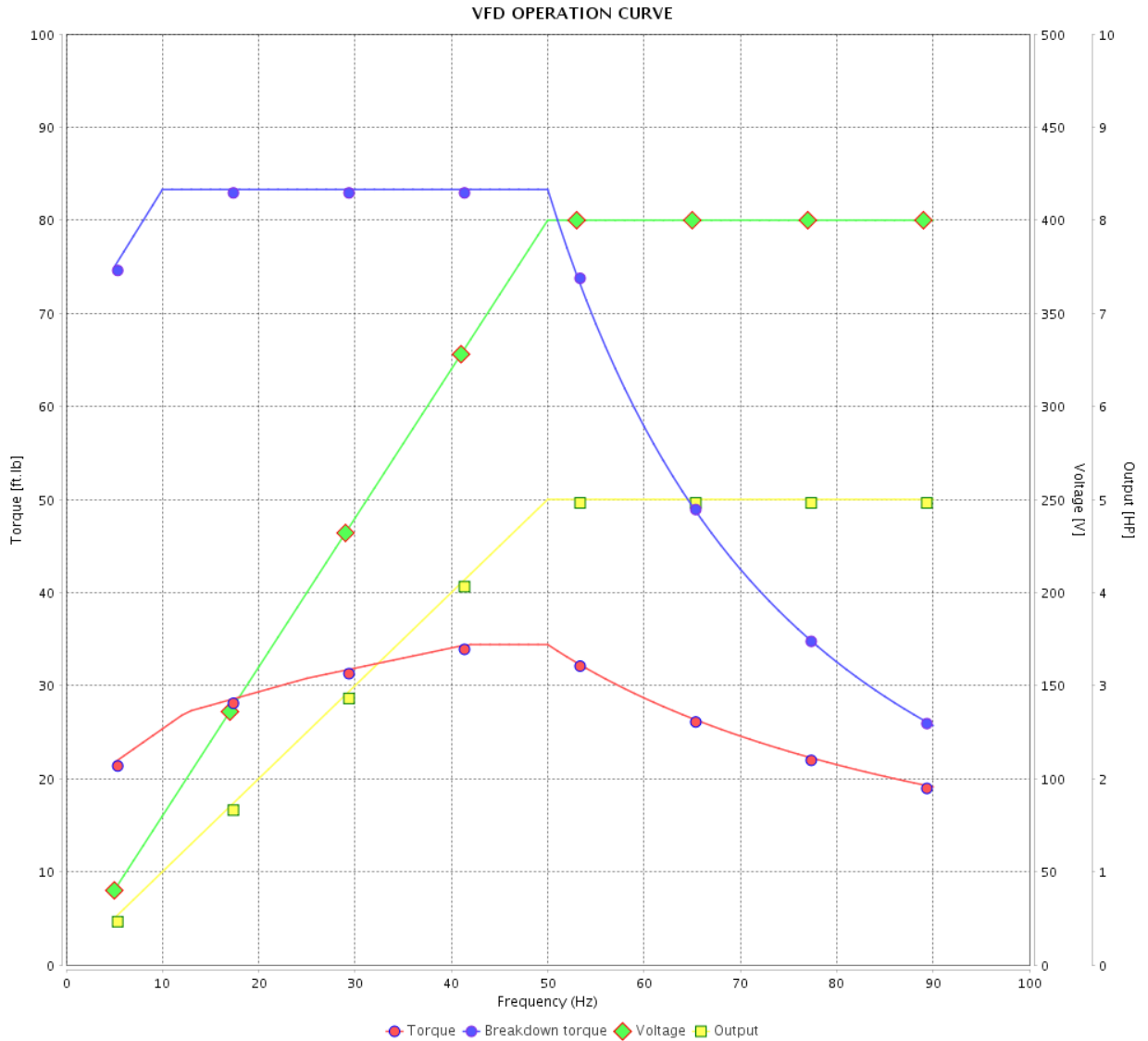
VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



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Product line : NEMA Premium Efficiency Three-Phase
 Product code : 14407417
 Catalog # : 00509XT3E254T



Performance : 400 V 50 Hz 8P IE3

Rated current	: 8.92 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 725 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



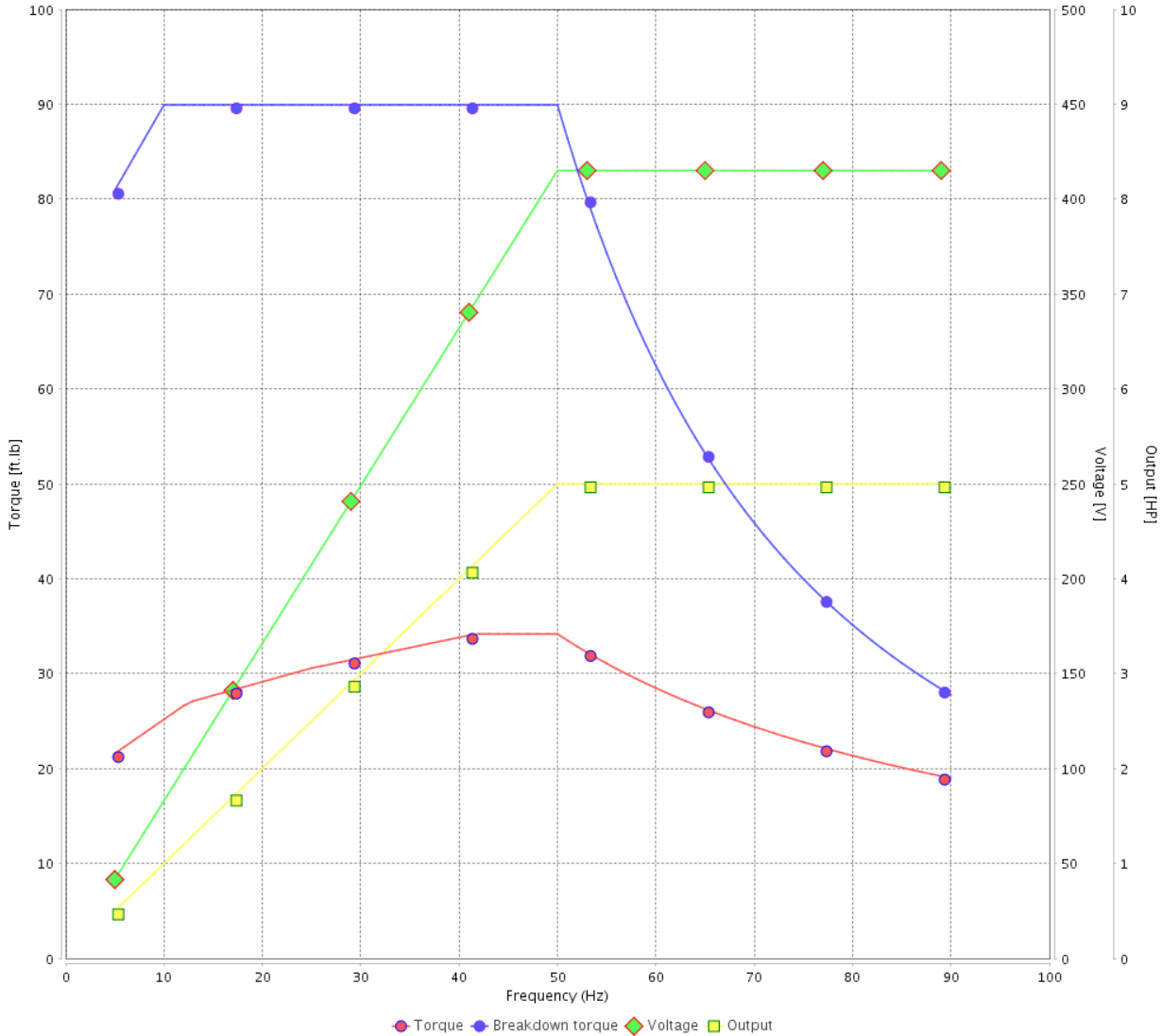
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VFD OPERATION CURVE



Performance : 415 V 50 Hz 8P IE3

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LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.0 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 730 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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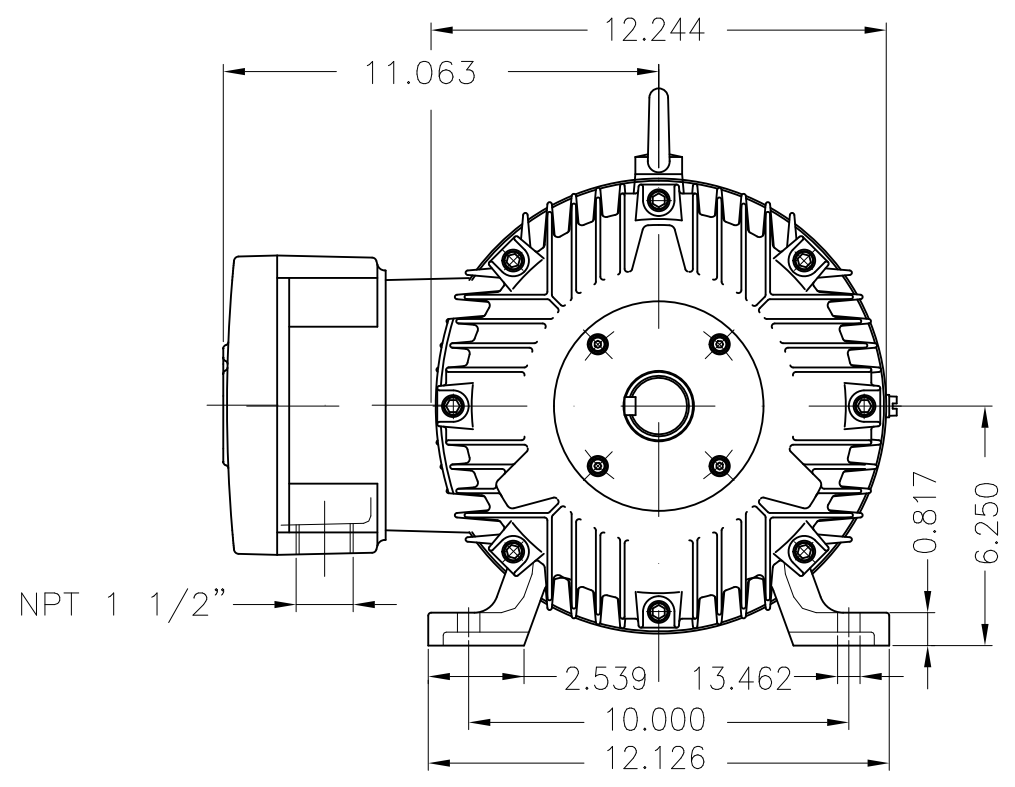
A

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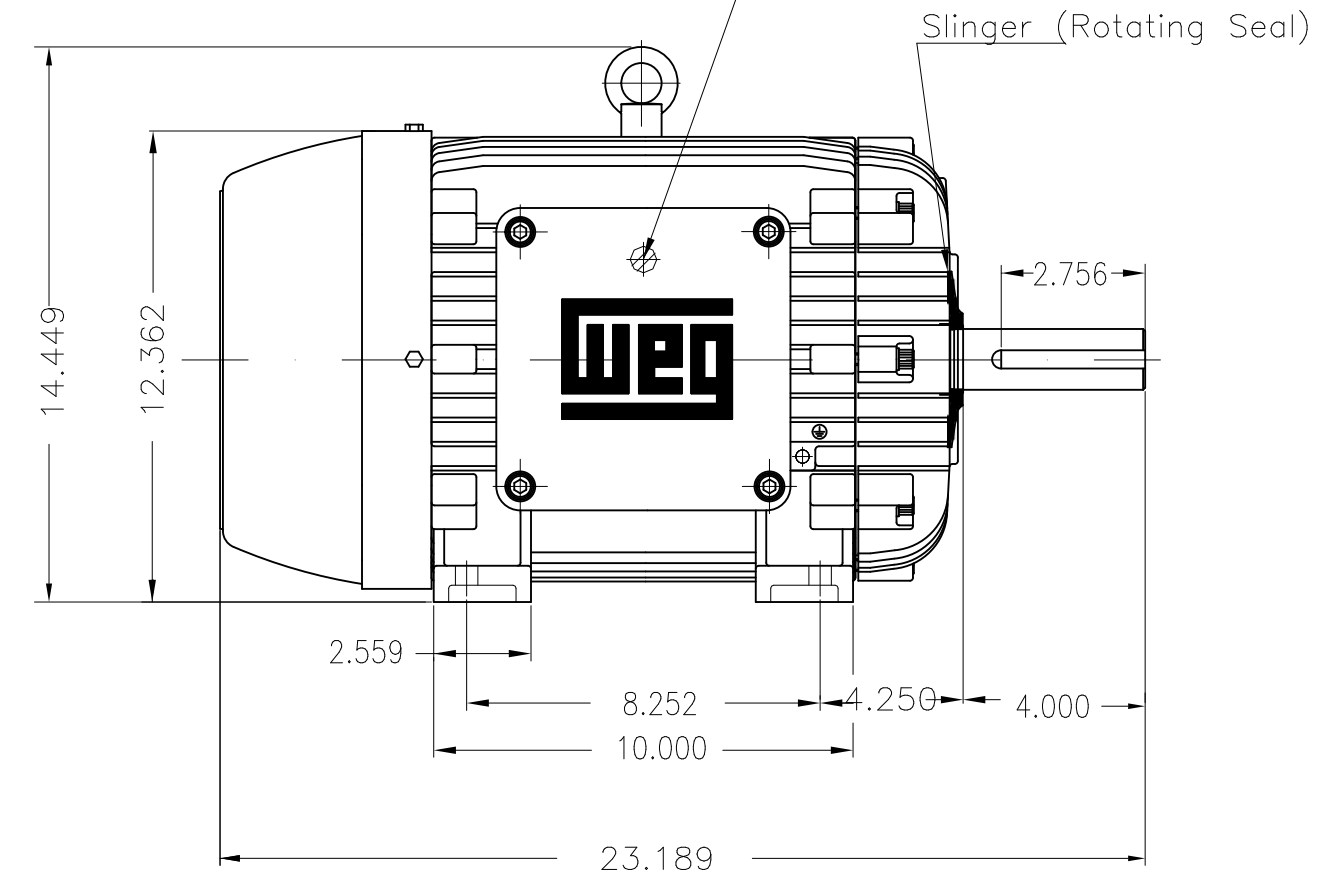
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D

E

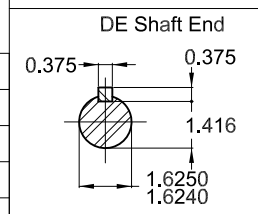


Grounding for leads 5.2–25 mm² / 10–4 AWG



5 HP 08 Poles 60 Hz A

- With grease fitting
- Color RAL 5009
- Painting plan 202P
- Mounting NEMA F-1
- Mounting B3R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 254T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

PREVIEW
WDD

SHEET 1 / 1

Dimensions in inches XME A3

MADE IN BRAZIL


W21X NEMA
Premium

14407417

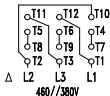
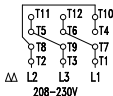
CC029A

Inverter Duty Motor
Severe Duty


LISTED

MODEL 00509XT3E254T

PH 3	FR 254T		
HP(kW) 5.0(3.7)		HZ 60	IP55
V 230/460		A 15.9/7.93	
RPM 880		NEMA NOM EFF 87.5%	
PF 0.67		SFA 18.3/9.12	DES B
INS CL F Δ T 80 K		SF 1.15	ENCL TEFC
DUTY CONT.		CODE H	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	17.5 A	SF 1.15 SFA 20.1
AMB 55°C SF1.0			
5.0HP 3.7kW 50Hz 380V 9.17A 720RPM SF1.00 EFF 84.0% (IE2)			



→ 6309-C3 MOBIL POLYREX EM
 → 6209-C3 13 g 20000 h

324 Lbs



TEMP CODE T3C
 CSA/UL: Class I - Div. 1 - Groups C and D
 CSA: Class II - Div. 1 - Groups F and G
 CSA: Class I - Zone 1 - IIB

EXPLOSION PROOF MOTOR

FOR USE ON VPWM VFD 1000:1VT, 6:1CT, 1.0SF, T3C, AMB 40°C.